

Dr.T.P. Sarma

Associate Professor in Mathematics

Department of Education in Science and Mathematics

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Educational Qualification

M.Sc. , Ph.D. (Mathematics) from University of Delhi

Areas of Work

Mathematics Education at School level

Development of Teaching Materials, Teacher Training Material, Textual Material

Research: Primary Mathematics, Mathematics Education, Mathematics

Publications

1. Chaos in Restricted Three Body Problem, Proceeding of workshop of Celestial Mechanics and Space Dynamics(1996)
2. Hori's method to nonlinear coupled oscillators and application to restricted problem, Bull. Astro. Soc. India (1999) with Ayub Khan and L.M.Saha
3. Effect of solar radiation pressure and tidal forces on the rotational motion of satellite, Bull. Astro. Soc. India (2000) with Ayub Khan and L.M.Saha
4. Motion of an artificial satellite moving around the oblate earth under the influence of atmospheric drag, H.P. University(2003)
5. Hill's stability problem criteria in oblate restricted three body problem, Proc. Nat. Acad. Sci. India(2005) with Purnima Dixit and L.M.Saha
6. Lie technique in restricted three body problem, GanitSandesh(2005) with Ayub Khan and L.M.Saha

7. A study on students' performance on mathematics in relation to teaching technique, School Science(2005)
8. Non-resonant and resonant solutions using KBM technique, GanitSandesh(2007) with Ayub Khan and L.M.Saha
9. Learning from children some anecdotes from classroom, Mathematics Education –Expanding Vistas(2008)
10. A study of Mathematics Education in present scenario, “AnusandhanVatika, Vol.I, (2011)
11. Measuring Chaos in some discrete Non-linear system, International Journal of Engg. And Innovative technology, Vol. 2, Issue 5, (2012)
12. Effectiveness of teacher at Upper Primary Level, Journal of Teacher Education in Developing Nation, Vol. 3, No.5, (2012)
13. Activity based Methods in Teaching Mathematics, Proceeding of UGC sponsored Conference, (2012)
14. Assessment Concept and Strategies, School Science, Vol. 50, No.2 (2012)
15. Teaching number to Early Grade Children, Proceeding of National Conference, RIE, Mysore, 2015
16. Reflective and Activity Approaches of Teaching Mathematics, Proceeding of National Conference, RIE, Mysore, 2015, with Purnima Dixit
17. A Study of Relation and Function Proceeding of National Conference, RIE, Mysore, 2015, with Rahul Sofat
18. Enhancing Self Learning the Biggest Challenge in Mathematics, Proceeding of National Conference, RIE, Mysore, 2015, with Venika Krishan.
19. Complexity Analysis in Bouncing Ball Dynamical System, Cornell Univ. , Library, USA, 2016 with L.M.Saha and Purnima Dixit
20. Dynamic Lyapunov Indicator (DLI): A perfect indicator for Evolutionary System, 2016 with Nitesh Sahni and L.M.Saha

Papers Presented:

- (i) Presented a paper in the workshop on Celestial Mechanics and Space Dynamics held at BRA Bihar University, Muzaffarpur during 18th- 22 Sept. 1995.
- (ii) Presented a paper at Astronomical Society of India's meeting which was held at Raman Research Institute, Bangalore , during Feb. 1-4, 1999
- (iii) Presented a paper at Young Astronomer's Meet which was held at Uttar Pradesh State Observatory, Monora Peak, Nani Tal during June 1-3, 1999
- (iv) Presented a Paper on " National Conference of Mathematics and its applications to analysis" in the Himachal Pradesh University, Shimla during 7-9 November 2000
- (v) Presented a paper in ASI (Astronomical Society of India) Meeting at Gorakhpur University during 15-18 November 2000
- (vi) Presented a paper in the workshop on Celestial Mechanics and Dynamical System during October 4-13, 2001 at IUCAA(Inter University Centre for Astronomy and Astrophysics), Pune
- (vii) Delivered a talk on Nonlinear Dynamics and Chaos in the Shiraz University ,Shiraz,Iran during 1st - 5th Sept. 2003
- (vii) Presented a paper in the 16th Annual Conference of Rajasthan GanitaParishad at Govt. College, during 26-27 Feb. 2005
- (viii) Presented a paper entitled "Learning from Children – some anecdotes from the classroom " at Lady Sri Ram College for women, New Delhi during 8th –9th Feb. 2008
- (ix) Delivered Invited Talk on Indians Mathematicians at National Conference of Mathematical Modeling in Natural Sciences at Al-Falah School of Engg. And Technology on Aug.12, 2008
- (x) Delivered a Key Note Address on Making Mathematics Learning a Fun and Magic at Elementary Level on 24th Nov., 2009 at Don Bosco Institute, Kharguli Guwahati organized by SSA, Assam
- (xi) Presented a paper at NERIE, Shillong on Right to Education and its perspective (2011)

