

# Problems and Prospects of Information and Communication Technologies Application in Education in Karimnagar District Of Telangana, India

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**ABSTRACT:** Information and communication technologies (ICT) have become the order of the day in all aspects of life. Over the last few years, the use of ICT drastically changed the patterns and procedures of nearly all forms of human endeavour. Education is no exception. Impact of ICT on contemporary education and its effect on potential future developments is immense. The role of ICT in transforming teaching and learning is impeccable. This research was designed to assess the prospects and problems/factors limiting the awareness and usage of ICT in education. Also, it identified and described the available ICT technologies. Primary data were obtained from the respondents through the use of structured questionnaire. The information collected was analyzed by the use of descriptive statistics and multiple regression technique.

**Keywords:** transforming, contemporary education, future developments

## I. INTRODUCTION:

Information can be defined as knowledge communicated by others or obtained from investigation study or instruction. It could be the process by which the form of an object of knowledge is impressed upon the apprehending mind so as to bring about a state of knowing. Technology on the other hand is the science of application of knowledge to practical purposes. Technology determines the quality of life of a people and the overall status of their nation. Information has been the driving force to so many human activities in search of developing one-self, which has created a basis for the need to know. It has been said that "Ignorance is a disease and knowledge is its cure, which is achieved by obtaining information". This therefore brought

about the birth of ICT. ICT has since been the dawn of a new day in several countries among professions/professionals that are venturing into adopting it. In various walks of life such as medicine, insurance, tourism, travel, business, law, banking, engineering and architecture, the impact of ICT across the past two or three decades has been enormous. Dramatic changes occurred in these fields when compared with pre ICT era. But the impact of ICT in education has not been as immense as in other fields. Education used to be a teacher centred activity. The use of ICT in education leads to more student-centred learning. But, it is to be said that, when compared to other fields, education has not been influenced much with the advent of ICT. Several people tried to explore the reasons for this stigma. This research was designed to assess the prospects and problems/factors limiting the awareness and usage of ICT in educational field in Karimnagar district of Telangana, India.

For these reasons, the following research questions need to be answered:

- i. What are the factors or problems limiting the use of ICTs in educational sector?
- ii. Does ICT have any beneficial prospects in education sector?
- iii. What are the socio-economic characteristics of the respondents and how do they affect level of ICTs awareness and application?
- iv. What are the various ICTs available to stakeholders in education?

In view of these, the objectives of this study are therefore to:

- i. identify and describe the available ICTs applicable in education,

- ii. describe the socio-economic characteristics of the respondents and assess how they affect ICTs awareness and application, and
- iii. outline the problems and prospects of the usage of ICTs in education.

**THE ICT AND EDUCATION:** ICT is an indispensable part of the contemporary world. In fact, culture and society have to be adjusted to meet the challenges of the knowledge age. The pervasiveness of ICT has resulted in a political, social and economic transformation as well as eventuated in a network society organized around ICT. In order to husband the potentials of ICT, most nations of the world have evolved national ICT policies, to serve as a framework for ICT integration in all facets of the society. India is not an exception to this practice. In concrete context, ICT can enhance education through its dynamic, interactive and engaging content; and it can provide real opportunities for individualized instruction. ICT has the potential to accelerate, enrich and deepen skills; motivate and engage students in learning; helps to relate theoretical experiences to work practices; contribute to radical changes in education; strengthen education, and also provide opportunities for any time learning, anywhere learning, online learning. ICT would make education more effective and productive. In research, ICT provide opportunities for learners to communicate with one another through email, mailing lists, and chat rooms. It also provides a quicker and easier access to more extensive and current information. Furthermore, it can provide researchers with a steady avenue for the dissemination of research reports and findings. Immense advantages are promised by globalization through ICT, but it is sometimes wrongly imagined that there are no drawbacks. Globalization is unfortunately a zero-sum game which has the capability of producing the win-win outcome that is popularly canvassed. However, this can only be achieved if all countries are able to interrelate with The Information Manager.

## II. RESEARCH METHODOLOGY:

**Study Area:** India is the second most populated country in world. Telangana is newly formed state in the southern part of the country, Karimnagar is one of the 10 districts of the state. This research is conducted in selected mandals of Karimnagar district.

