SEAMEO CENTRES POLICY RESEARCH NETWORK (CPRN) SUMMIT 2025

Building Bridges to a Sustainable Future: Inclusive Collaboration and Innovation in Education, Science, and Culture

SciConnect: Empowering Primary Educators in Southeast Asia with Science Communication Strategies for Enhancing Science Education

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Introduction

- Science Communication uses various methods to make science more accessible, engaging, and meaningful.
- In primary education, it helps simplifying complex concepts and sparking curiosity among young learners.
- Teachers play a crucial role as science communicators.
- The way science is presented impacts student interest.

Background and Rationale

- Declining STEM engagement among students.
- Teachers face difficulties in effectively communicating science.
- Lack of training in science communication strategies.

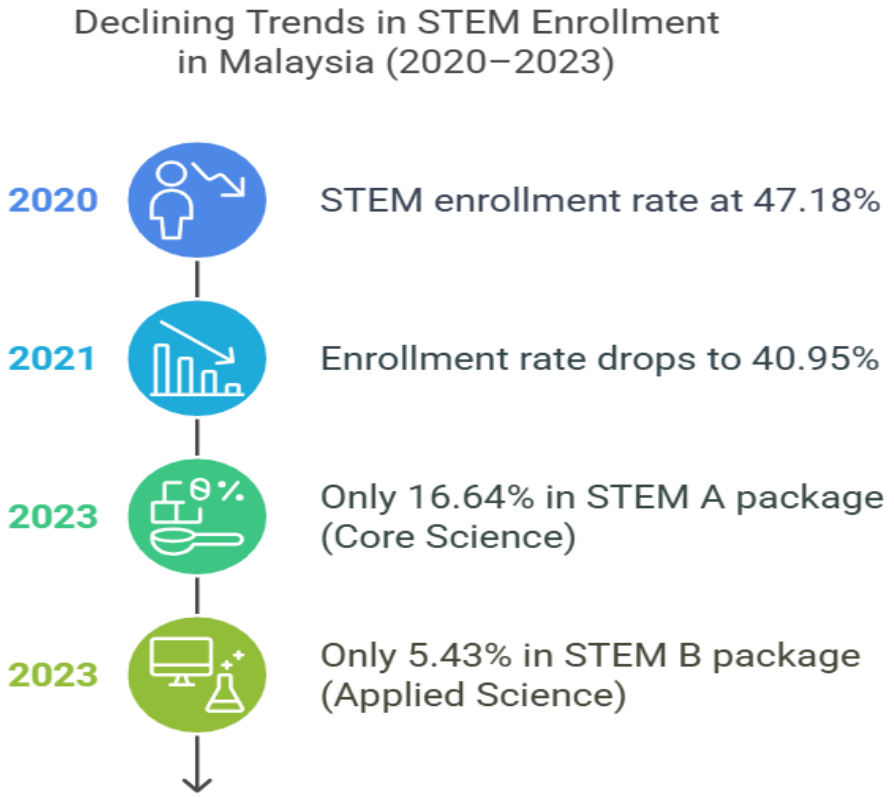


Figure 1: Declining Trends in STEM Enrolment in Malaysia (2020–2023) - *Source: Bernama, 2021; Idris et al., 2024; Malay Mail, 2024*

Research Questions

- What are the key challenges primary educators face in effectively communicating science?
- How can structured training improve educators' science communication competencies?
- What is the impact of the SciConnect module on educators' classroom practices?

