

Kaizen in Computer Literacy Rate – A Study on Impact of Tamilnadu Government’s Cost Free Laptop Computer Scheme in Ramanathapuram District

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Abstract— This paper presents an empirical study that attempts to find out the extent to which Tamilnadu State Government’s Cost Free Laptop Computer Scheme brought Kaizen (a Chinese word, which means ‘continuous improvement’) in the Computer Literacy Rate of Rural Students. The Government has been encouraging students through various welfare schemes at high & higher secondary school-level and it is the main reason for higher rate of enrolment of students at collegiate education. This article is an outcome of research made on impact of Government’s free laptop schemes in Ramanathapuram district.

Keywords: Computer Literacy Rate, Free Laptops, School & College Students, Ramanathapuram district, Tamilnadu Government.

I. INTRODUCTION



Improvisation of teaching methods by incorporating computer-based-learning has paved way to numerous facets of teaching and learning. The innovative scheme of the Tamil Nadu State government in providing FREE LAPTOP to all college students is a milestone in higher education, especially for the economically deprived students of Ramanathapuram district of Tamil Nadu. The Tamilnadu State Government issues laptops to school students when they are pursuing higher secondary studies (or) immediately they leave the school after completing their higher secondary courses. The

noticeable feature is that the Govt. puts the laptops directly in the hands of the end users, with no rule for the school or the teacher. The main motives behind disbursing laptops are to empower students to pursue their higher studies.

Considering the fact that a large percentage of our students are from rural areas, the laptops give them an opportunity to use the computer for preparing their assignments: they also become conversant with power point presentations, document works etc. This distribution of cost-free laptops to the students has reduced the gap between rural and city students.

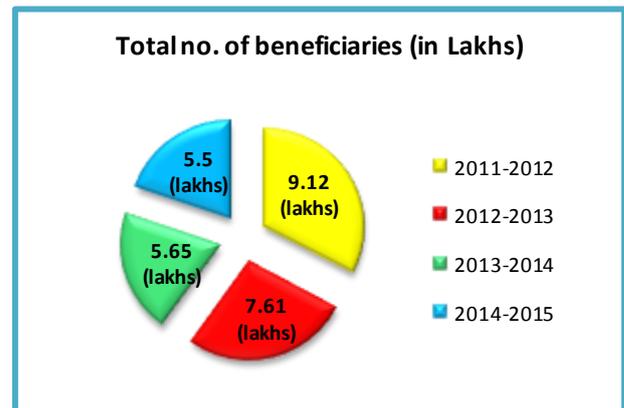
Who are eligible to get the cost free laptops?

The scheme was launched in September 2011, to coincide with the birth anniversary of Dravidian Stalwart C.N. Annadurai. Students of Government and Government-aided schools and colleges from Plus Two onwards to Under Graduates, including those pursuing Engineering and Polytechnic Colleges are eligible for benefitting of the scheme. Identification of the beneficiaries should be done by the Heads of Institutions ensuring the distribution only to regular and genuine students and it should be ensured that there is no duplication [1].

Free Laptops-Beneficiaries details

Year wise details (whole the state) as follows,

2011-2012	:	9.12 lakh beneficiaries
2012-2013	:	7.61 lakh beneficiaries
2013-2014	:	5.65 lakh beneficiaries
2014-2015	:	5.5 lakh beneficiaries [2] Total allocation
	:	29.56 lakh [3]



Despite the staggering numbers, till date there is no concrete evidence to display the total number of beneficiaries of the scheme at whole the state level. [9]

Following TN Govt, other state Governments in the country like Uttar Pradesh, Meghalaya etc started distributing cost free laptops.



Dr. R. Sundarajan, Hon'ble state minister, in the event of cost free laptop distribution.

