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AWARENESS AND ATTITUDE OF STUDENTS AND TEACHERS OF THE UNDER GRADUATE COLLEGE ON THE USE OF ICT: A CASE STUDY

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Abstract

Technology awareness, motivation and changing learners' and teachers' behavior are prerequisites for successful implementation of e-learning programs. For the past two or three decades ICT has changed many aspects of our life but when one looks at education there seems to have been an uncanny lack of influence and far less change than other fields have experienced. A number of researchers have attempted to explore this lack of activity and their influence (Soloway and Prior, 1996, Collis, 2002). Awareness goes along with attitude and 'positive attitude towards ICTs is widely recognized as a necessary condition for effective implementation.' (Woodrow, 1992, cited in Sife, Lwoga & Sanga, 2007, p. 7.) Accepting the fact that a great revolution has taken place in ICT, students and teachers are therefore expected to use it as an educational tool rather than interacting with it as an entertainment tool.

Key words: Information and communication technology, awareness, students' attitude, teachers', college, developing country, Kolkata

Introduction

Globalization and technological change---processes that have accelerated over the last twenty years have created a new global economy powered by technology fuelled by information and driven by knowledge. The emergence of new global economy has serious implications on the nature and purpose of educational institutions. As the half---life of information continues to shrink and access to information continues to grow exponentially, schools and formal institutions of education cannot just remain venues for transmission of a prescribed set of information from the teachers to the students over a fixed period of time. Rather schools must promote learning to learn, ie, the acquisition of knowledge and skills that make possible continuous learning over the lifetime . The illiterate of the 21 st century according to futurist Alvin Toffler ,will not be those who cannot read and write but those who cannot

learn, unlearn and relearn. Concerns over educational relevance and quality therefore coexist with the imperative of expanding educational opportunities to those made most vulnerable by globalization —developing countries in general, low income groups, girls and women, and low-skilled workers in particular. Global changes have constantly put pressure on all groups to constantly acquire and apply new skills and teachers or teacher education as a whole needs urgent and comprehensive reforms .The International Labour Organization defines the requirements for education and training in the new global economy simply as 'Basic Education for All', 'Core Work Skills For All,' 'Life Long Learning For All'. Information and communication technology does not merely mean having radio, T.V and newer digital technologies such as computer and internet as powerful enabling tools for educational change and reforms but appropriately using them to expand access in education, strengthening the relevance of education to the increasingly digital workplace and raising educational quality by and among others and making teaching —learning an engaging active process connected to life. However the experience of introducing different ICTs in the classroom and other educational settings all over the world over the past several decades suggests that the full realization of the potential educational benefits of ICTs is not automatic. The effective integration of ICTs into the educational system is a complex, multifaceted process that not only involves technology, indeed given enough initial capital, getting the technology is the easiest part! but curriculum and pedagogy, institutional readiness and teacher competencies above all needs a greater convergence between professional preparation and continuing professional development for all stages of education in terms of level, duration and structure.(NCFTE2009). Education therefore as an area of interdisciplinary knowledge is not merely an application of a few core disciplines but a praxis and a context where theories and practical wisdom are generated continuously. This primarily is intended to help policy makers in developing countries define a framework for the nation in consonance with the technological advancement .The rapid advances recently made in ICT particularly in internet has very important implication Use of internet has increased rapidly from an estimated 3 million in 1990

to approximately 137 million in June, 2012(Market Research firm IMRB and the Internet &Mobile Association of India (IAMAI)

Internet has therefore undoubtedly emerged as a powerful and effective tool facilitating the teaching process. It has become a useful resource for information, database along with user interaction and participation. It has complemented the traditional libraries and has shared the burden of students facilitating learning through e- journal thus helping universities with battling the inflation in the printing material cost. No doubt during the second half of twentieth century as a result of knowledge explosion it has opened more avenues and opportunities to help learners find jobs, scholarships and educational opportunities for further higher studies. Not alone for the college, the internet has proved its benefits in schools by enhancing and facilitating learning. Even a single computer in the classroom can bring about effective results has been proved in the study of Scaplen (1999). Today it is an integral part of schools, colleges and universities. It has facilitated information collection and storage. It has catered to different students and their personalized needs. It has also catered to the needs of the differently able students thus facilitating learning and accommodation in various learning styles. As we begin the 21 st century it is almost impossible to imagine how ICT will be like by the end of the century. The advances in this field are already visible but in a developing country like India there is a long way to go. The Chinese proverb says — Tell me and I forget Show me and I remember, Involve me and I understand is very apt in the present times of unprecedented change. The potential role of ICT may play an important role in revitalizing teaching to meet the growing aspiration of today's world. Teaching therefore is becoming one of the most challenging professions in our society where knowledge is expanding rapidly and much of it is available to students as well as teachers at the same time (Perraton, Robinson and Cree, 2001) As new concepts of learning have evolved, teachers are expected to facilitate learning and make it more meaningful to individual learners rather than just to provide knowledge and skills. Recent developments of innovative technologies have provided new possibilities to the teaching profession but at the same time has placed more demands on teachers, to learn how to use these technologies in their teaching (Robinson and Latchem, 2003) Globally too, educational systems are under pressure to adopt innovative technologies and to integrate new information and communication technologies in the teaching learning process to prepare students with the knowledge and skills they need in the 21 st century. Apparently teaching

