

Rani Prasad

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EDUCATION

Homi Bhabha Center for Science Education (HBCSE) - TIFR, Mumbai, India Pursuing PhD in Science Education (HBCSE Research Scholars)	August 2024 (Ongoing)
School of Education, Tata Institute of Social Sciences (TISS), Mumbai, India Master of Arts in Education (Elementary)	July 2022 - May 2024
<ul style="list-style-type: none">GPA: 8.3/10.0Dissertation: Diagnosing and Remediating Elementary students' misconceptions about 'Growth of Plants' through Drawing.Advisor: Dr. Rafikh Shaikh (TISS) and Dr. Narendra Deshmukh (HBCSE)	
Pillai College of Education and Research (PCER), Mumbai, India Bachelor of Education (Science and Mathematics Education)	November 2020 - May 2022
<ul style="list-style-type: none">GPA: 9.1/10.0Dissertation: A study to understand the perspective of B.Ed. students with respect to feminism.Advisor: Dr. Rajendra Deshmukh (PCER)	
Ramnarain Ruia Autonomous College, Mumbai, India Master of Science in Life Science (Biotechnology)	July 2018 - October 2020
<ul style="list-style-type: none">GPA: 9.69/10.00Dissertation: Purification, Biochemical, Biophysical characterization and Crystallization of cell division protein FtsZ from <i>Bacillus subtilis</i>.Advisor: Dr. Gagan Deep Gupta (BARC) and Mrs. Shweta Kumari (BARC)	
Ramnarain Ruia Autonomous College, Mumbai, India Bachelor of Science in Life Science	July 2015 - May 2018
<ul style="list-style-type: none">GPA: 6.83/7.00Project: Growth curve of <i>Escherichia coli</i>.Advisor: Dr. Kanchan Chitnis	
Atomic Energy Junior College, Mumbai, India HSC, Central Board of Secondary Education (CBSE)	July 2013 - May 2015
<ul style="list-style-type: none">Percentage: 86.77%	
Atomic Energy Central School - 1, Mumbai, India SSC, Maharashtra State Board of Secondary & Higher Secondary Education	July 2012 - May 2013
<ul style="list-style-type: none">GPA: 10.0/10.0	

EXPERIENCE

Education Research Experience

Senior Research Associate, Centre of Excellence in Teacher Education (CETE), TISS, Mumbai, India in collaboration with SCERT Telangana June 2023 – December 2023

Interactive Flat Panel (IFP) Project

Project In-charge: Dr. Rafikh Shaikh (TISS).

- Formulated design principles for biological sciences to curate open educational resources.
- Curated and created OERs aligned with the Biological Science curriculum of secondary students in grades 8 to 10.
- Designed lesson plans and wrap-arounds using the COOL-OER framework, ensuring they aligned with SCERT Telangana guidelines and adhered to the required syllabus.
- Adapted curated resources to create interactive and engaging content, enhancing students' learning experiences.

Teaching Experience

Guest lecturer, CETE, TISS, Mumbai, India

29 July, 19 August, and 10 October 2025

- Delivered three (two offline and one online) 2-hour sessions on Curriculum and School to final-year B.Ed-M.Ed and M.A. Education students (class of 72 students).
- Covered topics including curriculum, syllabus, textbooks, learning objectives, and case studies from government schools.

Adjunct Biology Professor, Ramnivas Ruia Junior College, Mumbai, India

November 2021 – April 2022
& October 2022 - April 2023

- Taught lectures and practicals in Botany and zoology, averaging 80 students per class comprising six divisions of 11th and 12th standard each.
- Developed projects, question papers, quizzes, exams, and homework for students.
- Coordinated grading and laboratory work with a team of 2-3 teaching and laboratory assistants.
- Coordinated and organized science exhibitions for students, assisted them in designing and modifying their exhibition projects, and preparing effective presentations.

INTERNSHIP

CETE, School of Education, TISS, Mumbai, India

June 2024 – March 2025

Odisha and Bhutan government leadership program

Project Incharge: Dr. Gomathi Jatin

- Worked as a co-facilitator and mentored student volunteers for the programs.
- Organized school and educational office visits for participants in the programs.
- Authored program reports.

