



ICT Use and Implementation in Government College of Teacher Education (GCTE) Mangalore

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Abstract

The integration of Information and Communication Technology (ICT) has become an essential component in teacher education, enabling enhanced teaching practices, interactive learning, and improved student engagement. This study examines the use and implementation of ICT in the Government College of Teacher Education (GCTE), Mangalore. A descriptive survey method was employed with a sample of 100 student-teachers and one lecturer. Data were collected through checklists, questionnaires, and interviews to assess ICT infrastructure, resources, and pedagogical practices. Findings reveal that GCTE has made considerable progress in providing ICT facilities such as projectors, desktops, internet access, and simulation classes, which support both faculty and student learning. However, challenges persist, including inadequate funding, limited technical support, and restricted access to resources. The study highlights the need for strengthening ICT infrastructure, enhancing training, and fostering digital literacy to improve teacher preparation and future classroom practices.

Keywords: ICT integration, teacher education, digital literacy, GCTE Mangalore, educational technology, student engagement.

Introduction

Education is a tool that aids in the expansion of existing knowledge and the transmission of current information. It rises to the occasion and tries to match the country's requirements. In the rapidly moving current era Information and Communication Technology (ICT) is increasingly becoming an indispensable part of the education system from the time we get up in the morning till we go to sleep at night. It has changed many aspects of our lives. These changes have caused educational institutions, administrators, teachers, to rethink their roles, teaching methodology, and refresh their vision for the future.

To acquaint coming generation with technologically advancing society educational institution plays a key role. In that too, it is important that teachers must be equipped with the skills and knowledge to harness ICT's potential to enhance student learning outcomes, increase accessibility, and foster collaborative learning environments. In that Colleges of Teacher Education (CTEs) play a critical role in preparing future teachers to effectively integrate ICT into their instructional practices. However technological changes have challenged teacher educators to re-evaluate their teaching and to reconstruct their teaching methods. They have also enforced them to adapt training programs to the requirements of the information era, in terms of teachers' changing roles, understanding how students learn in a technology and information-saturated environment.

However, the successful implementation of ICT in teacher education remains a complex and multifaceted challenge. Effective ICT integration can facilitate personalized learning, improve student engagement, and bridge the digital divide. Nevertheless, numerous barriers, including inadequate infrastructure, insufficient training, and resistance to change, hinder the widespread adoption of ICT in teacher education.

ICT stands for Information and Communication Technology. It refers to the technologies used for information processing, communication, and digital content creation. Information and Communication Technology (ICT) refer to the convergence of computing, communication, and information technologies to create, manage, and disseminate information.

The integration of Information and Communication Technology (ICT) in education has transformed the teaching-learning process. ICT has the potential to enhance teacher effectiveness, student engagement, and access to educational resources. The Government College of Teacher Education (GCTE) has recognized the importance of ICT in teacher education and has taken steps to integrate ICT into its programs. This study aims to investigate the use and implementation of ICT in GCTE, with a focus on identifying the challenges and opportunities for ICT integration in teacher education. The integration of Information and Communication Technology (ICT) in education has transformed the teaching-learning process. ICT has the potential to enhance teacher effectiveness, student engagement, and access to educational resources. The Government College of Teacher Education (GCTE) has recognized the importance of ICT in teacher education and has taken steps to integrate ICT into its programs.

As teacher education institutions play a critical role in preparing teachers for the digital age, it is essential to investigate the use and implementation of ICT in these institutions. This study aims to explore the current state of ICT integration in GCTE, identify the challenges and opportunities for ICT integration, and provide recommendations for improving ICT use and implementation in teacher education.

Need for the Study

The integration of Information and Communication Technology (ICT) in teacher education is crucial for preparing teachers to effectively integrate technology into their teaching practices. However, the use and implementation of ICT in Government College of Teacher Education (GCTE) Mangalore have not been adequately studied.

The purpose of this study is to investigate the use and implementation of Information and Communication Technology (ICT) in the Government College of Teacher Education (GCTE)Mangalore . It aims to identify the challenges and opportunities of ICT use in teacher education and to inform strategies for improving ICT integration in GCTE.

The study aims to contribute to the existing body of knowledge on ICT use and implementation in educational institutions, and to provide insights that can inform policy and practice in GCTE and similar institutions.

