LUMSx

MASTERING SCIENCE COMMUNICATION

Lala Rukh Fazal-Ur-Rahman

LUMSx is the center for online learning and professional development at LUMS. We extend LUMS' excellence in teaching and research beyond its borders by leveraging technology and innovative pedagogy. Our courses aim to bridge critical knowledge & skill gaps for Pakistani learners and to meet their diverse learning needs, we offer **Massive Open Online Courses** (MOOCs), **Hybrid Courses**, **Synchronous (Live) Courses**, and **Free Open Online Courses** (OpenCourseWare). We intend to harness technology for enhancing access, improving educational quality, and amplifying education's impact.

Course Format: Hybrid
Language: English, Urdu

Starting Date: 14 September, 2024
Registration Deadline: 10 September, 2024
Duration: 2 days (10 hours)

Price: PKR. 8,000

ABOUT THIS COURSE

This impactful 2-day online workshop is designed to empower primary and middle school teachers with crucial science communication skills and inquiry-based teaching strategies. Participants will master the art of effectively conveying scientific concepts and captivating students through engaging in hands-on activities using everyday materials. Additionally, the workshop will introduce the concept of science capital, equipping teachers to cultivate a lasting enthusiasm for science among their students.

This course is designed for educators across primary, middle, and secondary schools, as well as individuals interested in enhancing their science communication skills, including private tutors. Participants are expected to have a basic understanding of educational principles, but no specific prerequisites in science or teaching experience are required. The content is tailored to equip participants with effective strategies for integrating hands-on, inquiry-based STEM activities into their teaching practices, fostering engagement and enhancing scientific literacy among students of diverse backgrounds.

WHAT WILL YOU LEARN

By the end of this course students should be able to:

1. Facilitate Science Inquiry
2. Communicate Scientific Concepts Effectively
3. Create Dynamic Science Activities
4. Apply Science Capital Concepts
5. Foster Critical Thinking and Problem-Solving Skills
6. Enhance STEM Learning Through Technology
7. Promote Collaborative Learning:

MEET YOUR INSTRUCTOR

Course Instructor

Lala Rukh Fazal-Ur-Rahman

CEO and Co-Founder, Science Fuse

Lala Rukh is a distinguished science communicator and STEM engagement curator with over eleven years of experience in promoting scientific literacy. As the Founder and CEO of Science Fuse, she leads a pioneering social enterprise focused on developing innovative science educational programs & resources across Pakistan. Her work at Science Fuse aims to make STEM education accessible and engaging for children, teachers, and communities from diverse backgrounds, including girls, students with disabilities, and marginalised groups.

Lala's career includes impactful roles at renowned institutions such as the Science Museum in London and Forskerfabrikken in Norway, where she honed her skills in science communication and STEM educational outreach. She is recognized for curating and delivering compelling science engagements, including presentations at esteemed venues like the Royal Institution, known for hosting leading scientists such as Michael Faraday & Carl Sagan.

Lala's dedication to promoting scientific literacy has garnered her prestigious accolades, including recognition as a Malala Fund Education Champion (2020), a Pakistan Acumen Fellow (2018), and an Ashoka Changemaker Exchange Fellow (2019). Her leadership and commitment continue to inspire and empower communities to embrace STEM education as a pathway to knowledge and opportunity.

COURSE OUTLINE

Saturday, 14 Sep, 10:00am - 3:00pm

Session 1	**Agenda:** **Ice Breaking Activity: The Weather Check-In** Participants share their current feelings using weather-related analogies, fostering a warm and inclusive environment conducive to learning. **Ice Breaking Activity: Guess My Birthday** A fun math game that teaches addition and subtraction concepts, exemplifying a playful approach to math education through interactive gameplay. **Why Teach Science?** Participants reflect on the fundamental reasons for teaching science, exploring its role in fostering critical thinking, curiosity, and informed citizenship. **Introduction to Science Capital & 8 Dimensions of Science Capital** Introduces the concept of science capital, helping educators understand how students' engagement with science is shaped by their personal, social, and cultural experiences. **Making & Presenting Science Capital Maps** Participants create and present maps of their personal science experiences, highlighting how backgrounds shape engagement with science and promoting inclusivity in science education. **Introduction to Science Inquiry** Introduces the principles and types of science inquiry, preparing educators to foster curiosity and critical thinking in the classroom through effective inquiry questions. **Making Instant Ice Cream with Gul Rukh** Participants conduct a hands-on experiment using everyday kitchen materials to create instant ice cream, demonstrating how relatable experiments can enhance understanding of scientific methods. **How to Convert a Demonstration into an Inquiry: The Eggstreme Engineering Challenge** Engages participants in testing the strength of raw eggs, exploring how to transition a demonstration into a scientific investigation and identifying related scientific topics and learning outcomes.

COURSE OUTLINE

Sunday, 15 Sep, 10:00am - 3:00pm

Session 2

Agenda:

Mystery Boxes - Design A Science Inquiry Lesson
Participants collaboratively plan science inquiry lessons using limited resources, enhancing their ability to design effective and engaging science lessons while developing teamwork and communication skills.

Science Capital Engagement Tools
Introduces participants to the Science Capital Engagement Reflection Tool to help teachers integrate science capital principles into their teaching practices, promoting inclusive and engaging science lessons.

Personalising & Localising Astronomy with Kainaat Kids Series
Demonstrates how localized astronomy-themed educational content can enhance student engagement with science by integrating science capital principles through guided discussions and video analysis.

Using the Hook, Inform, Enable, Extend Tool to Design Impactful STEM Engagements in a Classroom
Teaches participants to apply the HIEE framework in lesson planning to create engaging, effective science lessons that capture students' attention and deepen their understanding of STEM subjects.

Design an HIEE Activity & Present It in Plenary
Provides participants with practical experience in applying the HIEE framework to design and present effective science lessons, fostering active learning and critical thinking.

Ideas for Extending the Experience
Empowers teachers with follow-up activities inspired by the workshop to foster engaging, hands-on science experiences for students, promoting reflective teaching practices and community engagement.

Feedback Form and Check-out
Allows participants to reflect on their learning experience and express their thoughts or feelings succinctly, concluding the workshop on an engaging note.

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ENROLL NOW

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