

INNOVATIVE TEACHING TECHNIQUES USING ICT – AN ANALYSIS AMONG PRIMARY TEACHERS

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Abstract

The purpose of this paper is to evaluate innovative practices of teaching methodology adopted by primary teachers for interactive classroom learning using ICT. The main purpose of this study is to implement technology into the teaching and learning process, and to recommend additional technological teaching methods that the teacher would try to transmit knowledge to the pupils. In general, the two fundamental components of ICT are the transmission of information and the reception of information by receivers, i.e., students, through a mediator, i.e., teachers, using computers and other associated ICT. Innovative practices such as collaborative, cloud-computing and blended teaching are very essential to make a lively classroom. It has a bigger effect on boosting instructors' self-confidence, which in turn strengthens their academic performance and enables them to effectively communicate with young students. The major goal is to cutting-edge teaching strategies used in the classroom to make learning more engaging. A self-made questionnaire was used to collect data from 100 randomly chosen teachers from the Chennai region for the research and statistical software used for conducting the analysis using the T-test.

Keywords: *Information and communication technology, Collaborative teaching, Cloud-computing, Transmission, Self-confidence.*

INTRODUCTION

Teachers encounter challenges that are getting more and more difficult as they grow up in a world that is always changing, as well as amazing opportunities brought on by new knowledge and technologies. To fulfil the needs of modern students and equip them with the resources they require to flourish in such a world, we continuously review, rethink, and modify our pedagogy, systems, locations, and use of digital technology. This is done to better prepare our students for it. Innovative teaching and learning practices include the use of authentic context, highly

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engaging and responsive teaching methods, skill development and mindful use of digital resources to connect, collaborate, create and share learning.

There are numerous options and possibilities when it comes to technology in education. Thanks to educational technology, teachers have been able to make their classes more engaging and interesting. Everyone is aware that deeds speak louder than words. Someone who doesn't know what a triangle is will only have a vague understanding if I state that it is a three-sided figure. As I depict it on the board, it simultaneously becomes more understandable. With the aid of technology, this triangle could be animated and its 3D shape, the pyramid, could be shown, all of which would increase comprehension. Instructors can use educational technology, such as online teaching resources, animations, and other tools, to keep their classes engaging and ensure that students are actively participating. It helps pupils understand the topics they are studying. The use of various types of educational technology has made this possible. These kinds of innovative teaching techniques are crucial to maintaining class engagement.

INNOVATIVE PRACTICES IN TEACHING

Interactive Sessions: The biggest mistake a teacher can make is to make lessons non-interactive. Some teachers find it difficult for interacting with their students in the classroom. Set aside a day solely for talking if your attention is being diverted away from your work. You may incorporate some interactive tasks into your session. Use brainstorming sessions, group discussions, debates, peer assessments, and other activities to stimulate student participation in your classroom. You must be aware of your kids' pulse and how they react to certain events and situations as a teacher. Only then you will be able to personalize your teaching strategies to each individual student in your classroom.

Creative Pedagogies: It is all about using innovative approaches to teach is what creative pedagogy is all about. The following are five different approaches to creative pedagogy:

- **Constructivist Pedagogy:** In constructivist education, students construct their understanding of a lesson utilizing prior experiences and expertise, in addition to the instructions they acquire from their teacher.
- **Collaborative Pedagogy:** students will perform better in writing, critical thinking, and grasping concepts if they participate and cooperate with others.
- **Integrative Pedagogy:** Integrative pedagogy brings together and blends students' conceptual understanding, practical skills, and self-regulation.

- **Inquiry-Based Learning:** It promotes learners to ask questions, inquire, investigate, and acquire knowledge on their own schedules as educator's guide, direct, and push and guide as needed.

Storytelling: It has a way of getting into students' heads and staying with them for extended periods of time. Including the narrative method in your courses, regardless of grade level, will result in a considerable gain in student understanding. They will be able to identify with and relate to the lessons. A tough math problem can be reduced by telling a story about it, and as previously said, we can employ technology and several virtual classrooms to create animations and illustrate your lessons.

