



Network for Information and Digital Access

---

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

### Bibliography

**Comics** | Group 3. Traditional publishing and journalism  
- print and broadcast

Ver. 2.00

Date: May 2019

## 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
<b>Composite approaches</b>	
Multiliteracies	
Multimodalities	
<b>Related approach</b>	
Citizen Science	

Attribution 4.0 International (CC BY 4.0)

## Impact Assessment

- Amaral, Sara Varela, Teresa Forte, João Ramalho-Santos, and M. Teresa Girão da Cruz. 2015. "I Want More and Better Cells! – An Outreach Project about Stem Cells and Its Impact on the General Population." *PLOS ONE* 10 (7): e0133753. <https://doi.org/10.1371/journal.pone.0133753>.
- Aydinoglu, Arsev Umur, and Suzie Allard. 2010. "Connecting the Public with Science: Comic Books and Libraries." *BOBCATSSS 2010*, January, 1–27. <http://dspace-unipr.cineca.it/handle/1889/1241>.
- Bach, Benjamin, Nathalie Henry Riche, Sheelagh Carpendale, and Hanspeter Pfister. 2017. "The Emerging Genre of Data Comics." *IEEE Computer Graphics and Applications* 38 (3): 6–13. <https://doi.org/10.1109/MCG.2017.33>.
- Batista, Adriana, Michele Mouttapa, Sharonda Wallace, and Shari McMahan. 2014. "Empieza Con Fuerza Tu Día (Kick Start Your Day): A Comic Book Designed to Increase Knowledge about Healthy Eating Habits among Latino Families." *Californian Journal of Health Promotion* 12 (2): 99–106. [http://www.cjhp.org/volume12issue2\\_2014/documents/99-106\\_Formatted\\_cjhp\\_A.Batista.pdf](http://www.cjhp.org/volume12issue2_2014/documents/99-106_Formatted_cjhp_A.Batista.pdf).
- Berney, Sandra, and Mireille Bétrancourt. 2016. "Does Animation Enhance Learning? A Meta-Analysis." *Computers & Education* 101 (October): 150–67. <https://doi.org/10.1016/j.compedu.2016.06.005>.
- Branscum, Paul, and Manoj Sharma. 2009. "Comic Books an Untapped Medium for Health Promotion." *American Journal of Health Studies* 24 (4): 430–39. [https://www.researchgate.net/publication/246545517\\_Comic\\_books\\_an\\_untapped\\_medium\\_for\\_health\\_promotion](https://www.researchgate.net/publication/246545517_Comic_books_an_untapped_medium_for_health_promotion).
- Branscum, Paul, Manoj Sharma, Lihshing Leigh Wang, Bradley R. A. Wilson, and Liliana Rojas-Guyler. 2013. "A True Challenge for Any Superhero: An Evaluation of a Comic Book Obesity Prevention Program." *Family & Community Health* 36 (1): 63–76. <https://doi.org/10.1097/FCH.0b013e31826d7607>.
- Clary, Renee M., and James H. Wandersee. 2010. "Scientific Caricatures in the Earth Science Classroom: An Alternative Assessment for Meaningful Science Learning." *Science & Education* 19 (1): 21. <https://doi.org/10.1007/s11191-008-9178-y>.
- Collver, Jordan, and Emma Weitkamp. 2018. "Alter Egos: An Exploration of the Perspectives and Identities of Science Comic Creators." *Journal of Science Communication* 17 (1): A01. <https://doi.org/10.22323/2.17010201>.
- Cooper, Sandi, Suzanne Nesmith, and Gretchen Schwarz. 2011. "Exploring Graphic Novels for Elementary Science and Mathematics." *School Library Research* 14: 1–17. [http://www.ala.org/aasl/sites/ala.org.aasl/files/content/aaslpubsandjournals/slr/vol14/SLR\\_Exploring\\_GraphicNovels\\_V14.pdf](http://www.ala.org/aasl/sites/ala.org.aasl/files/content/aaslpubsandjournals/slr/vol14/SLR_Exploring_GraphicNovels_V14.pdf).
- Diamond, Judy, Benjamin Jee, Camilla Matuk, Julia McQuillan, Amy N. Spiegel, and David Uttal. 2015. "Museum Monsters and Victorious Viruses: Improving Public Understanding of Emerging Biomedical Research." *Curator: A Quarterly Publication of the American Museum of Natural History* 58 (3): 299–311. <https://doi.org/10.1111/cura.12115>.
- Diamond, Judy, Julia McQuillan, Amy N. Spiegel, Patricia Wonch Hill, Rebecca Smith, John West, and Charles Wood. 2016. "Viruses, Vaccines and the Public." *Museums & Social Issues: A Journal of Reflective Discourse* 11 (1): 9–16. <https://doi.org/10.1080/15596893.2016.1131099>.
- Dolins, Francine L., Alison Jolly, Hantanirina Rasamimanana, Jonah Ratsimbazafy, Anna T. C. Feistner, and Florent Ravoavy. 2010. "Conservation Education in Madagascar: Three Case Studies in the Biologically Diverse Island-Continent." *American Journal of Primatology* 72 (5): 391–406. <https://doi.org/10.1002/ajp.20779>.

