

Chapter 12

Embracing Artificial Intelligence (AI) Tools to Enrich Special Education Teacher Preparation

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ABSTRACT

The preparation of special education practitioners is a field that is ever-evolving. To that end, this paper aims to demonstrate the utility and increased opportunity of embedding artificial intelligence (AI) tools within the preparation programs of special educators, particularly as it is contextualize within the community college space. Additionally, this paper attempts to establish an abbreviated research base for AI within education-centered literature, particularly as this piece illustrates the impact of community college and specific coursework that is used to provide learning opportunities for students studying the fundamentals of special education. Last, this document illustrates how AI may be used as an engaging component to special education coursework to improve the ways in which special education teacher-educators, i.e., research-practitioners who train and provide academic and professional development for special educators, design and develop coursework within settings of teaching and learning.

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INTRODUCTION

Research on special education teacher education is limited, particularly on how community colleges fit into the work of developing novice or experienced special educators (Brownell et al., 2005). The clarity of the roles of what special educators must be most competent in and the training that must accompany the specific enactments that a special educator must be able to do within a classroom setting is imperative, yet research on the topic is seldom prioritized for within the field of educational research (Shepherd, 2016). While teacher preparation has gone through many variations throughout the years, especially since 2020 when the COVID-19 global pandemic rendered the work of teacher preparation impossible, particularly in face-to-face formats, there still is a need to codify practices, even the practice of field experiences within special education, that are being utilized for educators within the field of special education (Ali, 2023; O'Brien, 2024; Williams, 2023;).

Historically, educators have attempted to continue preparing teachers, especially special education practitioners; however, there has still been, for a myriad of reasons, an exodus, of sorts, of special educators from the K-12 field, leaving the high-quality, internal training opportunities for novice special educators in a state of disrepair in many local education agencies (Mason-Williams et al., 2021; Hester, Bridges, & Rollins, 2020). The limited research of special education teacher preparation may be attributed to many different ideas, including the ways in which professors, whose role in studying phenomena, are, also, leaving higher education spaces because budget cuts, salary freezes, and program eliminations (Faris, 2024). With that stated, there is still a great need to recruit, train, and develop educators, especially special educators, because the need of ensuring that students with disabilities are provided specially designed instruction is still a legal mandate within the United States of America (IDEA, 2004).

With the revelatory need of teacher preparation noted, as well as the forthcoming transparency of the human capital crisis on both ends, i.e., educators who train special educators and special educators, themselves, it is salient to explore and evaluate new and emerging practices that honor the work of the past and ushers in the work of the future, especially as technological advances continue to advance and enhance the way we work with greater effectiveness and efficiency. While there have been some practical innovations in teacher preparation, this paper aims to add to the field of special education teacher preparation by suggesting an empowering way to embed artificial intelligence into the training process of special educators, both new and experienced (Cochran-Smith, et al., 2020; Blömeke, S., Nilsen & Scherer, 2021; Ellis, V., Steadman, S., & Mao, 2020).

Perhaps it is the hesitancy to work within a heuristic model of training teachers or simply an inability to approach preparation with a new, fresh, different approach, but the work of teacher preparation is still a vast landscape, filled with standards *and* opportunities for the newest generation of special educators and those still making remarkable gains for neurodivergent students. The field of special education, particularly now with so many shortages and in the face of inflation, must begin to embrace new and emerging forms of teacher preparation to engage newer generations of teachers and inspire more experienced special educators to continue their ongoing growth within the field (Darling-Hammond, DiNapoli Jr., Kini, 2023; Flores & Craig, 2023; Ingersoll & Tran, 2023).

While this paper has several foci, the primary focus of this paper is to demonstrate how an artificial intelligence may be used to create an engaging and responsive method to enrich current special education coursework practices. A secondary focus of this paper is to note that special education and its rich history must be honored by the work we do as reflective practitioners and researchers while, simultaneously, ensuring that we remember the ways in which creativity and specialness brought us to the field of specialized instruction and how different special education and its preparation methods must be from general education, even though there must be, because of lack of research centered on special education, certain connections that must be made through the research conducted for general education contexts. A tertiary focus of this work is to advocate for more opportunities wherein community colleges might be utilized to enhance and advance the field of special education teacher preparation. Finally, this paper offers additional considerations to ensure that the work of educating special educators is done in partnership with researchers, practitioners, and all stakeholders, including students with disabilities, to the comprehensive betterment of training, recruiting, retaining, and graduating more special educational professionals.

BACKGROUND

Landmark Cases that Shaped our Understandings

Within the United States, special education teacher preparation and training measures have drastically been transformed over the last 70 plus years, right around the same time that the first artificial neural network was developed, leading the way for computer systems to be modeled after the human brain and capable of making decisions based on data (Hill-Jackson & Lewis, 2023; Kumar & Thakur, 2012; McCray, 2023). Prior to inclusive classroom settings, children with disabilities were educated away from their typically aged peers. Because of the Civil Rights Movement, *Brown*

v. Board of Education of Topeka, Kansas, and other special education landmark cases to ensure the rights of learners with disabilities, there have been major, positive shifts in teacher preparation, especially as teacher preparation programs have increase their use of current and emerging evidence-based practices and technologies (Ford et al., 2024; Rupp, 2023; Skiba et al., 2008). Cases that brought together disability and disproportionality because of race and ethnicity became more and prevalent within the United States. For example, in *Hobson v. Hansen* (1967), it was determined that African American children were being placed in lower educational tracks in the Washington, DC, public schools (McNamara, 2023).

Additionally, cases ranging from *Diana v. Board of Education* (1970), a case that held assessments used to measure intelligence could not be linguistically biased, *PARC v. Commonwealth of Pennsylvania* (1972), a case that created the foundation of least restrictive environment, *Mills v. Board of Education of the District of Columbia* (1972), a case that ruled that children with disabilities could no longer be suspended, transferred, expelled, and reassigned without due process, and finally *Larry P. v. Riles* (1979) cases where African American students took culturally biased tests, which strengthened the mechanism for compensatory education and fairer assessments, and, much later of course, response to intervention (RTI), and multi-tiered systems of supports (MTSS). While all students were placed in public schools, the problem was that students from lower socioeconomic status or from minority groups were being discriminated against. Most of the tests used were normed on white, middle-class children, which discriminated against other racial groups (Birnbaum, 2006). To understand special education means that one understands, of course, evidence-based practices, intervention implementation, progress monitoring and some of the most critical components to teaching and learning within specialized instruction; while, at the same time, understanding culture and culturally respectful practices to ensure that some of our most vulnerable students are given the free and appropriate public education that they all have a right to access.

Case after case, there are rulings that have attempted to address the issue of inappropriate special education placement because of race in specialized education settings. Arguably, it is difficult task to solely focus on the futuristic opportunities that technology, particularly artificial intelligence, can bring to teacher preparation, without mentioning how the litigious happenings of the past have impacted the field of special education as a whole, insisting that we teach both the historical challenges and the present opportunities of equipping special educators with the robust, comprehensive knowledge to do great work for students with disabilities. There is, now, an opportunity to meaningfully combine various cultures, disability/ability, technology, etc., together to vastly improve the ways in which we support students with disabilities across our nation's classroom settings through technology in a new and creative way.

