

Name: Ruchi verma

Designation: Professor (Chemistry), DESM, NIE, NCERT, New Delhi.

Area of Intesrest: Science Education, Chemistry Education, Art Integrated Learning

Educational Qualification: M.Sc. (chemistry), Ph.D(Chemistry), B.Ed.

Educational Awards:

- Merit position holder in the course of M.Sc.,
- Awards in 21st and 22nd AICEAVF and ICT Mela
- ❖ Jury appreciation award (2017)
- ❖ The Best Voice Over Artist (2017)
- ❖ The Best Script (2017)
- ❖ The Best Video at upper primary level (2018)
- Hindi Pakhawada : Hindi Kavita competition – First prize

Employment:

- Regional Institute of Education, NCERT, Ajmer;
- Programme, Planning and Monitoring Division, NCERT, New Delhi;
- Department of Education in Science and Mathematics (DESM), NIE, NCERT, New Delhi.

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Work Experience

She has been contributing in the area of Science education from last 22 years.

Teaching experience: Served at Regional Institute of Education, Ajmer for around five years (Teaching of Integrated B.Sc. B.Ed. and B.Ed. Courses)

Research:

About 21 years of Research experience in National Institutes /Universities

- PI/Co-PI for number of research projects in chemistry and science education and published number of Chapters / Research Papers in National and International Books/ Journals in Chemistry and Science Education.
- Participated in seminars and conferences conducted at national and international levels .
- Published several research papers in the field of science education and in the area of chemistry at International and National levels.

Review: (during last three years)

- Draft NEP and analysis of suggestions received upon it;
- Analysis of stakeholder's suggestions for rationalisation of syllabus (science, Chemistry).
- Reviewed research papers of various National and International Journals

Development of Teaching-Learning materials

Member of author's teams for various Textbooks and other Teaching-Learning Materials developed by NCERT in the areas of Chemistry , Science, Science education and Teacher training modules.

In the recent years, the major contribution as a Team member is for developing Learning Outcomes in Science (for Upper Primary and Secondary stages) & in Chemistry (for Higher Secondary stage), NISHTHA Training Package on pedagogy of Science and Art Integrated Learning for upper primary and Secondary stages(online and offline) , Alternative Academic Calendar during situation of pandemic ; development of Working Papers on Science Education and Environmental Education; Development of Tactile Kit in Science for Visually Impaired Students; an online course entitled Teaching of Science at Upper Primary Stage, developed for teachers teaching at middle level; Developed e-content in Science for classes VI,VII and VIII and Chemistry (Class XI & XII).

Her special contribution is towards preservation of our cultural heritage such as various art forms, traditional games & toys and various ancient practices which are struggling for their existence, by means of integrating such activities with learning science. In this manner, she is putting her efforts to make the process of learning science a joyful, interactive and child-centered endeavor. She initiated such integration by coordinating the task of publishing reference books entitled" Handbook on understanding science through games, toys fun activities and art forms at upper primary and secondary stages. "These

books are available online at NCERT website also. She has developed several audio-video programmes and e-content by integrating music, dance and drama with the concepts of science up to secondary stage. In this manner, she is addressing the issue of dissolving curricular boundaries. She is firm believer that knowledge is holistic and must be treated in this manner only. Subject boundaries are artificial and result of the formal system of education which a teacher needs to break by using innovative pedagogical practices and Novel experimentations. She is trying to revisit our ancient pedagogical practices to amalgamate these with 21st century skills.

She addressed as a Guest speaker at FM Radio Pink City on burning Issues of present Education System.

TRAINING/ CAPACITY BULDING PROGRAMMES

- Coordinator / resource person for conducting number of Training/ capacity building programmes organized in online and offline mode.
- Resource person for NISHTHA.
- Resource Person for various Regional Meets on dissemination on Learning Outcomes.

EXTENSION ACTIVITIES(during last three years)

One of the Team/ Committee Member for Evaluating and finalizing the projects submitted by children from different States for. 'Jawaharlal Nehru National Level Science, Mathematics and Environment Exhibition (JNNSMEE)' for children, State level Science, Mathematics and Environment Exhibition (SLSMEE) for children; Rashtriya Avishkar Abhiyan, popularization of science activities.

SOME MAJOR RESEARCH PUBLICATIONS (INTERNATIONAL/ NATIONAL)