- Dworkin, Mark S., Caryn E. Peterson, Weihua Gao, Angel Mayor, Robert Hunter, Edna Negron, Alison Fleury, and C. Lynn Besch. 2013. "Efficacy of a Food Safety Comic Book on Knowledge and Self-Reported Behavior for Persons Living with AIDS." *PLOS ONE* 8 (10): e72874. <https://doi.org/10.1371/journal.pone.0072874>.
- Feldt, Tobias. 2017. *Increasing Environmental Awareness Using Comic-Style Illustrations as a Visual Communication Tool, Madagascar*. [https://www.researchgate.net/publication/311518269\\_Increasing\\_environmental\\_awareness\\_using\\_comic-style\\_illustrations\\_as\\_a\\_visual\\_communication\\_tool\\_Madagascar](https://www.researchgate.net/publication/311518269_Increasing_environmental_awareness_using_comic-style_illustrations_as_a_visual_communication_tool_Madagascar).
- Höffler, Tim N., Helmut Prechtel, and Claudia Nerdel. 2010. "The Influence of Visual Cognitive Style When Learning from Instructional Animations and Static Pictures." *Learning and Individual Differences* 20 (5): 479–83. <https://doi.org/10.1016/j.lindif.2010.03.001>.
- Hosler, Jay, and K. B. Boomer. 2011. "Are Comic Books an Effective Way to Engage Nonmajors in Learning and Appreciating Science?1." *CBE Life Sciences Education* 10 (3): 309–17. <https://doi.org/10.1187/cbe.10-07-0090>.
- Jacoby, Susan D., Monique Lucarelli, Fowsia Musse, Ashok Krishnamurthy, and Vince Salyers. 2015. "A Mixed-Methods Study of Immigrant Somali Women's Health Literacy and Perinatal Experiences in Maine." *Journal of Midwifery & Women's Health* 60 (5): 593–603. <https://doi.org/10.1111/jmwh.12332>.
- Kennedy, Anne, Anne Rogers, Christian Blickem, Gavin Daker-White, and Robert Bowen. 2014. "Developing Cartoons for Long-Term Condition Self-Management Information." *BMC Health Services Research* 14 (February): 60. <https://doi.org/10.1186/1472-6963-14-60>.
- Keogh, Brenda, and Stuart Naylor. 1999. "Concept Cartoons, Teaching and Learning in Science: An Evaluation." *International Journal of Science Education* 21 (4): 431–46. <https://doi.org/10.1080/095006999290642>.
- Keogh, Brenda, Stuart Naylor, and Catherine Wilson. 1998. "Concept Cartoons: A New Perspective on Physics Education." *Physics Education* 33 (4): 219. <https://doi.org/10.1088/0031-9120/33/4/009>.
- Kim, Jiyeon, Min Suk Chung, Hae Gwon Jang, and Beom Sun Chung. 2017. "The Use of Educational Comics in Learning Anatomy among Multiple Student Groups." *Anatomical Sciences Education* 10 (1): 79–86. <https://doi.org/10.1002/ase.1619>.
- Kraft, Stephanie A., Melissa Constantine, David Magnus, Kathryn M. Porter, Sandra Soo-Jin Lee, Michael Green, Nancy E. Kass, Benjamin S. Wilfond, and Mildred K. Cho. 2017. "A Randomized Study of Multimedia Informational Aids for Research on Medical Practices: Implications for Informed Consent." *Clinical Trials (London, England)* 14 (1): 94–102. <https://doi.org/10.1177/1740774516669352>.
- Krishnan, Shamini, and Kamisah Othman. 2016. "The Effectiveness Of Using Comic To Increase Pupils' Achievements And Higher Order Thinking Skills In Science." *International Journal of English and Education* 5 (3): 281–93. [http://ijee.org/yahoo\\_site\\_admin/assets/docs/22.19215604.pdf](http://ijee.org/yahoo_site_admin/assets/docs/22.19215604.pdf).
- Kurniawati, Ayu A., Sri Wahyuni, and Pramudya Dwi Aristya Putra. 2018. "Utilizing of Comic and Jember's Local Wisdom as Integrated Science Learning Materials," January. <http://ura.unej.ac.id/handle/123456789/67861>.
- Leung, May May, Melanie C. Green, Deborah F. Tate, Jianwen Cai, Katarzyna Wyka, and Alice S. Ammerman. 2017a. "Fight for Your Right to Fruit : Psychosocial Outcomes of a Manga Comic Promoting Fruit Consumption in Middle-School Youth." *Health Communication* 32 (5): 533–40. <https://doi.org/10.1080/10410236.2016.1211074>.
- . 2017b. "Fight for Your Right to Fruit: Psychosocial Outcomes of a Manga Comic Promoting Fruit Consumption in Middle-School Youth." *Health Communication* 32 (5): 533–40. <https://doi.org/10.1080/10410236.2016.1211074>.