Teacher Preparation within Special Education

One of the first teacher preparation programs in special education in the United States was situated in a residential facility and were erected by incredible foundational members of the special education community, including Laurent Clerc and Thomas Hopkins Gallaudet (Connor, 1976). This and other training programs like them were located at either special training schools within a clinical setting and served only a few types of disabilities, e.g. speech, hearing, and visual impairments, as well as mental retardation (noted as intellectual disability in current laws and literature) (Brownell et al., 2005). Teacher preparation programs shifted around the 1970s, and the rise of competency-based teacher education (CBTE) became more and more apparent within schools of education across the country, lessening the intimate knowledge that was once required to support students with specific disabilities to framing teacher preparation through generalities of understanding different skills, knowledge, and abilities within the practice to achieve and acquire specific competencies (Ghosh & Sankar, 2024; Rajesh & Joseph, 2023; Roth, 1977; Semmel & Semmel, 1976).

Findings from Shortes, Cegelka, and Nelson (1973) illustrated an indication that, “[Teacher] competencies tended to be derived from ‘expert’ opinion rather than the direct observation of teacher behavior, that they often are not behaviorally stated or evaluated as to whether or not they have a positive impact on children performance, and that few teacher educators or researchers were, at the time, attempting to validate competencies empirical before including them in teacher education programs” (p. 192). CBTE has had its issues, particularly as some researchers have noted its often too mechanical reception, creating the environment for pre-service teachers being instructed in a broader, more generalizable method, creating overlaps that minimize and reduce the specialness from special education (Brownell et al., 2010; Hallahan & Kauffman, 1977).

Because of the lack of specificity in addressing specially designed instruction, the conflation of teacher education of special education and general education occurs, inopportunistically creating teacher preparation programs for special educators that look too analogous to any typical preparation program of any content-area or student-centered approach (Goe, 2006). Additionally, even some alternative teacher certification programs, attempting to do the work that higher education institutions seemingly struggle with, are currently certifying teachers in a specific content area and, as an essential *add-on*, offering dual teaching certificates by simply taking a handful of classes on the topic of specialized instruction (CityTeachingAlliance). The case is clear: without a deepened and deliberate understanding of how-to best support students with disabilities and their teachers, there will be little-to-no sig-

nificant gain in successful outcomes for students with disabilities (Blasey, Wang, and Blasely, 2023).

Now, more than ever, especially because of the many dismal outcomes for so many students with disabilities, there is more of a need to ensure that teacher educators specify and situate special education teacher preparation with students with disabilities at the center of learning the field in a more deeply focused way (Cole et al., 2023; Cooc, 2023; Kloos, Nacik, & Ward, 2023). Now, with the varying ways by which formal and informal teacher preparation is conducted, i.e., in-person, virtual, etc., the opportunity to ensure techniques and technologies are crafted with, first, students with disabilities in mind, is more imperative than ever before. Even informal methods whereby there is an underpinning of learners with disabilities have started to emerge like never before. For example, viral video models and speech and language supports can be widely accessed by educators of students with disabilities, even by Rachel Griffin Accurso, more widely known as Miss Rachel, an educator with two master's degrees in education and a passion to support her son, Thomas, who was diagnosed with speech delay (Calloway-Appleton, 2023). Ultimately, special education teacher educators must rethink what makes a quality special education teacher, and that process should be informed by the field's history and by the trends in policy, service delivery, and research that have shaped special education and teacher education practices (Brownell et al., 2010). Moreover, understanding the history of our work is salient, while, concurrently, ensuring that we are looking ahead at tools and strategies to ensure that researchers and practitioners are aware of emerging and new ideas to promote the work of specially designed instruction without conflating it with the supports that other students need and deserve.

Sindelar and colleagues (2010) found studies could be categorized into the following areas that aligned with research gaps within special education teacher preparation: (a) pedagogical strategies (i.e., specific approaches, such as coaching and action research that are used in initial preparation and PD opportunities to improve teacher knowledge, beliefs, and instruction); (b) technologies that could be used to deliver practice-based approaches; (c) fieldwork experiences offered in schools, communities, clinics, or tutoring programs; (d) program experiences (i.e., a set of courses and fieldwork experiences that are structured around a particular topic, such as inclusion); and (e) measurement of teacher knowledge, instructional practice, or beliefs. No studies, as shared by Sindelar et al. (2010), were identified that provided information about variables that might moderate or mediate the effectiveness of teacher education innovations or how to promote the collaborative learning of special and general education teachers in ways that would improve their ability to co-teach or work within multi-tiered systems of support (MTSS) (p. 29).

That study of nearly fifteen years ago, today, had a noticeable absence, of course, of one of today's leading opportunities to help create solutions to some of the research gaps noted—that solution being artificial intelligence within the work of special education teacher preparation. This observation leads readers to realize that there was an omission of how emerging technologies, beyond computer-aided instruction, of course, could help to provide stronger and richer outcomes for students with disabilities. Now, special educators and teacher preparers, can envision how artificial intelligence, another field of special education preparation that requires research and consideration, could be used to deliver practice-based approaches within specialized education, as well as the pedagogical strategies that can now be realized by AI tools.

In addition to the apparent gaps of research within special education, it must also be noted that there are significant redesigns happening in special education teacher preparation all the time because of new and emerging practices within the space of program evaluation to ultimately strengthen the delivery methods and experiences of special education teacher preparation. Goeke, Kossar, and Mitchem (2018) share that the Recognizing Effective Special Education Teachers (RESET), is one of many evaluative tools currently being implemented in the country, conceptually framing well-defined observations that incorporate clearly explicated criteria linked to evidence-based practices within special education, directing teacher's attention to implement instructional practices that have been demonstrated to result in improved outcomes for students with disabilities (SWD) (pgs. 155-156). Readers must understand that there is a balance happening within special education teacher preparation. While there are gaps that exist, there is still meaning, rich work happening to ensure that special educators are getting what they need in order to be the best special educators, particularly in the areas of history and content, for the students and families that they serve.

Byrd and Alexander (2020), in an investigation of the demonstration of special educators' content concluded:

That content area specialty does provide one type of expertise, there is much more to teaching than that knowledge. They share that, "We can all learn from each other the most effective methods of adapting the curriculum to meet the needs of all students. And finally, all of this can be done through effective communication that must be multi-directional (among all stakeholders, including administration). These issues can act as a springboard starting from the day a teacher candidate entered their program and continued throughout their careers. It is not necessarily asking for others to think outside the box; it is realizing that the box is bigger than previously considered by those involved in this endeavor. (p. 80).

This notion of the “box being bigger than previously considered helps readers to practitioners to understand that there is no myopic, one-size fits all to the education matters for students with disabilities or the ways in which to prepare their teachers (Bryd & Alexander, 2020). In fact, the *one-size-fits-all* method is contrary to specialized education and specially designed instruction. Allowing special educators and the professionals who teach them to continuously improve by incorporative effective methods to assist in the teaching and learning of students with disabilities is imperative for the success of field of special education.

Special Educational Technology and AI in the Literature

Technology has been noted as *the great equalizer* in education, and the benefit of technology has also been noted to allow students with disabilities being able to strategically solve many of the challenges faced by learners with disabilities (Schradie, 2020). For example, “. ... [Technology] can provide a voice to those students who may not otherwise have one per their disability (i.e., AAC devices), read a text to a student who struggles with reading as a result of his/her disability (i.e., text-to-speech devices, screen readers, and Reading Pens), grant access to a computer and other electronic tools (i.e., switches and speech recognition), and offer low-tech devices such as pencil grips or lined paper to aid students in writing (Bouck, 2010). Although never actually mentioning artificial intelligence, Edyburn, one of the most notable researchers in special education technology, shares:

Educators are often so focused on their day-to-day work that there is little time for considering the emerging trends and issues happening around us. Trend analysis is a basic technique futurists use in order to develop scenarios that are helpful in planning for the future. For those willing to take great risks, there is the potential for great reward. The special educational needs of individuals with disabilities require considerable effort and technologies to assist them in maximizing their potential. However, there are many secondary benefits to society when some specialized technologies (i.e., screen magnification, text to speech, and word prediction) are implemented as inclusive technologies, providing benefits for everyone. As a result, it is important to think about the needs of diverse individuals when planning for the future of education. (p. 291)

While this comment takes on both a hardware and software conceptualization of special education. It is clear that the emerging trends and issues happening around us, particularly in education, cannot be ignored and must be embraced if we are going to ensure that our educational systems, specifically or special education system, have the most well-prepared teachers for some of our most vulnerable populations.

