

References

Literature

- [1] A. V. Aho. “Computation and computational thinking”. In: *Computer Journal* (2012).
- [2] V. Barr, C. Stephenson. “Bringing computational thinking to K-12: What is involved and what is the role of the computer science education community?”. In: *ACM Inroads* (2011).
- [3] M. Berland, V. Lee. “Collaborative strategic board games as a site for distributed computational thinking”. In: *International Journal of Game-Based Learning* (2011).
- [4] C. M. Bishop. *Pattern Recognition and Machine Learning*. Springer, 2006.
- [5] P. Blikstein. “Connecting the science classroom and tangible interfaces: the bifocal modeling framework”. In: *Proceedings of the 9th International Conference of the Learning Sciences*. Chicago, IL, 2010.
- [6] P. Blikstein. *Seymour Papert’s Legacy: Thinking about learning, and learning about thinking*. 2013. URL: <https://tltl.stanford.edu/content/seymour-papert-s-legacy-thinking-about-learning-and-learning-about-thinking>.
- [7] E. Cassese. *E se il Coding Fosse la Nuova Lingua Straniera? – Educazione Globale*. 2014. URL: <http://www.educazioneglobale.com/2014/02/e-se-il-coding-fosse-la-nuova-lingua-straniera>.
- [8] D. H. Clements, D. F. Gullo. “Effects of computer programming on young children’s cognitions”. In: *Journal of Educational Psychology* (1984).
- [9] P. Denning, P. Freeman. “Computing’s paradigm”. In: *Communications of the ACM* (2009).
- [10] A. A. diSessa. *Changing Minds: Computers, learning, and literacy*. Cambridge: MIT Press, 2000.

- [11] C. L. Fajó, M. Lu, J. B. Black. *Instructional embodiment and video game programming in an after school program*. Paper presented at the World Conference on Educational Multimedia, Hypermedia & Telecommunications, Chesapeake, VA (June, 2009).
- [12] C. Felker. *Maybe Not Everybody Should Learn to Code: A software engineer's take on the new education call to arms*. 2013. URL: http://www.slate.com/articles/technology/future_tense/2013/08/everybody_does_not_need_to_learn_to_code.html.
- [13] D. A. Fields, K. A. Searle, Y. B. Kafai, H. S. Min. "Debuggems to assess student learning in e-textiles". In: *Proceedings of the 43rd SIGCSE Technical Symposium on Computer Science Education*. New York, NY: ACM Press, 2012.
- [14] H. Giest. *Zur Didaktik des Sachunterrichts – Aktuelle Probleme, Fragen und Antworten*. Universitätsverlag Potsdam, 2009.
- [15] S. Grover, R. Pea. "Computational thinking in K-12: A review of the state of the field". In: *Educational Researcher* (2013).
- [16] M. Guzdial. *Learner-Centered Design of Computing Education: Research on computing for everyone. Synthesis lectures on human-centered informatics*. Morgan & Claypool Publishers, 2015.
- [17] M. Guzdial. "Paving the way for computational thinking". In: *Communications of the ACM* (August 2008).
- [18] K. Han Koh, A. Basawapatna, V. Bennet, A. Repenning. "Towards the automatic recognition of computational thinking for adaptive visual language learning". In: *Proceedings of the 2010 Conference on Visual Languages and Human Centric Computing (VL/HCC 2010)*. Madrid, Spain: IEEE Computer (2010).
- [19] I. Harel, S. Papert. "Software design as a learning environment". In: *Interactive Learning Environments* (1990).
- [20] P. B. Henderson, T. J. Cortina, O. Hazzan, J. M. Wing. "Computational thinking". In: *Proceedings of the 38th ACM SIGCSE Technical Symposium on Computer Science Education (SIGCSE '07)*. New York, NY: ACM Press, 2007.
- [21] M. B. Hesse. *Models and Analogies in Science*. Sheed & Ward Ltd., 1963.

