

Special Education Technology Research: New Advances in 2019
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1. Overview

The purpose of this session is to introduce participants to relevant works that have been published in the special education technology research literature in 2019 in order to understand new advances in research-based evidence. The presentation will answer the question: What have we learned lately?

2. Search Process

This work is part of a larger study on assistive technology evidence with particular emphasis on works published in 2019. Articles profiled are from selected journals and databases to illustrate 26 trends and issues appearing in the literature Circle the number of the article if it holds special interest for you. Make personal notes in the significance column.

3. Topic and Citations

Topic: 3D Printing		
<i>Number</i>	<i>Citation</i>	<i>Significance</i>
1	Lee, K. H., Kim, D. K., Cha, Y. H., Kwon, J. Y., Kim, D. H., & Kim, S. J. (2019). Personalized assistive device manufactured by 3D modelling and printing techniques. <i>Disability and Rehabilitation: Assistive Technology, 14</i> (5), 526-531.	
2	Maharaj, C., Rago, K., Sirjoosingh, V., Sahadeo, S., Lall, D., & Chowdary, B. V. (2019). Design and performance evaluation of 3D printed writing and typing assistive devices: A pragmatic single participant study. <i>Technology and Disability, 31</i> (1-2), 51-61.	
3	Ribeiro, D., Cimino, S. R., Mayo, A. L., Ratto, M., & Hitzig, S. L. (2019). 3D printing and amputation: A scoping review. <i>Disability and Rehabilitation: Assistive Technology, 1</i> -20. https://doi.org/10.1080/17483107.2019.1646825	
4	Zuniga, J. M., Peck, J. L., Srivastava, R., Pierce, J. E., Dudley, D. R., Than, N. A., & Stergiou, N. (2019). Functional changes through the usage of 3D-printed transitional prostheses in children. <i>Disability and Rehabilitation: Assistive Technology, 14</i> (1), 68-74.	
Topic: Accessibility		
5	Dukhovny, E., & Thistle, J. J. (2019). An exploration of motor learning concepts relevant to use of speech-generating devices. <i>Assistive Technology, 31</i> (3), 126-132.	
6	Koester, H. H., & Simpson, R. C. (2019). Effectiveness and usability of Scanning Wizard software: a tool for enhancing switch scanning. <i>Disability and Rehabilitation: Assistive Technology, 14</i> (2), 161-171.	
7	Kurt, S. (2019). Moving toward a universally accessible web: Web accessibility and education. <i>Assistive Technology, 31</i> (4), 199-208.	
8	Perfect, E., Jaiswal, A., & Davies, T. C. (2019). Systematic review: Investigating the effectiveness of assistive technology to enable	

	internet access for individuals with deafblindness. <i>Assistive Technology</i> , 31(5), 276-285.	
Topic: Apps		
9	Liu, H. Y. T., Chia, R. M., Setiawan, I. M. A., Crytzer, T. M., & Ding, D. (2019). Development of “My Wheelchair Guide” app: A qualitative study. <i>Disability and Rehabilitation: Assistive Technology</i> , 14(8), 839-848.	
10	Weng, P. L., & Bouck, E. C. (2019). Comparing the effectiveness of two app-based number lines to teach price comparison to students with autism spectrum disorders. <i>Disability and Rehabilitation: Assistive Technology</i> , 14(3), 281-291.	
Topic: Assistive and Instructional Technology		
11	Ok, M. W., & Rao, K. (2019). Digital tools for the inclusive Classroom: Google Chrome as assistive and instructional technology. <i>Journal of Special Education Technology</i> , 34(3), 204-211.	
12	Nordström, T., Nilsson, S., Gustafson, S., & Svensson, I. (2019). Assistive technology applications for students with reading difficulties: Special education teachers’ experiences and perceptions. <i>Disability and Rehabilitation: Assistive Technology</i> , 14(8), 798-808.	
Topic: Assistive Technology Development		
13	Thorstensen, E. (2019). Responsibility for assistive technologies: Product assessment frameworks and responsible research and innovation. <i>Nordic Journal of Applied Ethics</i> , 13(1), 55-80.	
Topic: Assistive Technology Devices and Services		
14	Ranada, A. L. & Lidström, H. (2019). Satisfaction with assistive technology device in relation to the service delivery process – A systematic review. <i>Assistive Technology</i> , 31(2), 82-97.	
15	Scherer, M. J. (2019). Assistive technology selection to outcome assessment: the benefit of having a service delivery protocol. <i>Disability & Rehabilitation: Assistive Technology</i> , 14(8), 762-763.	
16	Widehammar, C., Lidström, H., & Hermansson, L. (2019). Environmental barriers to participation and facilitators for use of three types of assistive technology devices. <i>Assistive Technology</i> , 31(2), 68-76.	
Topic: Assistive Technology in Higher Education		
17	Brown, J., & Wollersheim, M. (2019). Exploring assistive technology use to support cognition in college students with histories of mild traumatic brain injury. <i>Disability and Rehabilitation: Assistive Technology</i> , 14(3), 255-266.	
18	Evmenova, A. S., Graff, H. J., Genaro Motti, V., Giwa-Lawal, K., & Zheng, H. (2019). Designing a wearable technology intervention to support young adults with intellectual and developmental disabilities in inclusive postsecondary academic environments. <i>Journal of Special Education Technology</i> , 34(2), 92-105.	
19	Malcolm, M. P., & Roll, M. C. (2019). Self-reported assistive technology outcomes and personal characteristics in college students with less-apparent disabilities. <i>Assistive Technology</i> , 31(4), 169-179.	