Objectives of the Study

1. To inquire about the ICT Syllabus for the B.Ed Course at a Government College of Teacher Education Mangalore.
2. To gather details on the infrastructure resources for ICT education at the Government College of Teacher Education Mangalore.
3. To gather the perspectives of student teachers studying in the B.Ed program at Government College of Teacher Education in concerning ICT education.

Sample of the Study

The population of this study consists of a sample of 100 students and one lecturer from the Government College of Teacher Education (GCTE).

The study is a descriptive study including First and Second Semester B.Ed. students of GCTE Mangalore. Through the survey method, data on the various variables chosen for the study was obtained from GCTE students.

Tools used in the Study

The study consists of three tools and one check list. All the tools were constructed by the investigator.

1. Checklist
2. Questionnaire for Faculty Members
3. Interview-Questionnaire for Faculty Members
4. Questionnaire for Students

Statistical Techniques of the Study

For the present study, the Investigator used Descriptive Statistics i.e. Mean and Standard Deviation were used.

Based on the investigator observation and interview the brief summary is as follows:

A brief summary of the interview is given along with a discussion based on the Investigator's observation:

Government College of teacher education Mangalore has made significant efforts to integrate Information and communication Technology into its curriculum and teaching practices. The integration of Information and the communication technology in educational institutions have become a crucial aspect of modern education. The government college of teacher education Mangalore has recognised the importance of ICT in enhancing the quality of education and has made significant efforts to provide state of the art ICT facilities to its students and faculty members. GCTE has invested heavily in providing modern ICT facilities to its students and faculty, the college has a well-established ICT infrastructure which includes 18 projectors, computers for personal use by students 6 printers and 8 scanner software. The college also has a good internet facility which enable students to access online resources and conduct research.

1. **Hardware facilities:** The college has 30 desktops, 18 projectors, 6 printers and 8 scanners.

2. **Internet and software facility:** A good internet facility is available enabling students to access online resources and also which is applicable for simulation classes.(100GB,20 Mbps, ,FIFTH connection).
3. **Support and training:** Well qualified ICT Tutor provides training and support to students in enhancing their ICT skills.

The college has implemented CCTV surveillance in the ICT lab to enhance security, monitor student activity and prevent misuse of ICT facilities.

The ICT facilities in GCTE have benefitted for student teachers as well as faculty members in several ways.

- Students can use computers freely, which enables them to take control of their learning, this in turn enhances their learning skills.
- Another significant benefit is student engagement and interaction.
- Simulation classes and smart boards enables students to participate in the learning process, which increases their motivation and interest in the learning.
- ICT facilities also provide teachers with opportunities for professional development.
- ICT lecturer provides training and support to student teachers which enables them into integrated ICT into their teaching practices effectively.

Despite the efforts made by GCTE Mangalore ,to provide ICT facilities several challenges are faced, they are as follows.

- Insufficient government funding in development and maintenance of ICT facilities.
- Limited devices affect teaching practices and Student learning outcomes.
- Limited technical support due to funding constraints affect the smooth functioning ICT facilities.
- There is a need to replace the desktops with latest laptops. This would actually enable all students use the laptops even in their teaching practice sessions.

Major findings of the Study

1. The college has a moderate level of ICT infrastructure, there 18 projectors for teacher trainees to develop their computer skills, enhancement of visual learning and boosting presentation skills.
2. Weekly four simulation classes were conducted to develop their confidence level and future teaching skills.
3. However, most of the lecturers use ICT for instructional purposes, such as online teaching and learning.
4. Student teachers also have limited access to ICT for academic purposes.
5. The main challenges to ICT use and integration are lack of technical support, and limited training for lecturers.
6. Other challenges include high cost of internet connectivity, limited access to digital resources, and lack of government funding.
7. Lecturers and students perceive ICT as a valuable tool for enhancing teaching and learning.

8. ICT use and integration can improve student engagement, motivation, and academic performance.
9. ICT can also facilitate communication and collaboration among lecturers, students, and other stakeholders.

