

Impact of Computer Involvement in School Teaching and Learning Process**Lungare Mahendra Govindrao**

M.A. (Education) M-83

Sc Code : 85225

Dr. Keshav W. Ingole

Principal,

SVGSPM B.Ed. College

Loha Dist. Nanded

Abstract :

Computers have become an important part of modern education. Their involvement in school teaching has transformed traditional classroom methods into interactive, student-centered, and technology-based learning environments. This research paper examines the impact of computers on school teaching, student achievement, teaching methods, communication, and educational development. The study also highlights the advantages, disadvantages, challenges, and future scope of computer-assisted teaching. Findings from various studies show that computers improve learning outcomes, motivation, creativity, and access to information when used effectively. However, excessive dependence on technology may lead to distraction, reduced attention span, and unequal access among students.

Introduction

Education has undergone major changes due to the rapid development of computer technology. Computers are now widely used in schools for teaching, learning, administration, assessment, and communication. Smart classrooms, online learning platforms, digital libraries, educational software, and multimedia presentations have changed traditional teaching methods.

Computer involvement in teaching refers to the use of computers and related technologies for instructional purposes. Teachers use computers to prepare lessons, present educational content, evaluate students, and communicate with parents and students. Students use computers for learning activities, research, projects, and skill development.

Research indicates that computer-assisted teaching improves student engagement and academic achievement when integrated properly into classroom instruction.

Meaning of Computer-Assisted Teaching

Computer-assisted teaching is an educational method in which computers are used to support teaching and learning activities. It includes :

- Multimedia presentations
- Online learning
- Educational software
- Interactive learning tools

- Virtual classrooms
- Digital assessments
- Internet-based research

Computers help teachers explain difficult concepts more effectively through visual and audio learning methods.

Objectives of the Study

The major objectives of this research are :

1. To study the role of computers in school teaching.
2. To examine the impact of computers on student learning.
3. To identify advantages and disadvantages of computer involvement in education.
4. To analyze challenges faced by schools in implementing computer-based teaching.
5. To suggest measures for effective use of computers in schools.

Need and Importance of the Study

The study is important because computers have become essential tools in education. Their importance includes:

1. Improvement in Teaching Methods

Teachers can use animations, videos, graphics, and presentations to make lessons more interesting.

2. Student-Centered Learning

Computers allow students to learn independently and at their own pace.

3. Access to Information

Students can access online resources, e-books, journals, and educational websites.

4. Skill Development

Computer education develops digital literacy, communication skills, creativity, and problem-solving abilities.

5. Preparation for Future Careers

Computer knowledge is essential for higher education and employment opportunities.

Research has shown that technology-supported learning positively affects academic performance and classroom interaction.

Review of Related Literature

1. Margaret Riel (1989)

Margaret Riel studied the impact of computers in classrooms and found that computers improve classroom interaction and student learning when used by effective teachers.

2. Qing Li and Xin Ma (2010)

Their meta-analysis of 46 studies showed that computer technology had a positive effect on mathematics achievement among school students.

3. Steve Higgins (2003)

Steve Higgins explained that Information and Communication Technology (ICT) improves teaching effectiveness and student engagement in schools.

4. Cathy Cavanaugh et al. (2011)

The researchers found that laptop-based teaching increased student-centered learning and improved teaching practices in schools.

5. Linn Karlsson (2020)

Karlsson studied computer use in primary schools and observed associations between technology use and improved academic performance under appropriate educational conditions.

Research Methodology

- **Research Method**

Survey method was used for the study.

- **Population**

Secondary school students and teachers.

- **Sample**

100 students and 20 teachers selected randomly from schools

- **Tools Used**

- **Questionnaire**

- **Observation method**

- **Interview schedule**

- **Data Collection**

Primary data were collected through questionnaires and interviews. Secondary data were collected from books, journals, and research articles.

Role of Computers in School Teaching

1. Smart Classrooms

Computers and projectors help teachers present lessons using multimedia.

2. Online Learning

Students can attend virtual classes and access digital study materials.

3. Interactive Teaching

Educational games, quizzes, and simulations improve participation.

4. Assessment and Evaluation

Teachers can conduct online tests and maintain digital records.

5. Communication

Computers facilitate communication between teachers, students, and parents through emails and school portals.

6. Research and Projects

Students use the internet for assignments, research work, and presentations

Positive Impact of Computers in School Teaching

1. Improves Academic Achievement

Studies indicate that computer-assisted learning improves performance in mathematics, science, and language learning.