Methodology

- Framework: ADDIE Model (Analysis, Design, Development, Implementation, Evaluation)

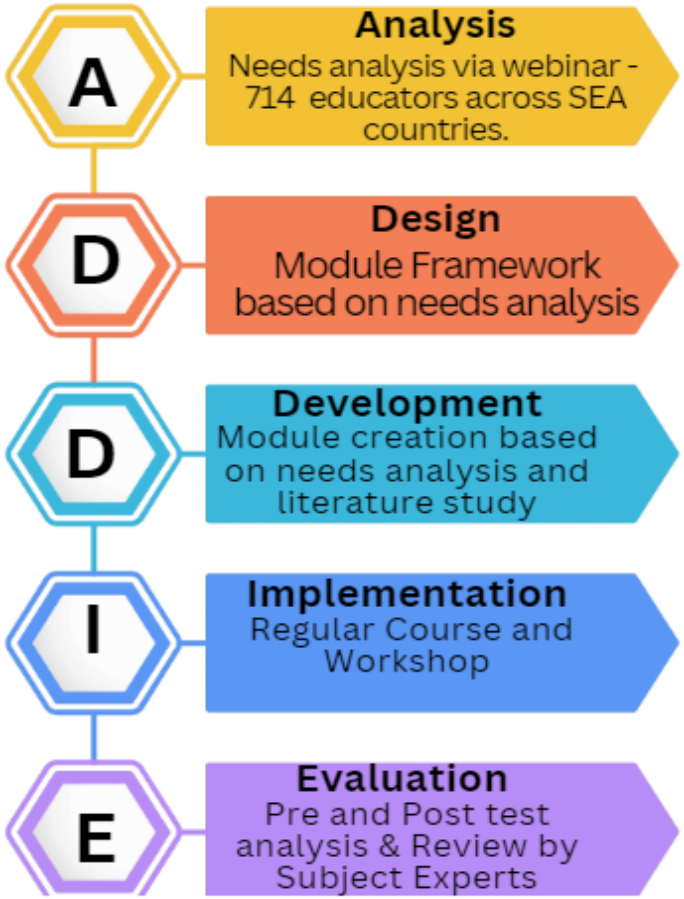


Figure 2: Flowchart of the Research Methodology based on the ADDIE Model – Branch (2009)

Needs Analysis

- Participated by 714 educators from 9 Southeast Asian countries.
- Collected data on challenges in science communication
- Explored training needs and preferred support mechanisms.