Educational Implications of the Study

1. **Enhanced Teacher Training:** Integrate ICT into teacher training programs to enhance teaching and learning.
2. **Improved Curriculum Design:** Use ICT to design and develop interactive and engaging curricula for teacher education.
3. **Increased Access to Resources:** Provide teachers and students with access to digital resources, such as e-books and online journals.
4. **Development of Digital Literacy:** Incorporate digital literacy skills into the teacher education curriculum.
5. **Enhanced Student Engagement:** Use ICT to create interactive and engaging learning experiences for students.
6. **Improved Assessment and Evaluation:** Use ICT to develop innovative assessment and evaluation strategies.
7. **Increased Collaboration and Communication:** Use ICT to facilitate collaboration and communication among teachers, students, and stakeholders.
8. **Development of Online Courses and Resources:** Develop online courses and resources to support teacher education and professional development.
9. **Improved Data Management and Analysis:** Use ICT to manage and analyze data related to teacher education and student learning outcomes.
10. **Enhanced Research and Development:** Use ICT to support research and development in teacher education and educational technology.
11. **Development of Critical Thinking and Problem-Solving Skills:** ICT can facilitate the development of critical thinking and problem-solving skills among teacher trainees.
12. **Enhanced Assessment and Feedback:** ICT can enable lecturers to provide timely and effective feedback to teacher trainees, enhancing the assessment process.
13. **Support for Diverse Learning Needs:** ICT can provide support for teacher trainees with diverse learning needs, such as disabilities or language barriers.
14. **Fostering a Community of Practice:** ICT can facilitate the development of a community of practice among teacher trainees, promoting collaboration and knowledge sharing.
15. **Development of Digital Literacy Incorporating ICT into teacher education programs can help develop digital literacy skills among teacher trainees.**
16. **Enhanced Collaboration and Communication** ICT can facilitate collaboration and communication among teacher trainees, lecturers, and other stakeholders.
17. **Personalized Learning** ICT can enable personalized learning experiences for teacher trainees, catering to their individual needs and learning styles.

18. Access to Global Resources ICT can provide teacher trainees with access to global educational resources, enhancing their knowledge and understanding of diverse perspectives.

Suggestions for Further Research

1. **Investigating the Impact of ICT on Student Learning Outcomes:** A study to investigate the impact of ICT on student learning outcomes in Government College of Teacher Education.
2. **Exploring the Role of ICT in Teacher Professional Development:** A study to explore the role of ICT in teacher professional development in Government College of Teacher Education.
3. **Developing a Framework for Effective ICT Integration in Teacher Education:** A study to develop a framework for effective ICT integration in teacher education.
4. **Investigating the Challenges and Opportunities of ICT Use in Teacher Education:** A study to investigate the challenges and opportunities of ICT use in teacher education.
5. **Examining the Relationship between ICT Use and Teacher Self-Efficacy:** A study to examine the relationship between ICT use and teacher self-efficacy in Government College of Teacher Education.
6. **Developing ICT-Based Educational Resources for Teacher Education:** A study to develop ICT-based educational resources for teacher education.
7. **Investigating the Impact of ICT on Teacher Education Curriculum:** A study to investigate the impact of ICT on teacher education curriculum in Government College of Teacher Education.
8. **Exploring the Role of ICT in Enhancing Teacher-Student Interaction:** A study to explore the role of ICT in enhancing teacher-student interaction in Government College of Teacher Education.
9. Compare ICT usage across education institutions.
10. Analyze ICT usage patterns among different age groups.
11. Investigate barriers to ICT adoption among education students.
12. Examine effectiveness of ICT-based teaching methods.

Conclusion

The Case study investigated the use of Information and Communication Technology (ICT) in teaching and learning practices at Government College of Teacher Education (GCTE). The analysis and interpretation of the data revealed that ICT infrastructure is sufficient, and teachers and students use ICT for various purposes. However, challenges such as limited infrastructure, lack of technical support and digital divide hinder effective ICT use and implementation.

The study recommends upgrading ICT infrastructure, providing technical support and training, developing an ICT integration plan, and promoting digital literacy. Future research directions include investigating the impact of ICT on learning outcomes, exploring the role of ICT in promoting personalized learning, and developing and evaluating ICT-based educational interventions. By addressing the challenges and leveraging the benefits of ICT, GCTE can enhance teaching and learning practices, improving student outcomes and academic achievement.

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