(xii) Presented a paper at HBCSE, Mumbai on Effectiveness of Training of Mathematics for Capacity Building of Teachers at Upper Primary Stage.(2012)

(xiii) Presented a paper entitled “Activity based Mathematics Teaching Mathematics : Present Scenario” , in National Conference at Ramgarha College of Education, Punjab, during 15-16 Feb., 2012

(xiv)Presented a paper at National Meet at NCERT entitled “ Issues and Challenges in Mathematics Assessment” during 20-22, December, (2012)

(xiv) Presented a paper at National Meet at NCERT entitled “Issues and Challenges in Mathematics Assessment” during 20-22 December, 2012

(xiv) Delivered a talk on Mathematics and how to use activity based teaching at Primary Level at Salwan School, Delhi on 16th May, 2013

(xv) Presented a paper at National Conference on Developing Mathematics Teacher for Quality Learning for all at R.I.E., Ajmer during 20-22 December, 2013

(xvi) Presented a paper at National Conference on Constructivist approach in teaching Mathematics at R.I.E., Bhopal during 20-22 December, 2014

(xvii) Delivered a Talk on “ Activity based Mathematics Teaching” at Queen Mary’s School, Model town, Delhi on 3rd November, 2015

(xvii) Presented a paper at National Conference on Teaching Number to Early Grade Children at R.I.E., Mysore during 21-22 December, 2015

(xviii) Presented a paper in National Seminar entitled “Chaotic Motion of Satellite in Solar System” at Sobhasaria Group of Institutions , Sikar, Rajasthan on 15th March, 2016

Research Study

(i) A Study of Students’ Performance in Mathematics Relation to Teaching Techniques (2004-05)

(ii) A Study on Classroom Transactions of Science and Mathematics Textbooks at Upper Primary, Secondary and Higher Secondary Stages in the Light of NCF-2005 (2008-09) (Project Team Member)

(iii) Evaluation Study of CLAPS of Andhra Pradesh(2009-11) (Project Team Member)

Acted as a Resource Person in the following programmes:

- (i) Training of KRPs in Teaching of Mathematics with Special Emphasis on Newly Introduced Topics at Sr. Sec. Level for Punjab and Srinagar at R.I.E., Ajmer during Sept. 27 to Oct. 01, 2004
- (ii) Training of Key Resource Persons in Teaching Mathematics at Sr. Sec. Level held at R.I.E. , Ajmer during Nov. 29- Dec.3, 2004
- (iii) Training of Key Resource Persons in Teaching Mathematics at Sr. Sec. Level held at S.I.E., Jammu during Dec. 13-17, 2004
- (iv) Training of Key Resource Persons in Teaching of Mathematics of Sr. Sec. Level held at R.I.E., Ajmer during Sept. 27- Oct.1, 2004
- (v) Training of Key Resource Persons in Establishment of Mathematics Laboratory at Sec. Level held at R.I.E., Ajmer during Jan. 4-6, 2006
- (vi) Training of Key Resource Persons on Value Education during 24-28 Dec., 2007
- (vii) Orientation of Master Resource Persons of NE States (Manipur) at DM College, Imphal during 3-4 Feb., 2008
- (viii) Orientation of Master Resource Persons of NE States (Meghalaya) at DERT, Shilling during 24-25 March, 2008
- (ix) Orientation of KRP's on Multilevel Teaching at RIE, Ajmer during 24-28 Nov. , 2008
- (x) Training of Head Master of Uttar Pradesh and Rajasthan at RIE, Ajmer during 5-6 Oct., 2009
- (xi) Training of Primary and Upper Primary Teachers at North Eastern region d at Guwahati during 25-28 Jan., 2010
- (xii) Orientation of Master Trainers at Secondary Level at DESM, NCERT, w.e.f. 13-17 Feb., 2012
- (xiii) Orientation on CCE of Meghalaya Teachers at NERIE, Shillong during 30th May to 1st June, 2012.
- (xiv) Haryana School Secondary Board for Selection of Material at Primary Level at Bhiwani on 13th May, 2013