- Lin, Shu-Fen, and Huann-shyang Lin. 2016. "Learning Nanotechnology with Texts and Comics: The Impacts on Students of Different Achievement Levels." *International Journal of Science Education* 38 (8): 1373–91. <https://doi.org/10.1080/09500693.2016.1191089>.
- Lin, Shu-Fen, Huann-shyang Lin, Ling Lee, and Larry D. Yore. 2014. "Are Science Comics a Good Medium for Science Communication? The Case for Public Learning of Nanotechnology." *International Journal of Science Education, Part B* 5 (3): 276–94. <https://doi.org/10.1080/21548455.2014.941040>.
- Lin, Xiao. 2013. "The Impact of Comics on Audiences' Knowledge of, Attitude toward, and Behavioral Intentions Related to Wind Energy." Master's thesis, USA: Iowa State University. <https://lib.dr.iastate.edu/etd/13262>.
- Manes, Mindi R., Li Liu, Anne Burke, and Mark S. Dworkin. 2014. "Food for Thought: Effective Evidence-Based Brochure and Comic Book Interventions Designed for Restaurant Food Handlers." *Food Protection Trends* 34 (2): 68–82. <https://uic.pure.elsevier.com/en/publications/food-for-thought-effective-evidence-based-brochure-and-comic-book>.
- Mascarello, Giulia, Stefania Crovato, Anna Pinto, Albino Gallina, Michael Siegrist, and Licia Ravarotto. 2014. "Communicating Chemical Risk in Food to Adolescents. A Comparison of Web and Print Media." *Food Control* 35 (1): 407–12. <https://doi.org/10.1016/j.foodcont.2013.07.031>.
- Mayo, Carolyn M. 2011. "Use of a Popular Comic Strip Character as a Teaching Tool in Aphasia: The Case for 'Grandpa Jim.'" *SIG 10 Perspectives on Issues in Higher Education* 14 (2): 46–56. <https://doi.org/10.1044/ihe14.2.46>.
- McNicol, Sarah. 2017. "The Potential of Educational Comics as a Health Information Medium." *Health Information and Libraries Journal* 34 (1): 20–31. <https://doi.org/10.1111/hir.12145>.
- Montgomery, Michelle, Brenda Manuelito, Carrie Nass, Tami Chock, and Dedra Buchwald. 2012. "The Native Comic Book Project: Native Youth Making Comics and Healthy Decisions." *Journal of Cancer Education : The Official Journal of the American Association for Cancer Education* 27 (1 0): S41–46. <https://doi.org/10.1007/s13187-012-0311-x>.
- Nagata, Ryoichi. 1999. "Learning Biochemistry through Manga — Helping Students Learn and Remember, and Making Lectures More Exciting." *Biochemical Education* 27 (4): 200–203. [https://doi.org/10.1016/S0307-4412\(99\)00052-7](https://doi.org/10.1016/S0307-4412(99)00052-7).
- Naylor, Stuart, and Brenda Keogh. 1999. "Science on the Underground: An Initial Evaluation." *Public Understanding of Science* 8 (2): 105–22. <https://doi.org/10.1088/0963-6625/8/2/303>.
- Negrete, AQUILES. 2013. "Constructing a Comic to Communicate Scientific Information about Sustainable Development and Natural Resources in Mexico." *Procedia - Social and Behavioral Sciences*, 13th International Educational Technology Conference, 103 (November): 200–209. <https://doi.org/10.1016/j.sbspro.2013.10.327>.
- Negrete, Aquiles, and Cecilia Lartigue. 2010. "The Science of Telling Stories: Evaluating Science Communication via Narratives (RIRC Method)." *Journal Media and Communication Studies* 2 (4): 98–110. [https://www.researchgate.net/publication/266339677\\_The\\_science\\_of\\_telling\\_stories\\_Evaluating\\_science\\_communication\\_via\\_narratives\\_RIRC\\_method](https://www.researchgate.net/publication/266339677_The_science_of_telling_stories_Evaluating_science_communication_via_narratives_RIRC_method).
- Olson, John C. 2009. "The Comic Strip as a Medium for Promoting Science Literacy." Northridge: California State University. <https://www.pdfFiller.com/12937411--THE-COMIC-STRIP-FOR-PROMOTING-SCIENCE-LITERACY-The-csun->