Western Governors University provides insight into the different technology that has appeared in special education over the years. The following table is represented of the information shared:

Table 1. Western Governors University’s Types, Definitions, and Examples of Technology

Type of Technology	Definition of Technology	Example of Technology
Assistive listening devices	Students with difficulties hearing or concentrating can benefit from the use of an assistive listening device. These are designed to make it easier for students to listen during class by amplifying sound.	FM systems and sound field systems use wireless transmitters to broadcast and amplify the teacher’s voice. Whether an instructor must assist an individual student with special needs in an inclusive classroom or to amplify their voice in a classroom with poor acoustics, this technology can help dramatically.
Text-to-speech tools	Students with disabilities that impact their ability to read, such as visual impairments or dyslexia, can struggle in general education classrooms without the help of text-to-speech tools. By using assistive technology for reading, educators can improve classroom performance for these individuals.	There are many text-to-speech tools for educators available for both desktops and mobile devices. Using free applications and browser plug-ins, students with vision or reading impairments can save and hear educational content in an audio format.
Switch devices	Mobility impairments can make it hard for students with disabilities to engage with lessons in the same way as their peers. Switch devices allow these learners to engage with content with alternative input devices. There are switch devices designed to allow users to touch, blink, kick, or push and pull to interact with educational content and software.	Sip-and-puff (SNP) systems allow students with mobility impairments to interact with computers and mobile devices by sipping or puffing on a controller, effectively replacing a mouse or keyboard.
Proofreading technology	Students with disabilities that may impact their mobility, language comprehension, or ability to type can benefit from assistive proofreading technology. This is designed to either automatically fix common errors or to make grammatical suggestions.	Basic proofreading software can help learners write more efficiently, while more sophisticated solutions can identify student problem areas, then make advanced recommendations. This data can also help teachers determine where a student may require further instruction.

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Table 1. Continued

Type of Technology	Definition of Technology	Example of Technology
Assistive technology for math	There are a wide range of devices and software options to help students with conditions that impact their ability to complete calculations. From basic arithmetic to calculus and beyond, there are assistive technologies for most subjects in math.	Calculators can help students solve simple and complex math problems. Some are designed with large buttons, which can help students with mobility or visual impairments. More advanced tools, like equation-solving software, can make suggestions to help students without directly giving them answers. Some even offer games that make teaching math easy and fun.
Augmented and virtual reality	Learners with disabilities who experience struggles focusing on projects or “tuning out” distractions can be aided through augmented or virtual reality software. The former can highlight key elements of a project and provide additional information or guidance, while the latter can provide a virtual environment in which external distractions can be reduced.	Examples of augmented and virtual reality applications for assistive learning include AR flashcards, AR-enabled worksheets, VR educational simulations, and VR collaboration software. Each of these can improve student engagement by drawing student interest and eliminating distractions.

Again, readers will notice that artificial intelligence is not actually named within the technology listed; however, it is clear that artificial intelligence absolutely has convergence in this work, as represented by AI tools that perform specific tasks presented. For example, Grammarly, one of the more widely known AI tools in this space, is used to perform the task of proofreading, along with other tools like Ginger Software, QuillBot, Slick Write, PaperRater, and countless other artificial intelligence tools.

Artificial intelligence has been used and referenced in several areas within general education. For example, Salas-Pilco, Xiao, and Hu (2022) share that artificial intelligence (AI) and learning analytics (LA) have been introduced in the field of education; they find: (a) there is a focus on studying the behaviors, perceptions, and digital competence of pre- and in-service teachers regarding the use of AI and LA in their teaching practices; (b) the main data sources are behavioral data, discourse data, and statistical data; (c) machine learning algorithms are employed in most of the studies; and (d) the ethical clearance is mentioned by few studies. The implications will be valuable for teachers and educational authorities, informing their decisions regarding the effective use of AI and LA technologies to support teacher education (p. 569).

These types of findings are salient to the field of education and, although they do not reference special education teacher preparation, readers may be able to approximate how the findings from the work of Salas-Pilco, Xiao, and Hu (2022) help to shape a clear vision by which teacher-educators might be able to shape the ways in which AI can be yielded.

Additionally, Sperling et al. (2024) illustrate how, although AI literacy is a globally emerging research field, specifically in business and computer science; however, there is an absence of AI literacy, as initially defined by Long and Magerko (2020), particularly as a professional knowledge base, within teacher education. This blatant omission of artificial intelligence within specialized instructional settings may widen the knowledge gap between what is known by emerging technologies within the field of human endeavor, e.g., AI, and how it might add a beneficial layer to the work of special education teacher preparation for years to come.

Globally, educational partners from the United Arab Emirates have addressed the role of artificial intelligence in teacher professional development, yet, unfortunately, the study is not centered on special education preparation. While the findings by Hashem Mahmoud Muslim al-Zyoud (2020) are helpful in understanding some intelligent applications that can be utilized within professionals development of teachers, the study does not provide a practical implication for special educators to see how AI might be able to complement the work of special educators within coursework, as well as an ability to provide the increased competencies to work within a dual capacity approach, engaging special educators with increased awareness and utility of emerging technologies, as well as providing special educators with practical tools to help increase productivity and support the challenging work of special education, as an entire specialized field. Additionally, Lamas and Arnab (2021) explore the role of teachers to be the subject matter experts to design, visualize, and orchestrate AI-enabled teaching and learning, which is an undoubted direction that education is moving towards, but not quite making its way to embedding AI within special education-teacher preparation (Ng et al., 2023).

Currently, most of the literature centers on learning about AI, not using it to enhance a specific capacity of knowledge within the content area of preparing special educators. In the following sections of this paper, readers will learn about the general composition of the community college space as an environment to provide training to educators through special education coursework, as well as a formal addressing of how artificial intelligence has been used within teacher preparation to enhance the practice and access of emerging technologies that may lead to increase engagement within student-candidates attempting to learn more about the pedagogical practices of specialized instruction. Waterfield, Watson, and Day (2024), share, “special education teachers can leverage AI platforms, tools, and other technologies to support general tasks in their day to day practice, lesson planning, content creation, and more” (p. 449). While some studies share the litany of tools that may be useful to special educators, there is no pedagogical framing by researchers, professors, or knowledgeable others within specialized education, supporting learners’ knowledge and application.

Moreover, Morino et al. (2023) reveal, “[S]pecial education teacher preparation programs must reconsider how we prepare future teachers.” When provided the prompt, “Given the future use of AI, what are some considerations for preparing future educators and special educators?” ChatGPT gave the following answer. None of the words in these seven considerations have been edited:

1. Equip educators and special educators with the knowledge and skills to understand and use AI in the classroom. This includes understanding the various types of AI, the ethical considerations, and the potential applications of AI.
2. Provide educators and special educators with the opportunity to explore how AI can be used to support personalized instruction and how AI can be used to identify student learning needs.
3. Educate educators and special educators on the implications of using AI in the classroom, such as potential privacy concerns, data security, and bias in AI systems.
4. Provide educators and special educators with resources on AI-based learning and assessment tools, and how to integrate them into their teaching and assessment practices.
5. Develop guidelines and protocols for the use of AI in the classroom and for the ethical use of AI by educators and special educators.
6. Educate educators and special educators on the potential risks of AI and the ways in which AI can be managed, monitored, and regulated.
7. Encourage educators and special educators to collaborate with experts in AI to ensure that AI is used to its fullest potential in the classroom. (p. 411)

While artificial intelligence shares the *what* of special education teacher preparation, there is still a prevalent need to identify and create the *how* of special education, essentially ensuring that reflective practitioners are given the opportunity to consider special education, first, when considering how to train teachers who will serve and support students with disabilities. One of the ways that can be done is through the possible flexibility that institutions of higher education, particularly at the community college level, can employ while educating future special educators. Because of the history of the comprehensive community as a nimble place that responds to the needs of its local community, there is an opportunity to ensure that community colleges take their place within the conversation of how to utilize AI to help support the production of special educators.