Findings of Need Analysis

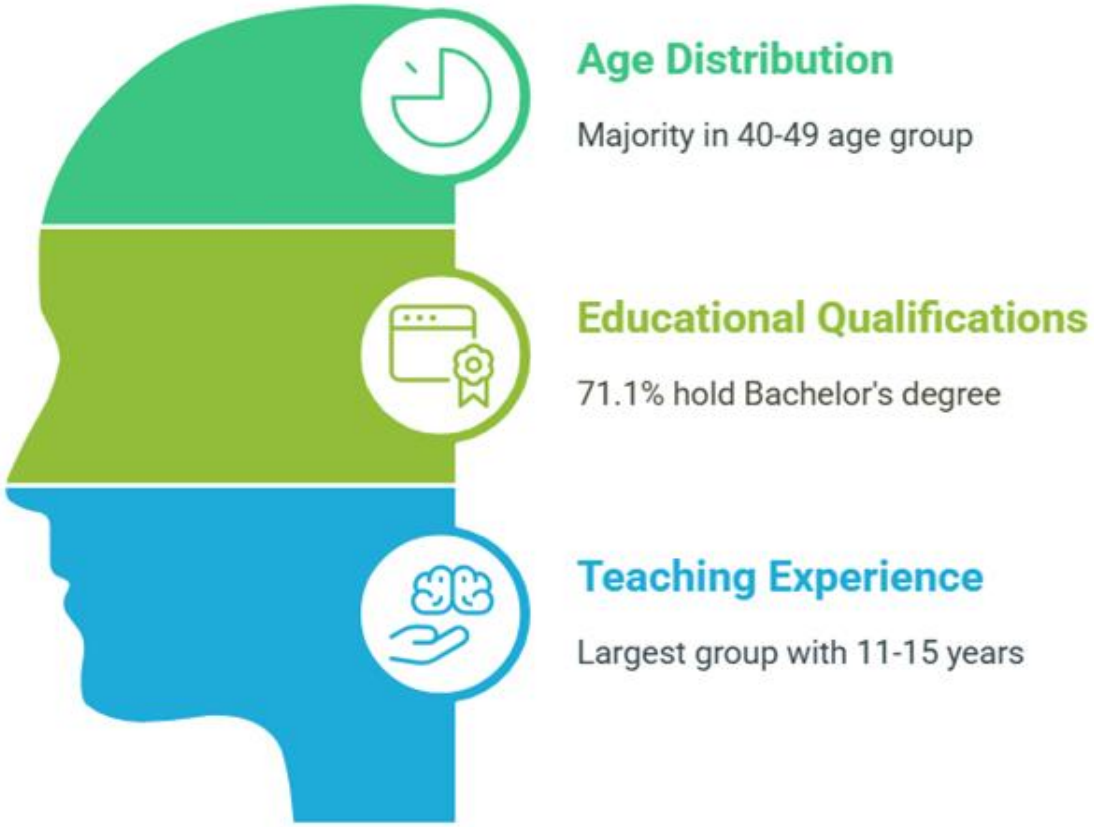


Figure 3. Demographic summary of Southeast Asian (SEA) educators who participated in the needs analysis.