- Pincavage, Amber T., Wei Wei Lee, Laura Ruth Venable, Megan Prochaska, Daina D. Stasiunas, Kimberly J. Beiting, M. K. Czerweic, Julie Oyler, Lisa M. Vinci, and Vineet M. Arora. 2015. "Ms. B Changes Doctors': Using a Comic and Patient Transition Packet to Engineer Patient-Oriented Clinic Handoffs (EPOCH)." *Journal of General Internal Medicine* 30 (2): 257–60. <https://doi.org/10.1007/s11606-014-3009-4>.
- Rodriguez, Lulu, and Xiao Lin. 2016. "The Impact of Comics on Knowledge, Attitude and Behavioural Intentions Related to Wind Energy." *Journal of Visual Literacy* 35 (4): 237–52. <https://doi.org/10.1080/1051144X.2016.1278090>.
- Rule, Audrey C., and Jeremie Auge. 2005. "Using Humorous Cartoons to Teach Mineral and Rock Concepts in Sixth Grade Science Class." *Journal of Geoscience Education* 53 (5): 548–58. <https://doi.org/10.5408/1089-9995-53.5.548>.
- Sarayeva, Tatyana. 2017. "Comics' and Graphic Novels' Effect on the Perception of Climate Change and Natural Disasters." <http://lup.lub.lu.se/student-papers/record/8922347>.
- Sharpe, Justin, and Yasamin O. Izadkhah. 2014. "Use of Comic Strips in Teaching Earthquakes to Kindergarten Children." *Disaster Prevention and Management: An International Journal* 23 (2): 138–56. <https://doi.org/10.1108/DPM-05-2013-0083>.
- Shin, Dong Sun, Dae Hyun Kim, Jin Seo Park, Hae Gwon Jang, and Min Suk Chung. 2013. "Evaluation of Anatomy Comic Strips for Further Production and Applications." *Anatomy & Cell Biology* 46 (3): 210–16. <https://doi.org/10.5115/acb.2013.46.3.210>.
- Short, Jeremy C., Brandon Randolph-Seng, and Aaron F. McKenny. 2013. "Graphic Presentation: An Empirical Examination of the Graphic Novel Approach to Communicate Business Concepts." *Business Communication Quarterly* 76 (3): 273–303. <https://doi.org/10.1177/1080569913482574>.
- Spiegel, Amy N., Julia McQuillan, Peter Halpin, Camillia Matuk, and Judy Diamond. 2013. "Engaging Teenagers with Science Through Comics." *Research in Science Education* 43 (6). <https://doi.org/10.1007/s11165-013-9358-x>.
- Stothard, J. R., A. N. Khamis, I. S. Khamis, C. H. E. Neo, I. Wei, and D. Rollinson. 2016. "Health Education and the Control of Urogenital Schistosomiasis: Assessing the Impact of the Juma Na Kichocho Comic-Strip Medical Booklet in Zanzibar." *Journal of Biosocial Science* 48 Suppl 1: S40-55. <https://doi.org/10.1017/S0021932016000122>.
- Tekle-Haimanot, Redda, Pierre Marie Preux, Daniel Gerard, Dawit Kibru Worku, Hanna Demissie Belay, and Meron Awararis Gebrewold. 2016. "Impact of an Educational Comic Book on Epilepsy-Related Knowledge, Awareness, and Attitudes among School Children in Ethiopia." *Epilepsy & Behavior: E&B* 61 (August): 218–23. <https://doi.org/10.1016/j.yebeh.2016.05.002>.
- Tjiam, A. M., G. Holtslag, H. M. Van Minderhout, B. Simonsz-Tóth, M. H. L. Vermeulen-Jong, G. J. J. M. Borsboom, S. E. Loudon, and H. J. Simonsz. 2013. "Randomised Comparison of Three Tools for Improving Compliance with Occlusion Therapy: An Educational Cartoon Story, a Reward Calendar, and an Information Leaflet for Parents." *Graefes' Archive for Clinical and Experimental Ophthalmology = Albrecht Von Graefes Archiv Fur Klinische Und Experimentelle Ophthalmologie* 251 (1): 321–29. <https://doi.org/10.1007/s00417-012-2107-4>.
- Toledo, Michael A., Rosanelia Yangco, and Allen A. Espinosa. 2014. "Media Cartoons: Effects on Issue Resolution in Environmental Education." *International Electronic Journal of Environmental Education* 4 (1): 19–51. <https://eric.ed.gov/?id=EJ1060551>.
- Topkaya, Yavuz. 2016. "The Impact of Instructional Comics on the Cognitive and Affective Learning about Environmental Problems." *Education and Science* 41 (187): 199–219. <https://search.proquest.com/openview/500a9cd855d8d97cdd31985936fcea6f/1?pq-origsite=gscholar&cbl=1056401>.