- [22] N. R. Holbert, U. Wilensky. *Racing Games for Exploring Kinematics: A computational thinking approach*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA. April, 2011.
- [23] Y. B. Kafai, C. C. Ching, S. Marshall. "Children as designers of educational multimedia software". In: *Computers & Education* (1997).
- [24] R. Keen. "The development of problem solving in young children: A critical cognitive skill". In: *Annual Review of Psychology* (2011).
- [25] D. Klahr, S. M. Carver. "Cognitive objectives in a LOGO debugging curriculum: Instruction, learning, and transfer". In: *Cognitive Psychology* (1988).
- [26] D. M. Kurland, R. D. Pea, C. Clement, R. Mawby. "A study of the development of programming ability and thinking skills in high school students". In: *Journal of Educational Computing Research* (1986).
- [27] A. Lamb, L. Johnson. "Scratch: Computer programming for 21st century learners". In: *Teacher Librarian* (April, 2011).
- [28] J. Lave, E. Wenger. *Situated Learning: Legitimate peripheral participation*. Cambridge University Press, 1991.
- [29] C. E. Leiserson, C. Stein, R. Rivest, T. H. Cormen. *Introduction to Algorithms*. MIT Press, 1990.
- [30] J. Maloney, K. Peppler, Y. B. Kafai, M. Resnick, N. Rusk. "Programming by choice: Urban youth learning programming with Scratch. In: *Proceedings of SIGCSE '08*. New York, NY: ACM Press, 2008.
- [31] M. Marji. *Learn to Program with Scratch. A visual introduction to programming with games, art, science, and math*. No Starch Press, 2014.
- [32] M. Menichinelli. *Business Models for Fab Labs*. URL: <http://www.openp2pdesign.org/2011/fabbing/business-models-for-fab-labs>.
- [33] E. M. Mercier, B. Barron, K. M. O'Connor. "Images of self and others as computer users: The role of gender and experience". In: *Journal of Computer Assisted Learning* (2006).

[34] National Research Council. *Committee for the Workshops on Computational Thinking: Report of a workshop on the scope and nature of computational thinking*. Washington, DC: National Academies Press, 2010.

[35] National Research Council. *Committee for the Workshops on Computational Thinking: Report of a workshop on the pedagogical aspects of computational thinking*. Washington, DC: National Academies Press, 2011.

[36] National Research Council. *A Framework for K-12 Science Education: Practices, crosscutting concepts, and core ideas*. Washington, DC: National Academies Press, 2012.

[37] J. F. Pane, C. A. Ratanamahatana, B. A. Myers. "Studying the language and structure in non-programmers' solutions to programming problems." In: *International Journal of Human-Computer Studies* (2001).

[38] S. Papert. *Mindstorms: Children, computers, and powerful ideas*. New York, NY: Basic Books, 1980.

[39] S. Papert. "Situating constructionism". In: I. Harel & S. Papert (Eds.), *Constructionism*. Norwood, NJ: Ablex, 1991.

[40] R. D. Pea, E. Soloway, J. C. Spohrer. "The buggy path to the development of programming expertise". In: *Focus on Learning Problems in Mathematics* (1987).

[41] A. Repenning, D. Webb, A. Ioannidou. "Scalable game design and the development of a checklist for getting computational thinking into public schools". In: *Proceedings of the 41st ACM Technical Symposium on Computer Science Education*. New York, NY: ACM Press, 2010.

[42] M. Resnick. *Learn to Code, Code to Learn*. 2013. URL:
<http://web.media.mit.edu/~mres/papers/L2CC2L-handout.pdf>.

[43] M. Resnick. *Let's Teach Kids to Code*. 2013. URL:
http://www.ted.com/talks/mitch_resnick_let_s_teach_kids_to_code/transcript.

[44] Royal Society. *Shut Down or Restart: The way forward for computing in UK schools*. 2012. URL: <https://royalsociety.org/~media/education/computing-in-schools/2012-01-12-computing-in-schools.pdf>.

[45] B. A. Sheil. "Teaching procedural literacy: Presentation abstract". In: *Proceedings of the ACM 1980 Annual Conference* (1980).

- [46] C. Stephenson, J. Malyn-Smith. *Computational Thinking from a Dispositions Perspective*. 2016. URL: <https://blog.google/topics/education/computational-thinking-dispositions-perspective>.
- [47] S. Watanabe. "Pattern recognition as conceptual morphogenesis". In: *IEEE Transactions on Pattern Analysis and Machine Intelligence* (1980).
- [48] L. Werner, J. Denner, S. Campe, D. C. Kawamoto. "The Fairy performance assessment: Measuring computational thinking in middle school". In: *Proceedings of the 43rd ACM Technical Symposium on Computer Science Education (SIGCSE '12)*. New York, NY: ACM Press, 2012.
- [49] C. Wilson, M. Guzdial. "How to make progress in computing education". In: *Communications of the ACM* (2010).
- [50] C. Wilson, L. A. Sudol, C. Stephenson, M. Stehlik. *Running on Empty: The failure to teach K-12 computer science in the digital age*. 2010. URL: <http://runningonempty.acm.org/fullreport2.pdf>.
- [51] R. A. Wilson, L. Foglia. "Embodied cognition". In: *The Stanford Encyclopedia of Philosophy*. 2011.
- [52] J. M. Wing. "A call to action: Look beyond the horizon". In: *IEEE Security & Privacy* (2003).
- [53] J. M. Wing. "Computational thinking". In: *Communications of the ACM* (March, 2006).
- [54] J. M. Wing. *Computational Thinking and Thinking About Computing*. 2008. URL: <http://www.cs.cmu.edu/~wing/publications/Wing08a.pdf>.
- [55] J. M. Wing. "Research notebook: Computational thinking – What and why?" In: *The Link Magazine* (Spring, 2011). Carnegie Mellon University, Pittsburgh.