**Sampling Procedure and Data Collection:** The purposive sampling technique was employed to select the respondents. Forty (40) teachers were randomly selected from the district that were available at the time of sampling. Primary data were used for the study. Data collection was done using structured questionnaire. The information collected includes the socioeconomic variables of the respondents and teachers such as educational status, and sex of the respondents. Other variables include source(s) of information, application of ICT, frequency of usage, the level of awareness of ICT technologies and problems and prospects of ICT usage in education.

**Analytical Techniques:** In order to achieve the objectives of the study, descriptive statistics and multiple regression analysis were used to analyze the data. The implicit regression analysis model for the study is specified as follows:

$$Y = F(X_1, X_2, e)$$

Where, Y = level of awareness of ICT

X1 = Sex of the respondents

X2 = Educational status of the

respondents

e = error term

**Definition Variables:** **Awareness of ICT technology** – This is the extent of knowledge of the respondents about the ICT technologies available. The more the level of awareness of a technology, the more the interest to understand it and participate by trying it out, in accordance with Rogers's adoption principle (Rogers, 1995).

**Sex** – This is the extent to which the respondents are segregated based on gender. The more segregated they are based on gender the more difficult it is for information to spread among them equally. It is expected that males are more predisposed to change than females due to sociocultural barriers (Kaul, 1991).

## Results and Discussions

### Socio-Economic Characteristics and their Effect on Awareness and Application of ICTs

**Socio-Economic Characteristics** Some of the important socio-economic characteristics of the teachers considered were sex, level of education, and source of information.

- a) **Sex distribution:** 50% of the respondents were male while 50% of the respondents were female.

**TABLE 1: Distribution of Respondents According to Level of Awareness of ICTs Technology**

Technological know how	Male No of respondents %	Female No of Respondents %
Computers	40	35
The Internet	10	10
Broadcasting technologies	12	17
e- books	10	10
interactive White board	10	10
OHP	8	8
PPT	10	10

**b) Educational status:** Level of education attained is an important factor that determines the ability of a person to understand policies or programmes that affect his/her profession, to accept and adopt innovations. 70% of the respondents in the research were graduates, 20% of the respondents were M.Phils and 10% of the respondents were Ph.D.s. A respondent's level of education increases his/her awareness on modern technology.

**Level of Awareness of ICTs:** Awareness is the first stage in the adoption process. The proportion of the respondents that were aware of the various ICTs is presented in Table 1. The study shows that all the respondents were aware of one or more of the various ICTs.

**Factors Affecting Awareness and Usage of ICTs:** The result of the multiple linear regression to determine the influence of the respondents' socioeconomic factors on the awareness and usage of ICTs is presented in Table 2. The variables tested were sex, level of education and sources of

information. The result indicates that the coefficient of multiple determinations (R<sup>2</sup>) for the estimated regression model was 0.667. This shows that about 66.7% of the total variation in the awareness and usage of ICTs were explained by variations in all the explanatory variables included in the model. The F-ratio was significant at 5% level, implying that all the explanatory variables included in the model were collectively important in explaining variation in the level of awareness and usage of ICTs. It was found that sex is directly but insignificantly related to the respondents' level of awareness. Educational status was found to be directly related to the respondents' level of awareness and was equally statistically significant at 5% level of probability. Access to sources of information was directly related to the level of awareness and also was found to be statistically significant. This implies that the respondents make use of the sources of information available to them in receiving information about new technologies.

**TABLE 2: Regression Results for the Socio-Economic Factors Affecting Awareness and Usage of ICTs**

Independent Variable	Regression Coefficients	Standard Error	T Value
Constant	-0.178	0.265	-0.671
Sex (X1)	0.077	0.198	0.390
Educational Status (X2)	0.121	0.041	2.953*
Sources of Information (X4)	0.048	0.015	3.235*

**R<sup>2</sup> = 0.667 F = 13.628\* Degree of freedom = 39**  
\* = Significance at 5% level of probability

**Problems and Prospects of ICTs**

A number of problems were enumerated by the respondents as hindering or limiting their application of ICTs. The result presented in Table 3 shows the problems identified by the respondents.

From the analysis, it was found that cost of software and hardware as well as poor access to ICT infrastructure were the major problems faced by the respondents. Also, respondents identified problem of poor network and networking. Respondents recorded the problems of unstable power supply, poor sensitization about ICT and low computer literacy as affecting ICTs usage.