HBCSE - TIFR, Mumbai, India

October 2023 – March 2024

Science Education Research Intern

Guides: Dr. Rafikh Shaikh (TISS), Dr. Narendra Deshmukh (HBCSE) and Mrs. Ujwala Baba Kadam (BMC)

- Conducted sessions at Govandi Station BMC Hindi Medium School to diagnose and address misconceptions about plant growth among 51 students in grades 3 and 5.
- Organized a contest on “Innovation in Teaching and Learning Practices in Science and Mathematics Education” for B.Ed. and D.Ed. students on National Science Day, 28 February 2024.
- Co-organized the Homi Bhabha Young Scientist Enrichment Camp-2024 and served as a resource person for sessions on chloroplasts, graph interpretation, and microscope use for grades 6 and 9.

Shiv Shikshan Sanstha School, Mumbai, India

September 2021 - January 2022

Science Teacher

Guides: Ms. Achala Bhor (PCER) and Mrs. Anupama (Shiv Shikshan Sanstha School)

- Taught Science to Grade 6th to 8th students, with 30 students per class, covering topics such as 'Parts of Flowers, Pollination, Current Electricity, and Magnetism' (ICSE Board till 8th and Maharashtra State Board till 10th).
- Used macro-lesson and Nai Talim teaching methods to enhance student engagement.
- Developed and conducted online assessments to assess student understanding post-sessions.

AWARDS & SCHOLARSHIP

Awarded a certificate of merit on delivering the most effective lesson in B.Ed.
Reached University Finals at the Avishkar Research Convention.
Received DST-INSPIRE scholarship in HSC to pursue B.Sc. & M.Sc.

January 2022

January 2020

May 2015

PUBLICATIONS

Research Papers

3. **Prasad, R.**, Deshmukh, N., & Shaikh, R. (2025). *Diagnosing and remediating elementary students' misconceptions about the 'Growth of Plants.'* *The Asian Journal of Biology Education*, 17, 2–14.
https://doi.org/10.57443/ajbe.17.0_2
2. Jatin, G., **Prasad, R.** (2025). *Culturally responsive classroom management self-efficacy of teacher candidates.* *National Journal of Education*, 23(1), 54-77. Full article.
1. Patkar, M.S., **Prasad, R.R.**, Rahate, K.S., Shetye, P.A., Sinha, R.A., & Chitnis, K.S. (2020). *Extraction and Characterization of Starch from Tubers and its Application as Bioplastic.* *World Journal of Environmental Biosciences*, 9(3), 1-5. Full article.

CONFERENCE PROCEEDINGS

Papers Presented

7. Shaikh, R., **Prasad, R.** Kadam, S., & Singh, A., Co-creation Under Command: Power, Participation, and Digital Mediation in Multi-Institutional Collaboration, *International Conference on Technology 4 Education (T4E 2025)*, IIT Madras, India, December 2025.
6. Shaikh, R., Sharma, R., Singh, A., Das, Mukesh K., Kadam, S., & **Prasad, R.** Learning of Socio-scientific Issues through a Design-Based Critical Pedagogy Module, *European Science Education Research Association (ESERA 2025)*, Copenhagen, Denmark, August 2025.
5. **Prasad, R.**, Kadam, S., & Shaikh, R. Status Of Open Education Resources Suitable For Indian Context: Case Of Biology Subject Resources, *International Conference on Technology 4 Education (T4E 2024)*, IIT Gandhinagar, India, December 2024.
4. **Prasad, R.**, & Deshmukh, D. N. Navigating ethical consideration within evolving educational technologies: Framework for higher education in India, *XXI The International Organization for Science and Technology Education (IOSTE)*, November 2024.
3. **Prasad, R.**, & Deshmukh, D. N. Diagnosing and remediating elementary students' misconceptions about the 'Growth of Plants' through drawing: Unveiling misconceptions using drawing and crafting solutions for conceptual change, *The 29th Biennial Conference of Asian Association for Biology Education*, October 2024.
2. **Prasad, R.**, & Deshmukh, D. N. Conceptual Change: Remedying Misconceptions and Fostering Creativity and Critical Thinking in Holistic Educational Environments, *International Conference on Envisioning Industry 5.0: A Holistic Learning Environment*, Navi-Mumbai, India, June 2024.
1. Deshmukh, D. N., Kathle, S. & **Prasad, R.** Community Participation in Creating Awareness Towards the Latest Innovations in the Science and Mathematics Education Domains, *National Conference on Exploring Interdisciplinary Frontiers: Challenges and Opportunities*, IGNOU, Delhi, April 2024.