II. REVIEW OF LITERATURE

M. Nithya, S. Suba, B. Vaishnavi, have made an attempt to study mode of usage of cost free laptop computers by the students belongs to rural areas which is provided by the state Government. They applied weka tools for their studies and find out that most students utilize the device for

education purpose and finally there is an increase in the computer literacy rate. [5]

Mitra, Dangwal, Chatterjee, Jha, Bisht and Kapur - conducted a study to find out the best method of acquisition of computer literacy by student generations by learning by-self in a personal computer irrespective of traditional method of teaching computer education. [6]

S. Thilaka and Dr. K.Shyamala, in their study evaluated the usefulness of Priceless Government laptop scheme of Tamil Nadu. Their study explains how this laptop program has contributed much to improvement of students' performance, who is basically from a poor family. So, it is a gift for those who cannot afford the price of owning laptops [7].

Dr. K. Rajeswari, A. Selva Lakshmi, in their study entitled "School Students' Attitude towards Tamilnadu Government Welfare Schemes" observed that literacy rate is increasing gradually and education plays an important role for survival of students. Hence Tamilnadu Government by offering quality items has enhanced the goodwill and increased the ever growing enrolment rate of students [8]

III. RESEARCH GAP

From the foregoing review of literature, it can be understood that number of studies has been made on various

aspects of Govt's scheme towards improvising the literacy level of students at whole the state. Similarly no study has made a concrete analysis on impact of such Govt's scheme on growth or appreciation of computer literacy level as well as number of computer users, particularly in the remotest villages of Ramanathapuram district. For very long years, Ramanathapuram district is deemed to be low at literacy level, particularly in computer education and thus the researcher found a need to analyze computer literacy level after start distributing cost free laptop computers.

IV. OBJECTIVES OF THE STUDY

This study was initiated to find:

- ✍ *The impact of Govt's scheme in terms of kaizen in computer literacy rate.*
- ✍ *The extent to which the scheme reached its target students.*
- ✍ *The scheme's pre & post computer literacy status of the beneficiaries.*
- ✍ *The role played by the scheme in uplifting the beneficiary for higher education as well as career development.*
- ✍ *The perception of beneficiaries towards this scheme.*

The ultimate objective is to offer concrete suggestions and recommendations for scheme operating Government, on the basis of findings of the study

V. RESEARCH METHODOLOGY

This study is based on published and unpublished data which are collected from primary and secondary sources. For primary data, informations have been collected directly from students at school / college / polytechnique college levels and also from beneficiaries' who are completed their studies. A questionnaire designed by the investigators was used to provide information pertaining to kaizen in the computer literature level due to Govt's scheme. The total samples taken for this study is 450, including 250 male and 300 female respondents.

For secondary data, informations have been obtained from journals, magazines, online news papers, books, thesis, and Government reports. Finally all the information and data collected are analyzed, evaluated and essential inferences have been drawn from them.

VI. LIMITATIONS OF THE STUDY

As the scheme does not cover students of self financing institutions, it was unable to gain opinions from such students.

Most school/college teachers are not computer-literate and thus they may forbid students to bring laptops to institutions, as a result affecting the effectiveness of the scheme.

The scheme has no comprehensive list of all the beneficiaries and this factor is considered as a drawback of this scheme [9]

The survey is limited to Ramanathapuram district alone and the study cannot be generalized to other geographical locations of Tamilnadu.

VII. EMPIRICAL FINDINGS

The respondents' opinions were gained on a number of aspects related to the Govt's scheme, from their personal experience. The important analyses which add potential evidence to this study are shown below:

COMMUNITY CATEGORY OF RESPONDENTS

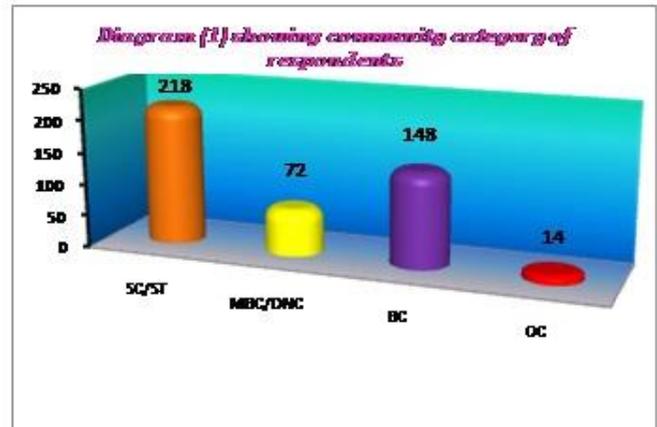
The following data categorize the respondents on the basis of communities they belong.

