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Welfare of Education in Kanyakumari District

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Abstract. The intention of this paper is to provide a clear idea about the current education scenario practiced in Kanyakumari District, Tamil Nadu, India, its associated drawbacks and to propose innovative teaching methods. For this purpose, various schools in the district were visited and surveys had been conducted to bring out the expectations and interests of students towards our education system. Based on the feedback given by the students and teachers, an analysis was performed and the shortcomings in the current education system were spotted out. The suggestions and expectations on the existing education scheme are being discussed in this paper.

Keywords: Education, Education System, Learning.

INTRODUCTION

The growth and development of a country in all sectors depends on the quality of education provided to its citizens. The primary purpose of education is to mould good individuals who are capable of serving society. The education also aims at yielding knowledge among students in all aspects, making them dream bigger and developing their personal skills. Whatever the objective of education may be, its scenario in our state is completely based on marks obtained in the examinations. The quality of education is measured in terms of grades and the toppers are considered to be brilliant. This has poisoned the very roots of education and its intentions. The talents of the students are nipped in bud and all of them are made to concentrate in scoring higher grades and in choosing professional courses for higher studies. This teaching methodology has been generating lakhs of Engineers every year, yet not even one Rabindranath Tagore or a Ravi Varma or a Lincoln out of it. Seeds of independent thinking lie within every individual and it's the duty of the parents and teachers to create an atmosphere for it to sprout. The real target of education can be achieved only if the individual's talents are brought out in addition to imparting knowledge to them.

EDUCATION BACKGROUND OF KANYAKUMARI DISTRICT

Education in Kanyakumari district is significantly influenced by the Christian Missionaries who were the pioneers of English education in the erstwhile Travancore State and, more specifically, in the South Travancore, the territory that now constitutes the district of Kanyakumari. The Portuguese and Dutch, who arrived before the British in the ancient Travancore State, were Roman Catholics who paid little attention to the cause of education. However, English instruction was later introduced to the district by Protestant missionaries who arrived in this area. The founder of the English School in the previously Travancore State was Rev. William Tobias Ringle Taube, a native of Prussia who arrived to India in 1806. He built the groundwork for



popular education in the area over the course of ten years, from 1806 to 1816.

Private teachers known as Asans used to conduct schools in villages and spread such teaching essential for daily life of the average man before the Government of the erstwhile Travancore Native State took over the direction and management of the education system. The government at the time had no active involvement in education. The teachers were not paid their due salary, thus the villagers voluntarily donated to the teachers' salaries.

The education department of the state was headed by the director of public instructions when Kanyakumari district was founded and joined to the then Chennai (Madras) in 1956. The state was divided into two divisions, with a divisional inspector in charge of each division. When the Kanyakumari district was created, it was placed under the jurisdiction of the Madurai divisional inspector.

METHODOLOGY

In order to make out the teaching methods prevailing in our education system, to analyse its pros and cons and to enhance the interests of high school students towards technology, visits were organized to the following schools and surveys were conducted:

1. Government Higher Secondary School, Kodupaikuzhy on 22nd June 2016:

A technical session on "Basics of Electromagnetism" was conducted and the ideas on power distribution and electric shock were disseminated to the students. The terms like electricity, magnetism, their types and their practical applications such as motors, generators and transformers were also explained. A demonstration was given on the project developed using Arduino and an ultrasonic sensor to sense the distance of an object. This helped the students to become somewhat familiar with the recent technologies. Models of Distance Finder, 4X4 LED Matrix and Electronic Snap Circuit were also presented to the students.

 Government Higher Secondary School, Puthoor on 15th September 2016:

A technical session on "The Basics of Semiconductors" was conducted with the view of helping the students to get an idea about the basic concepts of semiconductor devices such as diode, LED, MOD-FET, solar panels, their operations and applications.

- 3. Three teams each with four members disseminated their knowledge on the following topics to the students:
 - Semiconductors and Applications
 - Harnessing Solar/Wind Energy Application and Principles
 - Nanotechnology Principle and Applications

The charts, models and powerpoint presentations were used to present these topics in detail. The students of the following schools were made familiar with those topics:

- Government Higher Secondary School, Thuckalay, on 27th July 2016
- Government Girls Higher Secondary School, Marthandam, on 29th July 2016
- SLB Girls Higher Secondary School, on 1st August 2016
- Kavimani Desigavinayagam Pillai Girls Higher Secondary School, on 1st August 2016

In addition to these, feedback was collected from the students and teachers regarding their views about the present education system.