20	McNicholl, A., Casey, H., Desmond, D., & Gallagher, P. (2019). The impact of assistive technology use for students with disabilities in higher education: A systematic review. <i>Disability and Rehabilitation: Assistive Technology</i> , 1-14. https://doi.org/10.1080/17483107.2019.1642395	
21	Smith, C. C., Cihak, D. F., McMahon, D. D., & Coleman, M. B. (2019). Examining digital messaging applications for postsecondary students with intellectual disability. <i>Journal of Special Education Technology</i> , 34(3), 190-203.	
Topic: Behavior		
22	Riden, B. S., Markelz, A. M., & Randolph, K. M. (2019). Creating positive classroom environments with electronic behavior management programs. <i>Journal of Special Education Technology</i> , 34(2), 133-141.	
Topic: Communication		
23	Bryant, L., Brunner, M., & Hemsley, B. (2018). A review of virtual reality technologies in the field of communication disability: Implications for practice and research. <i>Disability and Rehabilitation: Assistive Technology</i> , 1-8. https://doi.org/10.1080/17483107.2018.1549276	
24	Collins, B. C., Browder, D. M., Haughney, K. L., Allison, C., & Fallon, K. (2019). The effects of a computer-aided listening comprehension intervention on the generalized communication of students with autism spectrum disorder and intellectual disability. <i>Journal of Special Education Technology</i> , 34(4), 269-283.	
25	Dukhovny, E., & Thistle, J. J. (2019). An exploration of motor learning concepts relevant to use of speech-generating devices. <i>Assistive Technology</i> , 31(3), 126-132.	
26	Judge, S., Randall, N., Goldbart, J., Lynch, Y., Moulam, L., Meredith, S., & Murray, J. (2019). The language and communication attributes of graphic symbol communication aids – A systematic review and narrative synthesis. <i>Disability and Rehabilitation: Assistive Technology</i> , 1-11. https://doi.org/10.1080/17483107.2019.1604828	
27	Moorcroft, A., Scarinci, N., & Meyer, C. (2019). A systematic review of the barriers and facilitators to the provision and use of low-tech and unaided AAC systems for people with complex communication needs and their families. <i>Disability and Rehabilitation: Assistive Technology</i> , 14(7), 710-731.	
28	Pahisa-Solé, J., & Herrera-Joancomartí, J. (2019). Testing an AAC system that transforms pictograms into natural language with persons with cerebral palsy. <i>Assistive Technology</i> , 31(3), 117-125.	
29	Stans, S. E. A., Dalemans, R. J. P., de Witte, L. P., & Beurskens, A. J. H. M. (2019). Using talking mats to support conversations with communication vulnerable people: A scoping review. <i>Technology and Disability</i> , 30(4), 153-176.	

