Network for Information and Digital Access

# The impact of Science Literacy delivery methods - what works?

## Bibliography

**Seminars** | Group 1. Events, meetings, performances

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# Introduction

This thematic bibliography is the result of research to survey existing literature available on Science Literacy delivery methods.

The search was carried out by retrieving documents and articles from a wide range of sources, including research databases, Google Scholar, ResearchGate, subject databases, open access repositories etc. using keyword combinations.

The results of the resource discovery are divided into two groups: one containing impact assessments using qualitative, quantitative or mixed method (both qualitative and quantitative) approaches to data collection and a second including descriptive resources, which encompass, for example, reviews, guides, handbooks, reports and project reports.

This bibliography is work in progress and is not designed to be fully exhaustive or complete. We will be pleased to receive suggestions and recommendations for additions that can contribute to the understanding of science, its applications and, to the promotion of science literacy.

# Groups and methods list

During the first part of the Desk Research phase of this project (i.e. Task 1), the team identified 42 single-mechanism approaches, 2 composite approaches and 1 related approach that were relevant to the delivery and dissemination of scientific information. The list of single mechanisms was further organised into 7 thematic groups, as presented in the following Table.

| **Single mechanism approach** | **Group** |
|---|---|
| Exhibitions, Expo, Festivals, Movies, Picnics, Science fairs, Seminars, Talks, TED Talks, Theatre, Workshops | 1. Events, meetings, performances |
| Colloquia, Courses, Curricula, E-learning, Webinars | 2. Education and training – including online |
| Animations, Books, Brochures, Cartoons, Comics, Games, Graphics, Posters, Publications, Radio, Reports, TV, Videos | 3. Traditional publishing and journalism – print and broadcast |
| Competitions, Experiments, Makerspaces, Mobile classrooms, Mobile laboratories | 4. Activities and services |
| Blogs, E-books, E-zines, Mobile Apps, Podcasts, Social media, Websites, Wikis | 5. Online interactions |
| **Composite approaches** | |
| Multiliteracies | |
| Multimodalities | |
| **Related approach** | |
| Citizen Science | |

## Impact Assessment

Anthony, Barbara M. “A First Year Seminar’s Impact on Interest in Computer Science.” *Journal of Computing Sciences in Colleges* 32, no. 2 (2016): 83–89. https://dl.acm.org/citation.cfm?id=3015076&dl=ACM&coll=DL.

Birol, Gülnur, Andrea Han, Ashley Welsh, and Joanne Fox. “Impact of a First-Year Seminar in Science on Student Writing and Argumentation.” *Journal of College Science Teaching* 43, no. 1 (2013): 82–91. http://www.jstor.org/stable/43631725.

Fong, Bonnie L. “Assessing Graduate and Undergraduate Student Needs to Redesign a Chemistry Seminar Course.” *Science & Technology Libraries* 35, no. 1 (January 2, 2016): 70–90. https://doi.org/10.1080/0194262X.2015.1127794.

Noh, Younghee. “The Development and Performance Measurements of Educational Programs to Improve Consumer Health Information (CHI) Literacy.” *Reference & User Services Quarterly* 53, no. 2 (December 1, 2013): 140–54. https://doi.org/10.5860/rusq.53n2.140.

Spruijt, Annemarie, Jimmie Leppink, Ineke Wolfhagen, Albert Scherpbier, Peter van Beukelen, and Debbie Jaarsma. “Investigating Teaching Performance in Seminars; a Questionnaire Study with a Multi-Level Approach.” *BMC Medical Education* 14, no. 1 (December 2014). https://doi.org/10.1186/1472-6920-14-203.

Trogden, Bridget G., Amy E. Gratz, and Geoffrey P. Timms. “Learning through Two Lenses: An Analysis of Chemistry Students’ Information Literacy Skills.” In *ACS Symposium Series*, edited by Charity Flener Lovitt, Kristen Shuyler, and Ye Li, 1232:187–204. Washington, DC: American Chemical Society, 2016. http://pubs.acs.org/doi/abs/10.1021/bk-2016-1232.ch010.

## Descriptive Resources

Garritano, Jeremy R. “Ice Cream Seminars for Graduate Students: Imparting Chemical Information Literacy.” *Public Services Quarterly* 3, no. 3–4 (March 30, 2008): 53–70. https://doi.org/10.1080/15228950802110452.

Lowe, M. Sara, Char Booth, Sean Stone, and Natalie Tagge. “Impacting Information Literacy Learning in First-Year Seminars: A Rubric-Based Evaluation.” *Portal: Libraries and the Academy* 15, no. 3 (2015): 489–512. https://doi.org/10.1353/pla.2015.0030.

Scalfani, Vincent F., Patrick A. Frantom, and Stephen A. Woski. “Replacing the Traditional Graduate Chemistry Literature Seminar with a Chemical Research Literacy Course.” *Journal of Chemical Education* 93, no. 3 (March 8, 2016): 482–87. https://doi.org/10.1021/acs.jchemed.5b00512