Posters Presented

3. Shaikh, R., Sharma, R., Kadam, S., **Prasad, R.**, Singh, A., & Das, M. Facilitating Learning of Socio-scientific Issues through An Adaptive Critical Pedagogy Module, *International Society of the Learning Sciences (ISLS) Annual Meeting 2025*, University of Helsinki, Helsinki, Finland, June 2025.
<https://doi.org/10.22318/icls2025.542526>
2. Deshmukh, D. N., & **Prasad, R.** Exploration of Chloroplast Localisation in Plant Anatomy Through Hands-On Microscopy Sessions with Secondary Students, *EpiSTEME 10 conference*, HBCSE, Mumbai, India, January 2025. Extended Abstracts.

1. **Prasad, R.**, Sharma, A., Kadam, S. & Mulla, S., Telangana IFP OER Curation Project at *Edtech talk – 6 titled “AI is for Everyone in the Era of AI”*, TISS, Mumbai, India, December 2023.

Reviewing Activities

1. EdTech Society Conference on Technology for Education (T4E) 2025, IIT Madras, India; and T4E 2024, IIT Gandhinagar, India.
2. International Society of the Learning Sciences (ISLS) Annual Meeting 2025, University of Helsinki, Finland.

STUDENT MENTORING

CETE, School of Education, TISS, Mumbai, India August 2024 (Ongoing)

- **Onkar Patil** MA Education, Second Year (current)
- **Tanya Kumari** B.Ed.-M.Ed. Integrated, Second Year (current)

University of Washington, Seattle, U.S.A Nov 2025 (Ongoing)

- **Hyeonah Kim** MS, Learning Sciences and Human Development, Second Year (current)

University of Sarawak Malaysia (UNIMAS), Sarawak, Malaysia Nov 2025 (Ongoing)

- **Gwen Chopard** Master of Education in Learning Sciences, First Year (current)

VOLUNTEERING

HBCSE, Mumbai January 2025

Rapporteur and Volunteer, epiSTEME 10 conference

- Served as a rapporteur and volunteer at the epiSTEME 10 conference, contributing to session documentation and ensuring the smooth conduct of all sessions.

School of Education, TISS, Mumbai and University of San Diego January 2024

Program Helper, School of Leadership and Educational Sciences study abroad program.

- Assisted San Diego's Master and PhD students during their school visits in Mumbai.
- Provided guidance and support to students in preparing their assignments based on insights gained during school visits.
- Collaborated with them in presenting the assignments during the presentation sessions.
- Assisted in facilitating discussions and reflections to help students connect their experiences with academic objectives.

Teach for India August 2021 – November 2021

Literacy Educator

- Provided literacy instruction to four underprivileged fifth-grade girls through an online platform.
- Designed and implemented tailored lesson plans focused on enhancing reading comprehension and fluency.
- Conducted English reading fluency assessments to track progress and adjust teaching strategies accordingly.

PROFESSIONAL AFFILIATIONS & LEADERSHIP ROLES

International Society of the Learning Sciences (ISLS) July 2025 - 2026

Asia-Pacific Representative, International Learning Sciences Student Association (ILSSA), Technology Committee

- Represent the Asia-Pacific region in ILSSA, contributing to technology-related initiatives.
- Participate in community building for the Asia Pacific Science Education Network.
- Organize academic and professional events to strengthen collaboration in the region.

PROJECTS

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| School of Education, TISS, Mumbai, India - During MA in Education (Elementary). | August 2023 - October 2023 |
| <ul style="list-style-type: none">Conducted research on the topic 'Feedback and Inclusion: Catalysts for Effective Evaluation' at Atomic Energy Central School-1, Anushaktinagar, Mumbai, India. | |
| Ramnarain Ruia Autonomous College, Mumbai, India - During M.Sc. | October 2019 - January 2020 |
| <ul style="list-style-type: none">Extracted starch from potato, sweet potato, and tapioca for practical applications. Used the extracted starch to produce bioplastics and pharmaceutical tablets. | |
| Ramnarain Ruia Autonomous College, Mumbai, India - During B.Sc. | April 2015 - January 2018 |
| <ul style="list-style-type: none">Investigated the diauxic growth curve of <i>Escherichia coli</i> under varying nutrient conditions.Conducted behavioral studies on the snail (<i>Achatina fulica</i>), focusing on environmental responses.Analyzed the effects of different solvents on the viability and germination (rate) of pollen grains from flowers, including <i>Peltophorum pterocarpum</i> and <i>Calotropis</i>. | |

