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Mathematics Education: Challenges and Opportunities

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Abstract: In this short communication, we discuss the recent challenges and opportunities in the field of Mathematics and mathematical sciences.

Mathematics Education is a process which involves teaching, learning, research or any other activity related to mathematics. Researchers in mathematics education develop the tools, methods , approaches that not only facilitate study of mathematics but they are useful to other fields of science, technology and life. At different times mathematics education has attempted to achieve different objectives. These objectives are as follows: (1)development of numerical skills, (2) framing of curriculum at primary, secondary & higher levels which includes syllabus , teaching plans, laboratory experiments, library containing texts, references, dictionaries, periodicals, journals, audio & video C.D.s etc. (2) usage of charts, graphs and equipments (3) teacher's knowledge of the subject and their training (4) proper communication, feedback and reinforcement (5)fostering independent and creative thinking (6) eradication of fear about the subject and building self confidence(7)familiarity with technical vocabulary and symbolism(8)to equip students of different ages with different areas of mathematics such as algebra, geometry, trigonometry, calculus and such other pure and applied branches of mathematics (9) to introduce axiomatic systems, deductive reasoning, contradiction deduction & induction methods of proofs etc. These objectives should help the students to acquire necessary skills. Methods of teaching mathematics have changed in line with changing objectives at different times.The processes teaching, learning and evaluation are integrated components at primary, secondary and higher levels of mathematics education.

Although mathematics education has expanded and has diverse applications in science, technology and other fields of life, even then issues of concerns or challenges and opportunities in mathematics education are quality, declining enrolment, drop-outs, shortage of teachers, red-tapism, syllabi at various levels, competition, assessment and accountability , ICT based teaching learning processes, abstract concepts, examination & evaluation, research projects, interdisciplinary learning & research, entrepreneurship skills, innovative practices, study tours, student support and progression, consultancy ,collaborations etc.

Quality in mathematics education is possible with effective support, participation and commitment of different stakeholders like Government, Management, Teachers, Parents, and Students etc. In mathematics education, we should create learner-friendly environment by enriching the learning resources and make learners primarily responsible for their choices. This will help to maximize teacher and student's productivity, knowledge acquisition, development of skills like creative thinking, analytical approach and logical thinking. In mathematics education we should develop procedures to keep pace with recent developments. We should develop appropriate continuous evaluation schedules and communicate in advance to learners. We should develop networking, collaborations with neighborhood, industry, colleges, government and non-governmental organizations to make the different educational services user friendly and

mutually beneficial. We should have ambitious schemes and programs for taking full advantage of information technology. Efforts should be made to capitalize the benefits and harvest newer possibilities of revitalizing and empowering universities and colleges through network ,
e-resources, online learning, archiving of contents etc. framing of curricula, usage of I.C.T., interactive teaching learning, problem solving sessions etc. will help in developing required abilities in students. Interdisciplinary approach in teaching learning, organization of seminars of students, assigning research projects to students along with guidance etc. will enhance interest and involvement of students in the subject. Visit to places related to mathematics education, guidance about career after mathematics education will ensure confidence among the students.

Indians have proved that they are one of intellectual powerful democratic nation of the world. But still our education system is not coping with the global moving trend. So we need to fulfill above-mentioned challenges and opportunities. In higher education we have competition with foreign universities. They are well equipped with IT facilities and equipments to woo our students. It is right time to do some research and development and establish system to empower our teachers and students for international competition.

References:

[1] Mathematics Education: Wikipedia.
[2] A Model Research Proposal by Prof. Dilip Barad from google on topic titled : ICT and Educational Community: Integrating ICT into Teaching and Learning process to Empower and develop proficiency of Teachers and students
[3] Goals for School Mathematics: The Report of the Cambridge Conference on School Mathematics 1963.