Table.1 Respondents' community category

Community	No. of respondents	% of respondents
SC/ST	218	48
MBC/DNC	72	16
BC	148	33

Other Caste	14	3
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Source: Questionnaire and personal interview



Inference;

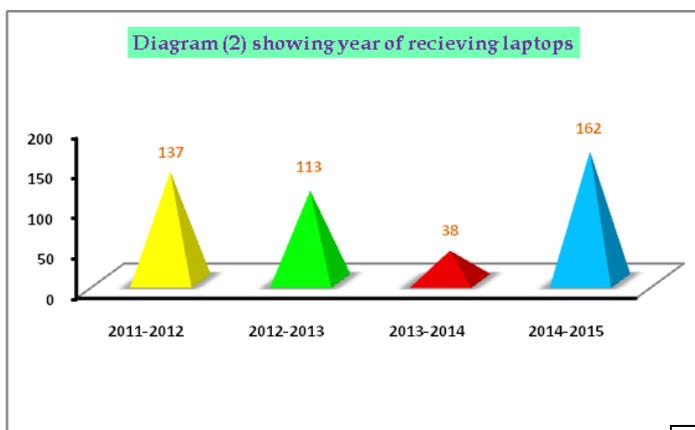
When the respondents are compared on social status basis as shown in Table.1, majority of (48%) of them are SC/ST, followed by BC, MBC/DNC and OC with 33%, 16% and 03% respectively. This vast difference between SC/ST category with rest of the categories, clearly depicts that majority beneficiaries of the Tamilnadu state Govt's cost free laptop computer scheme are students belongs to SC/ST community. Thus it is presumed that the SC/ST/minority/weaker section populations are benefitted the most of the Government's scheme.

YEAR OF RECEIVING THE COST FREE LAPTOP

All beneficiaries of the scheme are not distributed laptops in a same time and it varies according to factors such as the educational district of a particular institution belongs,

location of the institution etc. This question is not asked to compare number of beneficiaries year by year, but to check the increasing volume of beneficiaries.

Table.2 showing year of receiving laptop



Inference:

When finding the year by which the beneficiaries receiving the cost free laptop, there was a steady raise in the number of beneficiaries. Among the selected population, 30.44% of respondents received laptops in the very beginning year of the scheme i.e., 2011-2012 and 25.11% in the year 2012-2013, 8.44% in the year 2013-2014, 36% in the year 2014-2015.

Thus, the cumulative number of beneficiaries shows that the scheme is covering more and more population year by year.

RESPONDENTS' FEEL ON RECEIVING LAPTOP

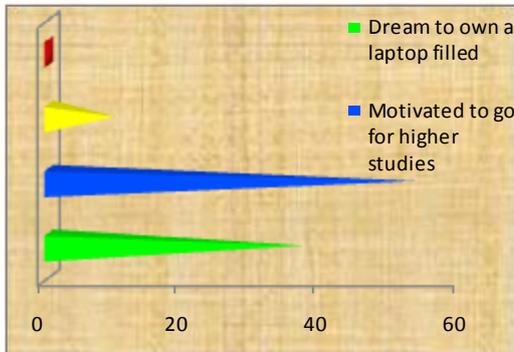
For a common people, any free scheme of Government evokes emotions and expectations. This question has been asked to study the pulse of beneficiaries' in such an occasion.