The Comprehensive Community College

As researchers examine the spaces wherein artificial intelligence may have the most exploratory, effective, and efficient opportunities to provide added instruction and education to the field, it is important to review the composition of community colleges. Since their inceptions, community colleges have been expected to serve several roles in American society (Kisker Cohen, & Brawer, 2023). As the entry-way to college for groups of people who would otherwise have been excluded from higher education, community colleges often provide the first step on the road toward a baccalaureate degree and safe spaces that address the educational and civic needs of a wide array of local citizens; no other segment of postsecondary education has been more responsive to its community's workforce needs because at community colleges, students can learn at any point in their lives while taking advantage of low tuition, convenient campus locations, open admissions, and comprehensive course offerings (Kasper, 2003; Ives, 2006).

Community colleges are diverse spaces that, since their beginnings, have sought to find their identities in an ever-changing U.S. and address the changes that society and the world bring—both foreseen, such as changing demographics, and unforeseen, such as recessions and, of course, global pandemics, now, too (Bulman & Fairlie, 2022; Carales, 2020). Schools, including institutions of higher education like community colleges, are nested in providing comprehensive support to a diverse body of students. Given community colleges' open enrollment policies and their numerous instructional missions, students enter and re-enter with various and often multiple objectives but not always with clear knowledge of how to clarify and accomplish them; this makes successful completion in community colleges that much more difficult than other educational spaces (Lee et al., 2021; Hatch & Garcia, 2017).

Typically during times of financial uncertainty, community colleges often bore witness to large leaps in enrollment and completion; however, in the wake of the financial and health uncertainties created by Covid-19, that was not the case (Mountjoy, 2022). Historically, with low cost and ready-access, community colleges have been an opportunity for the marginalized to engage and enroll in higher education schools (Krebs, 1999; Soria Hargos, & Shenouda, 2023). Community colleges have, like any other educational constructs, not been without their problems, even with low-cost incentives that make these institutions favorable to so many, particularly in the area of student completion rates (Acton, 2021). Even with that noted, because of the flexibility that community college spaces offer, it makes the inclusion of AI within teacher preparation at this level of higher education a fertile and promising space to creatively envision how teacher preparation, particularly special education teacher preparation, might look in the near future.

Community Colleges as Places of Teacher Preparation

Over the years, community colleges have been a major source of providing credentials, through state education agency-approved coursework, for decades, and the ability for community colleges to provide essential training and technical assistances is evermore present, especially in the post-pandemic era (Garza-Mitchell, Geier, & Singleton, 2019; Kisker, C. B., Cohen, A. M., & Brawer, F. B, 2023). Garza-Mitchell, Geier, & Singleton share:

However, despite being providers of teacher education preparation, the history of serving students in urban and rural areas, both areas of high turnover, their commitment to serving underserved students, and their dedication to remediating students who may not initial qualify for teacher education programs at [traditional four year institutions], they are not considered valuable resources in their regard. In order for community colleges to successfully serve workforce needs, including teacher education, they must be included in national conversations about low-cost, high-quality options for preparing teachers. (p. 25)

Removing community colleges from the broader conversations of teacher preparation, which inevitably removes them, too, from conversations about methods of teacher preparation and innovative coursework compositions, has, historically, created an under-utilization of resources for the work of teacher preparation. Now that artificial intelligence has become more and more apparent with the field of education and other fields of human endeavor, as shared earlier in this work, community colleges are positioned to take advantage of the many ways that are possible to ensure a technologically advanced and engaging way to capture more students who have an interest in becoming educators to possibly improve the teacher shortage in the United States (K-12 Education). Admittedly, there is little information about special education teacher preparation within community college contexts, which underscores the salience of this chapter, especially as emerging technologies are being actualized and utilized.

For the sake of presenting a wide view of the possibility of wherein community colleges might strengthen their presence in the space of places of teacher preparation and the innovation that may exist within those spaces, this paper must present findings that demonstrate a strong understanding of this work. Park and colleagues (2018) researched community college teacher education baccalaureate programs, in innovative approach to ensure that the teacher shortage, billowing from the past 20 years, is creatively addressed. Unfortunately, Park et al., (2018):

Faced with declining numbers of students in teacher education programs, policymakers in many states are considering new actions that might increase teacher supply. One approach that has gained increasing popularity is community colleges beginning to offer 4-year degrees in teacher education. This study explores state

adoption of these programs and its effect on the number and diversity of students earning bachelor's degrees in teacher education. Overall, we find no effect of these programs; however, in the limited case of a state with widespread use of community college baccalaureate (CCB) teacher education programs we find that degree production increased, yet the diversity of the graduates declined. (p.1)

This critical study demonstrates the underpinning of ensuring that degree attainment, particularly within teacher preparation, cannot be the sole focus of new and emerging work that happens within the space of education. A critical lens must be applied to recruitment and retention of community college students seeking to become teachers. Additionally, it must be noted that special education preparation was not mentioned in this article; however, readers might make inferences about the extension of the work to prepare general education teachers and how it dovetails with the work of preparing special educators, too. While the strategies mentioned, again, do not specify the work of preparing special educators but, rather, general educators, it must be noted that artificial intelligence was omitted, too, which leads to an additional mention about the relationship between retention and engagement, specifically noting how specific strategies may be employed to increase the ultimate output and outcomes of reinventing and reimaging what teacher preparation might look like for special educators in the future. Because this paper's primary aim is to consider the ways in which artificial intelligence tools might be utilized in the preparation of special educators, conceptualizing the work of teacher preparation more deeply than simply offering a degree, there must be, albeit, brief conversation about how some student see AI as a way to stay current and engaged with coursework material and classroom experiences.

Harvard University's Graduate School of Education conducted a study wherein they elicited student thinking in a survey, centering questions about artificial intelligence and its use within classroom settings. The Harvard Graduate School of Education shares:

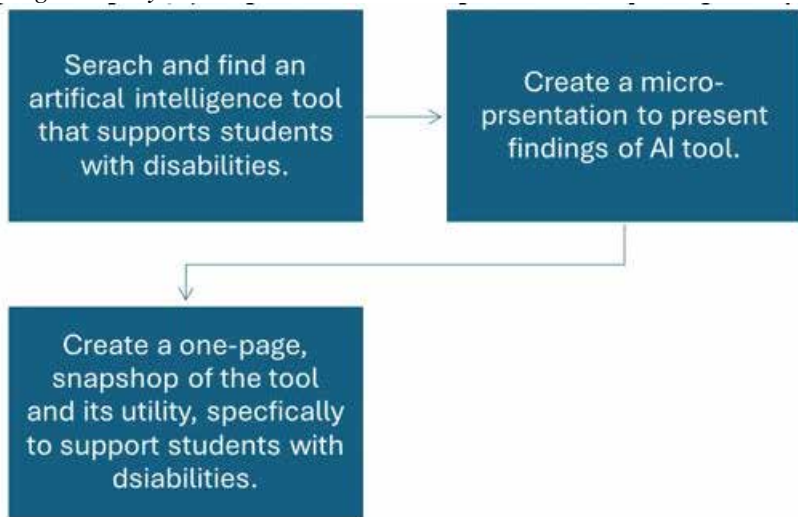
Of the teens surveyed, many admitted to using AI to cheat on assignments, homework, or tests. But while academic integrity remains a concern for both adults and teens alike, many study participants highlighted positive academic experiences they've had with generative AI. AI was called "the modern approach to learning," while other teens surveyed pointed out that "not all kids use it to cheat in school. Reflecting insights heard from teens and young adults about their excitement for the future of generative AI, teens also wanted adults to know they can be trusted to, as one participant wrote, "use it in a good way," such as asking for help starting papers or to create an individualized learning plan. (p. 2)