- Lassaigne's tests for Nitrogen revisited, Co-authored by V.P. Gupta and R.K. Parashar Journal of Teaching and Research in Chemistry: An International Journal, Vol. II, No. 2, December 2004
- Training of KRPs in Preparation and Use of Low Cost TLM in Science: An Experience at RIE, Ajmer, Journal of School Science, Vol. XLIII, No. 4, December 2005
- खेल के देखो खेल के जानो आस पास को तुम पहचानो – Co-authored by Indu Kumar, Prathmik Shikshak, NCERT, January – 2006
- Hard Spots in Teaching Carbohydrate, Co-authored V.P. Gupta Journal of School Science, Vol. 44, No. 4, December 2006
- हरित रसायन: पर्यावरण शिक्षा की ओर कदम, पर्यावरण विमर्श , (RNI No. 61919/95), July – September 2007 , (Page No. 12-13)
- नई राष्ट्रीय पाठ्यचर्या एवं विज्ञान शिक्षक की भूमिका, भारतीय आधुनिक शिक्षा , NCERT, January-April, 2007
- Making Flower Extract Indicators : A novel way to enhance teaching of acid/base chemistry in Lower Secondary School Science , School Science Review (SSR), The ASE's Journal for Science Education (11-19), (ISSN 0036-6811), December 2008, Vol. 90, Number 331, Page No. 85-89, Published in UK
- Teaching of Inductive Effect: Solution to many Problems in Organic Chemistry School Science, (ISSN 0972-5060), December 2008, Volume 46, No. 4, Page No. 8-16

- Synthesis, Characterization and Biological Activities of copper(II) Complexes with semicarbazones and Thiosemicarbazones, *Journal of Chemical and Pharmaceutical Research*, Issue 4, Vol. 3, 2012 ; PP : 1612 – 1618, ISSN: 0975-7384, Elsevier Indexed for cosmos Impact Factor (Indexed in SCOPUS and CAS)
- Synthesis and Characterization of Cobalt (II) Complexes with Semicarbazones and Thiosemicarbazones based Ligands, *International Journal of Chemistry*, Issue 2, Vol. 1, 2012 ; PP : 216 – 222 ISSN: 2249-2119 .
- स्कूल चले हम- मेरी कलम से, , भारतीय आधुनिक शिक्षा , NCERT, July 2013, Page 69- 75, ISSN 0972-5636
- आशा आज भी नहीं आई , प्राथमिक शिक्षक, NCERT, October 2013, NCERT, ISSN 970-9312, page 86-90
- अंको की आपाधापी में सतत एवं व्यापक मूल्यांकन (सीसीई) की किरण, प्राथमिक शिक्षक, अप्रैल-जुलाई 2015, ISSN 970-9312
- विज्ञान शिक्षण में कला एवं सौंदर्य शास्त्र की भूमिका, प्राथमिक शिक्षक, NCERT, January 2014, ISSN 970-9312, page 5-10
- “Students involvement in learning science to break the constraints : A classroom experience” *School Science Review (The ASE’s Journal for science education(UK), vol. 96, No. 356, March 2015, page 36-42*
- Facilitating Teaching-Learning Practices in Science, *School Science : A Quarterly Journal*, December 2015, ISSN 0972-5060, Co-authored by Anjni Koul
- अंकों की आपाधापी में CCE की रोशन किरण, प्राथमिक शिक्षक, NCERT, April- July 2015, ISSN 970-9312, pp 45-50
- Synthesis, Characterisation and Biological Evaluation of Chromium (III) Complexes of Some Biologically Active Ligands, *International Journal of Engineering Technology, Management and Applied Sciences*, October 2016, ISSN 2349-4476,4, Issue 10, pp 140-147
- Facilitating Teaching Learning Practices in Science, *School Science-A Quarterly Journal of Science Education*, March 2016, 54(1), pp 29-34, NCERT, India coauthored by Koul Anjni
- Synthesis and spectral charactersation of Nickel(II) complexes with biologically active ligands, *International Journal of Engineering Technology, Management and Applied Sciences*, December 2016, ISSN 2394-3386
- Qualitative Analysis of Manganese(II) ions: Sensitive, Selective and Time Effective Method, *School science : A Quarterly Journal*, NCERT, December 2016, ISSN 0036-679X(print) 0972-5061(online), pp 5-7
- Synthesis and Characterization of Manganese(II) complexes with semicarbazide and thiosemicarbazide based ligands, *International Journal Of Pharmaceutical Sciences And Research IJPSR (March 2017), Vol. 8, Issue 3 , 1000-09, E-ISSN: 0975-8232; P-ISSN: 2320-5148*
- Synthesis and Characterisation of Manganese(II) complexes with Schiff’s Base ligands derived from semicarbazides and thio semicarbazides IJPSR, March 2017, Vol 8, Issue 3, pp1000-1009
- Integrated Approach of Learning : An Effective way to teach electrochemistry, Ruchi Verma and Haritma Chopra, *International Journal of Applied Research (IJAR) 2017; 3(8); pp 152-156; ISSN online : 2394-5869*

- Integration of Games and Art forms with Teaching-Learning of Science: A Novel way to learn science, BOOK : 2018,ISBN: 978-81-937186-0-5,Published by Regional Institute of Education, Ajmer, Pp 118-122,Science Education based on NSSE2017,
- विज्ञान-गीतः संगीत की शक्ति द्वारा विज्ञान का प्रभावी शिक्षण,प्राथमिक शिक्षक, NCERT, July 2018, pp30-34,ISSN 0970-9312
- Science Kits as a Resource: Issues and Challenges. Asia-Pacific Forum on Science Learning and Teaching, 2018, Volume 19, Issue 2, Article 6, coauthored by Anjni Kaul.