**TABLE 3: Problems Limiting the Usage of ICTs**

S/No	Problems	No of Respondents	%
1	Unstable power supply	5	12.5
2	Cost of software and hardware	10	25
3	Poor network and networking	10	25

4	Low computer literacy	8	20
5	Few extension services and agents	2	5
6	Poor access to ICT infrastructures	3	7.5
7	Poor sensitization about ICT	2	5

**Prospects of ICT Usage** The respondents that were aware and/or used any of the available ICTs

identified a number of advantages emanating from their use. These advantages are shown in Table 4.

**TABLE 4: Distribution of Respondents According to Prospects Identified**

S/NO	Prospects	No. of Respondents	%
1	BROADEN KNOWLEDGE	6	15
2	OBTAIN RELEVANT INFORMATION	10	25
3	TIME EFFECTIVE AND REDUCE DRUDGERY	10	25
4	IMPROVES EDUCATION SYSTEM	6	15
5	FASTER AND WIDER DISSEMINATION OF KNOWLEDGE	8	20

It was found that about 15% of the respondents acknowledged that ICT can broaden the knowledge of the user while 25% of the respondents prospected ease of obtaining relevant information as one of the advantages of the ICTs. About 25% of the respondents were of the view that ICT can reduce drudgery and also it is time effective while about 20% of the respondents accepted that the ICT can facilitate provision of faster and wider dissemination of knowledge while 15% accept that ICT can improve the education system generally.

**Summary, Conclusion and Recommendation :**

The objectives of this study were to assess the problems and prospects and also determine the factors that influence the respondents' level of awareness and application of ICTs among teachers. A set of structured questionnaire was administered to forty (40) teachers. The data collected were analyzed using descriptive statistics and simple regression analysis. The relationship between the respondents' level of awareness and socio-economic characteristics showed that sources of information and educational status of the respondents were related to their level of awareness and were statistically significant at 5% level of probability. The other variables (sex,.) were not significant but had positive relationship with the respondents' level of awareness of ICTs. Most of the respondents that were aware and applied the ICT encountered some problems which include poor network, poor and unstable source of power supply and poor access to ICT infrastructure. On the other hand, some of the respondents enumerated increase in level of awareness, location of available and cheap inputs, improved education systems and faster and wider communication as some of the benefits/prospect of the ICT usage in education.

**III. CONCLUSION:**

The analysis in this study showed that respondents' characteristics are very important determinants of ICT awareness and application. The poor rate of awareness and application of ICT among majority of the teachers is an indication of low sensitization drive, poor extension services and their inaccessibility of ICT infrastructure. The prospect for ICTs usage in education is enormous in view of the fact that the whole world is gradually becoming a global village. Therefore, the teachers have no option than joining the technological trend especially if the problems earlier enumerated are solved.

**Recommendations on the basis of the findings:**

The following recommendations are made:

- i. Effort should be made by both governmental and non-governmental ICT organizations (NGOs) in improving the sensitization drive to not only increase awareness but also generate the interest of stakeholders in education sector in application of ICTs.
- ii. Improvement on source of power supply. This entails the government creating larger electricity grids with bigger capacity for supply to various parts of the country, including the rural areas. Also through the adoption of the modern solar panel as source of power supply by rural communities can as well minimize this problem especially in rural areas.
- iii. Translate the technologies to local languages as well as more training on ICT usage. This would increase the level of computer literacy among the populace.
- iv. Improvement on network and networking. Governmental and NGOs can provide a

- guaranteed Internet Service Provider (ISP) with greater efficiency.
- v. The provision of cheap hardware (computers) and software (programs) by the various national ICT organizations will go a long way in ensuring an effective usage of ICTs.
  - vi. To speedily tackle the shortcomings of poor access to ICT infrastructure, ICT activities should be employed effectively in all sectors of the economy including universities, other tertiary institutions and in research institutes.
  - vii. ICT workshops and trainings should include teacher education, and skills acquisition programmes in education, which will assist in proper orientation and appropriate technology acquisition and
  - viii. The educational policy should be reviewed by the government to include an ICT dimension analyzing the gaps in applications, particularly in rural societies.

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