Ladson-Billings (2007) notes that university teacher education programs are antiquated and barely existing in their failing attempts to recruit and graduate diverse teacher candidates. By ensuring that AI tools start to become more embedded into

core course curricula, teacher educators might be able to reinvigorate the profession, especially the training that must occur within the work. Seemingly, many students want to stay on the cusp of what is current and we, as teacher preparers, must be willing to, at best, explore tools that may enhance our overall work of, in this case, preparing special educators in the most progressive and applicable ways possible, leveraging technologies, even if albeit heuristically imperfect. Regardless of the technology, of course, the knowledge and art of teaching students with disabilities is still paramount and must be done by an experienced practitioner who has the wherewithal to ensure that, technology is used as a tool to assist the learning process, not in sole replacement of deep, rich pedagogical methodologies.

Again, the primary focus of this paper is to demonstrate how AI tools and technologies might be used to train and develop students formally learning special education practices within coursework settings at a largely diverse community college in the Mid-Atlantic region within the United States of America. Within an introductory course to special education, students are asked to perform several tasks, i.e., research historical legal cases that contributed to special education precedents within the American legal systems, create a lesson plan with clear evidence-based practices to be utilized for students with disabilities, present findings about Individuals with Disabilities Education Improvement Act of 2004 categories, including possible student behavioral manifestations, and other major assignments (IDEA, 2004). This type of historical and pedagogical opportunity allows students to witness the past, present, and potential future of special education, while simultaneously creating and ideating supports for students with disabilities. Recently, a new, major assignment was added to the curricula for the course, which is illustrated in Figure 1 (see Appendix A).

Figure 1. Artificial Intelligence (AI) Gadget and Website Scavenger Hunt and Critique Assignment Cycle



First, by allowing students to freely explore gives them a bound autonomy to increase their practices and skill set of being a research-investigator, a skill that will undoubtedly be helpful when they begin their careers as teachers of record (Zigmond & Kloo, 2017). This sense of autonomy underscores what empowerment theorists would note as being evidence when instructors can rely on the results of this paper due to its facilitation of the learning process in the classroom and beyond the brick-and-mortar system by leading students from behind. As mentioned by Joseph (2020), “If provided with ample opportunities for leadership on course assignments, students may become more empowered by learning their own way . . . [a] mastery of the empowerment theory would certainly prepare students for a better understanding of an avalanche of new . . . ideas in both clinical and non-clinical settings. (Joseph, 2020, p. 11-12). This helps researchers to understand allow the types of assignments within coursework allows the practicability of technology to come to the forefront of teaching and learning, particularly as a chance for practitioners to experiment and take calculated risks with the content, while keeping students with disabilities at the center of the work.

Additionally, ensuring that they are able to record and present their findings is an opportunity for students to get comfortable being the knowledgeable other within the context of finding and reporting on an AI tool that will be useful to them and their practices. At the conclusion of the assignment, the videos are shared through a cloud folder so students have a crowd-sourced, curated menu of AI tools that may

be learned and used well beyond the conclusion of the course. From this assignment, students have been able to find AI tools that assist with text adaptation, social narratives, and a myriad of other evidence-based practices found within the rich instructional history of special education; this is just one of many ways by which teachers-educators might develop special educators abilities to utilize AI in their instructional practices, specifically to support students with disabilities and their families (Wallace & Abel, 2021).

Embedding meaningful assignments centered on discovering the utility of artificial intelligence within special education settings is imperative to the continuation of exposing students to what will inevitably be our future work—educators yoking the strength of technology, specifically artificial intelligences, so we might be able to facilitate deeper connections between the ways teachers are trained to work and support students with disabilities and their families, as well as connecting practical tools that students might be able to turnkey into the classroom setting, as they work with students with learning disabilities and difficulties. This type of AI assignment aligns well with the expected course outcomes, and, because of the intended outcomes of the assignment, aligns well with several standards found within the *Practice-Based Standards for the Preparation of Special Educators* (2022).

CONCLUSION

There is still quite a considerable amount of work to do to purposefully and meaningfully embed AI as tools within the work of preparing special educators to be practical and well prepared to meet the needs of the students they serve. By allowing AI to appear within the work of special education-teacher preparation, the professor, acting as the expert, can provide meaningful feedback, leading to additional discoveries for students based upon the work they have ultimately submitted (see Appendix B) to explore even more research and resources that may lead to even deeper connections (see Appendix C).

Moreover, teachers able to use emerging technologies coincides with the teacher empower model and teacher empowerment theory, ensuring that teachers are given agency and a voice in the decision-making processes that affect their work and their students with disabilities (Mokhlis & Abdullah, 2024; Short & Rinehart, 1992; Wu, 2024). For example, teachers are able to explore more tools that will inevitably support their students' learning, removing the barriers that some curricula may bring in the space of specialized instruction. This opportunity for teachers to, in an efficient and timely manner, create and implement artificial intelligence tools to enhance their students' utility of technology as a leveraging support is critical, and addresses

several domains, i.e., self-efficacy, autonomy, decision-making, and impact, within the theoretical framework of empowerment (Yang et al., 2024).

Of course, more research and development are necessary for the ethical implications of allowing AI to support novice special educators, as well as the review and codification of useful tools done by experienced practitioners within and throughout special education. Additionally, it is necessary to begin ensuring that there is official guidance from an accrediting body within special education teacher preparation, as there may be some teacher preparation programs, specifically for special education teacher preparation, that may give additional accessibility and allowance to ensure that special education teacher preparation work occurs without potential barriers from internal controls found within some institutions of higher education, as well as teacher preparation programs that are incepted within and for local education agencies.

We know that it takes much more than a degree or coursework to become and effective special educator. We know that there is a functional relationship between the intervention and mentor knowledge as well as the ability to identify components of specialized instruction, and, most importantly, novice special educators improve their instructional practices after being mentored by those who received the professional development and specialized coaching (Cornelius, Rosenberg, & Sandmel, 2019). Beyond the work of institutions of higher education, High-quality, meaningful PD opportunities for teachers working in inclusive settings is critical to the continued success of children with disabilities (Francois, 2020). The future of curating meaningful experiences for those training to become special educators is dependent on the field to be able to coexist with artificial intelligence and so many other emerging technologies.

