



Role of ICT in Mathematics Teaching and Learning

Ambika Sharma

Assist. Professor,
Dept. of Mathematics,
Bhavan's Hazarimal Somani College, Mumbai, India

Abstract : The aim of this research article is to explore the advantages and disadvantages of using ICT in Teaching Mathematics as Mathematics, to most, is a complex and difficult subject. Author believes that use of ICT can make Mathematics teaching more interactive and interesting. The author aims to explain the impact of Information Communication Technology in Mathematics teaching and learning and Challenges faced by the teachers while using ICT.

Index Terms - ICT, ICT and Mathematics. Mathematics-ICT

I. INTRODUCTION

Mathematics, to most, is a complex and difficult subject. The tendency of most students is to consider the subject as one that is boring and financially useless, thus, creating lack of interest in the topics being discussed. This poses a great challenge for teachers and educators.

For long, the role of mathematics was limited to purely academic domain. Now, the role of Mathematics is not restricted to purely academic domain, It has entered the domain of Technology and Industry. New fields in Mathematics such as Operation Research, Control theory, Signal Processing and cryptography have been generated which need technology. Technology can change the nature of Mathematics education in two ways. The first is that, it can reduce the time taken to perform tedious paper-and-pencil computations, such as long division or constructions such as graphical representations. Second is the pedagogical idea that mathematics can be taught more effectively using ICT. For example, visual and contextual representations that might not otherwise be available can be included and teachers can use computer-based simulations to provide students with opportunities to work on problem situations that are difficult to experience without technology.

II. IMPACTS OF ICT ON MATHEMATICS LEARNING

Appropriate use of ICT allows learners to have the freedom of choice to decide their own time, place and pace to study.

ICTs have many features that can enhance student's learning if designed properly. Dynamic, graphical, numerical and visual technological applications provide new opportunities for teachers and students to interact, represent and explore mathematical concepts. For example, graphical aspects help students visualize two and three dimensional geometric figures. In dynamic, interactive geometry programs, students may directly manipulate figures that remain intact as they change shape in continuous fashion, allowing students to see intermediate states.

ICT helps to increase the critical thinking, analyzing skills, understanding and application skills of students. ICT helps to increase the critical thinking, analyzing skills, understanding and application skills of students.

III. CHALLENGES FACED BY THE TEACHERS WHILE USING ICT

- 3.1 Lack of appropriate infrastructure for enabling the use of ICT.
- 3.2 Lack of funds to make feasible investment in ICTs.
- 3.3 Lack of knowledge about ways to integrate ICT to enhance curriculum.
- 3.4 Lack of training for staff.
- 3.5 Lack of maintenance and support staff.

IV. Conclusion

There are many implications of using ICT in teaching Mathematics as it is exciting, enjoyable and productive to use computers in class. Students natural curiosity can be utilized to its fullest potential with the help of ICT application because they are keen to explore and discover. To sum up, great efforts are required to ensure that technology is as integral part of Mathematics teaching as it is to the world beyond the classroom, rather than amounting to a curricular add on.

REFERENCES

- [1] Adrian Oldknow, R. T. (2010). Teaching Mathematics Using ICT. UK: Bloomsbury Publishing Plc.
- [2] CTLI. (2007). Why should a teacher use technology in his or her mathematics classroom? . Texas: Center for Technology in Learning, SRI International.
- [3] Das, K. (2019, September). Role of ICT for better Mathematics Teaching. Shanlax International Journal of Education ,7(4),19-28. doi:http://dx.doi.org/10.34293/education.v7i4.641
- [4] Joshi, D. R. (2017, January). ICT Need,Influence of ICT in Mathematics Teaching. NTERNATIONAL JOURNAL FOR INNOVATIVE RESEARCH IN MULTIDISCIPLINARY FIELD , 3(1), 7-11.
- [5] Knights, A. O. (2013). Mathematics Education with Digital Technology. UK: Bloomsbury Publishing Plc.
- [6] Koshy, V., & Murray, J. T. (2011). Unlocking Mathematics Teaching. Taylor & Francis Group.
- [7] Wiest, L. R. (2001). The Role of Computers in Mathematics Teaching and Learning. Computers in School :Interdisciplinary Journal of Practice, Theory, and Applied Research, 17(1-2), 41-55.