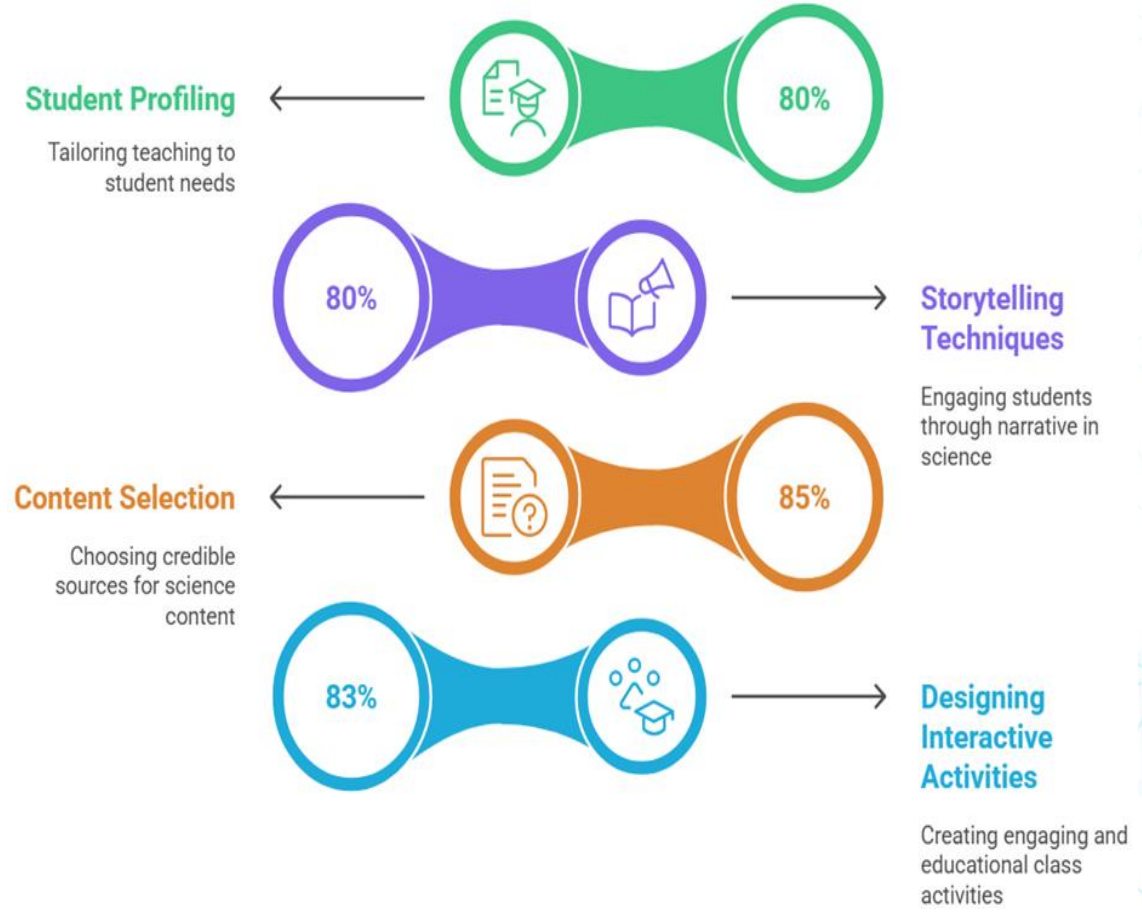


Figure 4. Challenges Faced by SEA Educators in Effectively Communicating Science Concepts

Findings of Need Analysis

Figure 5: SEA country educators' perspective on importance of Science Communication

Design & Development of Science Communication Module

- SciConnect: Bridging Science and Primary Education through Effective Science Communication