INNOVATIVE PRACTICES IN IMPLEMENTING ICT IN TEACHING

a) Smart Board Teaching

Smartboards are a great way to create an educational environment while encouraging deeper student interaction and understanding. This is achieved by including interactive and visual components in the course content. Teachers use dynamic multimedia content to help students understand topics more effectively and create visual and engaging experiences on smart boards, transforming teaching methods into interactive and collaborative experiences.

b) Flipped Classroom

Flipping the learning environment is a widely used and successful teaching method that is gaining traction. By making students responsible for their own learning, they develop into fully involved in their educational process. Teachers are only resource providers, while pupils are responsible for acquiring concepts and knowledge. Students are encouraged to use a variety of technological tools to acquire knowledge, fill knowledge gaps, and create inferences on their own. Holding students responsible for their own learning may not seem like a good idea to some, but teachers around the world find that when students are responsible for their education, they become more engaged and show greater interest in the material and learn more effectively. One of the best teaching methods to lay the foundation for self-directed learning is this approach.

c) Collaborative Teaching

Encourage student collaboration on a variety of projects as another innovative teaching method. In today's globalised environment, collaboration is a fundamental ability that is critical for all vocations and businesses. Allowing children to study, work, and learn in groups can help

teachers develop this talent in their students. Giving children group work or having them do games, presentations and other reports together are just a few examples. Collaboration is now gaining popularity as a teaching method. In this method, the students are once again given the responsibility while the teachers act as their guides, mentors, and supervisors. Additionally, it instructs students in problem-solving, teamwork, negotiation, and empathy.

d) Virtual Reality

Virtual reality technology can help students learn through immersive 3D experiences. Teachers can use 3D technology to study historical civilizations, travel to remote locations for geography lessons, and even space travel for science lessons without boring students with history lessons. Students now have the rare opportunity to learn in an immersive environment, using virtual reality technology, which will have a profound impact on their minds. When exploring effective teaching strategies in the classroom, it increases students' motivation and helps them retain information longer.

e) 3D Printing Technology

Teachers looking for novel ways to teach can use 3D printing as a teaching tool. In lower-level classes, teachers can utilise 3D printers to teach subjects that were previously taught via textbooks, giving students a greater understanding of the material—especially in the fields of science and mathematics.

f) Cloud Computing

The use of technology in the classroom allows teachers to experiment with new teaching methods. With the help of cloud computing, teachers can store important class documents such as lesson plans, notes, audio lessons, videos, and homework details in the school cloud. Students can then use it anytime from the comfort of their own home, bringing the classroom back to them with the click of a mouse. In addition, it ensures that all students are always informed in the event of absence from class due to illness or any other reason. It frees students from the need to carry heavy textbooks and allows them to study at their own pace, whenever and wherever. By embracing cloud computing, districts and schools can save money on licensing, hardware, electricity, and support. Online versions of textbooks will also be available for schools, saving money and ensuring students are learning from the latest resources.

SIGNIFICANCE OF THE STUDY

- Present children with a fascinating situation that is both real and realistic.

- Provide learners with the foundations, but do so quickly.
- Motivate them to carry out their research.
- It's important to improve the sophisticated skills of students.
- Verify that they comprehend the subjects.
- Ensure that students think of novel ways to use everyday objects.
- Verify that pupils understand what they still need to study.
- Students' capacity for creativity and innovation shouldn't be evaluated.

LITERATURE REVIEW

The move towards sustainability is an important aspect of 21st century society, and the trend to use ICT to develop good teaching practices is moving education towards these principles of sustainability. Therefore, the challenge for college teachers is to integrate all of these aspects into the classroom. All of this will lead to the sustainable use of technology, improving the quality of education through good teaching practices, while promoting environmental awareness and the creation of sustainable spaces (Alonso-García et al., 2019). Given the increasing importance of team-based and school-based professional development in the educational use of ICT, the online tool, pICTos (Planning for ICT in School), has been developed to support elementary schools in developing a shared vision for ICT. By using this tool, schools gain insight into their educational vision of how education is related to the use of ICT. The school team is expected to go through five steps. Some of these steps will be followed by each teacher individually, while others will be worked on together with the entire school team (Alonso-García et al., 2019) (Albion et al., 2015).