- Tversky, BARBARA, JULIE BAUER Morrison, and MIREILLE Betrancourt. 2002. "Animation: Can It Facilitate?" *International Journal of Human-Computer Studies* 57 (4): 247–62. <https://doi.org/10.1006/ijhc.2002.1017>.
- Weber, Karen C., and Teresa C. B. Saldanha. 2013. "Introducing comics as an alternative scientific narrative in chemistry teaching." *Batı Anadolu Eğitim Bilimleri Dergisi* 4 (2). <http://dergipark.ulakbim.gov.tr/baebd/article/view/5000057223>.
- Weitkamp, E., F. Burnet, E. Weitkamp, and F. Burnet. 2007. "The Chemedian Brings Laughter to the Chemistry Classroom." *International Journal of Science Education* 29 (15): 1911–29. <http://dx.doi.org/10.1080/09500690701222790>.
- Williams, Olajide, Elyn Leighton-Herrmann, Mindy Hecht, Alexandra DeSorbo, William Gerin, Monique Hedmann, Rachel Shelton, Benjamin Tolchin, and James Noble. 2017. "Child-Mediated Health Communication: A Conceptual Framework for Increasing Stroke Literacy in Hard to Reach Populations." *Journal of Health Disparities Research and Practice* 9 (4). <https://digitalscholarship.unlv.edu/jhdrp/vol9/iss4/7>.
- Woolston Jennifer M. 2014. "Graphic Novels and Comics in the Classroom: Essays on the Educational Power of Sequential Art Carrye Kay Syma and Robert G. Weiner, Editors. Jefferson, NC: McFarland, 2013." *The Journal of American Culture* 37 (2): 231–32. <https://doi.org/10.1111/jacc.12179>.
- Zhang-Kennedy, Leah, Sonia Chiasson, and Robert Biddle. 2016. "The Role of Instructional Design in Persuasion: A Comics Approach for Improving Cybersecurity." *International Journal of Human-Computer Interaction* 32 (3): 215–57. <https://doi.org/10.1080/10447318.2016.1136177>.
- Zhao, Zhenpeng, Rachael Marr, and Niklas Elmqvist. 2015. "Data Comics: Sequential Art for Data-Driven Storytelling – HCIL." HCIL Technical Report. Maryland, USA: University of Maryland, College Park. <http://hcil.umd.edu/data-comics/>.