profession is evolving from an emphasis on teacher centered, lecture based instruction to student centered interactive learning environment. Today New Information and Communication Technology (NICTs) is integrating the usage of technology seamlessly for educational processes like transacting curricular content, support based learning, research, evaluation, development of instructional materials international collaboration, networking in educational and professional development in developed countries.. Video conferencing through multimedia delivery to websites is also being used to help the teachers meet the challenges they face today. In a developing country like India the educational system therefore needs to come in real terms with these new challenges and take full advantage of these opportunities. If educational institutions have to ensure that their students leave the institutions as confident individuals capable of using new technology creatively and productively then their teachers should have the competence to integrate emerging technologies and digital content in all their operations. There is a profound gap between knowledge and skills students acquire in school and colleges and those required in the ever changing today's world of technology. The technology that has become so pervasive in our daily lives is still outside the comfort zone of our educational environment. The teachers are therefore facing immense challenges to overcome traditional ways and change pedagogical practices in the ways that reflect the changing social, political and economic landscape in which 21 st century students learn. Therefore the educational system must understand and embrace the 21 st century skills within the context of rigorous academic challenges.

Review Of Related Literature

The success of any program in education depends solely upon the awareness of the students' and support and positive attitude of its teachers'. Teachers are the steering engineers and therefore if they perceive that the introduction of technology will do no good to their students introducing technology with the best of infrastructure will be futile. Among the other factors that affect successful use of computers in the class room are teacher attitude towards computers (Huang and Liaw 2005) Attitude in turn constitutes various dimensions. Some examples of those perceived usefulness, computer confidence (Rovia and Childress, 2002) training (Tsitouridou and Vryzas, 2003) gender (Sadik, 2006) knowledge about computers (Yuen, Law and Chan,
1999), anxiety, confidence and liking (Yildirim, 2000)

In support of the importance of teachers attitude towards computer use Zhao, Tan and Mishra (2001) provided evidence to suggest that the attitudes of teachers are directly related to computer use in the classroom. For example, teachers often view the computer as a tool to accomplish housekeeping tasks, manage their students more efficiently, and to communicate with parents more easily. The success of student learning with computer technology will depend largely on the attitude of teachers and their willingness to embrace the technology (Teo, 2006) Gaining an appreciation of the teachers attitude towards computer use may provide useful insights into technology integration and acceptance and usage of technology in teaching and learning. In many developed countries nearly all schools and higher educational institutions are equipped with infrastructure to conduct ICT mediated teaching and learning. Positive teacher attitude is therefore crucial if computers are to be effectively integrated into the school and higher educational institutions. A major reason for studying teachers' attitude is that it is a major predictor for future computer use in the class room. (Myers and Halpin 2002).

Rationale of the Study

Information and Communication technologies (ICTs) are indispensable and have been accepted as part of the contemporary world especially in the industrialized society. In fact, cultures and societies have adjusted to meet the challenges of the knowledge age. The pervasiveness of ICT has brought about rapid change in technology, social, political, global and economic transformation. However the field of education has not been unaffected by the penetrating influence of information and communication technology. Unquestionably ICTs has impacted on the quality and quantity of teaching, learning and research in teacher education in developed countries. Undoubtedly, ICT provides opportunities for students, teachers, academic and non academic staff to communicate with one another effectively during formal and informal teaching and learning (Yusuf 2005 b, pp. 316-321) In the same vein teachers need training not only in computer literary but also in the application of various kinds of educational software in teaching and learning (Ololube, 2006) Furthermore, they need to learn how to integrate ICTs into their classroom activities and school and college structures. The quality of teachers is known in virtually all countries to be a key predictor of student learning (Ololube 2005a; 2005b). Therefore teacher training is crucial using ICTs because ICTs are tools that on the one hand can facilitate teacher training and on the other hand help them to take full advantage

of the potential of technology to enhance student learning (UNESCO, 2003). Correspondingly, ICTs have introduced a new era in traditional methods of teaching and offering new teaching and learning experiences to both teachers and students.