Finally, any effective shift within education systems or contexts requires real and thoughtful leadership—leaders who are willing subscribe to a critical and comprehensive theory of change (Fullan, 2007). Theory of change, a particular approach for making underlying assumptions in a change project explicit and using the desired outcomes of the project as a mechanism to guide project planning, implementation, and evaluation, involves single change initiatives, and is marked by choosing the right sources, i.e., literature, experts, and other elements curated by a carefully selected project team (Reinholz & Andrews, 2020). If community colleges become bold enough to thoughtfully adopt AI tools as an emerging technology in teacher preparation, local education agencies and schoolhouses must be in a position to rightfully receive the innovative teaching practices. Local education agencies and schools must continue working closely with community college and see them as partners in the work of providing the most effective practices for students with disabilities, beyond dual enrollment or middle college practices (Giani, Krawietz, Whittaker, 2023; Johnson et al., 2024). There must be a willingness shared between

stakeholders, even parents of students with disabilities, to learn and understand how educational landscapes are increasingly shifting towards AI tools and technology. School administrators must have an expectation to see how coursework enhancements for the teachers who teach in their schools help and ultimately benefit learners with disabilities under their care. There must be a greater alignment and working relationship between those who teach special educators to enact innovative approaches in coursework at the collegiate level and those who supervise, observe, and review the performance of special educators within the classroom setting. With greater alignment between stakeholders

REFERENCES

- Al-Zyoud, H. M. M. (2020). The role of artificial intelligence in teacher professional development. *Universal Journal of Educational Research*, 8(11B), 6263–6272. DOI: 10.13189/ujer.2020.082265
- Ali, Z., Ahmad, N., Rehman, H. U., Ullah, N., & Zahra, T. (2023). Investigating Teacher Educators' Perceptions on Technology Integration in Teacher Preparation Programs. *Journal of Social Sciences Review*, 3(2), 341–355. DOI: 10.54183/jssr.v3i2.272
- Birnbaum, B. W. (2006). *Foundations of special education leadership: Administration, assessment, placement and the law*. Edwin Mellen Press.
- Blasey, J., Wang, C., & Blasey, R. (2023). Accommodation use and academic outcomes for college students with disabilities. *Psychological Reports*, 126(4), 1891–1909. DOI: 10.1177/00332941221078011 PMID: 35303777
- Blömeke, S., Nilsen, T., & Scherer, R. (2021). School innovativeness is associated with enhanced teacher collaboration, innovative classroom practices, and job satisfaction. *Journal of Educational Psychology*, 113(8), 1645–1667. DOI: 10.1037/edu0000668
- Bouck, E. C. (2010), “Chapter 6 Technology and students with disabilities: Does it solve all the problems”, Obiakor, F.E., Bakken, J.P. and Rotatori, n.F. (Ed.) *Current Issues and Trends in Special Education: Research, Technology, and Teacher Preparation (Advances in Special Education, Vol. 20)*, Emerald Group Publishing Limited, Leeds, pp. 91-104. [https://doi-org.proxy1.library.jhu.edu/10.1108/S0270-4013\(2010\)0000020009](https://doi-org.proxy1.library.jhu.edu/10.1108/S0270-4013(2010)0000020009)
- Brownell, M. T., Jones, N. D., Sohn, H., & Stark, K. (2020). Improving Teaching Quality for Students With Disabilities: Establishing a Warrant for Teacher Education Practice. *Teacher Education and Special Education*, 43(1), 28–44. DOI: 10.1177/0888406419880351
- Brownell, M. T., Ross, D. D., Colón, E. P., & McCallum, C. L. (2005). Critical features of special education teacher preparation: A comparison with general teacher education. *The Journal of Special Education*, 38(4), 242–252. DOI: 10.1177/00224669050380040601
- Brownell, M. T., Sindelar, P. T., Kiely, M. T., & Danielson, L. C. (2010). Special education teacher quality and preparation: Exposing foundations, constructing a new model. *Exceptional Children*, 76(3), 357–377. DOI: 10.1177/001440291007600307

Bulman, G., & Fairlie, R. (2022). The impact of COVID-19 on community college enrollment and student success: Evidence from California administrative data. *Education Finance and Policy*, 17(4), 745–764. DOI: 10.1162/edfp_a_00384

Byrd, D. R., & Alexander, M. (2020). Investigating special education teachers knowledge and skills: Preparing general teacher preparation for professional development. *Journal of Pedagogical Research*, 4(2), 72–82. DOI: 10.33902/JPR.2020059790

Calloway-Appleton, T. April 15, 2023, “Mom couldn’t find a show tailored to her son’s special needs—so she made her own!” Inspiremore.com <https://www.inspiremore.com/ms-rachel-developmental-programming-for-kids/>

Carales, V. D. (2020). Examining educational attainment outcomes: A focus on Latina/o community college students. *Community College Review*, 48(2), 195–219. DOI: 10.1177/0091552120903087

CityTeachingAlliance. (n.d.). The program. <https://cityteachingalliance.org/the-program/>

Cochran-Smith, M., Keefe, E. S., Carney, M. C., Sánchez, J. G., Olivo, M., & Smith, R. J. (2020). Teacher preparation at new graduate schools of education. *Teacher Education Quarterly*, 47(2), 8–37.

Cole, S. M., Murphy, H. R., Frisby, M. B., & Robinson, J. (2023). The relationship between special education placement and high school outcomes. *The Journal of Special Education*, 57(1), 13–23. DOI: 10.1177/00224669221097945

Connor, F. P. (1976). The past is prologue: Teacher preparation in special education. *Exceptional Children*, 42(7), 366–378. DOI: 10.1177/001440297604200702

Cooc, N. (2023). National trends in special education and academic outcomes for English learners with disabilities. *The Journal of Special Education*, 57(2), 106–117. DOI: 10.1177/00224669221147272

Cornelius, K. E., Rosenberg, M. S., & Sandmel, K. N. (2020). Examining the impact of professional development and coaching on mentoring of novice special educators. *Action in Teacher Education*, 42(3), 253–270. DOI: 10.1080/01626620.2019.1638847

Council for Exceptional Children. (2022). *Practice-based standards for the preparation of special educators*. Council for Exceptional Children.

Darling-Hammond, L., DiNapoli, M. Jr., & Kini, T. (2023). *The Federal Role in Ending Teacher Shortages*. Learning Policy Institute. DOI: 10.54300/649.892

Diana, V. (1970). State Board of Education. Civil Action No. C-70-37 (N. D. Cal. 1970)

Edyburn, D. L. (2023). Reimagining the Future of Special Education Technology. In *Reimagining Education: Studies and Stories for Effective Learning in an Evolving Digital Environment* (pp. 281–292). Springer International Publishing. DOI: 10.1007/978-3-031-25102-3_23

Ellis, V., Steadman, S., & Mao, Q. (2020). ‘Come to a screeching halt’: Can change in teacher education during the COVID-19 pandemic be seen as innovation? *European Journal of Teacher Education*, 43(4), 559–572. DOI: 10.1080/02619768.2020.1821186

Esposito, M. C., Hamdan, K., & Benitez, X. (2014), “Providing Effective Special Education Teachers in Low-Income Urban Settings: Implications for Educational Leadership”, *Pathways to Excellence: Developing and Cultivating Leaders for the Classroom and Beyond (Advances in Educational Administration, Vol. 21)*, Emerald Group Publishing Limited, Leeds, pp. 205-219.

