Leveraging Artificial Intelligence to Enhance Implementation of Research-Based Practices for Teaching Students with Moderate to Severe Intellectual Disability

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ABSTRACT

Artificial intelligence (AI) has transformative potential to support the education of students with moderate to severe intellectual disabilities (M/SID) and their teachers. Although research and evidence-based practices (EBPs) are integral to fostering positive student learning outcomes, educators face challenges in effectively implementing these strategies. In this article, we discuss how higher education faculty can prepare educators to harness the use of AI as a powerful tool to support the implementation of EBPs in the classroom, addressing teacher fluency and maintenance of application.

KEYWORDS

Artificial intelligence, evidence-based practices, instruction, moderate to severe intellectual disabilities, research-based practices

The core principle of *research-based practices and evidence-based practices*[1] (EBPs) is to define and employ practices and instructional strategies that have demonstrated positive impacts on student outcomes through rigorous research across multiple studies (Hsiao & Peterson, 2019). Over the last decade, various literature reviews (e.g., Browder et al., 2014; Saunders et al., 2020; Spooner et al., 2012) and valuable, reliable, and no-cost resources and tools have emerged from research centers (e.g., Collaboration for Effective Educator Development, Accountability, and Reform [CEEDAR]; Frank Porter Graham Child Development Institute [FPG]) to aid in teacher preparation and the application of recognized EBPs for students with moderate to severe intellectual disability (M/SID). Browder et al.'s (2014) Innovation Configuration specifically outlines EBPs to support students with M/SID across the domains of academics, daily living, job and community, self-determination, and social and communication skills. Legislation such as the Every Student Succeeds Act (ESSA, 2015) and the Individuals with Disabilities Education Act (IDEA, 2004) mandates that schools utilize alternative assessments for students who partake in alternate assessments based on standard state academic content assessments. In order to equip students with the ability to demonstrate advancement in line with state standards, even amid adjusted achievement expectations, teachers require comprehension of academic interventions.

Capabilities of Artificial Intelligence Technologies in Supporting Pre-Service Teachers

Artificial Intelligence (AI) technologies offer a diverse range of capabilities that can significantly support teacher preparation, ultimately enhancing the quality of education (Center for Innovation, Design, and Digital Learning [CIDDL], 2024). AI has the potential to reduce educator stress and burnout by automating tasks like grading and lesson planning. One key area where AI excels is in assisting educators in curriculum development and lesson planning. Natural language processing algorithms can analyze educational materials, textbooks, and online resources to identify

[1] Throughout this paper we have italicized research- and evidence-based practices to highlight for readers.

relevant content, suggest instructional strategies, and even generate lesson plans. This not only saves teachers time but also ensures that lessons are aligned with learning objectives and standards. However, it is crucial to address challenges related to training and job security to ensure that AI integration complements teaching rather than replacing it.

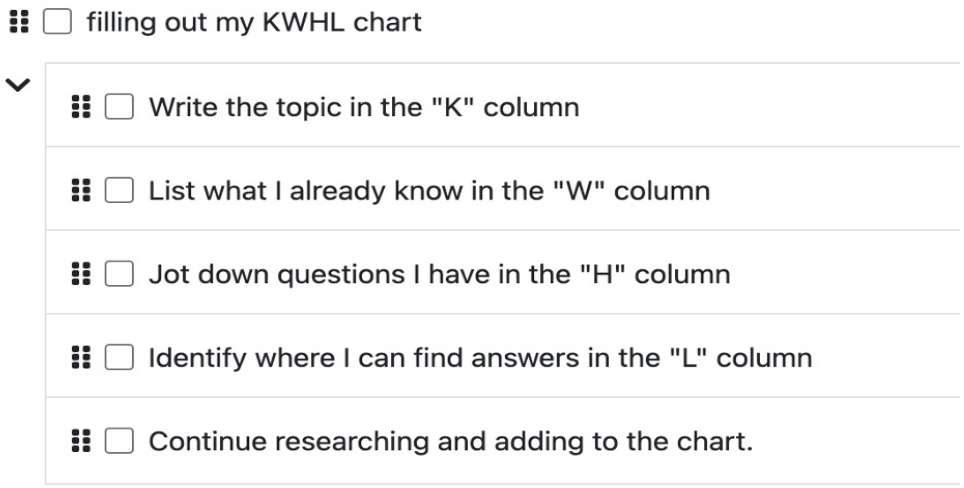
Overall, AI technologies have the potential to revolutionize teacher preparation by providing personalized learning experiences for students, streamlining curriculum development and lesson planning, and offering innovative approaches to professional development for educators. By harnessing the power of AI, we can better equip special educators with the tools and resources (including time) they need to effectively support student learning and achievement (Marino et al., 2023), aligned with research.