EDUCATION IN KANYAKUMARI – CURRENT SCENARIO

Even though the district ranks first in the case of literacy rate in TamilNadu, the rate of unemployed people is considerably high. The major reason behind this situation is that most of the students lack the basic knowledge and stick to the curriculum and exams. The current curriculum for school education is average but the reach to students is poor. This curriculum has many drawbacks and it mainly focuses only on examinations and marks. Teachers in Kanyakumari's private schools outperform government schools in this area since they only earn credit if they produce growing merits for each succeeding year, whereas in government schools, their job security has nothing to do with the school's result. Every year, a considerable number of unemployed graduates are generated, many of them lack the basic communication and problem-solving abilities required for even the most basic occupations.

TEACHING METHODOLOGY

Teaching methodology plays a vital role in education. It is the most powerful tool in education. The teaching should create an interest and fascination towards the subject. The teaching methodology in the existing system is result oriented and not knowledge based. The students are taught on the basis of examination and eventually some of the topics are skipped by the teachers. In some schools, even the portion for IX and XI classes are skipped. During the IX and XI standards, the syllabus for X and XII standard are covered respectively. After finishing the curriculum, the students are being pressurized in the name of cyclic tests and weekly exams. This method is followed to make the students memorize each line of text book, so that they will be able to secure high marks and state level ranks. As a result of this teaching methodology the students are not clear with the concepts and subjects.

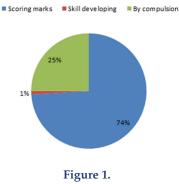
EFFECTS

The current education system in Kanyakumari has the following effects:

- The syllabus taught to students is exam oriented.
- This existing system is based on competition and here the competition arises from different schools for achieving greater results. Thus, every school management, especially the private institutions pressurizes the students to score high marks. As a result, the suicide rate of students increases every year.
- Eventually the students also get used to it and they tend to study only for scoring in the examinations.
- As they are taught on the basis of exams, the students lack interests in understanding the concepts, technical knowledge and practical skills.
- Most of the government schools are lacking textbooks and have poor infrastructure.
- This system fails to spot out and encourage the skills hidden within each student.
- Government's investment towards education is only 3% of its GDP which is low compared to other sectors and this makes private institutions to increase the cost of education.
- Ethics aren't taught in schools, which leads to a lack of ethical behaviour among many educated people.
- There is no financial incentive for teachers to promote critical thinking in their students.
- Although teachers in government schools have various benefits compared to private institutions, they lack in clarity of explanation and proper guidance.
- Since the rate of pressure is more for private teachers than government teachers in case of job security, they implement the pressure over students for marks and grades by conducting regular examinations instead of teaching.

RESULT

STUDENTS APPROACH TO EXAMS



OBSERVATION AND SURVEY

In order to analyse the existing education system of Kanyakumari district, various schools of our district have been visited and individual feedback from each student and teachers were obtained. Their comments on the prevailing education system and their expectations on it were attained.

From the survey, it is noted that about 74% of the students in the district, study just to score high marks and secure ranks during their examination. The students belonging to this category focus on achieving high scores which paves way for choosing higher studies that leads to better career paths.

It is observed that about 25% of students study for parents and management sake. The students belonging to this category are pressurized and forced to study because of the school management especially private organizations whose objective is producing greater results and parents who influence their expectations over their children.

It is observed that only around 1% of students study to score marks as well as to develop their skills. The students of this category can be expected to excel in both their academics and extracurricular activities. Apart from these it has been found that the discovery-learning approaches are preferred by the students to the traditional "tell-andpractice" approaches [1]. The traditional approach in lectures promotes passive learning [8] and it often creates a mismatch between the teachers' way of teaching and the students' way of learning.

STUDENTS EXPECTATIONS TOWARDS EDUCATION SYSTEM

- They expect the teachers to teach the subjects using power point presentations, charts, models or audio and visual aids.
- About 90% of the students have complained that some of the topics coming under examination point of view were not taught properly but instead they were made to learn the content without making them understand the crux and necessity of the topic in real life scenario.
- They are interested in implementing the theoretical knowledge that they gain from the subjects in practical and real-life applications. But there is lack of support from the teachers for this kind of activities apart from the textbooks and curriculum.