Year	No. of respondents	% of respondents
2011-2012	137	30.44%
2012-2013	113	25.11%
2013-2014	38	8.44%
2014-2015	162	36.00%

Table.3 Respondents' feel while receiving laptop

Opinions	No. of respondents	% of respondents
Dream to own a laptop filled	166	36.89
Motivated to go for higher studies	239	53.11
It is really a mirage	43	9.56
No effect	02	0.44

Source: Questionnaire and personal interviews



Inference:

It was observed during the survey that majority of 53.11% of student respondents opined favourably that their hope for moving to higher studies have been increased and got confidence in acquiring better understanding of what they have learnt theoretically, 36.89% respondents feels that their dream to own a personal computer has been fulfilled, 9.56% respondents exclaimed that it was really miraculous. Only 0.44% of respondents expressed no feelings.

From the above said analysis, it is inferred that the scheme has got the imagination of students as well and it has enhanced the enrolment rate of students for higher studies.

RESPONDENTS' COMPUTER LITERACY LEVEL BEFORE & AFTER RECEIVING LAPTOP

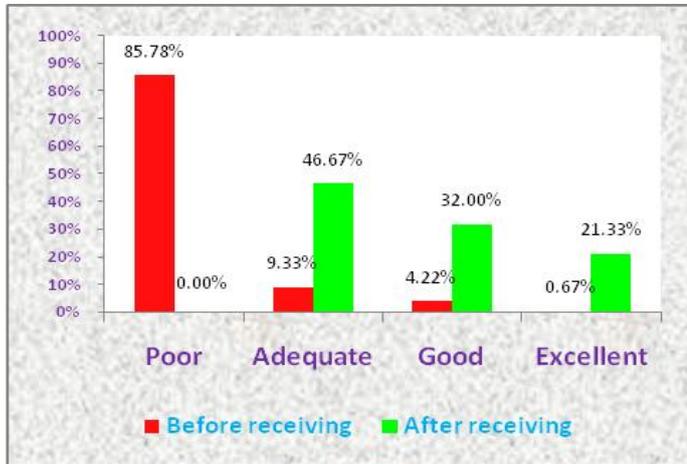
The researcher finds it essential to compare the respondents' computer literacy knowledge at pre and post receiving the

Opinions	Before receiving		After receiving	
	No. of respondents	% of respondents	No. of respondents	% of respondents
Poor	386	85.78%	0	0.00%
Adequate	42	9.33%	210	46.67%
Good	19	4.22%	144	32.00%
Excellent	3	0.67%	96	21.33%

cost free laptop. Two individual questions asked viz, respondents' computer knowledge before getting and after getting laptop. For ease of comparison, they are presented in a single table as follows,

Table.4 showing respondents' computer literacy level

Source: Questionnaire and personal interviews



Inference:

The survey highlights the respondents’ literacy knowledge level prior to receive a laptop computer. Of the total respondents 85.78% were poor or nil at computer knowledge, 9.33% of them have had adequate knowledge, 4.22% have had good knowledge, and only 0.67% were excel to access a computer. This observations clearly shows that the student population of this district have been kept aside from computer knowledge due to factors such as poor socio-economic status, uneducated parents, un-advanced school and higher education system, lack of external support etc.

But the position is totally inverse after receiving the laptop. At present, none of the respondents are poor in computer knowledge, 46.67% of them having adequate knowledge in computer operations, 32% are good at computer knowledge and the remaining 21.33% of the respondents possess

excellent computer knowledge. Thus the scheme has brought a drastic change in the educational status / lifestyle among Ramanathapuram district’s population.