Connections Between Teacher Preparation and Research- and Evidence-Based Practices

Although AI has many benefits, it is still critical for teachers to understand and implement research-based practices and EBPs fluently. For students with M/SID, specific EBPs have been identified and are included in textbooks used with pre-service teachers fulfilling coursework relevant to students with M/SID (e.g., constant time delay, system of least prompts, task analysis; Browder et al., 2020; Collins, 2022). Using AI to identify these EBPs is not enough. As instructors of pre-service teachers, we ourselves need to be able to communicate and teach these EBPs and lead our students through the phases of learning.

Just as we ask our teachers to do for their students, we must guide pre-service teachers through the four stages of learning (Collins, 2007). These stages include acquisition (i.e., learning a new behavior or response), fluency (i.e., how well/quickly a teacher can make that response), maintenance (i.e., the ability of a teacher to make that response over time), and generalization (i.e., the ability of a teacher to perform a behavior over time; Collins, 2022).

FIGURE 1: Example of a Task Analysis for Self-Monitoring KWHL Chart



Note. Generated by goblin.tools

Currently, faculty members are tasked with integrating technology into their own courses, as well as equipping future special educators with the skills to effectively utilize technology in their classrooms (Markelz, 2022). We must teach our pre-service teachers wisely, instructing and assessing to be sure that our students are fluent in research-based practices and EBPs while teaching in parallel how to use technology—including AI—to support classroom instruction. While AI technologies can provide lesson plans, materials, and assessments, AI alone cannot take the place of a teacher who is versed in research- and evidence-based instructional practices.

Research-Based Practices and Evidence-Based Practices and AI

According to current talk across the field of education, AI holds potential for various applications within the classroom setting (e.g., grading and feedback, student monitoring and supports) that can enhance student engagement or predict graduation rates and accessibility (Remian, 2019). However, more examples are needed of how pre- and in-service educators can use AI to support the research-to-practice gap (CIDDL, 2024) by addressing their own needs, as well as those of their students with M/SID. Multiple AI tools can be found that assist in creating lesson plans; however, when considering the complex support needs of many students with M/SID, it is necessary for educators to utilize and combine multiple AI resources to maximize their time and effort. In the following sections, we offer examples of employing research-based practices and EBPs alongside AI to educate students with M/SID. We also illustrate how AI can assist in teacher preparation and enhance maintenance and generalization in implementing these research-based practices and EBPs.

Task Analytic Instruction

A *task analysis* (TA) is an evidence-based (McConomy et al., 2022; Sam & AFIRM Team, 2015) systematic instructional tool used to break down the steps involved in a task to help make it more manageable and bite-sized. TAs can be implemented in many areas for students with and without disabilities, including academic, adaptive, and everyday living skills. While each TA should

FIGURE 2: Example of a Task Analysis for a Developing Lesson with Grade-Aligned TextChart

- ☐ creating a lesson plan using different AI tools for teaching the novel Animal Farm
  - ▶ ☐ Research different AI tools available for creating lesson plans
  - ▶ ☐ Select AI tools that are most suitable for teaching literature
  - ▶ ☐ Familiarize yourself with the novel Animal Farm and its themes
  - ▶ ☐ Outline the key concepts and learning objectives you want to cover in the lesson plan
  - ▶ ☐ Use the AI tools to create engaging activities and assessments for the students
  - ▶ ☐ Incorporate multimedia elements such as videos, interactive quizzes, and simulations
  - ▶ ☐ Ensure that the lesson plan aligns with educational standards and guidelines
  - ▶ ☐ Test the lesson plan using the AI tools to identify any areas that need adjustments
  - ▶ ☐ Gather feedback from colleagues or beta testers on the effectiveness of the lesson plan
  - ▶ ☐ Make any necessary revisions based on the feedback received
  - ▶ ☐ Finalize the lesson plan and establish a timeline for implementation
  - ▶ ☐ Monitor student progress and engagement during the lesson
  - ▶ ☐ Evaluate the lesson plan's effectiveness in meeting the learning objectives
  - ▶ ☐ Make adjustments to the lesson plan as needed based on student performance and feedback