## Descriptive Resources

- Aisyah, R, I A Zakiyah, I Farida, and M A Ramdhani. 2017. "Learning Crude Oil by Using Scientific Literacy Comics." *Journal of Physics: Conference Series* 895 (September): 012011. <https://doi.org/10.1088/1742-6596/895/1/012011>.
- Amresh, Ashish, Madhumita Sinha, Rebecca Birr, and Rahul Salla. 2015. "Interactive Cause and Effect Comic-Book Storytelling for Improving Nutrition Outcomes in Children." In *Proceedings of the 5th International Conference on Digital Health 2015*, 9–14. DH '15. New York, NY, USA: ACM. <https://doi.org/10.1145/2750511.2750533>.
- Arroio, Agnaldo. 2011. "Comics as a Narrative in Natural Science Education." *Western Anatolia Journal of Educational Sciences*, 93–98. <http://acikerisim.deu.edu.tr:8080/xmlui/handle/12345/5157>.
- Baker, Amy. 2011. "Using Comics to Improve Literacy in English Language Learners." Master's thesis, Missouri, USA: University of Central Missouri. [https://centralspace.ucmo.edu/bitstream/handle/10768/20/Baker201120\\_RP\\_Using.pdf?sequence=7&isAllowed=y](https://centralspace.ucmo.edu/bitstream/handle/10768/20/Baker201120_RP_Using.pdf?sequence=7&isAllowed=y).
- Birisci, Salih, and Mustafa Metin. 2010. "Developing an Instructional Material Using a Concept Cartoon Adapted to the 5E Model: A Sample of Teaching Erosion." *Asia-Pacific Forum on Science Learning and Teaching* 11 (1).
- Carter, Henry A. 1988. "Chemistry in the Comics: Part 1. A Survey of the Comic Book Literature." *Journal of Chemical Education* 65 (12): 1029. <https://doi.org/10.1021/ed065p1029>.

- Cimermanová, Ivana. 2015. "Using Comics with Novice EFL Readers to Develop Reading Literacy." *Procedia - Social and Behavioral Sciences*, International Conference on New Horizons in Education, INTE 2014, 25-27 June 2014, Paris, France, 174 (February): 2452–59. <https://doi.org/10.1016/j.sbspro.2015.01.916>.
- Cirigliano, Matthew M. 2012. "Exploring the Attitudes of Students Using an Edutainment Graphic Novel as a Supplement to Learning in the Classroom." *Science Educator* 21 (1): 29–36. <https://eric.ed.gov/?id=EJ977454>.
- Cohn, Neil. 2013. *The Visual Language of Comics: Introduction to the Structure and Cognition of Sequential Images*. London ; New York: Bloomsbury Academic. <https://www.amazon.co.uk/Visual-Language-Comics-Introduction-Sequential/dp/1441181458>.
- . 2016. *The Visual Narrative Reader*. London ; New York: Bloomsbury Academic. <https://www.bloomsbury.com/uk/the-visual-narrative-reader-9781472577900/>.
- Comics & Literacy. n.d. "A History of Comics and Early Literacy." Comics & Literacy. Accessed November 6, 2018. <https://comicsliteracy.weebly.com/history.html>.
- Costello, K., E. Reilly, G. Bracey, and P. Gay. 2012. "Hanny and the Mystery of the Voorwerp: Citizen Science in the Classroom." In , 457:23. <http://adsabs.harvard.edu/abs/2012ASPC..457...23C>.
- De Hosson, C., Laurence Bordenave, Nicolas Decamp, and Christophe Hache. 2014. "Learning Science through the Conception of Comics: The SARABANDES Research." In *Learning Science through the Conception of Comics: The SARABANDES Research Project*, 1. Florence, France. <https://hal.archives-ouvertes.fr/hal-01006216>.
- Di Raddo, Pasquale. 2006. "Teaching Chemistry Lab Safety through Comics." *Journal of Chemical Education* 83 (4): 571. <https://doi.org/10.1021/ed083p571>.
- Dobbins, Sarah. 2016. "Comics in Public Health: The Sociocultural and Cognitive Influence of Narrative on Health Behaviours." *Journal of Graphic Novels and Comics* 7 (1): 35–52. <https://doi.org/10.1080/21504857.2015.1127844>.
- Farinella, Matteo. 2018. "The Potential of Comics in Science Communication." *Journal of Science Communication* 17 (1): Y01. <https://doi.org/10.22323/2.17010401>.
- Frey, Nancy, and Douglas Fisher. 2008. *Teaching Visual Literacy: Using Comic Books, Graphic Novels, Anime, Cartoons, and More to Develop Comprehension and Thinking Skills*. 1 edition. Thousand Oaks, CA: Corwin. <https://www.amazon.co.uk/Teaching-Visual-Literacy-Cartoons-Comprehension/dp/141295312X>.
- González-Espada, Wilson Javier. 203AD. "Integrating Physical Science and the Graphic Arts with Scientifically Accurate Comic Strips: Rationale, Description, and Implementation." *Revista Electrónica de Enseñanza de Las Ciencias* 2 (1): 58–66. [http://reec.uvigo.es/volumenes/volumen2/REEC\\_2\\_1\\_4.pdf](http://reec.uvigo.es/volumenes/volumen2/REEC_2_1_4.pdf).
- Green, Michael J., and Kimberly R. Myers. 2010. "Graphic Medicine: Use of Comics in Medical Education and Patient Care." *BMJ* 340 (March): c863. <https://doi.org/10.1136/bmj.c863>.
- Grennan, Simon, and Ian Hague. 2018. "Medium, Knowledge, Structure: Capacities for Choice and the Contradiction of Medium-Specificity in Games and Comics." *Image & Narrative*, 13. <http://www.imageandnarrative.be/index.php/imagenarrative/article/view/1765>.
- Guzzetti, Barbara, and Marcia A. Mardis. 2017. "The Potential of Graphic Nonfiction for Teaching and Learning Earth Science." *School Libraries Worldwide* 23 (1): 15. <https://www.questia.com/library/journal/1P4-1930779523/the-potential-of-graphic-nonfiction-for-teaching-and>.