More recently, learning through active interdependence has expanded to online collaboration and social learning. Researchers have found that course design has a significant impact on student satisfaction and performance. Students are more satisfied with courses that include a lot of individual reading and watching instructional videos, but students are more likely to complete courses with more collaborative learning (Sharples et al., 2015). Education is a very social activity and a quality education is traditionally associated with excellent teachers who have a very personal contact with students and technology. Information and Communication Technologies (ICT) have become an everyday entity in all aspects of life. The use of ICT has fundamentally changed the practices and procedures of almost all forms of activity in business and management. In education, ICTs are beginning to emerge, but the impact is not as widespread as in other areas. The use of ICT in education contributes to more student-centred

learning environments and often causes stress for some teachers and students. But as the world rapidly shifts to digital media and information, the integration of ICT into teaching practices has become increasingly important and will continue to grow and evolve in the 21st century (Alemu, 2015).

Increasingly fierce global competition and the rapid development of information technology are accelerating social change. Innovative approaches are used as an important tool to gain an edge in the race for economic profit and social well-being. Innovation can be created by individuals who are creative and able to think differently. Education systems assume new roles and responsibilities in response to these variables, and acquire new functions in response to new social and economic expectations. Establishing and maintaining an innovative system of education and training practices will support beneficial and stable development throughout the country (Güçlü Yılmaz, n.d.). Scaffolding is one of the increasingly popular teaching and learning methods. It's a way for a teacher to model or illustrate how to solve a problem, then step back and offer help when needed. The idea is that when students get the help they need to learn new things, they have a better chance of using those experiences successfully. A general model for understanding and describing scaffolding involves flexibility, ambiguity, and assignment of responsibility. Accidents are used to explain or support how experts affect learners. The selection and deployment of effective emergency response measures depends on knowing the current skill levels of learners (Rahmat et al., 2020).

To improve the reach and quality of teacher instruction, higher education leaders should promote the development of ICT-related skills that enable teachers to determine when, how and why technology is used in their practice. As the world becomes increasingly mobile, educators need to find ways to keep content relevant and content delivered; however, the integration of m-ICT, like any approach with the potential to transform teaching and learning, must first go through good practice to test (Biddix et al., 2016).

HYPOTHESES OF THE STUDY

1. There is no significant differences in skills using ICT in innovative educational practices by gender (male/female).
2. There is no significant difference in skills using ICT in innovative educational practices by School Type (Govt/Govt. Aided/Matric/CBSE)
3. There is no significant difference in skills using ICT in innovative educational practices by B.Ed. Qualified teachers (Yes/No)

4. There is no significant difference in skills using ICT in innovative educational practices by Teaching Experience (Fresher/Experienced)
5. There is no significant difference in skills using ICT in innovative educational practices by Major Subject (Computer/Non-Computer)
6. There is no significant difference in skills using ICT in innovative educational practices by Proficiency in Computers (Good/Average)
7. There is no significant difference in skills using ICT in innovative educational practices by using ICT as a tool (Often/Rarely)

METHODOLOGY

A review of the literature was carried out using the technique of "documentary analysis" to assess the links between the variables related to educational innovation and define the scope of educational methods. The relationship between innovative strategies and learning and teaching activities, teaching skills, educational environment, student assessment methods and the use of teaching resources, and the relationship of all this to variables individual, tries to understand by gathering in-depth information on the research topic. In order to identify different, common or different perceptions of the research topic, qualitative research methods were used. Therefore, a "survey" technique was chosen and teachers were given questionnaires to collect data to identify successful teaching practices that had a greater impact on the optimal teaching environment.

Location of the Study:

This study aimed to collect data on the use of innovative practices in teaching methods by primary school teachers using ICT in the district of Chennai and used a survey methodology.

Sample of the Study:

This study included 100 primary school teachers who adopted innovative practices and teaching methods of ICT in various schools in Chennai district. Draw samples using stratified random sampling.

Table 1.

Distributions of the Entire Sample

Sl.No.	Variable	Sub-samples	N
Entire Sample=100			
1	Gender	Male	12
		Female	78
2	Medium of Instruction	Tamil	16
		English	84
3	School Type	Govt	10
		Govt. Aided	17
		Matric	54
		CBSE	19
4	Whether Qualified B.Ed.	Yes	81
		No	19
5	Teaching Experience	Fresher	24
		Experienced	76
6	Major Subject	Computer	22
		Non-Computer	88
7	Proficiency In Computer	Good	84
		Average	26
8	Using ICT as a Tool	Often	71
		Rarely	29

Tool Used:

These data are needed to conduct research surveys. It must be removed using special tools or work equipment. The success of research largely depends on the correct choice of research tools. The instrument built is the scale of ICT in innovative teaching practices adopted by primary school teachers. The scale consists of 50 statements with the following responses on the 5-point Likert scale.