Note. Generated by goblin.tools

be individualized for students' current skill levels, AI can support educators in developing and then editing the steps needed for a particular student to learn a new task. See Figure 1 for an example of how AI (i.e., GoblinTools) generated a TA to support student *self-monitoring* by filling out a KWHL *graphic organizer* (see Saunders et al., 2020). Figure 2 also shows how a TA can be used to support teacher instruction, in this case, how to create a lesson using *grade-aligned text* (Browder et al., 2014).

Story-Based Lessons

Shared story reading is an EBP for students with M/SID and is defined as a practice used to access age-appropriate literature through reader-listener interaction in which a story is read aloud and the student interacts with components of the text (Hudson & Test, 2011). Also known as a *story-based lesson* (SBL), the development of grade-appropriate text can be time-consuming. Teachers typically gain fluency in new skills over time through practice to develop SBLs. However, AI could significantly aid in adapting text, playing an important role in this process.

Repeated Storylines. Another component in SBL is the use of repeated storylines. Repeated storylines have been used across adapted text to provide students with big ideas of a short book, chapter, or sections of a book (Browder et al., 2007). They have been used to provide sentences for *choral responding* (Sindelar et al., 1986), used for writing mini-book reports by sequencing the sentences to summarize the story, and have been programmed into augmentative and alternative communication devices to increase opportunities to respond during literacy lessons for students with complex communication needs (Browder et al., 2008). Sometimes, it is hard to generate a one-sentence repeated line that accurately describes the chapter. AI can be used to support this—and save time doing so. An example of repeated storylines for Chapters 1-3 of *Animal Farm* by George Orwell generated by ChatGPT is presented in Table 1. It is important to note that this should be used as a tool and that knowledge of the book is important before utilizing AI to ensure that the generated repeated storylines align with the chapters and novel.

Mathematics and Science. Educators of students with disabilities are often expected to teach most, if not all, of the content areas to their students while also attempting to individualize and differentiate to ensure all students are able to access the general education curriculum. Many special educators have expressed feeling unprepared to teach certain content areas, such as mathematics or science (Knight et al., 2018). This is where the assistance of AI is particularly useful. Research has shown that using children's literature with students with M/SID to teach mathematics concepts helps with student engagement and increasing problem-solving skills by putting these concepts into contexts students can relate to (Courtade et al., 2012). Within mathematics instruction, AI can help teachers create individualized math stories based on student interests, math standards, and early numeracy concepts.

Science wonder stories are another example of a research-based practice to enhance student comprehension of complex science concepts (Apanasionok et al., 2020; Browder et al., 2014. However, educators must be familiar enough with the science concepts to create a story that is not only scientifically sound but also does not promote misconceptions while maintaining personally relevant experiences (Trela & Jimenez, 2013) for the students. With the help of certain AI tools, teachers can learn how to create mathematics and science stories that are both individualized to the students' abilities and needs along with their personal interests to increase engagement. For example, for a student

TABLE 1: Example of Repeated Story Lines for Chapters 1-3 of the Novel, Animal Farm

Chapter	Suggested repeated story-line
1	Mr. Jones, the farmer, is mean to the animals and doesn't treat them well.
2	The animals gather secretly to discuss their plans for rebellion.
3	Mr. Jones and his men try to take back the farm from the animals, but the animals are brave and stand up to them.

Note. Generated by ChatGPT

with a high interest in music who is learning to add numbers from one to 10, an educator could use AI to generate a mathematics story featuring the student's favorite singer, along with math problems aligned with their learning goals.