Faris, D. (2024). Why are professors trying to escape their jobs? *The Week*. <https://theweek.com/education/professors-leaving-academia>

Flores, M. A., & Craig, C. J. (2023). Reimagining teacher education in light of the teacher shortage and the aftershock of COVID-19: Adjusting to a rapidly shifting world. *European Journal of Teacher Education*, 46(5), 772–788. DOI: 10.1080/02619768.2023.2294697

Floyd, D. L., & Walker, D. A. (2003). Community college teacher education: A typology, challenging issues, and state views. *Community College Journal of Research and Practice*, 27(8), 643–663. DOI: 10.1080/713838241

Ford, D. Y., Hines, E. M., Middleton, T. J., & Moore, J. L.III. (2024). Brown vs. Board of Education: Implications for Gifted and Talented Education. *Gifted Child Today*, 47(3), 216–220. DOI: 10.1177/10762175241242493

Francois, J. (2020) “Teaching Beliefs and Their Relationship to Professional Development in Special Education Teachers,” *Educational Considerations*: Vol. 45: No. 3. DOI: 10.4148/0146-9282.2195

Fullan, M. (2007). Change theory as a force for school improvement. In *Intelligent leadership: Constructs for thinking education leaders* (pp. 27–39). Springer Netherlands. DOI: 10.1007/978-1-4020-6022-9_3

Garza-Mitchell, Geier, & Singleton. (2019). Community college teacher education: Fulfilling the workforce development mission for diverse geographies. In C. Lewis & M. D’Amico (Eds.), *Community college teacher preparation for diverse geographies* (pp. 15-32). Information Age Publishing, Inc.

Ghosh, S., & Sankar, C. S. (2024). Competency-Based Teacher Education in Gender and Inclusive Practices. *Social Science Journal for Advanced Research*, 4(5), 18–25.

Giani, M. S., Krawietz, C. E., & Whittaker, T. A. (2023). The Role of Student Beliefs in Dual-Enrollment Courses. *Research in Higher Education*, 64(8), 1113–1142. DOI: 10.1007/s11162-023-09740-z PMID: 37359447

Goe, L. (2006). *The teacher preparation –teacher practices –student outcomes relationship in special education: Missing links and next steps. A research synthesis*. National Comprehensive Center for Teacher Quality.

Goeke, J. L., Kossar, K. R., & Mitchem, K. J. (Eds.). (2018). *Redesigning special education teacher preparation : challenges and solutions / edited by Jennifer L. Goeke, Katherine J. Mitchem, and Kalie R. Kossar* (1st ed.). Routledge.

Hallahan, D. P., & Kauffman, J. M. (1977). Labels, categories, behaviors: ED, LD, and EMR reconsidered. *The Journal of Special Education*, 11(2), 139–149. DOI: 10.1177/002246697701100202

Han, X., Hu, L., Han, D., Peng, Y., Wang, Y., Yan, C., & Wang, Z. (2022). Research on the Application of Artificial Intelligence in Special Education. In *International Conference on Social Science, Education and Management*. Harvard University's Graduate School of Education.(nd). <https://www.gse.harvard.edu/ideas/usable-knowledge/24/09/students-are-using-ai-already-heres-what-they-think-adults-should-know#:~:text=Many%20participants%20reported%20using%20AI,use%20it%20to%20write%20code>

Hatch, D. K., & Garcia, C. E. (2017). Academic advising and the persistence intentions of community college students in their first weeks in college. *Review of Higher Education*, 40(3), 353–390. DOI: 10.1353/rhe.2017.0012

Hester, O. R., Bridges, S. A., & Rollins, L. H. (2020). ‘Overworked and underappreciated’: Special education teachers describe stress and attrition. *Teacher Development*, 24(3), 348–365. DOI: 10.1080/13664530.2020.1767189

Hill-Jackson, V., & Lewis, C. W. (Eds.). (2023). *Transforming teacher education: What went wrong with teacher training, and how we can fix it*. Taylor & Francis.

Hobson v. Hansen (1967) 269 F.Supp. 401; (1971) 327 F.Supp 844.

Ingersoll, R. M., & Tran, H. (2023). Teacher shortages and turnover in rural schools in the US: An organizational analysis. *Educational Administration Quarterly*, 59(2), 396–431. DOI: 10.1177/0013161X231159922

Johnson, J. M., Paris, J. H., Curci, J. D., & Horchos, S. (2024). Beyond college access: An exploration of the short-term impact of a dual enrollment program. *Journal of College Student Retention*, 26(1), 41–63. DOI: 10.1177/15210251211056319

Joseph, R. (2020). The theory of empowerment: A critical analysis with the theory evaluation scale. *Journal of Human Behavior in the Social Environment*, 30(2), 138–157. DOI: 10.1080/10911359.2019.1660294

K-12 Education : Education Should Assess Its Efforts to Address Teacher Shortages : Report to Congressional Committees / United States Government Accountability Office. (2022). United States Government Accountability Office. Print

Kisker, C. B., Cohen, A. M., & Brawer, F. B. (2023). *The American community college*. John Wiley & Sons.

Kloos, E., Nacik, E., & Ward, C. (2023). Developing implementation capacity of a state education agency to improve outcomes for students with disabilities. *Journal of Disability Policy Studies*, 34(2), 127–136. DOI: 10.1177/10442073221096393

Kumar, K., & Thakur, G. S. M. (2012). Advanced applications of neural networks and artificial intelligence: A review. *International Journal of Information Technology and Computer Science*, 6(6), 57–68. <https://doi-org.proxy1.library.jhu.edu/10.5815/ijitcs.2012.06.08>. DOI: 10.5815/ijitcs.2012.06.08

Ladson-Billings, G. (2006). From the Achievement Gap to the Education Debt: Understanding Achievement in U.S. Schools. *Educational Researcher*, 35(7), 3–12. DOI: 10.3102/0013189X035007003

Lameras, P., & Arnab, S. (2021). Power to the teachers: An exploratory review on artificial intelligence in education. *Information (Basel)*, 13(1), 14–20. DOI: 10.3390/info13010014

Larry P. v. Riles is 495 F. Supp. 926 (N.D. Cal. 1979).

Lee, J., Solomon, M., Stead, T., Kwon, B., & Ganti, L. (2021). Impact of COVID-19 on the mental health of US college students. *BMC Psychology*, 9(1), 95–102. DOI: 10.1186/s40359-021-00598-3 PMID: 34103081

Long, D., & Magerko, B. (2020, April). What is AI literacy? Competencies and design considerations. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems* (pp. 1-16). DOI: 10.1145/3313831.3376727

Mackie, R., & Dunn, L. (1954). *College and university programs for the preparation of teachers of exceptional children*. U.S. Department of Health, Education, and Welfare, Office of Education.

- 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. DOI: 10.1177/01626434231165977
- Mason-Williams, L., Bettini, E., Peyton, D., Harvey, A., Rosenberg, M., & Sindelar, P. T. (2020). Rethinking shortages in special education: Making good on the promise of an equal opportunity for students with disabilities. *Teacher Education and Special Education*, 43(1), 45–62. DOI: 10.1177/0888406419880352
- McCray, E. D. (2023). *Handbook of research on special education teacher preparation*. E. Bettini, M. T. Brownell, J. McLeskey, & P. T. Sindelar (Eds.). Taylor & Francis Group. DOI: 10.4324/9781003297093
- McNamara, K. (2023). “The Magic of Numbers is Strong”: Hobson v Hansen and Contested Social Science in Judicial Decision Making. *Social Science History*, 47(4), 641–664. DOI: 10.1017/ssh.2023.16
- Mills v. Board of Education of District of Columbia: 348 F. Supp. 866 (D.D.C. 1972)
- Mokhlis, S., & Abdullah, A. H. (2024). Does teacher empowerment contribute to innovative work behaviour? *International Journal of Management Education*, 18(2), 147–172.
- Mountjoy, J. (2022). Community colleges and upward mobility. *The American Economic Review*, 112(8), 2580–2630. DOI: 10.1257/aer.20181756
- Ng, D. T. K., Lee, M., Tan, R. J. Y., Hu, X., Downie, J. S., & Chu, S. K. W. (2023). A review of AI teaching and learning from 2000 to 2020. *Education and Information Technologies*, 28(7), 8445–8501. DOI: 10.1007/s10639-022-11491-w
- Ng, D. T. K., Leung, J. K. L., Chu, K. W. S., & Qiao, M. S. (2021). AI literacy: Definition, teaching, evaluation and ethical issues. *Proceedings of the Association for Information Science and Technology*, 58(1), 504–509. DOI: 10.1002/pra2.487
- O’Brien, K. M., Nagro, S. A., Binkert, G. D., Szocik, K., & Gerry, M. (2024). Field experiences in special education teacher preparation: A review of the literature. *Teacher Education and Special Education*, 47(1), 5–25. DOI: 10.1177/08884064231177662
- Obiakor, F. E., Bakken, J. P., & Rotatori, A. F. (2010). *Current issues and trends in special education. Research, technology, and teacher preparation / edited by Festus E. Obiakor, Jeffrey P. Bakken, Anthony F. Rotatori*. (1st ed.). Emerald.