EXPERIENCE GAINED

The interaction with school students gave a different experience for our team. All our members felt completed after disseminating their knowledge to the students. Each and every student was made to understand even the minute concepts behind each technology by utilizing the aids [4] like models, charts, diagrams, power point presentations, videos and real-life examples. The utilization of visual aids grabbed the attention of the students and created an interest within them to listen to the technical sessions. Their curiosity in knowing the recent technologies was revealed when they were encouraged to work with the models and projects. We succeeded in making the technology reach the children and in spotting out the flaws in the current education system.

DISCUSSIONS

It is necessary that Indian government has to invest at least 4% of GDP in the education sector. It should concentrate heavily on improving the infrastructure of the education sector, appointing teachers and in training them. Moreover, the entire attitude towards education has to be changed and the method of teaching has to be revised. It should aim at making the students learn the subjects and concepts, but not making them study all those stuffs.

The teachers must disseminate and encourage logical thinking and creativity among students. The exam patterns have to be changed in such a way that it should test the knowledge of students on the subject and not their memory. To grasp the problem and apply their knowledge and problem-solving methods [7] to solve it, students should be made mainly self-reliant.

Students have to be exposed to economic and social problems around the world through conducting various awareness programs. They should be kept updated about the world news and general knowledge. Their personalities and unique skills should be found out and it needs to be developed.

Steps should be taken in order to introduce technical mode of teaching in schools. Educational Robots can be used for teaching purpose [5] and it can replace teachers. It can help the students in building their own depictions and notions of science and technology [6]. In order to support the life-long learning and autonomous learning activities of students, remote laboratories [3] can be introduced.

As the school years are key times in the improvement of orientation towards careers [2], the students should be given a clear vision about the opportunities available to them in this world. This can help them in choosing a career based on their interest and opportunity.

Another important factor is malnutrition among students which could affect their ability to learn. Thus, proper measures have to be taken to avoid the nutrition deficiency. In total, the education system is supposed to mould each student into a responsible citizen.

CONCLUSION

Education is one of the most efficient interventions for improving our human living standards by means of improving the literacy rate in marginalized societies. It is the only way to eliminate poverty, improve people's health, and boost economic growth. We need an education system that can eliminate illiteracy and give basic education as well as higher and technical education to the common man. the entire approach toward education must be altered. India can successfully employ its massive human resources if it has an effective learning system.

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REFERENCES

- Bertrand Schneider and Paulo Blikstein, "Flipping the Flipped Classroom: A Study of the Effectiveness of Video Lectures Versus Constructivist Exploration Using Tangible User Interfaces", IEEE Transactions On Learning Technologies, Vol. 9, No. 1, January–March 2016.
- [2] Esther Lee Burks, "The Junior High Years: A Time for Beginning Engineering Orientation", IEEE Transactions on Education, Vol. E-18, No. 1, February 1975.
- [3] Luís Gomes and Seta Bogosyan, "Current Trends in Remote Laboratories", IEEE Transactions on Industrial Electronics, Vol. 56, No. 12, December 2009.
- [4] Mansour Eslami, "Improving Engineering Education into the Next century", IEEE Control Systems, April 1996.
- [5] Morgane Chevalier, Fanny Riedo, and Francesco Mondada, "Pedagogical Uses of Thymio II, How Do Teachers Perceive Educational Robots in Formal Education?", IEEE Robotics and Automation Magazine, June 2016.
- [6] Pablo De Cristóforis, Sol Pedre, Matías Nitsche, Thomas Fischer, Facundo Pessacg, and Carlos Di Pietro, "A Behavior-Based Approach for Educational Robotics Activities", IEEE Transactions on Education, Vol. 56, No. 1, February 2013.
- [7] Robin R. Murphy, "Competing for a Robotics Education", IEEE Robotics and Automation Magazine, June 2001.
- [8] Wen-Jye Shyr, "Integrating Laboratory Activity into a Junior High School Classroom", IEEE Transactions on Education, Vol. 53, No. 1, February 2010.