Vocabulary Instruction

Vocabulary instruction is an important lesson component to enhance student comprehension. Vocabulary words can be taught either explicitly or incidentally and are often categorized into three different tiers. Tier 1 words are the everyday words that are used and heard often. Tier 2 words are words that might appear often in readings and heard from adults but may not be as familiar to a child, while Tier 3 words are usually content-specific (Spencer et al., 2012). When choosing vocabulary to teach, it can be difficult to decide which words are the most important, particularly when teaching grade-aligned content. AI tools can be used to generate a list of key vocabulary and definitions for a given topic. When using AI to generate a vocabulary list, educators should be cautious and check that the vocabulary aligns with the lesson and that the definitions are accurate. Further, educators should consider editing definitions into language and reading levels appropriate for their students.

Lesson Sample: Using AI to Support Research to Practice

Story Based Lesson Components

Please see the Supplemental Materials (Example Lesson Development of *Animal Farm* Using AI Tools), in which we outline multiple examples of how various AI tools could be used within an instructional unit (e.g., *Animal Farm*). We first started by asking AI to develop adapted text for the first three chapters of the book using a third-grade Lexile reading level, followed by vocabulary words for the first three chapters, along with the definitions of each (i.e., rebellion, comrades, tyranny). It should be noted that the vocabulary words generated were not always in the adapted text; therefore, it would be important to edit the text to add those keywords, as they are important concepts in the story. You may also need to use broader or more narrow prompts if the tool is not generating what you are looking to teach. For example, to modify the definition for the vocabulary word *tyranny*, we asked the tool if it could define tyranny as language appropriate for students in seventh grade with extensive support needs, to which it generated a few different examples of a modified definition to choose from.

Next, we prompted the tool to create comprehension questions from the first three chapters that align with Bloom's taxonomy (i.e., a published framework for categorizing educational goals. Bloom's taxonomy is used to design learning activities, assessments, and instructional strategies that promote higher-level thinking skills and deeper understanding among students). It is important for educators to first review the English language arts (ELA) standards aligned to the grade level of the students they are teaching. For example, figurative language is highlighted in ninth-grade ELA standards—the adapted text and comprehension questions should also include figurative language. We then created the repeated storylines (see Table 1). AI tools can create adapted novels for students; however, it is important to understand that AI is not perfect at creating correct grammar usage. Therefore, educators must ensure that the adapted novel is clear and true to the meaning of the novel and the standards being taught. Additionally, if you use a resource to create an adapted story, keep in mind that the vocabulary instruction, comprehension questions, and repeated storylines generated by an AI tool may no longer align with the adapted version. It is important to check that your lesson and assessments are aligned.

Lesson Plan Development

Using another AI tool, we generated a lesson plan that included learning targets, assessment suggestions, and an outline. We did need to edit some of the learning targets to better align with the lesson. This tool was able to create an assessment for the lesson it generated, or you can input questions aligned with Bloom's taxonomy to create a worksheet. Along with the lesson plan, this tool also generated an interactive slide deck to go along with the lesson, which outlined the story elements of *Animal Farm* as well as guided questions. We then used the draft slide deck to edit, align vocabulary, adapt text, adapt key comprehension questions appropriate

TABLE 2: ChatGPT Suggestions for Adaptations and Modifications for Teaching Animal Farm

Adaptation/Modification	Descriptions
Use Interactive Technology	audiobooks, e-books with text-to-speech features, or accessible digital platforms
Provide Physical Supports	adapted seating, positioning devices, or assistive technology devices that help students access and interact with the novel more comfortably.
Implement Augmentative and Alternative Communication (AAC)	communication boards, speech-generating devices, or picture exchange systems to facilitate communication and participation in discussions about the novel
Simplify Text and Language	Use adapted versions of the novel with simplified vocabulary, shorter sentences, and clear visual supports.
Provide Sensory Supports	incorporating sensory supports such as tactile materials, auditory cues, or sensory stories that engage students' senses and promote comprehension and retention of the story's content.
Offer Adapted Activities	Provide hands-on activities, interactive games, or modified art projects that allow students to explore and interact with the story in meaningful ways.
Use Visual Supports	picture symbols, visual schedules, or graphic organizers to help students organize and understand the story's plot, characters, and key concepts. Provide visual cues and prompts to support comprehension and communication.
Personalize Learning Experiences	Offer choices and opportunities for students to engage with the story in ways that align with their abilities, preferences, and strengths.
Encourage Peer Support and Collaboration	Foster peer support and collaboration by pairing students with and without disabilities in learning activities related to "Animal Farm." Encourage peer modeling, cooperation, and mutual assistance to promote social interaction and learning.
Provide Adapted Assessments	Use alternative assessment methods such as verbal responses, visual presentations, or interactive projects that reflect students' unique abilities and strengths.

for the students, and plan grade-aligned standards.

