













## 6 Acknowledgements

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## References

- [1] 2019. Accessibility Pledge. Retrieved August 1, 2019 from [https://www.csforall.org/projects\\_and\\_programs/accessibility-pledge/](https://www.csforall.org/projects_and_programs/accessibility-pledge/)
- [2] 2019. Children and Youth with Disabilities. Retrieved August 1, 2019 from [https://nces.ed.gov/programs/coe/indicator\\_cgg.asp](https://nces.ed.gov/programs/coe/indicator_cgg.asp)
- [3] Danna Arias and Ericka Madrid. 2017. A way to promote the development of autistic teenagers through programming of a humanoid robot platform. In *2017 IEEE Frontiers in Education Conference (FIE)*. IEEE, 1–6.
- [4] Computer Science Teachers Association. 2017. CSTA K-12 Standards. <https://www.csteachers.org/page/standards>.
- [5] Brett A. Becker and Keith Quille. 2019. 50 Years of CS1 at SIGCSE: A Review of the Evolution of Introductory Programming Education Research. In *Proceedings of the 50th ACM Technical Symposium on Computer Science Education (SIGCSE '19)*. ACM, New York, NY, USA, 338–344. <https://doi.org/10.1145/3287324.3287432>
- [6] College Board. 2019. AP Computer Science Principles. <https://apcentral.collegeboard.org/courses/ap-computer-science-principles>.
- [7] United States Census Bureau. [n. d.]. Annual Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico: April 1, 2010 to July 1, 2018. <https://www.census.gov/data/tables/time-series/demo/popest/2010-national-total.html>
- [8] Yueh-Hsia Chang, Chun-Yen Chang, and Yuen-Hsien Tseng. 2010. Trends of science education research: An automatic content analysis. *Journal of Science Education and Technology* 19, 4 (2010), 315–331.
- [9] Code.org. 2018. 2018 State of Computer Science Education. [https://code.org/files/2018\\_state\\_of\\_cs.pdf](https://code.org/files/2018_state_of_cs.pdf).
- [10] Code.org. 2019. Computer Science climbs to 4th most popular STEM major for college-bound students. <https://medium.com/@codeorg/computer-science-climbs-to-4th-most-popular-stem-major-for-college-bound-students-773ce681b96c>.
- [11] CSforAll Consortium. 2019. CSforAll. Retrieved June 20, 2019 from <https://csforall.org>
- [12] Radio Iowa Contributor. 2019. High poverty elementary schools incorporate computer science into curriculum. <https://www.radioiowa.com/2019/08/26/high-poverty-elementary-schools-incorporate-computer-science-into-curriculum/>.
- [13] Adrienne Decker and Monica M. McGill. 2017. Pre-College Computing Outreach Research: Towards Improving the Practice. In *Proceedings of the 2017 ACM SIGCSE Technical Symposium on Computer Science Education (SIGCSE '17)*. ACM, New York, NY, USA, 153–158. <https://doi.org/10.1145/3017680.3017744>
- [14] Adrienne Decker and Monica M. McGill. 2019. A Topical Review of Evaluation Instruments for Computing Education. In *Proceedings of the 50th ACM Technical Symposium on Computer Science Education*. ACM, New York, NY, USA.
- [15] Paul Denny, Brett A Becker, Michelle Craig, Greg Wilson, and Piotr Banaszkiewicz. 2019. Research This! Questions that Computing Educators Most Want Computing Education Researchers to Answer. In *Proceedings of the 2019 ACM Conference on International Computing Education Research*. ACM, 259–267.
- [16] Judith Gal-Ezer and Chris Stephenson. 2014. A Tale of Two Countries: Successes and Challenges in K-12 Computer Science Education in Israel and the United States. *ACM Trans. Comput. Educ.* 14, 2, Article 8 (June 2014), 18 pages. <https://doi.org/10.1145/2602483>
- [17] Shuchi Grover, Roy Pea, and Stephen Cooper. 2015. Designing for deeper learning in a blended computer science course for middle school students. *Computer Science Education* 25, 2 (2015), 199–237.
- [18] Shaun K Kane and Jeffrey P Bigham. 2014. Tracking@ stemxcomet: teaching programming to blind students via 3D printing, crisis management, and twitter. In *Proceedings of the 45th ACM technical symposium on Computer science education*. ACM, 247–252.