The purpose of this paper is to address the issues of awareness of students and attitudes of their teachers with regard to the use of ICT in an under graduate college in Kolkata. The key assertion of this paper is that technology-based learning should be provided to the teachers so that synergistic results will benefit the teachers in course of their transaction. Accordingly, there is a need to design better teacher education programs--- pre-service, inservice, refresher and orientation courses for unanticipated and unintended results that may confront them in the classroom. The curriculum according to the researcher should be absolutely built not only on the theoretical structure without the integration of ICT but amalgamating the two intensely. There is a myth between our curriculum and the expectations out of it. Accepting the fact that ICT is an integral part of teaching the study has proposed to examine the awareness of the college students and the attitude of their teachers respectively.

Objectives

1. To study the attitude of the college teachers' towards the use of ICT.
2. To study the awareness of the students' of the first year undergraduate female students towards the use of ICT.

Method

Random sampling method was employed for the study.

Sample

The present sample comprised of 105 undergraduate girl students of the Humanities discipline and 21 teachers teaching in the same department.

Tools Used

1. The study made use of two standardized tools (1) One Rating scale developed by Dr. Magre and Dr. Sandhya Milind Khedekar of the University of Mumbai was employed to assess the awareness of first year undergraduate female students on the four dimensions of awareness which comprised of 48 Items under 4 sub scales namely awareness about computer awareness about internet, broadcasting technology and over all awareness of ICT. This scale was modified to suit this particular study.

   The total score under the 4 dimensions was 176. It was converted into a score and quantified.

2. For assessing the attitude of college teachers on the use of ICT the researcher used another research instrument namely 'Teacher Educators Attitude' towards ICT scale developed by Sharma 2010 was employed. This scale comprised of 40 items under six sub scales : Curiosity to use potential of technology, Comparative use of technology, role in improvement, innovativeness and overall attitude. There were 48 and 40 items respectively in both the scales. The items for both the standardized scales were scored as strongly agree = 5, Agree = 4, Not sure or Neutral = 3, Disagree = 2 and strongly disagree =1 The overall scores yields students and teachers awareness and attitude towards the use of ICT respectively.

Procedure

The girl students belonging to the first year undergraduate level of the Humanities discipline and 21 teachers of the same department were studied by the researcher. The standardized tools for both the students and teachers were distributed among the respondents' who were present on that particular day. The researcher tried to maintain objectivity as far as possible. The statistical measures used in the study are mean, Standard Deviation, t-test and percentage.

Results and Discussion :

Classification of the Sample .

Community Wise difference in awareness of students towards ICT

Category	**No. of Students**	**Percentage**
HINDUS	40	38.09
MUSLIMS	16	15.23
CHRISTIANS	42	40
JAIN	03	2.85
SIKHS	01	0.95
OTHERS	03	2.85
TOTAL	105	100

Findings

The result showed that community wise mean and S.D. for Hindus was 102.09 and 6.50) for Muslims it was 98.31 & 4.55 for Christian it was 111.64 & 5.43 & for others (101.57 & 3.20) The t value of Hindus and Christians was 9.82 (two tailed) and 4.91 (one tailed) which is significant at 0.05 level. The t- value of Muslims & Christians was 8.90 (two tailed) & 4.45 (one tailed which is significant at 0.05 level. Mean was higher for Christians than the other communities namely Hindus, Muslim and others and tvalue (4.12) was significant at 0.05 level. So it may be concluded that Christians may have scored higher on a few dimensions of ICT assessed on awareness through the rating scales than all other communities. The researcher feels the Christian students' command over English could have been the contributory factor towards better awareness and understanding of computer and its better usage. Linguistic barriers therefore need to be addressed while teaching computers.

Socio — Economic Status (SES) and difference in Awareness of students towards use of ICT:

Classification of the Sample:

Category	No. of Students	Percentage
No response	1	0.95
Middle SES	49	46.66
Upper Middle SES	38	36.19
Higher SES	17	16.19
Total	105	100

Middle SES = 30,000 Earning Per Month

Upper SES = 60,000 Earning Per Month

Higher HSES = Above 60,000 Earning Per Month

Findings

Mean and S.D score for middle socioeconomic status (MSES) was 116.89 and 7.77, upper socio - economics status (USES) was 108.78 and 7.67 and higher socio — economic status (HSES) was 107.64 and 5.60.