Personalization. Using the MagicSchool AI tool, we wanted to enhance engagement and differentiate activities. We used the *Make it Relevant* generator to generate activities relevant to individual student backgrounds. We asked it to create activities for students who are non-verbal, in wheelchairs, and live in state-run homes. MagicSchool generated differentiated activities for these descriptions of students. While this tool was a great start, we then used these ideas to consider cultural sensitivity when implementing activities while also ensuring that students' accommodations were still being considered. AI tools can generate content that is sensitive to cultural nuances and linguistic diversity. This ensures that instructional materials are respectful and inclusive. Table 2 outlines examples of AI-generated modification and adapting suggestions for our example lesson on *Animal Farm*.

Cross-Curricular Components

Utilizing the MagicSchool *Math Word Problems* generator, we prompted it to create word problems aligned to the high school geometry standard for teaching planes, lines, and angles. Using *Animal Farm* as a theme, it generated examples that incorporated the characters and settings of the novel. In addition, to create a social studies lesson, we first prompted ChatGPT to identify the social studies themes within *Animal Farm*. We then thought about how to align these themes with our own individual state grade-level standards. Finally, we created a social studies lesson plan aligned with the state standards that included a tool that provided a step-by-step lesson along with suggestions for differentiation. We then used *Accommodation Suggestions* to ask how students with M/SID could participate in the geometry lesson. However, the suggestions were incredibly generic (e.g., provide hands-on experiences), thus highlighting that AI tools are just a starting point for educators, not a replacement.

The Future of Innovation and AI for Educating Students with M/SID

Holmes et al. (2021) expressed concern with the ethical intentions of using AI in the classroom, stating that there is a difference between "doing ethical things and doing things ethically" (p. 504). The authors went on to argue that

to do things ethically not only means to make ethical choices but also to consider any unintended consequences that could arise, including in the areas of bias, equity, inclusion, and autonomy. The most immediate ethical concern with using AI to support students with M/SID is student privacy and well-being. Educators need to be aware of the legal implications of using students' identifiable information when utilizing AI to assist in creating accommodations, goals, individual education programs (IEPs), and behavioral support plans. When using these tools to help teachers ease their workloads, caution should be used (e.g., being used as a generic guide instead of having it generate a complete IEP for any student). AI serves as a valuable tool to support teachers and aids in preparing educators for their multifaceted role in teaching. Rather than replacing the demands of lesson planning, it enhances and supports teachers as they develop greater fluency in their craft.

Higher Education and Teacher Preparation

Similar to the research-to-practice gap, there seems to be a gap in professional development for institutions of higher education (IHEs) related to AI. In 2023, the U.S. Department of Education's Office of Educational Technology published a report on AI and its impact on the future of teaching and learning. The report urged increased research and development in integrating AI into teacher preparation programs, calling on institutions to systematically incorporate AI into their curricula.

Since the report was published, there have been several responses to the call. Black et al. (2024) propose seven critical strategies to offer guidance to IHEs regarding the revision of their curricula. These strategies are aimed at preparing pre-service teachers to create effective learning environments for their students using AI technologies and include (a) fostering a universal foundational understanding of AI, (b) cultivating skills for effectively harnessing AI instructional tools, (c) using the five big ideas in AI as guidance for K-12 AI literacy education [perception, representation and reasoning, learning, natural interaction, and societal impact; AI4K12], (d) facilitating exploratory experiences that develop and apply AI knowledge, (e) infusing AI literacy across existing curriculum, (f) integrating critical examinations into classroom experiences, and (g) intentionally infusing these approaches into teacher preparation. Please see Black et al. for further information.

Although these strategies may be new for IHEs, they are critical. We cannot expect our pre-service teachers to use AI effectively (i.e., after fluency of instructional skills) without first addressing needs at the college or university level.