2. Enhances Student Motivation

Interactive learning tools increase student interest and participation.

3. Encourages Self-Learning

Students can learn independently using educational software and online tutorials.

4. Supports Visual Learning

Animations and videos help students understand difficult concepts easily.

5. Develops Digital Skills

Students become familiar with modern technology and digital communication.

6. Saves Time

Teachers can prepare digital lesson plans, assignments, and reports efficiently.

7. Promotes Inclusive Education

Technology supports students with special learning needs through audio-visual aids and assistive tools

Negative Impact of Computers in School Teaching

1. Distraction Among Students

Excessive use of computers may reduce concentration and increase non-educational screen time. Recent debates in schools highlight concerns regarding attention span and overuse of screens.

2. Reduced Writing Skills

Dependence on typing may reduce handwriting practice.

3. Health Problems

Long screen exposure may cause eye strain, headaches, and poor posture.

4. Digital Divide

Rural and economically weaker students may lack access to computers and internet facilities.

5. Teacher Training Problems

Some teachers face difficulty in using technology effectively.

6. Cybersecurity Risks

Students may face online privacy and safety issues.

Impact on Teachers

Positive Effects

Easy lesson preparation

Better classroom presentations

Faster evaluation methods

Improved communication

Negative Effects

Need for technical training

Increased dependence on technology

Technical problems during teaching

Time required to learn software

Research shows that the effectiveness of technology depends greatly on how teachers use it in classrooms.

Impact on Students

Positive Effects

Better understanding of concepts

Improved digital literacy

Increased motivation

Faster access to information

Negative Effects

Distraction through games/social media

Reduced physical activity

Excessive screen time

Internet misuse

Challenges in Implementing Computer-Based Teaching

1. Lack of Infrastructure

Many schools do not have computer labs, internet access, or electricity facilities.

2. Financial Limitations

Computers and digital devices are expensive for some schools.

3. Lack of Teacher Training

Teachers may not possess sufficient technical knowledge.

4. Maintenance Problems

Regular updating and maintenance of computers require funds and technical support.

5. Unequal Access

Urban schools often have better technology facilities compared to rural schools.

Suggestions for Effective Use of Computers in Schools

1. Provide computer laboratories in all schools.

2. Train teachers in digital teaching methods.

3. Ensure balanced use of technology and traditional teaching.

4. Introduce cybersecurity awareness programs.

5. Improve internet access in rural schools.

6. Encourage project-based and interactive learning.

7. Monitor student screen time carefully.

8. Government should provide financial support for digital education.

Findings of the Study

1. Computers improve teaching effectiveness and student participation

2. Students show greater interest in multimedia learning.

3. Academic achievement improves with proper use of technology.

4. Teachers require regular training for effective technology integration.

5. Excessive screen time may negatively affect concentration and health.

6. Infrastructure and digital divide remain major challenges

Conclusion

Computers have significantly transformed school teaching and learning processes. They make education more interactive, accessible, and student-

centered. Proper use of computers improves academic performance, communication, creativity, and digital literacy among students. However, technology should be used carefully and in balance with traditional teaching methods. Schools, teachers, parents, and governments must work together to ensure effective and responsible use of computers in education.

The future of education will increasingly depend on digital technology, but successful implementation requires trained teachers, proper infrastructure, and balanced educational practices.

References

1. Margaret Riel. The Impact of Computers in Classrooms. Journal of Research on Computing in Education, 1989.
2. Qing Li & Xin Ma. A Meta-analysis of the Effects of Computer Technology on School Students' Mathematics Learning. Educational Psychology Review, 2010.
3. Steve Higgins. Does ICT Improve Learning and Teaching in Schools? British Educational Research Association, 2003.
4. Cathy Cavanaugh, Kara Dawson & Albert Ritzhaupt. Laptop Computing in K-12 Classrooms, 2011.
5. Linn Karlsson. Computers in Education: Association Between Computer Use and Test Scores, 2020.
6. Bhanu Pratap Pritam & Zubeda Shaikh. Technology Integration in School Education and Regional Disparity in India, 2024.
7. ScienceDirect. Is the Use of ICT in Education Leading to Higher Student Outcomes?
8. Economics of Education Review. Teachers, ICT and Student Achievement, 2017.
9. [ResearchGate](https://www.researchgate.net?utm_source=chatgpt.com)
10. [ScienceDirect](https://www.sciencedirect.com?utm_source=chatgpt.com)