SOURCE OF LEARNING FOR RESPONDENTS WITH POOR KNOWLEDGE TO ACCESS COMPUTER

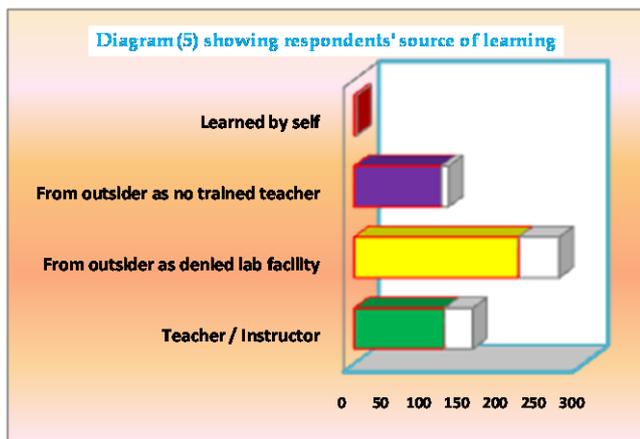
This question has been raised with 85.78% of respondents who were poor in computer knowledge before receiving the computer. The Government offering laptop computers to eligible students with no bother on their prior computer knowledge. So it becomes essential to the researchers to find the source by which students got trained to access the device.

Table.5 showing learning source of respondents

Source of learning	No. of respondents	% of respondents
Teacher / Instructor	166	36.89
From outsider as denied lab facility	239	53.11
From outsider as no trained teacher	43	9.56
Learned by self	02	0.44

Inference:

It was observed during the survey that majority of 53.11% of respondents got training from outsiders such as computer



centers, private tutors etc, as computer lab facilities are denied for non-computer students. 36.89 % of respondents trained from their teacher / instructor. 9.56% respondents learned from outsiders as there is no trained teacher in their institutions. 0.44% respondents learnt by their self.

From the above observation, it is inferred that most Government and Government aided educational institutions not allowing other major students into computer lab. Some institutions not even having computer trained instructors and students are compelled to spent cost to learn a cost free computer.

RESPONDENTS' USAGE DIRECTIONS OF LAPTOPS

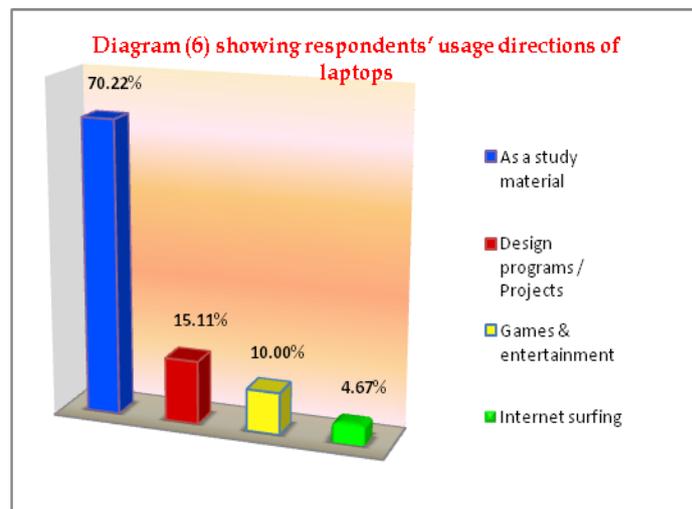
Even though the scheme initiated Government has not insisted any strict rules or procedure for handling the cost free

laptop, it is essential to know what the purposes the beneficiaries use it for are. A real success of the scheme rests on how the beneficiaries make use of given laptops.

Table.6 showing how respondents use the device

Usage directions	No. of respondents	% of respondents
As a study material	316	70.22%
Design programs / Projects	68	15.11%
Games & entertainment	45	10.00%
Internet surfing	21	4.67%

Source: Questionnaire and personal interviews



Inference:

The specific purpose of using laptops by the respondents is classified as follows: majority of 70.22% of the students use their laptop as a study material which shows that the free laptop act as a supporting device to bring up their studies. 15.11% use them for designing programs or projects, 10%

use it for games & entertainment purposes, 4.67% of them use laptops for other activities like internet browsing & downloading.