The Role of AI in Supporting Educators

Educators of students with M/SID often play multiple roles, including grant writing for additional resources within their own classrooms. AI may also provide support and help build fluency in grant proposal development. For example, teachers could ask tools, such as ChatGPT or Copilot, "What are some organizations that provide funding to get assistive technology in my classroom;" or "How can I get grants for assistive technology I need in my classroom;" or "Could you create an example of a generic grant proposal for assistive technology that I could modify for different organization's requirements?" After using AI to support grant development, educators would still need to consider the specific guidelines within the call for proposals and review how their own classroom and specific needs are embedded into the proposal.

AI can also play a pivotal role in fostering collaboration and communication among educators, therapists, and parents who serve students with M/SID. A collaborative approach is essential for providing holistic support to students with intellectual disabilities (Jimenez & Taber-Doughty, 2023). Virtual assistants and chatbots, armed with AI capabilities, serve as valuable allies in this endeavor. For example, educational teams often grapple with finding relevant resources tailored to individual student needs. AI can curate and recommend appropriate materials, such as adaptive learning modules. AI-powered virtual assistants may offer real-time support to teams by answering queries.

In conclusion, this article advocates for the integration of AI technologies as a means to enhance the implementation of research-based practices and EBPs in the classroom for students with M/SID. By leveraging AI's capabilities, higher education faculty can prepare educators in creating a more adaptive, inclusive, and personalized learning environment, ultimately supporting educators to improve the educational experiences and outcomes for this unique population.

REFERENCES

Apanasionok, M. M., Neil, J., Watkins, R. C., Grindle, C. F., & Hastings, R. P. (2020). Teaching science to students with developmental disabilities using the early science curriculum. *Support for Learning*, 35(4), 493–505. https://doi.org/10.1111/1467-9604.12329

Black, N. B., George, S., Eguchi, A., Dempsey, J. C., Langran, E., Fraga, L., Brunvand, S., & Howard, N. (2024). A framework for approaching AI education in educator preparation programs. *Proceedings of the AAAI Conference on Artificial Intelligence, 38*(21), 23069-23077. https://doi.org/10.1609/aaai.v38i21.30351

Browder, D. M., Trela, K., & Jimenez, B. (2007). Training teachers to follow a task analysis to engage middle school students with moderate and severe developmental disabilities in grade-appropriate literature. *Focus on Autism and Other Developmental Disabilities*, 22(4), 206–219. https://doi.org/10.1177/10883576070220040301

Browder, D. M., Mims, P. J., Spooner, F.,

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Ahlgrim-Delzell, L., & Lee, A. (2008). Teaching elementary students with multiple disabilities to participate in shared stories. *Research and Practice for Persons with Severe Disabilities*, 33(1–2), 3–12. https://doi.org/10.2511/rpsd.33.1-2.3

Browder, D., Spooner, F., & Courtade, G. (2020). *Teaching students with moderate and severe disabilities* (2nd ed.). Guildford Press.

Browder, D. M., Wood, L., Thompson, J., & Ribuffo, C. (2014). Evidence-based practices for students with severe disabilities (Document No. IC-3). Retrieved from University of Florida, Collaboration for Effective Educator, Development, Accountability, and Reform Center website: http://ceedar.education.ufl.edu/tools/innovation-configurations/

Center for Innovation, Design, and Digital Learning. (2024). *Inclusive intelligence: The impact of AI on education for all learners*. Author.

Collins, B. (2007). *Moderate and severe disabilities: A foundational approach.* Pearson, Merrill, Prentice Hall.

Collins, B. (2022). *Systematic instruction for students with moderate and severe disabilities* (2nd ed.). Brookes.

Courtade, G., Spooner, F., Browder, D. M., & Jimenez, B. A. (2012). Seven reasons to promote standards-based instruction for students with severe disabilities: A reply to Ayres, Lowrey, Douglas, & Sievers (2011). *Education and Training in Autism and Developmental Disabilities*, 47(1), 3–13. http://www.jstor.org/stable/23880557

Every Student Succeeds Act, Pub. L. No. 114-95, 129 Stat. 1802 (2015)

Holmes, W., Porayska-Pomsta, K., Holstein, K., et al. (2022). Ethics of AI in education: Towards a community-wide framework. *International Journal of Artificial Intelligence in Education*, 32(2), 504–526. https://doi.org/10.1007/s40593-021-00239-1