(xv) Development of Lab Manual of Upper Primary Mathematics at SCERT, Gurgaon, Haryana on during 2-5 July, 2013

(xvi) Capacity Building Programme of DIET Faculty at RIE, Ajmer during 16-18 December, 2014

(xvii) Participated in the National Conference on Emerging Trends in Science and Mathematics Education in Delhi University during 18-19 Feb., 2016

Conference Attended/Participated:

(i) Participated in the 84th session of Indian Science Congress during 3-8 Jan., 1997 at University of Delhi, Delhi

(ii) Participated in the 25th Astronomical Society of India's Session which was held at Physical Research Laboratory, Ahmedabad during Nov.28th -1st Dec., 1997

(iii) Participated in the " International Instructional Workshop on Wavelets and Applications" , Organized by Deptt of Mathematics , Univ. of Delhi during Aug.16-27, 1999

(iv) Participated in the workshop of Mathematics (Hands on Geometry, Hyper cubes , Golden Section and Fractal)at India Habitat Centre, New Delhi during 10-12, 2002

(v) Attended Faculty Development Programme organized by Amity institute of Training and Development on 1st Feb., 2003

(vi) Attended an Orientation Programme on Population Education at RIE, Ajmer during 2003-04

(vii) Participated in the Orientation Programme to Provide Research Support for Conducting Research at RIE, Mysore during 16th – 20th January, 2007 conducted by DERPP, NCERT

(viii) Participated in group work in Orientation Programme for Master Trainer of KVS, NVS and CBSE affiliated independent schools on the use of New Textbook developed by NCERT for class II, IV and X Mathematics at RIE, Ajmer in Sept., 2007

(ix) Oriented in Curricular Reform at NIE campus, CIET, NCERT, New Delhi conducted by Curricular Group during June 28 to July 6 and October 24 to Nov.6, 2007

(x) Participated in the review workshop of Mathematics Textbook of Class VIII during 24th -27th

September 2007

(xi) Participated in the review workshop on syllabus conducted by Curriculum Group, NCERT, 5-6 Jan.

2008

(xii) Participated in Science and Mathematics Exhibition prepared by students of Rajasthan at Govt.

Jawahar Higher Secondary School, Kuchaman City, Rajasthan for State Level Science Exhibition

during 10-11 Jan. 2008

(xiii) Participated in the Development of Pedagogical Material for Class I and II Mathematics, 21-23

May 2008

(xiv) Participated in workshop of Laboratory Manual of Mathematics for Secondary Stage, 5-12 Aug.

2008

(xv) Participated in National Teleconference of Early Mathematics as Pena list on 15th October 2008

at IGNOU, MaidanGarhi, New Delhi

(xvi) Participated in National Resource Group (NRG) meeting under SSA organized by DEE, NCERT on

23rd October 2008

(xvii) The Learning Kits of Group Arithmetic were tried out at KV Primary School, NCERT Campus

during July-Aug. 2008

(xviii) Participated in National Conference on Assessment and Improvement of Science and

Mathematics Education, 13-14 Jan. 2009

(xix) Participated in Capacity Building Programme under TC Fund of SSA at Institute of Education, University of London during April 20th – May 1st , Cambridge University during 5th -8th May and National Foundation of Education Research, UK , during May 11th – 14th , 2009.