- Reviewed by five subject-matter experts

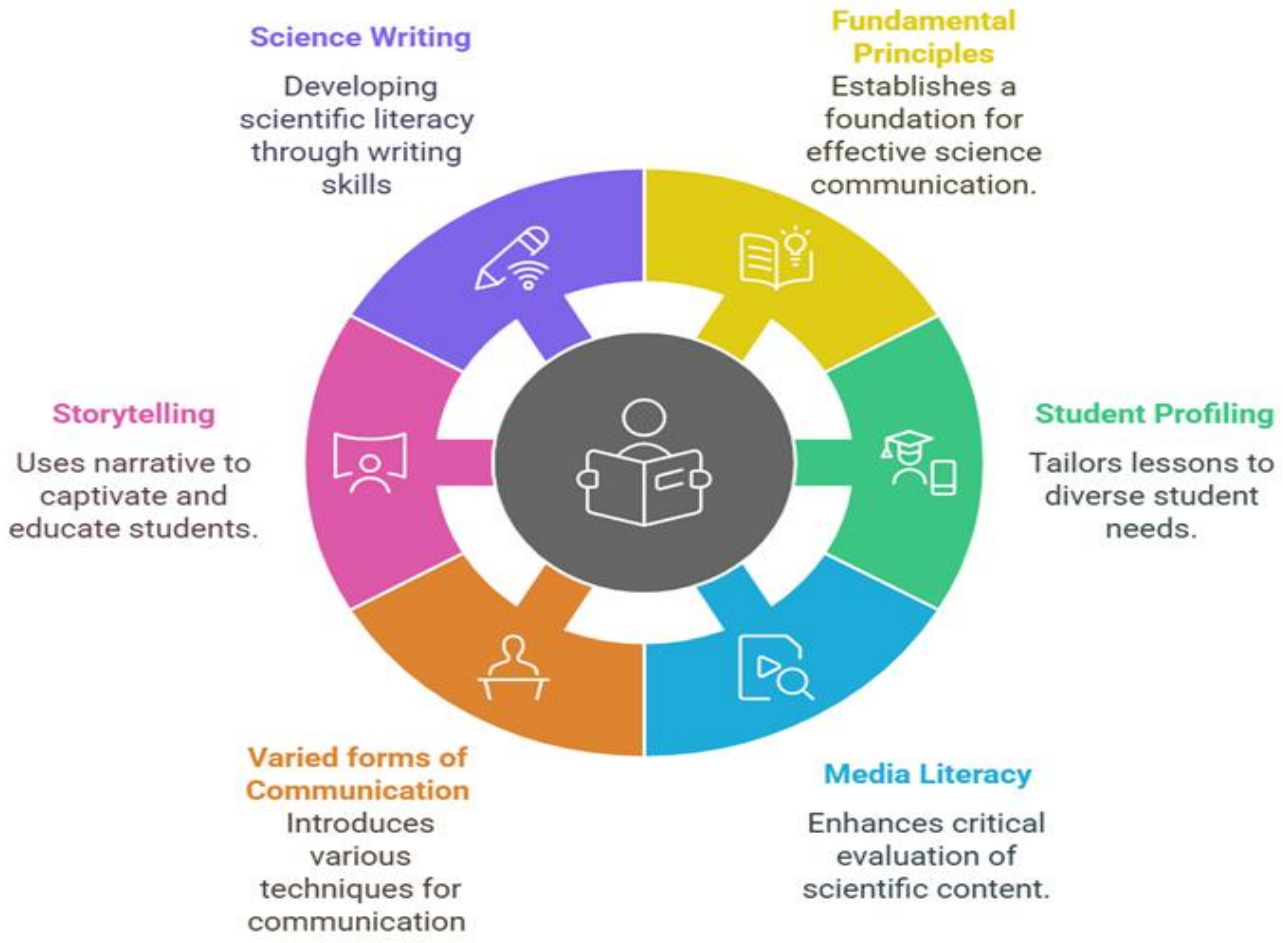


Figure 6: SciConnect Module content

Module Framework Implementation and Evaluation process

- Conducted in August 2023 through the four weeks RECSAM's Regular Course

- Gathering insights from 17 educators across 8 Southeast Asian countries.