Hsiao, Y.-J., & Sorensen Petersen, S. (2019). Evidence-based practices provided in teacher education and in-service training programs for special education teachers of students with autism spectrum disorders. *Teacher Education and Special Education*, 42(3), 193–208. https://doi.org/10.1177/0888406418758464

Hudson, M. E., & Test, D. W. (2011). Evaluating the evidence base of shared story reading to promote literacy for students with extensive support needs. *Research and Practice for Persons with Severe Disabilities*, *36* (1–2), 34–45. https://doi.org/10.2511/rpsd.36.1-2.34

Individuals with Disabilities Education Act of 2004, Pub. L. No. 108-446, 118 Stat. 2647 (2004).

Jimenez, B. & Taber-Doughty, T. (2023). Interpret and communicate assessment information with stakeholders to collaboratively design and implement educational programs. In R. Pennington, M. J. Ault, G. Courtade, J. M. Jameson, and A. Ruppar (Eds). *High leverage practices and students with extensive support needs*. (pp. 52–63). Routledge.

Knight, V. F., Huber, H. B., Kuntz, E. M., Carter, E. W., & Juarez, A. P. (2019). Instructional practices, priorities, and preparedness for educating students with autism and intellectual disability. *Focus on Autism and Other Developmental Disabilities, 34*(1), 3-14. https://doi.org/10.1177/1088357618755694

MagicSchool AI. (2024, April 20). MagicSchool [Software]. Retrieved from https://app.magicschool.ai

Marino, M. T., Vasquez, E., Dieker, L., Basham, J., & Blackorby, J. (2023). The future of artificial intelligence in special education technology. *Journal of Special Education Technology, 38*(3), 404-416. https://doi.org/10.1177/01626434231165977

Markelz, A. (2022). From the editor. *Journal of Special Education Preparation, 2*(1), 4–5.

McConomy, A. M., Root, J., & Wade, T. (2022). Using task analysis to support inclusion and assessment in the classroom. *Teaching Exceptional Children*, *54*(6), 414–422. http://doi.org/10.1177/00400599211025565

Microsoft. (2024, May 3). Microsoft Copilot [Software]. Retrieved from https://copilot.microsoft.com/

OpenAI. (2024). ChatGPT [Online model]. https://chat.openai.com/c/d3a60e16-4967-

4acf-a403-44da4720c0a3

Remian, D (2019). Augmenting education: Ethical considerations for incorporating artificial intelligence in education. *Instructional Design Capstones Collection*. 52. https://scholarworks.umb.edu/instruction_capstone/52

Sam, A., & AFIRM Team. (2015). *Task analysis.* National Professional Development Center on Autism Spectrum Disorder, FPG Child Development Center, University of North Carolina. http://afirm.fpg.unc.edu/task-analysis

Saunders, A. F., Wakeman, S., Reyes, E., Thurlow, M. L., & Vandercook, T. (2020). Instructional practices for students with the most significant disabilities in inclusive settings: A review of the literature (TIES Center Report 104). University of Minnesota, The TIES Center.

Sindelar, P. T., Bursuck, W. D., & Halle, J.W. (1986). The effects of two variations of teacher questioning on student performance. *Education and Treatment of Children*, *9*, 56–66. https://doi.org/10.1353/etc.2011.0010

Spencer, E. J., Goldstein, H., & Kaminski, R. (2012). Teaching vocabulary in storybooks: Embedding explicit vocabulary instruction for young children. *Young Exceptional Children*, *15*(1), 18–32. https://doi.org/10.1177/1096250611435367

Spooner, F., Knight, V. F., Browder, D. M., & Smith, B. R. (2012). Evidence-based practice for teaching academics to students with severe developmental disabilities. *Remedial and Special Education*, *33*(6), 374–387. https://doi.org/10.1177/0741932511421634

Trela, K., & Jimenez, B. (2013). From different to differentiated: Using "ecological framework" to support personally relevant access to general curriculum for students with significant intellectual disabilities. *Research and Practice for Persons with Severe Disabilities*, *38*(2), 117–119. https://doi.org/10.2511/027494813807714537

U.S. Department of Education, Office of Educational Technology. (2023). *Artificial Intelligence and future of teaching and learning: Insights and recommendations*.