It is really a good show that the former two categories i.e., 85.33% of respondents utilize laptop for their educational career development and they are making best use of it.

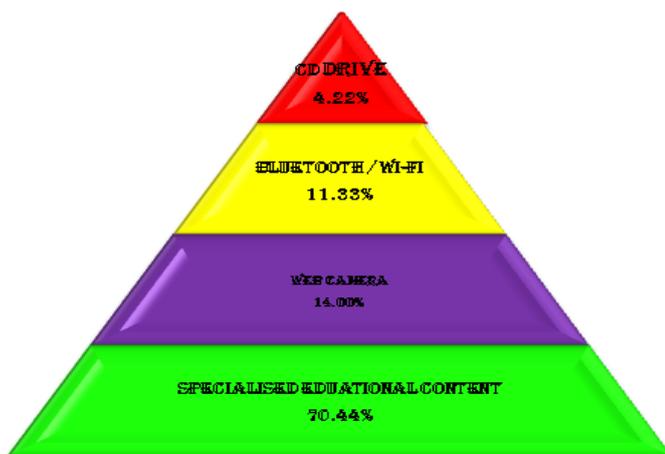
FEATURES MISSED IN THE LAPTOP

In all laptop computer brands involved in the scheme, there are number of features and applications are missing compare to brands available in the buyers' market. A beneficiary cannot make his choice like in a buyers' market. He has to accept the given computer. Thus respondents were raised questions on the missed feature of the laptop.

Table.7 showing features missed in the computer

Source: Questionnaire & personal interview

Diagram (7) showing features missing in the laptop



Inference:

Majority of 70.44% of respondents are not satisfied with the currently available in-built educational content and they expect organized and systematic study materials, general knowledge, solved model questions for services examination etc. 14% of respondents expects web camera, 11.33% respondents are unhappy with the absence of Bluetooth / Wi-Fi facilities. 4.22% of respondents opined that they are missing CD drive.

It shows that most respondents expect computers with in-built study materials according to their major they belongs, i.e., an engineering student should be given study notes for all engineering subjects and a science major students to be provided all science subjects.

Features	No. of respondents	% of respondents
Web camera	63	14.00%
Educational content	317	70.44%
CD drive	19	4.22%
Bluetooth / Wi-Fi	51	11.33%

RESPONDENTS' ACHIEVEMENTS USING COMPUTER LITERACY

It is much important to learn achievements gained by the beneficiaries in addition to how they optimize the cost free

resource. Thus questions raised and opinions gathered from non-student respondents, in the said manner and are presented in the following table,

Table.8 showing career achievements of scheme beneficiaries

Source: Questionnaire & personal interview



Inference:

There is no doubt that computer education has enormous domestic and offshore job opportunities. These opportunities are waiting not only for computer experts, but also for a person who knows basic computer operations. This is really a wonder that a district which remains at low literacy rate for

number of years has now shows a positive trend immediately after the incredible Govt's scheme.

This question has been raised with 335 respondents i.e, 74.4% of the total population who are completed their studies and currently in occupational status. Of them, a majority of

Opinion	No. of respondents	% of respondents
Got IT job	171	51.04%
Got non-IT job	98	29.25%
Started own business	45	13.43%
Job promotion	21	6.27%

Feelings	No. of respondents	% of respondents
Stops higher studies	166	36.89%
Missed professional career	215	47.78%
Spent lot to acquire	52	11.56%
Feel unlucky	17	3.78%

51.04% happily replied that they got IT job with attractive salary, 29.25% of respondents are in non-IT jobs like marketing, banking and other management jobs and they too feel that they have developed their employability skills by using computers. 13.43% of the respondents selected own-professions like Software Company, computer training centre, browsing centre, computer business etc. 6.27% of

the respondents opined that they easily got job promotions because of their computer knowledge.