Pre-test and Post-test Analysis

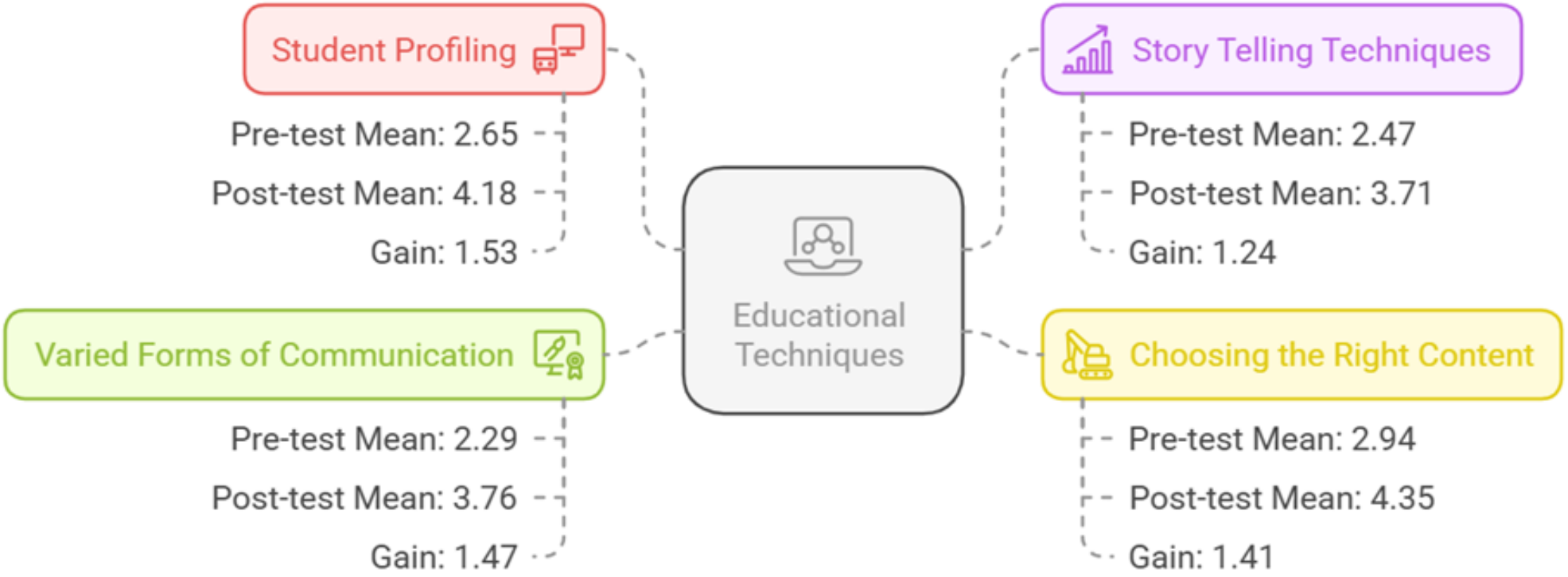


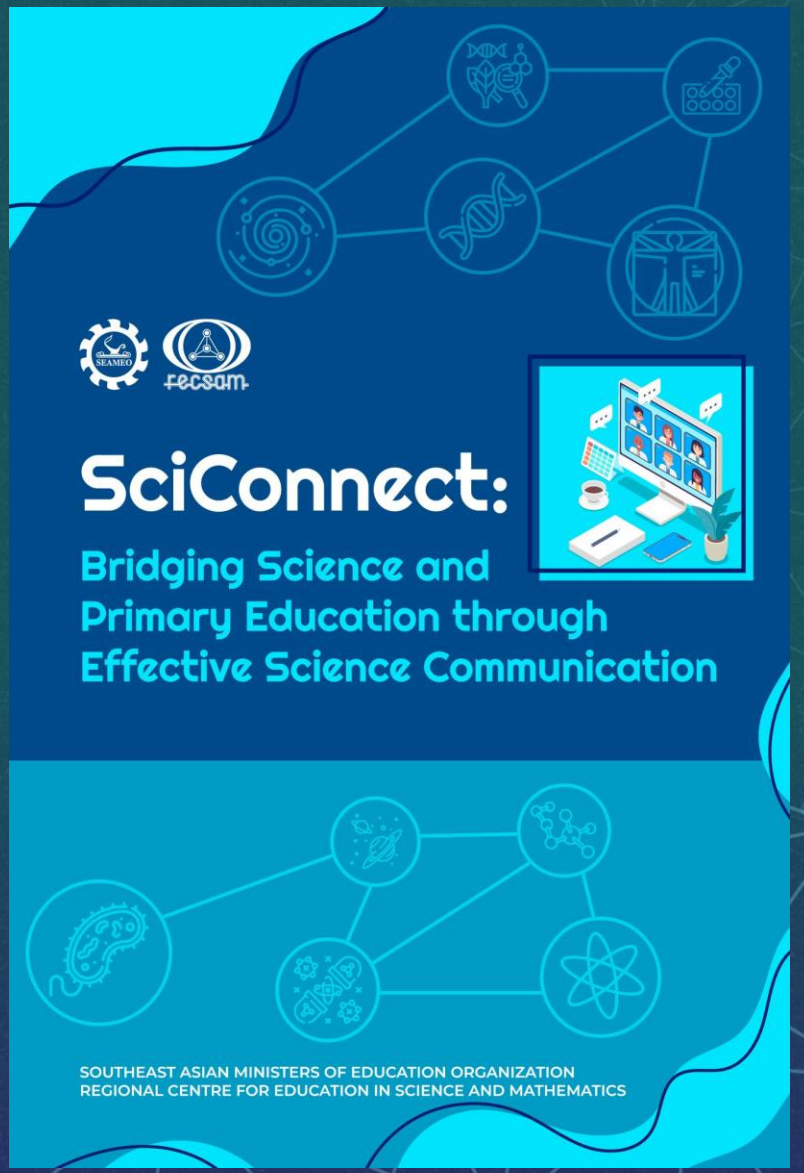
Figure 7: Pre and Post test analysis of module framework

Implementation and Evaluation of Final module

Figure 8: Key areas of impact identified in participant feedback

Conclusion

- Educators face challenges in effectively communicating science.
- SciConnect addresses this through practical, structured training.
- Post-training results show clear gains in confidence and skills.
- Feedback affirms clarity, relevance, and classroom use.
- SciConnect shows strong potential for wider scaling.



Recommendations

- Integrate science communication into teacher training programs
- Adopt SciConnect or similar frameworks in national training programs
- Support school-based communities of practice for science communication
- Undertake further research on student learning outcomes and module scalability

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