The t-test value between MSES and UMSES was 5.76 * and between MSES & HSES was 5.36* both significant at 0.05 and 0.01 level. The t value for UMSES and HSES was 0.53 which was insignificant at 0.05 levels. The research finding shows that awareness towards ICT is seen more among students belonging to the MSES category. The reason could be students belonging to this category may belong to a service background family and

therefore they try and abreast themselves with the ever changing technology so that they can face competition and challenges ahead in life. It has been a tradition that the middle SES category of students have to seek employment and only then can they earn their living. They can't dare to ignore the changing world and its pressing demands. This is an interesting finding.

CA TEGORY WISE FINDINGS

AWARENESS ABOUT COMPUTER

- 80% students have knowledge about computers.
- 45% have difficulty in using computer for the purpose of study since 'Computer' is a separate and optional subject. Hence students of Humanities discipline do not have it as a core subject. Hence difficulty in using it as an educational tool.
- 100% students do not know difficult programmes in computer.
- 48.5% students know word processing and use of computer to make power point presentation. Formal training has not been imparted to them in school but they learnt it through trial and error method since it is the requirement of the day. In a developing country like India computer science is a separate subject and only science students, teachers and policy makers believe should have knowledge about it.
- It is alarming that 100% students use the computers to play games.
- 100% strongly agreed saying that computers should be used to teach a subject as it will an enable them to learn a difficult subject more easily. All students felt subjects should be integrated. They are all aware that computer increases their knowledge, helps them academically and improves their interpersonal skills.

Awareness about internet

- 95.8% students are aware of the immense potential of internet. The students use the internet for web-surfing, E-mailing, for accessing information and educational materials.
- 29.5 % students use the internet for making presentation if the teacher assigns a particular task to them.
- 100% students use the internet to download music or a movie.
- 98.5% students strongly disagreed using the internet to access an educational software.
- 99% students disagreed on the teachers giving assignments and quizzes online and were not even aware of any on-line course in education. Students use the internet to be connected to friends on face book, chatting etc.

- 97.5 students are aware that there is a method of video conferencing but they have never experienced this form of virtual exposure.

It can be therefore concluded that the students are aware of the use of internet but since internet is still a costly affair in India they feel accessing the net for long hours to search information would be secondary and their primary interest was to be connected to friends. The college in which the students are studying has a website where administrative and academic matters are uploaded to give them informationl

Awareness About Broadcastinq Technoloqy

(Radios and Television)

- 100% students were aware about the broadcasting technology (radio and television). They know this technology helps in transmitting, accessing and understanding information but they are not aware of its potential as an educational tool. .
- 100% students know that programs on education are broadcast but they never watch or listen to it. Radio and television for the students is an entertainment tool rather than an educational tool

Awareness About ICT (Overall)

- 92 % students strongly agreed that the use of ICT has changed their role as students.

It has opened their gates to a vast sea of knowledge, Undoubtedly 100% students agreed that use of ICT helps them learn better and has a positive impact but since its usage is limited as teachers still use the chalk and the talk method nothing has really changed. Teachers appreciate the use of ICT for studies, just to surf information but a new beginning has to be made when computer technology will be integrated in teaching. There are great challenges ahead and to fulfill our dreams of integrating ICT needs a positive attitude not only of our policy makers and administrators but the teachers at large who are the makers of destiny and torch bearers of our nation. These finding corroborates the contention of the earlier study undertaken by (Mehra and Mital, 2007) that for example in India, despite research and testimony that technology is being used by more faculty, the diffusion of technological innovations for teaching and learning has not been widespread nor has it become deeply integrated will curriculum. Low collaborative activities and the significant preference of print over virtual forms of presentation prove the prevalence of traditional dynamics of teacher — centered learning where there is one way communication flowing from teacher to learner and printed materials are distributed among the students (Allan,

2007, Kundi and Nawaz, 2010) Until there is a change in attitude of people involved in academics not only with academia, designers, policy makers, administrators and above all the teachers who are to actually implement it is the classroom, no transformation can be really seen with regard to its actual usage . To bring about change the teacher is really to be taken into confidence. Since technology by nature is disruptive and demands not only new investments in terms of time, money and space but changes in the way people think and do things, acquire new skills and so on (Aaron et al, 2004).

There is also great uncertainty among decision makers, managers developers, trainers, learners and instructors about their new role as tutors and facilitators for learning process (Elhers, 2005)

The availability of technology itself will not instigate the aspired goals Cultural and pedagogic change should occur for the technology to be implemented to its full effectiveness and achieve the goals it was designed to fulfill (Allan, 2007). In some cases integrating the traditional "sage on the stage" to also being a " guide on the side" and student's role also changes from being passive receivers of content to being more active participants and partners in the learning processes

(Mehra and Mital 2007; Nawaz and Kundi, 2010c).

