

SCIENCE LITERACY, THE ROLE OF SCIENCE MUSEUMS AND CENTRES

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What are the facts ?

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- Unfortunately, the growing world population living on this planet Earth, with limited resources, lacks enough understanding the vital contributions that science, technology, engineering and mathematics (STEM) make in meeting these challenges.
- Science literacy as an integral part of science education in extending the knowledge and understanding of STEM concepts and processes to society at large (for decision making, participation in civic and cultural affairs, and economic productivity), must help break this gap by providing the basis for ability to engage with STEM-related issues and innovative ideas.

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- 1 The promotion of the STEM understanding, and
- 2 The expansion of the science literacy.

How to define science (or more globally STEM) literacy?

S-T-E-M

[Pimthong *et al.* (2018)] defined STEM as the integration of science (S), technology (T), engineering (E) and mathematics (M), which relate to both workforce and daily life experiences.

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Science literacy

University of Nebraska (United States of America) explained so well succinctly **science literacy** as **an enhanced capacity, both at the individual and collective levels, to make effective decisions grounded in STEM-informed analyses of complex, real-world challenges associated with food, fuel, water, landscape, and people issues.**

How important are STEM ?

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- STEM Education is provided to achieve educational aims that prepare people for future life and the workforce [Pimthong *et al.* (2018)].
- The integration and application of S-T-E-M concepts and processes are required by all, and young people should have opportunities to participate in real multidisciplinary situations [Bybee (2010,2013), English (2017), Stohlmann *et al.* (2011), Vasquez *et al.* (2013)].

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- **Cultural scientific literacy** involves knowing those ideas in science that represent major cultural achievements.

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- **Utilitarian arguments** : develop generic skills that are of value to all, prepare some for careers and jobs that involve some science, and develop important attitudes/dispositions such as curiosity, wonder, healthy scepticism, analytical disposition, etc.

How to promote STEM understanding ?

The problem of STEM understanding

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- Promotion of establishment and engagement with science museums and science activity centres.

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Encourage and engage with international and regional organizations.

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- How can the national STEM centres/museums, industry science centres, mobile thematic exhibitions, and other tools and instruments contribute to promote STEM literacy ?
- Do we adequately share and sufficiently exploit existing best practices and possibilities in these fields to improve STEM literacy in our countries and at global level ?

THANK YOU FOR YOUR ATTENTION

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