8-2023

Commonalities in Evidence-Based Instructional Strategies for Autism Spectrum Disorder and English Language Learners

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Commonalities in Evidence-Based Instructional Strategies for Autism Spectrum Disorder and English Language Learners

A thesis submitted in partial fulfillment
of the requirements for the degree of
Master of Education in Teaching English to Speakers of Other Languages

by

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August 2023
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ABSTRACT

Many English language learners experience life on the Autism spectrum. These students will spend much of their day in the general education setting, and teachers will need effective and proven strategies to support them. The data show that Autism Spectrum Disorder is increasing among all populations (CDC, 2023). Current understandings and influences on these learners will be explored. This review examines evidence-based practices presented by premier sources in the fields of Autism Spectrum Disorder and English language learning, seeking commonalities in strategies. Using the findings from the National Standards Report and the National Clearinghouse for Autism Evidence & Practice cross-referenced with the WIDA 15 Essential Actions, 79 common evidence-based strategies were found that could be employed in the general education setting for use with English language learners diagnosed with Autism Spectrum Disorder.

Keywords: Autism, Evidence-based strategies, English Language Learner

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INTRODUCTION

Background

Like an increasing number of parents worldwide, I have a child who has been diagnosed with Autism Spectrum Disorder (ASD). My 14-year-old son was also born with a Severe Bilateral Cleft Lip and Palate, which included structural defects in his mouth that continue to cause speech to be challenging. These speech issues delayed his diagnosis of ASD, partially due to well-intended practitioners who wanted to give his speech time to develop before considering testing. Although I had a wealth of experience as an educator working with students on the Autism Spectrum, as well as students with communication challenges, those experiences did not fully prepare me for the unexpected journey that would lie ahead as a parent and advocate.

In the spring of 2020, the world as we knew it was in upheaval. Previously well-established scaffolds and routines for all students came to a screeching halt with the arrival of the pandemic. I worked to ensure my son continued to receive support through online therapy, but it was not without its challenges. It was difficult for his multiple therapists to understand what he was saying online, and communication became even more of a struggle than it was in person. It was challenging to keep his spirits up and his attention on the task at hand when he had to spend so much time repeating himself and trying to be understood.

In the fall of 2020, I was selected as the virtual Kindergarten teacher at the school for which I am employed. I was excited and determined to make this a wonderful learning experience for students. Concerns about how to provide guidance for families to navigate the technology involved in virtual learning as well as how to instruct students who require unique scaffolding online kept me awake at night. The parents of students with special needs and the parents of the ELLs in my class were the most worried about meeting expectations. Several expressed worry about how their child would communicate with the teacher. My experiences as a parent gave me a strong connection to that feeling. This empathy also stemmed from understanding what it feels like when communication is a struggle for your child. Worrying if

teachers and therapists will be able to understand him if he needs something? Will he be able to express what he knows and understands? Will people assume that he does not know much because he cannot use language to express his thinking to them?

As a classroom teacher, I need effective strategies to engage all learners. As a veteran teacher, I have been privy to many teacher discussions about the insecurities they feel scaffolding students with developmental or communicative challenges. I have felt those insecurities myself. To continuously develop my craft and ensure that I provide access to the curriculum for all learners, I must recognize when I can improve my practice by investigating reputable sources for greater understanding.

Need for the Study

As our understanding of appropriate inclusive practices improves, we see a steady increase in neurodiversity in the general education classroom. Neurodiverse students that spend 80% or more of their time in an inclusive setting score better in reading and math than peers who spend more time in special education classrooms (Cole et al, Murphy et al, 2023). In 2000, the CDC reported that ASD occurred in 1 in 150 children. This number has steadily increased among all demographics, and as of 2020, 1 in 36 children are diagnosed with ASD in the United States (CDC, 2023). In 2019, there were 5.1 million ELLs in US public schools, representing 10% of learners nationally (Irwin et al., 2022). The National Education Association estimates that by 2025, 1 in 4 students will be ELLs in the United States. Additionally, for the first time Black, Hispanic, and Asian or Pacific Islanders had higher numbers of occurrences of ASD than did white eight-year-old children in 2020 (CDC, 2023). The data show that ASD is increasing among all populations. These students will spend much of their day in the general education setting and teachers will need effective and proven strategies to support them.