Teachers' Attitude and use of ICT in Education

Mean value of teachers scores with respect to sub scales of Attitude

Table - 1

Sub —Scales	Number (N)	Mean	S.D.
Curiosity to use	21	4.06	0.47
Potential of Technology	21	4.07	0.49
Comparative Use of Technology	21	4.07	0.41
Role in Improvement	21	4.16	0.42
Innovativeness	21	4.01	0.33
Overall Attitude	21	4.20	0.49

The above table reveals that since the mean value of the scores lie in between 4 and 5 it implies that most of the teachers strongly agree or agree with the items given in the attitude scale. Overall attitude of the teachers was found to be positive towards the use of ICT. However 89% teachers felt they need to be formally trained towards the use of

educational software. Not a single teacher questioned has registered for any online course or were even aware of any such courses like Khan Academy or COURSERA etc.

Though the college in which the study was conducted was Wi-fi connected but only 2% of the teachers who were in the administration could access the internet since the password was not available to all the other teachers. Students too had a similar fate and 98% teachers accessed the internet from their homes to send emails (first) followed by chatting (2^{nd}) and www. (3^{rd}). Students and teachers of the same college responded in a similar way. This finding highly indicates that teachers need to be trained to use ICT in education like accessing e-journals inflibnet database search etc.

Conclusion

ICTs have not permeated to a great extent in many higher educational Institutions due to the attitude of its teachers who are not fully equipped to meet the everchanging demands of the society. Integrating technology in India in higher educational Institutions is still a big challenge the teachers are facing today and especially teachers of the Humanities discipline. The curriculum has not changed to a large extent in terms of greater information access, greater communication, synchronous learning, increased co-operation and collaboration, pedagogical improvement through simulation, virtual experiences integration of different subjects, graphic representation etc. Teachers therefore require special training to integrate computers in their respective disciplines. Developing countries are immensely facing these challenges inspite of the governments' initiative to fund for infrastructure. Challenges of integrating these technologies can only make a break — through when teachers attitude towards its usage is positively and equitably distributed. During the last couple of years since 1990 the university libraries and other institutional libraries are coming under the impact of Information technology, Since last two decades several initiatives lave been taken by the Government of India for computerization and networking of Indian libraries. (Sinha and Satish, 2000). The eleven plan allocated 147, 781 million for technological infrastructure. The basic ICT infrastructure such as LAN, internet, computers, video, audio, CDs, and DVDs and mobile technology may form the basis for the establishment of e-learning but the teachers attitude and their ability to use them should be regarded as a potential tool to transform the teaching learning process. ICT should be identified as a game charger that can significantly strengthen India's higher educational system and propel the country to become a "Knowledge Power." For effective implementation there is a need to overcome linguistic barriers as well so that teachers

and students can equally master English since knowledge of English is essential to master computers. Out of 368 million literate rural Indians only 17 % can speak English.

A survey of accredited colleges by UGC in 2008 revealed glaring IT infrastructure short comings. The average number of computers per college was only 6.

The number of internet users per hundred inhabitants was only 7% in 2008 whereas in developed countries like UK and USA is 80% and 74 % respectively.

The fixed broadband penetration is as low as 0.3%. Percentage of rural population who use the internet is only 1%. Research has also revealed that there are only 3.18 number of computers per 100 individuals. There are disparities in PC ownership across India as well People staying in top metros have 21%, next four metros have 17%, 16 % for population of 0.5 - 1 million population towns and 4% for < 0.5 million population towns. (Source: International Telecommunication Union: IAMAI report 'Vernacular Content Market in India: "UGC : Higher Education in India 2008). India therefore faces a challenge of low technology and people readiness in order to realize the true potential of ICT in higher education. It can also be therefore concluded that students and teachers are aware of its immense potential as a tool of education but due to lack of training they are using the computer as an entertainment tool. Teachers, the researcher believes should assume a leadership role in transformation of education or be left behind in the swirl of rapid technological changes. Positive attitude no doubt is important for readiness but utilizing the computer in the right perspective is equally important. A new caliber of teachers with professional ability to handle the computer and its immense potential as an educational tool is to be inducted into the system and only then can they help their students do the same. This research endeavor might have made a considerable stride in terms of awareness of students with regard to their community and socioeconomic status but further studies may be taken up to probe more parameters in terms of gender, age and types of institutions on the basis of medium of instruction etc Further research may be undertaken to probe some of the parameters with a larger sample size as well.

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