WORKSHOPS ATTENDED

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| • Gestures and Role-plays Based Embodied Intervention for Teaching Science at <i>University of Helsinki, Helsinki, Finland</i> . | June 10, 2025 |
| • RACHANA Fellowship Winter School at <i>CETE, TISS, Mumbai, India</i> .
- Assisted in coordinating school visits and supported resource persons during pedagogy of science sessions. | December, 2024 |
| • RACHANA Fellowship Winter School at <i>CETE, TISS, Mumbai, India</i> .
- Resource Person for the session ICT (Biological Sciences). | November, 2023 |
| • Policy workshop on "NEP 2020 and the Agenda of Higher Education Expansion" at <i>IIT Bombay, Mumbai, India</i> . | May 3-4, 2023 |
| • Biology Practical Workshop at <i>K.J. Somaiya College, Vidyavihar, Mumbai, India</i> . | April 26, 2023 |
| • Nano- and Biotechnology course organized by Harrisburg University at <i>Ramnarain Ruia Autonomous College, Mumbai, India</i> . | July 10-11, 2017 |
| • Design and Technology Education Workshop at <i>HBCSE, TIFR, Mumbai, India</i> . | May, 2009 |

CERTIFICATIONS

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- **Portrait Painting Course** (Offline, part-time), September 2025 – February 2026, JJ School of Arts, Mumbai, India.
 - **Short term course on Research Methodology** (Online), May 20–26, 2024, Centre for Teaching Learning and Virtual Skilling (CTLVS), Indian Institute of Technology (IIT) Kharagpur, India.
 - **Interactive Science Teaching (S03b)** (Online), Grade A+, April - June, 2023, Reflective Teaching with ICT (Courses for Teachers), CETE, TISS, Mumbai, India.
 - **Experiential Learning Course** (Online), March, 2022, Diksha application.
 - **Udemy and Coursera courses:**
 - DNA Damage and Repair (Udemy)
 - Introduction to Psychology (Coursera)
 - From Disease to Genes and Back (Coursera)
 - Introduction to Molecular Spectroscopy (Coursera)
 - Introduction to Algae (Coursera)
 - Python for Genomic Data Science (Coursera)
 - First Step Korean (Coursera)
 - Drug Discovery (Coursera)

ACHIEVEMENTS

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| • UGC NET (Education) for Assistant Professor. | June 19, 2023 |
| • CTET Paper I and II , 72% and 71.33% respectively. | January 13, 2023 |

- **MAHA-TAIT**, 114/200 marks.
- **GATE - Biotechnology**. Certificate valid until 2025.
- **TIFR/JGEEBILS**. Certificate valid until 2022.
- **PET, Life Science**, 69/100 marks. Certificate valid until April 30, 2024.

February 24, 2023
 February 12, 2022
 March 7, 2021
 March 27, 2021

SKILLS & PROFICIENCIES

Teaching Skills

- Ability to create an effective teaching method for learners.
- Excellent communication skills and the ability to connect effortlessly with learners.
- Ability to work with learners of different aptitudes and skills.
- Expertise in taking online and offline assessments.
- A keen interest in continuous learning and adapting.

Science Practical Skills

- Chromatography techniques including:
 - Low-pressure Liquid Chromatography (LPLC).
 - Fast Protein Liquid Chromatography (FPLC).
 - Immobilized metal affinity chromatography (IMAC).
 - Ion Exchange Chromatography (IEX)
- Dynamic Light Scattering and Circular Dichroism.
- Protein concentration using Desalting Column method.
- Crystallization of protein using hanging drop method.

Languages

- Hindi (Fluent), Magahi (Fluent), English (Fluent), Marathi (Conversational).

Programming Languages

- Python, LaTeX, and HTML.

HOBBIES

Painting
 Calligraphy

Gardening
 Reading books