(xx) Participated in the training programme under SSA at Canada and USA (2010)

(xxi) Participated in the Capacity Building Programme of Programme Evaluation organized by DEE, NCERT during 8-12 August, 2011

(xxii) Participated in the Try Out of Mathematics Kit in the Project Schools of Group Arithmetic in Haryana, Uttarkhand and Chhatishgarh, 2011

(xxiii) Participated in the Orientation of NCERT Faculty in Field Work organized by DERPP, NCERT during 15-17 May, 2012

(xxiv) Participated in the Field Work of Teaching Mathematics at Sr.Sec. Stage at CTS, Herbertpur, Deharadun, 2012

(xxv) Participated in vetting of Tools of Classes I and II Mathematics at DEE, NCERT during 29-30 July, 2013

(xxvi) Participated in the Development of Teaching Material of Mathematics at Higher Secondary Stage during 11-12 March, 2014

(xxvii) Participated in the field work in Haryana Primary School during 20th November, 2013- 10th March, 2014

(xxviii) Participated in the Orientation –Cum-Refresher Course for the faculty of NCERT during 1st May- 26th May, 2014

(xxix) Participative in the National Consultative Seminar cum Workshop in Mathematics at CIE, Delhi University on 26th July, 2014

(xxx) Participated in the programme entitled “ Improvement of Science and Mathematics at Upper primary Stage” on 17th October, 2014

(xxxi) Participated in the National Conference on Emerging Trends in Science and mathematics Education at CIE, Delhi University during 18-19 February, 2016

Programme Coordinator of the following Programme

(i) Training of KRPs in Teaching Mathematics at Sr. Sec. Level for the state of Jammu & Kashmir during August 29 to September 2, 2005

(ii) Training of KRPs on Improvement of Content Competence in Mathematics at Sr. Secondary Level based on New Text Books during 7th – 11th November, 2005

(iii) Training Programme for KRPs in Teaching Mathematics at Sr. Sec. Level for the states of Jammu and Kashmir and Haryana during 13th – 17th November, 2006

(iv) The development of Teachers Training Package of Class I and II Mathematics during 26th -28th June 2008

(v) Review of the draft material of Teachers Training during 3rd – 5th October 2008

(vi) Review of Learning Material and User’s Manual during 13th -14th December 2008

- (v) Teachers Training Programme at Haridwar for Primary Teachers of Uttarakhand States during 3rd-5th January 2009
- (vi) Teachers Training Programme of Andhra Pradesh Teachers at NIE Campus during 16th-19th March 2009
- (vii) Advisory Committee Meeting of Group Arithmetic on 24th March 2009
- (viii) Workshop to simplify the language of Teachers Training Manual during 15th -16th April, 2009
- (ix) Workshop to simplify the language of Teachers Training Manual during 20th – 22nd May, 2009
- (x) Activity based Teaching of Mathematics at Upper Primary Level during 25-29 October, 2010
- (xi) Teacher Training Programme of Classes I and II Mathematics, 2011
- (xii) Orientation Programme of Upper Primary and Secondary Level Mathematics Training during 18-22 Feb., 2013
- (xiii) Activity based training of Mathematics during 10-13 June, 2014
- (xiv) Design and Development of Mathematics Kit for Higher Secondary Stage, 2014
- (xv) Development of Audio-Video Material for Activity in Mathematics at Upper Primary and Secondary Stages, 2015
- (xvi) Development of Hindi Version of Manual of Secondary Mathematics Kit, 2015

Teaching:

- (i) Taught B.Sc.-B.Ed. IV year Students at RIE, Ajmer from 3rd February 2004 to 20th September, 2007
- (ii) Taught at Amity School of Engg.& Technology (GGSIP Univ.) from Sept. 2002 to Nov. 2003
- (iii) Taught at BLS Institute of Management (GGSIP Univ.) from Aug. 2001 to April 2002
- (iv) Taught at National School of Egg. & Technology (UP Tech. Univ.) Jan. 2001 to March 2001

Innovation:

Member of Development Team of Early Primary Mathematics Learning Kits in Group Arithmetic,

DESM (2009-2011)

Member of Development Team of Higher Secondary Mathematics Kit, DEK (2013-2015)

Course Curriculum Development:

(i) Member of development Team of Teachers Training Manual of Class I and II Mathematics (2010)

(ii) Member of development Team of Exemplar Problem of class VI Mathematics (2010)

(iii) Member of development Team of Laboratory Manual in Mathematics at
Higher Secondary Stage(2010)

(iv) Member of development Team of Teacher Training Manual for Kasturba Gandhi Balika
Vidyalaya(2010)

(v) Member of Development Team of Laboratory Manual of Mathematics at Elementary Stage(2011)

(vi) Member of Development Team of Source Book of Mathematics (Class VI-VIII)(2013)