- [19] Diana Lambert. 2018. California adopts first computer science standards for K-12 students. <https://edsourc.org/2018/californias-first-computer-science-standards-set-for-approval/601985>.
- [20] Jihyun Lee and Valerie J Shute. 2010. Personal and social-contextual factors in K-12 academic performance: An integrative perspective on student learning. *Educational Psychologist* 45, 3 (2010), 185–202.
- [21] Jihyun Lee and Lazar Stankov. 2018. Non-cognitive predictors of academic achievement: Evidence from TIMSS and PISA. *Learning and Individual Differences* 65 (2018), 50–64.
- [22] R. Lingard and S. Barkataki. 2011. Teaching teamwork in engineering and computer science. , FIC-1-FIC-5 pages. <https://doi.org/10.1109/FIE.2011.6143000>
- [23] Marcia C Linn. 1987. Establishing a research base for science education: Challenges, trends, and recommendations. *Journal of research in science teaching* 24, 3 (1987), 191–216.
- [24] Andrew Luxton-Reilly, Ibrahim Albluwi, Brett A Becker, Michail Giannakos, Amruth N Kumar, Linda Ott, James Paterson, Michael James Scott, Judy Sheard, Claudia Szabo, et al. 2018. Introductory programming: a systematic literature review. In *Proceedings Companion of the 23rd Annual ACM Conference on Innovation and Technology in Computer Science Education*. ACM, 55–106.
- [25] Bambi Majumdar. 2019. Access to K-12 computer science education grows across the country. <http://exclusive.multibriefs.com/content/access-to-k-12-computer-science-education-grows-across-the-country/education>.
- [26] Monica M McGill and Adrienne Decker. 2017. cse4research.org Article Summaries Overview. <https://cse4research.org/article-summaries-overview/>.
- [27] Monica M McGill and Adrienne Decker. 2018. Defining Requirements for a Repository to Meet the Needs of K-12 Computer Science Educators, Researchers, and Evaluators. In *2018 IEEE Frontiers in Education Conference (FIE)*. IEEE, 1–9.
- [28] Monica M. McGill and Adrienne Decker. 2020. A Gap Analysis of Statistical Data Reporting in K-12 Computing Education Research: Recommendations for Improvement. In *Proceedings of the 51st ACM Technical Symposium on Computer Science Education*. ACM, New York, NY, USA.
- [29] Monica M McGill, Adrienne Decker, and Zachary Abbott. 2018. Improving Research and Experience Reports of Pre-College Computing Activities: A Gap Analysis. In *Proceedings of the 49th ACM Technical Symposium on Computer Science Education*. ACM, New York, NY, USA, 964–969.
- [30] Juliet Ollard. 2019. STEM: Efforts to inspire more children could be entrenching educational inequalities. <https://phys.org/news/2019-08-stem-efforts-children-entrenching-inequalities.html>.
- [31] Vivek Paramasivam, Justin Huang, Sarah Elliott, and Maya Cakmak. 2017. Computer science outreach with end-user robot-programming tools. In *Proceedings of the 2017 ACM SIGCSE Technical Symposium on Computer Science Education*. ACM, 447–452.
- [32] Selcuk R Sirin. 2005. Socioeconomic status and academic achievement: A meta-analytic review of research. *Review of educational research* 75, 3 (2005), 417–453.
- [33] Megan Smith. 2016. Computer Science for All. <https://obamawhitehouse.archives.gov/blog/2016/01/30/computer-science-all>
- [34] Tableau. 2019. Tableau Software. <https://www.tableau.com/>.
- [35] David S Touretzky, Daniela Marghitu, Stephanie Ludi, Debra Bernstein, and Lijun Ni. 2013. Accelerating K-12 computational thinking using scaffolding, staging, and abstraction. In *Proceeding of the 44th ACM technical symposium on Computer science education*. ACM, 609–614.
- [36] Karl R White. 1982. The relation between socioeconomic status and academic achievement. *Psychological bulletin* 91, 3 (1982), 461.
- [37] Trish Williams. 2018. California embraces computer science in its schools. <https://edsourc.org/2018/california-embraces-computer-science-in-its-schools/602227>