- Jee, Benjamin D., and Florencia K. Anggoro. 2012. "Comic Cognition: Exploring the Potential Cognitive Impacts of Science Comics." *Journal of Cognitive Education and Psychology* 11 (2): 196–208. <https://doi.org/10.1891/1945-8959.11.2.196>.
- King, Andy J. 2017. "Using Comics to Communicate About Health: An Introduction to the Symposium on Visual Narratives and Graphic Medicine." *Health Communication* 32 (5): 523–24. <https://doi.org/10.1080/10410236.2016.1211063>.
- Kong, Min. 2014. "An Assessment of the Methodologies of Grassroots Comics and Body-Mapping as Methods of Participatory Communication within the Kalahari Villages." Master's thesis, Durban, South Africa: University of KwaZulu-Natal. [http://ccms.ukzn.ac.za/Files/articles/MA\\_dissertations/2015-03-07%20Final%20correction%20%20M.%20Kong%20Master%20Thesis%202014.pdf](http://ccms.ukzn.ac.za/Files/articles/MA_dissertations/2015-03-07%20Final%20correction%20%20M.%20Kong%20Master%20Thesis%202014.pdf).
- Leinfelder, Reinhold, Alexandra Hamann, Jens Kirstein, Marc Schleunitz, Theresa Habermann, Nick Sousanis, Stephan Packard, et al. 2017. *Science Meets Comics. Proceedings of the Symposium on Communicating and Designing the Future of Food in the Anthropocene*. Zenodo. <https://doi.org/10.5281/zenodo.556383>.
- Muzumdar, J. 2016. "An Overview of Comic Books as an Educational Tool and Implications for Pharmacy." *Innovations in Pharmacy* 7 (4: Article 1): 12. <https://pubs.lib.umn.edu/index.php/innovations/article/view/463>.
- Packalen, Leif, and Sharad Sharma. 2007. *Grassroots Comics: A Development Communication Tool*. Ministry for Foreign affairs of Finland. <http://www.worldcomics.fi/files/8413/6517/4053/grassroots-book.pdf>.
- Plakitsi, Katerina, ed. 2013. *Activity Theory in Formal and Informal Science Education*. Rotterdam: SensePublishers. DOI: [10.1007/978-94-6091-317-4](https://doi.org/10.1007/978-94-6091-317-4).
- Rota, Gladis, and Juan Izquierdo. 2003. "Comics as a Tool for Teaching Biotechnology in Primary Schools." *Electronic Journal of Biotechnology* 6 (2). <https://doi.org/10.2225/vol6-issue2-fulltext-i02>.
- Schneider, Edward F. 2014. "Quantifying and Visualizing the History of Public Health Comics." *IConference 2014 Proceedings*, March. <https://doi.org/10.9776/14340>.
- Serious Comix. 2013. "Encouraging Literacy, Embracing Technology." In *Serious Comix*, 13. International Society for Technology in Education (ISTE). <http://www.iste.org/docs/excerpts/SCOMIX-excerpt.pdf>.
- Simmons, Robert A., Susan C. Cosgrove, Martha C. Romney, James D. Plumb, Rickie O. Brawer, Evelyn T. Gonzalez, Linda G. Fleisher, and Bradley S. Moore. 2017. "Health Literacy: Cancer Prevention Strategies for Early Adults." *American Journal of Preventive Medicine* 53 (3S1): S73–77. <https://doi.org/10.1016/j.amepre.2017.03.016>.
- Sousanis, Nick. 2015. *Unflattening*. Cambridge, Massachusetts: Harvard University Press. <https://www.amazon.co.uk/Unflattening-Nick-Sousanis/dp/0674744438>.
- Syma, Carrye Kay, and Robert G. Weiner. 2013. *Graphic Novels and Comics in the Classroom: Essays on the Educational Power of Sequential Art*. McFarland. [https://books.google.co.uk/books/about/Graphic\\_Novels\\_and\\_Comics\\_in\\_the\\_Classro.html?id=0vAD2yW5cUC&redir\\_esc=y](https://books.google.co.uk/books/about/Graphic_Novels_and_Comics_in_the_Classro.html?id=0vAD2yW5cUC&redir_esc=y).
- Tarver, Talicia, Deidra Woodson, Nick Fechter, John Vanchiere, Willam Olmstadt, and Charlie Tudor. 2016. "A Novel Tool for Health Literacy: Using Comic Books to Combat Childhood Obesity." *Journal of Hospital Librarianship* 16 (2): 152–59. <https://doi.org/10.1080/15323269.2016.1154768>.
- Tatalovic, Mico. 2009. "Science Comics as Tools for Science Education and Communication: A Brief, Exploratory Study." *Journal of Science Communication* 8 (4): A02. <https://doi.org/10.22323/2.08040202>.