Online sources

- [56] URL: www.blocklanguages.org.
- [57] *Alice (software)* – *Wikipedia*. URL: [https://en.wikipedia.org/wiki/Alice_\(software\)](https://en.wikipedia.org/wiki/Alice_(software)).
- [58] *Arduino – Home*. URL: <https://www.arduino.cc>.
- [59] *BBC Bitesize – Home*. URL: <http://www.bbc.co.uk/education>.
- [60] *BJC – Beauty and Joy of Computing*. URL: <http://bjc.berkeley.edu>.
- [61] *Code Club / Home*. URL: <https://www.codeclub.org.uk>.

- [62] *CodingGirls Roma-Usa / Fondazione Mondo Digitale*. URL: <http://www.mondodigitale.org/it/cosa-facciamo/aree-intervento/pna/codinggirls-roma-usa>.
- [63] *Computational Thinking for Educators – Course*. URL: <https://computationalthinkingcourse.withgoogle.com>.
- [64] *Computer Science Teacher: Programming with blocks*. URL: <http://blog.acthompson.net/2012/12/programming-with-blocks.html>.
- [65] *Computer Science Unplugged*. URL: <http://csunplugged.org>.
- [66] *Computing in the Core has moved – Code.org*. URL: <https://code.org/computing-in-the-core>.
- [67] *Cosa è Maker Faire – Maker Faire Rome*. URL: <http://www.makerfairerome.eu/it/cosa-e>.
- [68] *CS50 Syllabus*. URL: <https://cdn.cs50.net/2015/x/references/syllabus/syllabus.html>.
- [69] *Distributed Cognition (DCog) – Learning Theories*. URL: <https://www.learning-theories.com/distributed-cognition-dcog.html>.
- [70] *Exploring Computer Science*. URL: <http://www.exploringcs.org>.
- [71] *GameMaker: Studio – Wikipedia*. URL: https://en.wikipedia.org/wiki/GameMaker:_Studio#cite_note-1.
- [72] *GoGo Board*. URL: <http://gogoboard.org>.
- [73] *Google CS4HS*. URL: <https://www.cs4hs.com>.
- [74] *Google for Education: A solution built for teachers and students*. URL: <https://edu.google.com>.
- [75] *Greenfoot*. URL: <https://www.greenfoot.org/door>.
- [76] *H-FARM*. URL: <http://www.h-farm.com>.
- [77] *HyperCard – Wikipedia*. URL: <https://en.wikipedia.org/wiki/HyperCard>.
- [78] *IDC 2017 – ACM SIGCHI Interaction Design and Children*. URL: <http://idc2017.stanford.edu>.
- [79] *Instructables – How to make anything*. URL: <http://www.instructables.com>.
- [80] *Instructional Design Models and Theories: The Sociocultural Learning Theory: eLearning Industry*. URL: <https://elearningindustry.com/sociocultural-learning-theory>.
- [81] *K-12 – Wikipedia*. URL: <https://en.wikipedia.org/wiki/K%E2%80%9312>.

- [82] *Kodu / Home*. URL: <https://www.kodugamelab.com>.
- [83] *MIT App Inventor / Explore MIT App Inventor*. URL: <http://appinventor.mit.edu/explore>.
- [84] *Modularity definition and information*. URL: <https://www.defit.org/modularity>
- [85] *NetLogo 6.0.1. User Manual: Programming Guide*. URL:
<http://ccl.northwestern.edu/netlogo/docs/programming.html>.
- [86] *News & Updates - MIT Media Lab*. URL: <https://www.media.mit.edu>.
- [87] *Programmieren Lernen für Kinder: mit Spaß fit für die Zukunft*. URL: <https://www-de.scoyo.com/eltern/kinder-und-medien/programmieren-lernen-kinder-fit-fuer-die-zukunft>.
- [88] *Scratch – Imagine, Program, Share*. URL: <https://scratch.mit.edu>.
- [89] *Scratch (programming language)*. URL:
[https://en.wikipedia.org/wiki/Scratch_\(programming_language\)](https://en.wikipedia.org/wiki/Scratch_(programming_language)).
- [90] *The Micro:bit Foundation is a global non-profit organisation making invention with technology fun for everyone!* URL: <http://microbit.org>.
- [91] *The world's leading software development platform – GitHub*. URL: <https://github.com>.
- [92] *U.S. Bureau of Labor Statistics*. URL: <https://www.bls.gov/ooh>.
- [93] *What is a Makerspace? Is it a Hackerspace or a Makerspace?* URL:
<https://www.makerspaces.com/what-is-a-makerspace>.