- a) Strongly Agree
- b) Agree
- c) Undecided
- d) Disagree
- e) Strongly Disagree

Statistical Techniques Used:

Researchers used the following statistical techniques to interpret data from 100 primary school teachers in various schools in Chennai district on the adoption of innovative practices and ICT in their teaching methods. The researchers used SPSS (Statistical Package for Social Sciences) software for the statistical analysis. T-test was performed on data

DELIMITATION OF THE STUDY

This study is limited to a random sample of 100 primary school teachers who have adopted innovative practices and ICT in their teaching methods in various schools in Chennai district. In addition, this study was limited to certain factors such as gender, language of instruction, type of school or bachelor's degree in education, teaching experience, major, computer literacy and use of ICT as a tool.

RELIABILITY & VALIDITY TESTING

The reliability of the scale developed for this study was tested using Cronbach's Alpha method, with acceptable scores being 0.7 and above. Due to the diversity of respondents, the scale designed for the study tested the impact of ICT on secondary education. The observed reliability score is 0.885. Therefore, it is reliable. The scale developed for this study was tested for validity by the square root of the values obtained from the reliability test using Cronbach's Alpha method, where the reliability score was 0.885. The square root of 0.885 is 0.9409 is of great importance.

ANALYSIS AND INTERPRETATION OF DATA

We reject the null hypothesis if the absolute value of the t-value is greater than the critical value which is >0.05 . The null hypothesis is not rejected if the absolute value of the t-value is smaller than the critical value which is <0.05 .

FINDINGS

- There is no significant differences in skills using ICT in innovative educational practices by gender (male/female).
- There is a significant difference in skills using ICT in innovative educational practices by School Type (Govt./Govt. Aided/Matric/CBSE)
- There is no significant difference in skills using ICT in innovative educational practices by B.Ed. Qualified teachers (Yes/No)
- There is no significant difference in skills using ICT in innovative educational practices by Teaching Experience (Fresher/Experienced)
- There is a significant difference in skills using ICT in innovative educational practices by Major Subject (Computer/Non-Computer)
- There is a significant difference in skills using ICT in innovative educational practices by Proficiency in Computers (Good/Average)
- There is a significant difference in skills using ICT in innovative educational practices by using ICT as a tool (Often/Rarely)

RECOMMENDATIONS

- This study clearly describes the creative teaching methods based on ICT adopted by primary school teachers. Blended learning is a collaborative learning strategy that should be applied in conjunction with online resources now accessible.
- Most government funded and assisted schools need to switch to smart classrooms.
- Teachers who are reluctant to use or utilize ICT in creative teaching practices need to be motivated to save time and hold students' attention. Schools should use cloud computing technology to save time and money in the use of ICT classroom resources.
- Building teachers' positive attitudes and confidence through smart classroom training helps them create engaging learning environments.

- They can see real scenes with abstract objects in virtual reality, which makes learning very attractive. Unique to virtual reality, the ability to observe and experience breathtaking places in the classroom motivates students.

CONCLUSION

As teachers, we have different ways of teaching students, and we need to adapt our methods and programs to the type of students in our school and the way they learn. Some learners prefer to learn orally, while others prefer to learn visually. Therefore, we need to adapt our teaching methods according to the learners' situation to improve the interactive classroom and create a better learning environment for young students according to their educational background. Since they are young learners, we must first understand their level of understanding and interest, and then determine what best practices will help maintain their understanding and interest once they reach their level of understanding and interest. None of these can be considered better than the other. There is no doubt that choosing the right teaching method is the key to ensuring successful learning in the classroom, as it will affect classroom outcomes. As a teacher, you need to choose the appropriate innovative teaching method. As a teacher, you can choose from a variety of teaching methods. It depends on the demographics of your students, the subjects you teach, and the intensity of your course at any given time.

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