

STUDENTS RESPONSE TOWARDS ICT BASED EDUCATION AMONG VARIOUS SCHOOLS AND COLLEGES IN HYDERABAD - A CASE STUDY



Computer Science

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ABSTRACT

Information and Communication Technologies (ICTs) are considered to be a vital factor in achieving sustainable development of education. Education for emerging societies requires ICTs to facilitate large scale learning needs for social and economic development. ICTs have thus become a critical tool for any professional training aimed towards the cause for any professional training aimed towards the cause for accomplishing development in a specific segment. Technology today plays a vital role in modernizing the global education system. Mobile phones, PDAs and Tablet Pcs are found to be emerging as powerful pedagogical innovation in the area of teaching and learning process. These devices facilitate the easy interaction among instructors and learners in a time bound and truly collaborative manner. In this context, an attempt is made to find the usage of ICT based resources by students and teachers of various schools and colleges of Secunderabad and Hyderabad.

KEYWORDS

Information And Communication Technologies (icts), Personal Digital Assistants (pdas), Personal Computers (pcs), Wireless Fidelity (wifi), Massive Open Online Courses (moocs), Human Computer Interaction (hci), Kaiser-meyer-olkin (kmo), Higher Education Institutions(heis)

INTRODUCTION

Information and Communication Technologies (ICTs) are considered to be a vital factor in achieving sustainable development of education. Education for the emerging societies requires ICTs to facilitate large-scale learning needs for social and economic development. ICTs and Information Society deal with the creation, acquisition, sharing, dissemination, delivery, support, and recognition of knowledge. ICTs are hence the means to provide an access to and engage in the continuous learning that becomes necessary for successful participation in the societal development. ICTs have thus become a critical tool for any professional training aimed specifically towards the cause for accomplishing development in a specific segment.

Technology today plays a vital role in modernizing the global education system. Worldwide, Mobile devices like Mobile Phones, PDAs and Tablet PCs are found to be emerging as a powerful pedagogical innovation in the area of teaching and learning process. These devices help to effectively deliver the multimedia based educational content and also facilitates the easy interaction among instructors and learners, for the spread of knowledge and sharing of information in a time bound and truly collaborative experience.

Some of the main driving forces for improved learning environment are derived from the introduction of new Information and Communication Technology (ICT) tools, which are under intense development. New methods for enhanced communication, collaboration and knowledge transfer, MOOCs (Massive Open Online Courses), Ubiquitous and wearable computing for seamless and everywhere accessibility to computer resources, Creation of user environments with multimodal Human Computer Interaction (HCI), Increased possibilities for lifelong learning independent of time and physical space constraints and possibilities to adapt and/or develop new pedagogical and learning methods with respect to learning material, learning modes.

NEED FOR THE STUDY

Studies have been conducted to understand the factor that led the educational institutions to use ICT. Most of the studies hence restricted to higher education and it is observed that private schools, colleges and higher education institutions are using some methods of ICT. Now through this study we wish to know whether the students of various schools and colleges are providing ICT to meet the Global necessities.

ADVANTAGES OF ICT BASED LEARNING

The impact of the ICT on learning can be approached in different ways. There is no single concept of learning through the use of ICT. Many different types can be envisaged: computer assisted learning, web-learning, computer-classes, online training, distance education, eLearning, virtual learning, digital training, mobile learning, u

learning etc. ICT has not revolutionised teaching methods so far. The use of ICT is mostly focused on supporting the subject content. There is evidence that educational achievements are positively influenced by ICT.

There are many advantages of ICT based learning, some of them are as given below

- Offer the opportunity for more student centered teaching
- Give greater exposure to vocational and workforce skills for students,
- Create greater enthusiasm for learning amongst students.
- Prepare learners for the real world,
- Provide distance learners country-wide with online educational materials

OBJECTIVES

- i. To identify the availability of ICT based resources in schools and colleges of Hyderabad and Secunderabad.
- ii. To examine the level of awareness and use of ICT based resources by students of school and colleges.
- iii. To explore the means to enhance the quality and relevance of existing educational structures being put to proper and effective use.
- iv. To suggest suitable measures for further improvement in teaching through the use of ICT and other on-line resources.

MATERIALS

Primary data was collected using structured questionnaire from students of various schools and colleges from twin cities. Total of 173 respondents have taken part in this survey. The survey was conducted both online as well as offline. Students were involved to collect the information and the questionnaire was administered personally

METHODOLOGY

There are in all 1000 colleges approximately in Hyderabad and Secunderabad which include private, government, aided, engineering, medical and agricultural and other colleges. Besides there are a total of 2,200 schools approximately, which include government, private, corporate and International schools in Hyderabad and Secunderabad. Among them a 2 percent sample institutions each were chosen randomly for the purpose of the study.