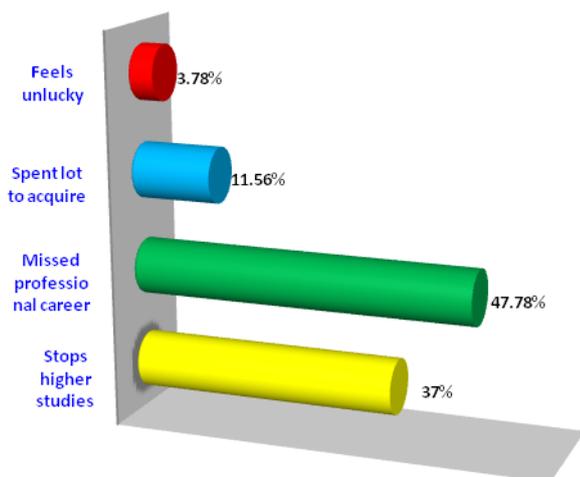
Thus the scheme has provided a lot of job opportunities to survive in the highly competitive world.

RESPONDENTS' STATE OF MIND IF THERE WERE NO FREE LAPTOP SCHEME

It is a negative type of analysis, what would be the respondents' position in their opinion if there were no cost free laptop scheme by Government. The gathered responses is given in the following table,

Table.9 showing respondents' opinion if no such Govt scheme

Diagram (9) showing respondents' opinion if no such Govt scheme



Inference:

When the question is raised, the respondents took some more time to reply as the answer should emerge beyond their experience. A majority of 47.87% of respondents said that they would have missed their professional career and the second majority of 36.89% of respondents opined that they would have concluded their educational career if they would not have received cost free laptop from the Government. Of the total respondents, 11.56% replied that they would have spent hard earned money of their parents to buy a computer, as they cannot avoid owning a personal computer. The lowest category of 3.78% respondents replied that they would have felt unlucky if there is no Govt's scheme of cost free laptop.

The above opinions shows that, unless otherwise the Government scheme, the people belong to Ramanathapuram district are not economically potential to buy a computer at market price. So the scheme definitely becomes a invaluable gift for the under privileged and needy population of Ramanathapuram district.

SUGGESTIONS AND RECOMMENDATIONS

✍ All eligible students can be given free laptops while they are entering higher secondary studies (i.e. when enrolled to +1 class), which would help them to perform better in academic pursuits.

- ✍ *It is essential to equip every school with computer lab facility and appointing trained computer teachers should be the next big step towards achieving equity and universality in computer education.*
- ✍ *Latest applications and inputs can be provided as that of computer brands available in market.*
- ✍ *Inbuilt educational contents can be given on the basis of respective students' curriculum of study.*
- ✍ *As the scheme becomes a source of getting good professional career, it should not be stopped at any cause.*
- ✍ *These schemes need to be taken up at the national level and Tamil Nadu must be supported financially for implementing these pioneering schemes.*

CONCLUSION

The major aim of this research work is to predict the effectiveness of Priceless Government laptop scheme of Tamil Nadu in terms of computer literacy rate. This study finds that there is convincing evidence that the laptop program has contributed much to improvement of students' performance. The laptops have given to Government / Government aided school and college students, who are basically from a poor family. So, it is a gift for those who

cannot afford the price of owing laptops. The laptop provided by the Government is not only useful for that one particular person but also to the whole family, either the sister or brother of him/her can make use of that laptop for their school projects and also for their further studies. It improves the technical skills of both school and college students. Though it has certain disadvantages (distraction of students in the classroom, using laptop for non-academic purposes more than academic activities like playing games and watching movies), the scheme's objective of enhancing students' knowledge is achieved. As per as our survey, we analyzed that the issue of Priceless Government laptop scheme is truly a boon to all students. Hence Tamilnadu Government by offering laptop computers has enhanced enrolment rate of students and certainly it has uplifted the count of computer literates in the district of Ramanathapuram

All the above things show that our Tamilnadu Government is one Step Forward in Shaping Right Human Resource of Tomorrows India.

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