Topic: Hearing Technologies		
30	Keidser, G., Matthews, N., & Convery, E. (2019). A qualitative examination of user perceptions of user-driven and app-controlled hearing technologies. <i>American Journal of Audiology</i> , 28, 993-1005.	
31	Manchaiah, V., Amlani, A. M., Bricker, C. M., Whitfield, C. T., & Ratinaud, P. (2019). Benefits and shortcomings of direct-to-consumer hearing devices: Analysis of large secondary data generated from Amazon customer reviews. <i>Journal of Speech, Language, and Hearing Research</i> , 62(5), 1506-1516.	
Topic: Internet of Things (IoT)		
32	Vasanth, K., Macharla, M., & Varatharajan, R. (2019). A self assistive device for deaf & blind people using IOT. <i>Journal of Medical Systems</i> , 43(4), 88-96.	
Topic: Legal		
33	Mead, T. P., Bruininks, B. D., Guillot, D. J., & Rudnicki, C. A. (2019). Legal consequences of using homemade or modified exercise equipment in adapted physical education. <i>Palaestra</i> , 33(3), 40-47.	
Topic: Literacy		
34	Demirok, M. S., Gunduz, N., Yergazina, A. A., Maydangalieva, Z. A., & Ryazanova, E. L. (2019). Determining the opinions of special education teachers regarding the use of assistive technologies for overcoming reading difficulties. <i>International Journal of Emerging Technologies in Learning</i> , 14(22), 141-153.	
35	Schmitt, A. J., McCallum, E., Hawkins, R. O., Stephenson, E., & Vicencio, K. (2019). The effects of two assistive technologies on reading comprehension accuracy and rate. <i>Assistive Technology</i> , 31(4), 220-230.	
36	Stauter, D. W., Prehn, J., Peters, M., Jeffries, L. M., Sylvester, L., Wang, H., & Dionne, C. (2019). Assistive technology for literacy in students with physical disabilities: A systematic review. <i>Journal of Special Education Technology</i> , 34(4), 284-292.	
Topic: Machine Learning		
37	Lillywhite, A., & Wolbring, G. (2019). Coverage of ethics within the artificial intelligence and machine learning academic literature: The case of disabled people. <i>Assistive Technology</i> , 1-7. doi: 10.1080/10400435.2019.1593259	
Topic: Math		
38	Doabler, C. T., Clarke, B., Firestone, A. R., Turtura, J. E., Jungjohann, K. J., Brafford, T. L., ... & Fien, H. (2019). Applying the curriculum research framework in the design and development of a technology-based Tier 2 mathematics intervention. <i>Journal of Special Education Technology</i> , 34(3), 176-189.	
Topic: Mobility		
39	Arlati, S., Colombo, V., Ferrigno, G., Sacchetti, R., & Sacco, M. (2019). Virtual reality-based wheelchair simulators: A scoping review. <i>Assistive Technology</i> , 1-12.	

