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## INFORMATION AND COMMUNICATION TECHNOLOGY IN EDUCATION: USE OF ICT IN COMPUTER SCIENCE TEACHING

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**D.Naga Chitra**

*Assistant Professor, Sri Raaja Raajan College of Education for Women  
Amaravathipudur, Karaikudi, Sivagangai, District*

### **Abstract**

ICT, the term is generally accepted to mean all devices, networking components, applications and systems that combined and allow teacher and student communities to interact in the digital world. Information and Communication Technologies refers to technologies that provide access to information through telecommunications, it is similar to information communication technologies which includes the Internet, wireless networks, cell phones, and other communication mediums. In the past few decades, information and communication technologies have provided education with a vast array of new communication capabilities. For example, all the teacher educator communities can utilise ICT to teaching and learning, most colleges and schools using technologies such as multimedia presentation, smart class, e-learning methods, instant message, audio, video-conference. ICT is often studied in the context of how modern communication technologies affect education. Information explosion is an ever increasing phenomena therefore there is need to get access to this information. Education should meet the needs of variety of learners and therefore IT is important in meeting this need. It is a requirement of the society that the individuals should possess technological literacy. Basically teaching must include two major components source and destination. Ultimately, a teacher tries his best to impart knowledge. So, any communication methods that serve this purpose without destroying the objective could be considered as innovative method in teaching and learning, one of the significant instructional applications of computer is CAI. CAI means "computer assisted instruction". In CAI activity of the learner is most important attribute, it can be used in formal and non-formal education at all levels. The use of innovative methods in educational institutions has the potential not only to improve education, but also to empower pupil, strengthen governance and galvanize the effort to achieve the teacher educator development. An overview of ICT within teacher education: programming, writing, language arts, Instructional aides, teaching computing, graphics, evaluation and development. Your teaching information and communication technology (ICT) systems should be working to make your teaching more effective and efficient; however this is not always the case. These are becoming a more familiar feature of equipment in school. Using ICT can facilities and extend ways of working which are inclusive and have always been considered good practice for teaching and learning. Thus in this paper an attempt has been made to discuss the use of information communication technology in computer science teaching.

### **Introduction**

"Information and Communication Technologies." ICT refers to technologies that provide access to information through electronic communications. It is similar to Technology; this includes the Internet, wireless networks, cell phones, and other communication mediums. In the past few decades, information and communication technologies have provided with a vast array of new communication capabilities. The pupil can communicate to teaching and learning using technologies such as gathering information for computer science teaching. The innovative method of teaching that ICT is often studies in the context of how modern communication technologies affect teaching and learning community, so the information and communication technology use for us.

### **Information and Communication Technology**

Information and communications technology uses a combination of text, graphics, sound and video in enhancing the learning process focuses on how to best programs, that is professionals need to know about existing applications, how they interact, how they are best used and how to troubleshoot problems between teaching and learning.

### **Significance of Information and Communication Technology in Education**

The internet has become an integral part of every individual's life. Even in schools, colleges, and universities the use of internet has increased at an alarming rate. ICT-Information and communication Technology has given wings to empower the use of technology related activities in the world of education particularly teaching of computer science. There is a negative image of ICT on the minds of many people and to eliminate that impact, schools play an important part because of widely uses for teaching learning. ICT, we call it 'multimedia' has a positive side that helps to increase the knowledge of the student and teacher. Nowadays, when schools are transforming themselves into smart schools, where the role of ICT has been skyrocketing, monitoring the critical part of ICT in education, the education ministers or administrators must be sufficiently insightful in actualizing the methodologies to enable ICT in supporting the educating, for teaching and learning process in the school, college, and university. ICT is the sprout of the education activities, as well as it will be the secondary alternative to enhance the powerful and important education systems to all our learning and teaching environment.

### **Recent Trends of Information Communication Technology to Teaching of Computer Science**

ICT can be use in many different ways, and how it is integrated into educational settings depends largely on teacher's instructional goals and strategies. Changes in the goals of education during the latter part of the twentieth century, coupled with increases in Computers and Internet connections are becoming widely available in schools, colleges and university classrooms one or more computers in their classrooms. Similarly having access Internet connections are also widespread with schools, colleges and university classrooms. Recently many educational institutions are making the of information and communications technology an important priority to teaching of computer science. Even in India use of ICT becomes more widely, the computer science teachers and student teacher understanding how to make this technology into computer science teaching environments.

The use of technology, the pupil can dominate from other followed by use multimedia. After use of ICT in teaching of computer science, the students will learning alone to complete all their studies because of information and communication technology are available in all classrooms for teaching of computer science.

### **Computer Assisted Instruction (CAI)**

A self-learning technique, usually offline and online, involving interaction of the student with programmed instructional materials. Computer-assisted instruction (CAI) is an interactive instructional technique whereby a computer is used to present the instructional material and monitor the learning that takes place. CAI uses a combination of text, graphics, sound and video in enhancing the learning process. The computer has many purposes in the classroom, and it can be utilized to help a student in all areas of the curriculum. So this is more useful to teaching of computer science.

### **Types of Computer Assisted Instruction**

CAI has different types that is Drill-and-practice, Tutorial, Games, Simulation, Discovery, and Problem Solving

### **Benefits of CAI**

CAI brings several potential benefits as teaching and learning medium. These include self-paced learning, self-directed learning, the exercising of various senses and the ability to represent content in a variety of media. With self-paced learning, learners can move as slowly or as quickly as they like through a program. If they want to repeat some task or review some material again, they can do so as many times as they choose. The program will not tire or complain about repetitions. Learners can skip over a topic if information is already known, making the learning process more efficient.

### **Advantages of Cai**

- One-to-one interaction
- Great motivator
- Freedom to experiment with different options
- Instantaneous response/immediate feedback to the answers elicited
- Self pacing - allow students to proceed at their own pace.

### **Conclusion**

The adoption and use of ICT in education have a positive impact on teaching and learning of computer science. ICT can affect the education and enable wider access to the same. In addition, it will increase flexibility so that can access the education regardless of time and geographical barriers. It can influence the way teacher educator are taught and how they teach, it would provide the rich environment and motivation for teaching learning process which seems to have a profound impact on the process of learning in education by offering new possibilities for learners and teachers. These possibilities can have an impact on student performance and achievement. Similarly ICT can foster better teaching and improved academic achievement of students. So this paper an attempt has been made to discuss the use of information communication technology in computer science teaching.