In this survey, we used descriptive, Bivariate and Multivariate analysis. Analysis of variance is a tool used in Statistics that splits an observed aggregate variability found inside a data set into two parts. Anova test allows comparison of more than two groups at the same time. In Multivariate we applied Factor analysis. Factor analysis is a data reduction tool. KMO Kaiser-Meyer-Olkin measure of sampling adequacy is 0.72, which is greater than 0.5. This shows it was feasible to take Factor analysis. KMO is a Statistic measure which tells whether

we have sufficient items for each factor. The main objective of using Factor analysis is to determine the minimum number of common factors from the observed variables. Exploratory factor analysis was used for this purpose. Varimax Rotation technique was applied to simplify the factors structure and to increase the interpretability of the factor solutions. The key concept of Factor analysis is that multiple observed variables have similar patterns of responses because they are all associated with or latent variable. This attempts to identify underlying variables or factor that explains the pattern of correlation within a set of observed variables. It is used in data reduction to identify a small number of factor that explain most of the variance observed in a much large number of variables.

HYPOTHESIS:

H₁: There is no significant difference between the usage of ICT and traditional way of learning.

H₂: There is no significant difference in the awareness of students after using ICT.

H₃: There is no significant difference in the quality and relevance of

educational structure.

H₄: There is no significant difference in the improvement of teaching through the use of ICT and other online resources.

Table:1 Details of Gender

Gender	Frequency	Percentage
Male	96	55.5
Female	77	44.5
Total	173	100

Table:2 Descriptive Statistics:

Having access to the internet	93.6%
Using digi boards	64.7%
Power point	82.1%
Video classes	75.1%
Browsing Internet	90.8%
Providing wifi facility	68.8%

Table: 3 ANOVA

		Sum of squares	Degrees of freedom	Mean sum of squares	Table value	Significance
Access to internet	Between groups	0.737	6	0.123	1.640	0.139
	Within groups	12.431	166	0.075		
	Total	13.168	172			
Using digi boards	Between groups	0.495	6	0.083	0.273	0.949
	Within groups	49.941	165	0.303		
	Total	50.436	171			
Power point methods	Between groups	2.084	6	0.347	1.583	0.155
	Within groups	36.425	166	0.219		
	Total	38.509	172			
Video	Between groups	1.530	6	0.255	1.107	0.360
	Within groups	38.239	166	0.230		
	Total	39.769	172			
Wifi	Between groups	0.645	6	0.108	0.389	0.885
	Without groups	45.910	166	0.277		
	Total	46.555	172			

Table:4 Factor analysis

Component	Initial Eigen Values			Extraction Sum of Squared Loadings			Rotation Sum of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1 Access to Internet	1.803	30.044	30.044	1.803	30.044	30.044	1.744	29.060	29.060
2 Using Digi Boards	1.285	21.412	51.456	1.285	21.412	51.456	1.344	22.396	51.456
3 Power point	.996	16.594	68.050						
4 Video Classes	.910	15.159	83.219						
5 Browsing Internet	.659	10.983	94.202						
6 Providing WiFi	.348	5.798	100.000						

From the studied group of table 1, it is observed that 55.5% are males and 44.5% are females. The parameters that contribute for learning based on ICT are access to computers, usage of digiboards, using power point to teach and making interesting videos for us to use. All these are from the table number 2. It shows that 93.6% have access to internet, 64.7% use digiboards, 82.1% used powerpoint presentation in classes, 75.1% through videos. The table number 3 explains Analysis of variance. It is observed that there is no significant difference between the Access, using digiboard, power point, video classes, wifi facility for students of various schools and colleges in Hyderabad.

The factor analysis table number 4 reveals that 6 items are included in the factor analysis, two dimensions were extracted and emerged with a cumulative variance of 51.456%, hence the two component solutions explains 51.456% of the variance. Here our components were retained. Component loadings and communalities of the rotated solution are presented in table number 4. Two components, access to internet and using digital boards for learning purposes made Principal component analysis and Varimax rotation resulted in the formation 2 factors explaining a cumulative variance of 51.456% with primary loadings of all items, values are greater than 0.5 form the best possible factor structure. Access to internet has emerged as the most important determinant factor.

CONCLUSION

The demand for access to higher education has increased sizably with the rise in living standards and the growing trend towards a knowledge based society. At the same time rapid developments in information and communication technologies (ICT) have created many new opportunities to enhance the reach and spread of quality of education in an efficient and effective manner. Many higher education institutions (HEIs) are using ICT to develop course materials, devise and share course content, lectures and presentation, facilitate communication among lecturers and students, conduct research and provide administrative and management services. Because ICT can enable teaching and learning from anywhere at any time it is seen as an effective means to provide lifelong education opportunities to one and all.

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