- The Graphic Librarian. 2016. "Graphic Medicine in the Academy." *The Graphic Librarian* (blog). August 8, 2016. <https://graphiclibrarian.wordpress.com/graphic-medicine-in-the-academy/>.
- Thomas, P. L. 2011. "Adventures in Genre!: Rethinking Genre through Comics/Graphic Novels." *Journal of Graphic Novels and Comics* 2 (2): 187–201. <https://doi.org/10.1080/21504857.2011.633090>.
- Toh, Tin Lam, Lu Pien Cheng, Siew Yin Ho, Heng Jiang, and Kam Ming Lim. 2017. "Use of Comics to Enhance Students' Learning for the Development of the Twenty-First Century Competencies in the Mathematics Classroom." *Asia Pacific Journal of Education* 37 (4): 437–52. <https://doi.org/10.1080/02188791.2017.1339344>.
- Tribull, Carly Melissa. 2017. "Sequential Science: A Guide to Communication Through Comics." *Annals of the Entomological Society of America* 110 (5): 457–66. <https://doi.org/10.1093/aesa/sax046>.
- Wallner, Lars. 2017. "Speak of the Bubble – Constructing Comic Book Bubbles as Literary Devices in a Primary School Classroom." *Journal of Graphic Novels and Comics* 8 (2): 173–92. <https://doi.org/10.1080/21504857.2016.1270221>.
- Wiegerová, Adriana, and Hana Navrátilová. 2017. "Let's Not Be Scared of Comics (Researching Possibilities of Using Conceptual Comics in Teaching Nature Study in Kindergarden)." *Procedia - Social and Behavioral Sciences, Education, Health and ICT for a Transcultural World*, 237 (February): 1576–81. <https://doi.org/10.1016/j.sbspro.2017.02.248>.
- Zielinski, C. 1986. "Publishing a Comic Book with Health Messages in India." *Ideas and Action Bulletin*. <http://agris.fao.org/agris-search/search.do?recordID=XF19870112640>.