Ochoa, S. H., Rivera, B., & Ford, L. (1997). An investigation of school psychology training pertaining to bilingual psycho-educational assessment of primarily Hispanic students: Twenty-five years after *Diana v. California*. *Journal of School Psychology*, 35(4), 329–349. DOI: 10.1016/S0022-4405(97)00009-5

Park, T. J., Tandberg, D. A., Shim, H. K., Hu, S., & Herrington, C. D. (2018). Community college teacher education baccalaureate programs: Early evidence yields mixed results. *Educational Policy*, 32(7), 1018–1040. DOI: 10.1177/0895904816682317

Pennsylvania Association for Retarded Citizens (PARC) v. Commonwealth of Pennsylvania (1972, 334 F. Supp. 1257 Rajesh, R., & Joseph, Z. C. (2023). Competency-based teacher education (CBTE): A training module to improve knowledge, attitude, and practices (KAP) of school teachers on learning disabilities in children. *Journal of Family Medicine and Primary Care*, 12(5), 874-880.

Reinholz, D. L., & Andrews, T. C. (2020). Change theory and theory of change: What's the difference anyway? *International Journal of STEM Education*, 7(1), 1–12. DOI: 10.1186/s40594-020-0202-3

Roth, R. A. (1977). How effective are CBTE programs? *Phi Delta Kappan*, 58(10), 757–760.

Ruppar, A., Kurth, J., Bubash, S., & Lockman Turner, E. (2023). A framework for preparing to teach students with extensive support needs in the 21st century. *Teacher Education and Special Education*, 46(1), 26–43. DOI: 10.1177/08884064211059853

Salas-Pilco, S. Z., Xiao, K., & Hu, X. (2022). Artificial intelligence and learning analytics in teacher education: A systematic review. *Education Sciences*, 12(8), 569. DOI: 10.3390/educsci12080569

Schradie, J. (2020). The great equalizer reproduces inequality: How the digital divide is a class power divide. In *Rethinking class and social difference* (Vol. 37, pp. 81–101). Emerald Publishing Limited. DOI: 10.1108/S0198-871920200000037005

Semmel, M. I., & Semmel, D. S. (1976). Competency-based teacher education: An overview. *Behavioral Disorders*, 1(2), 69–82. DOI: 10.1177/019874297600100205

Shepherd, K. G., Fowler, S., McCormick, J., Wilson, C. L., & Morgan, D. (2016). The search for role clarity: Challenges and implications for special education teacher preparation. *Teacher Education and Special Education*, 39(2), 83–97. DOI: 10.1177/0888406416637904

Shores, R. E., Cegelka, P. T., & Michael Nelson, C. (1973). Competency Based Special Education Teacher Training. [Web]. *Exceptional Children*, 40(3), 192–197. DOI: 10.1177/001440297304000305

Sindelar, P. T., Brownell, M. T., & Billingsley, B. (2010). Special education teacher education research: Current status and future directions. *Teacher Education and Special Education*, 33(1), 8–24. DOI: 10.1177/0888406409358593

Skiba, R. J., Simmons, A. B., Ritter, S., Gibb, A. C., Rausch, M. K., Cuadrado, J., & Chung, C. G. (2008). Achieving equity in special education: History, status, and current challenges. *Exceptional Children*, 74(3), 264–288. DOI: 10.1177/001440290807400301

Smith, P. S. (2024). (Re) presenting race: An analysis of special education textbooks for engagement with race and ethnicity. *Race, Ethnicity and Education*, ●●●, 1–22. DOI: 10.1080/13613324.2024.2306409

Soria, K. M., Horgos, B., & Shenouda, J. D. (2023). Disparities in college students' financial hardships during the COVID-19 pandemic. *Journal of Student Affairs Research and Practice*, 60(1), 31–48. DOI: 10.1080/19496591.2022.2046597

Sperling, K., Stenberg, C. J., McGrath, C., Åkerfeldt, A., Heintz, F., & Stenliden, L. (2024). In search of artificial intelligence (AI) literacy in teacher education: A scoping review. *Computers and Education Open*, 6, 100169. DOI: 10.1016/j.caeo.2024.100169

Wallace, B. C., & Abel, Y. (2021). Utilizing specially designed, instructional evidence-based practices and family engagement: Increasing African American student achievement in digital literacies. In *Connecting Disciplinary Literacy and Digital Storytelling in K-12 Education* (pp. 24–37). IGI Global. DOI: 10.4018/978-1-7998-5770-9.ch002

Waterfield, D. A., Watson, L., & Day, J. (2024). Applying Artificial Intelligence in Special Education: Exploring Availability and Functionality of AI Platforms for Special Educators. *Journal of Special Education Technology*, 39(3), 448–454. DOI: 10.1177/01626434241257237

Weiler, S. C., & Bauries, S. R. (2021). Special Education's Lessons for School Funding Litigation. *Education Law & Policy Review*, 6, 126. Westerns Governors University. Nd. *Special education: History, resources, and advice*. <https://www.wgu.edu/blog/special-education-history-resources-advice2001.html>

Williams, M. K., Christensen, R., McElroy, D., & Rutledge, D. (2023). Teacher self-efficacy in technology integration as a critical component in designing technology-infused teacher preparation programs. *Contemporary Issues in Technology & Teacher Education*, 23(1), 228–259.

Wu, P. (2024). The Influence of Holistic Leadership of Administrators on Teachers Empowerment Program. *Journal of Education and Educational Research*, 7(2), 71–78. DOI: 10.54097/qcdv1t54

Yang, C., Rho, E., Lin, X., & Stomski, M. (2024). Empowerment and Silence: A Grounded Theory Exploration Among New Teachers. *School Psychology*, 39(3), 291–301. DOI: 10.1037/spq0000612 PMID: 38095960

Zigmond, N. P., & Kloo, A. (2017). General and special education are (and should be) different. In *Handbook of special education* (pp. 249–261). Routledge. DOI: 10.4324/9781315517698-21

APPENDIX

Assignment Details for the AI Gadget and Website Scavenger Hunt and Critique

AI Gadget and Website Scavenger Hunt and Critique

For this assignment, you need to select an AI tool from the following webpage: <https://www.futurepedia.io/>

The AI tool you select must clearly demonstrate its usefulness for students with disabilities, families, and/or school staff members whose sole focus is to support students with disabilities. This should be a resource that is user-friendly and helpful—something you will be able to take into your school as a teacher and utilize, and preferably free or low-cost.

You will present your findings to the class in a micro-presentation (no more than 3-5 minutes). You can record yourself on whatever device is easiest for you to use, i.e., Zoom, etc. In the past, students have recorded a screen-share and talked about the site; however, there is no one right way to do this assignment.

Note: Presentations should include a one-pager. A one-pager provides an overview of the topic, a summary of the most salient points, important facts, and other relevant information related to the topic.