	https://doi.org/10.1080/10400435.2018.1553079	
40	Dicianno, B. E., Joseph, J., Eckstein, S., Zigler, C. K., Quinby, E. J., Schmeler, M. R., ... & Cooper, R. A. (2019). The future of the provision process for mobility assistive technology: A survey of providers. <i>Disability and Rehabilitation: Assistive Technology</i> , <i>14</i> (4), 338-345.	
41	Keeler, L., Kirby, R. L., Parker, K., McLean, K. D., & Hayden, J. A. (2019). Effectiveness of the wheelchair skills training program: A systematic review and meta-analysis. <i>Disability and Rehabilitation: Assistive Technology</i> , <i>14</i> (4), 391-409.	
42	Mubin, O., Alnajjar, F., Jishtu, N., Alsinglawi, B., & Al Mahmud, A. (2019). Exoskeletons with virtual reality, augmented reality, and gamification for stroke patients' rehabilitation: Systematic review. <i>JMIR Rehabilitation and Assistive Technologies</i> , <i>6</i> (2), e12010. doi: 10.2196/12010	
Topic: Online Learning		
43	Ottley, J. R., Coogle, C. G., Pigman, J. R., Sturgeon, D., & Helfrich, S. (2019). Online clinical teacher preparation programs in special education: Perspectives and critical components. <i>Journal of Special Education Technology</i> , <i>34</i> (4), 239-252.	
44	Sublett, C., & Chang, Y. C. (2019). Logging in to press on: An examination of high school dropout and completion among students with disabilities in online courses. <i>Journal of Special Education Technology</i> , <i>34</i> (2), 106-119.	
Topic: Personalized Learning		
45	Alsobhi, A. Y., & Alyoubi, K. H. (2019). Adaptation algorithms for selecting personalised learning experience based on learning style and dyslexia type. <i>Data Technologies and Applications</i> . https://www.emerald.com/insight/content/doi/10.1108/DTA-10-2018-0092/full/html	
46	Chorfi, H. O., & Al-hudhud, G. (2019). Optimizing e-learning cognitive ergonomics based on structural analysis of dynamic responses. <i>International Journal of Emerging Technologies in Learning</i> , <i>14</i> (10), 150-160.	
Topic: Readability		
47	Gray, S. A., Zraick, R. I., & Atcherson, S. R. (2019). Readability of individuals with disabilities education act part B procedural safeguards: An update. <i>Language, Speech, and Hearing Services in Schools</i> , <i>50</i> (3), 373-384.	
Topic: Research Methods		
48	Routhier, F., Lettre, J., Miller, W. C., Borisoff, J. F., Keetch, K., Mitchell, I. M., & CanWheel Research Team. (2019). Data logger technologies for powered wheelchairs: A scoping review. <i>Assistive technology</i> , <i>31</i> (1), 19-24.	
49	Sprigle, S., & Johnson Taylor, S. (2019). Data-mining analysis of the provision of mobility devices in the United States with emphasis on complex rehab technology. <i>Assistive Technology</i> , <i>31</i> (3), 141-146.	
50	Thorstensen, E. (2019). Responsibility for assistive	

	technologies: Product assessment frameworks and responsible research and innovation. <i>Nordic Journal of Applied Ethics</i> , 13(1), 55-80.	
Topic: Robots		
51	Hall, A. K., Backonja, U., Painter, I., Cakmak, M., Sung, M., Lau, T., ... & Demiris, G. (2019). Acceptance and perceived usefulness of robots to assist with activities of daily living and healthcare tasks. <i>Assistive Technology</i> , 31(3), 133-140.	
Topic: Social		
52	Aldabas, R. (2019). Effectiveness of social stories for children with autism: A comprehensive review. <i>Technology and Disability</i> , 31(1-2), 1-13.	
53	Stasolla, F., Caffò, A. O., Perilli, V., Boccasini, A., Damiani, R., & D'Amico, F. (2019). Assistive technology for promoting adaptive skills of children with cerebral palsy: Ten cases evaluation. <i>Disability and Rehabilitation: Assistive Technology</i> , 14(5), 489-502.	
Topic: Surveillance		
54	Vermeer, Y., Higgs, P., & Charlesworth, G. (2019). What do we require from surveillance technology? A review of the needs of people with dementia and informal caregivers. <i>Journal of Rehabilitation and Assistive Technologies Engineering</i> , 6. doi: 10.1177/2055668319869517	
Topic: Universal Design for Learning		
55	McMahon, D. D., & Walker, Z. (2019). Leveraging emerging technology to design an inclusive future with universal design for learning. <i>Center for Educational Policy Studies Journal</i> , 9(3), 75-93.	
Topic: Video Modeling and Prompting		
56	Park, J., Bouck, E., & Duenas, A. (2019). The effect of video modeling and video prompting interventions on individuals with intellectual disability: A systematic literature review. <i>Journal of Special Education Technology</i> , 34(1), 3-16.	
57	Aljehany, M. S., & Bennett, K. D. (2019). Meta-analysis of video prompting to teach daily living skills to individuals with autism spectrum disorder. <i>Journal of Special Education Technology</i> , 34(1), 17-26.	
Topic: Writing		
58	Datchuk, S. M., Smith, S., & Wang, L. (2019). Using multiple modes of transcription to improve the sentence typing of elementary students with disabilities. <i>Journal of Special Education Technology</i> , 34(4), 226-238.	