Statement of the problem

Professional development for educators regarding ASD or ELLs is often focused on legal compliance rather than instructional strategies to meet individual learners' varied and unique needs. Though compliance is essential and in the best interest of all stakeholders, successful professional development involves improving the skills and effectiveness of the teacher in an effort to increase student growth (Casteel & Ballantyne, 2009). This lack of instructional focus has resulted in teachers feeling insecure about their abilities to support the needs of these students without understanding the pedagogy behind it (Shevlin et al., 2013). Even willing teachers may encounter a lack of shared vision about what quality instruction looks like for these learners (Buczynski & Hansen, 2010). Evidence suggests that if teachers are not in a state of readiness to apply the values of inclusive education, the work of creating policies will be a one-sided effort (Lyra et al., 2023). In a recent survey of general education teachers, only 30% felt they were strongly prepared to teach students with disabilities (Mitchell, 2021). Teachers with training in inclusive practices have more positive attitudes toward inclusion (Ghanizadeh et al., 2006). Researcher John Hattie has shown that teacher efficacy has an effect size of ***d=****1.*57 and is considered the primary influence on student achievement (Hattie et al., 2015). Teacher preparedness is essential to meeting the needs of these students. When considering professional development options for teachers, policymakers, and leadership must involve educators in the decision-making. Understanding areas where teachers feel underprepared and attending to those needs is critical to providing for the needs of all students. Effective teacher training involves responsiveness to the educators and the learners (Darling-Hammond et al., 2017).

Providing teachers with evidence-based strategies vetted by experts in the fields concerning the specific needs of Autistic ELLs can help to improve their practice and ability to reach students. We need to create a bridge between our understanding of appropriate and evidence-based instructional strategies for students whose lives are touched by both

circumstances. Until further research explores best practices for these learners specifically, we are responsible for providing access to the curriculum. To assist teachers seeking proven methods of reaching students, this review will explore commonalities involving evidence-based strategies that help students become successful learners.

The issue at hand is that limited resources exist for classroom teachers looking to improve their practice to meet the specific needs of Autistic ELLs. Students are disadvantaged when teachers cannot provide instructional methods appropriate to their needs as ELLs and learners with Autism (Ortiz, 2015). This literature review aims to look for commonalities in evidence-based strategies from reputable sources in Autism and TESOL to find intersections of effective strategies for these students. Surveys of Autistic adults have shown a preference for research focused on strategies for an improved life rather than viewing their community from a deficit model (Pellicano et al., 2014). Deficit thinking falsely validates negative perceptions of communities and diminishes the value of their culture and experiences (Kennedy, 2023). Rather than being embraced as a skill and a tool for more effective communication, the opportunity to develop their bilingualism is seen as a problem to be overcome (Ruíz, 1984). Strategies to provide a more inclusive environment will aid in this effort. This study cannot provide every applicable strategy found to be effective, but it can help to give educators a starting point to help students access the curriculum.

The purpose of the study

The study aims to cross-reference evidence-based strategies from reputable sources in Autism and English language instruction to create a list of effective strategies for Autistic ELLs. The aim is to provide effective tools for educators, parents, and therapists.

Research Question

This study seeks to answer the question: What common evidence-based strategies are effective for students with ASD and ELLs?

DEFINITION OF TERMS

- **Antecedent-based Intervention**: Arrangement of events or circumstances that precede an activity or demand to increase the occurrence of a behavior or lead to the reduction of the challenging/interfering behaviors (Hume et al., 2021).
- **Autism Spectrum Disorder**: Autism spectrum disorder (ASD) is a complex developmental condition involving persistent challenges with social communication, restricted interests, and repetitive behavior. While Autism is considered a lifelong disorder, the degree of impairment in functioning because of these challenges varies between individuals with Autism (American Psychiatric Association, 2023).
- **Cognitive Behavioral Instructional Strategies**: Instruction on management or control of cognitive processes that lead to changes in behavioral, social, or academic behavior (Hume et al., 2021).
- **Culturally and Linguistically Diverse (CLD) Students**: Students enrolled in education programs who are either non-English proficient or limited-English proficient and may also be used to identify students from homes where English is not the primary language in use. These students may speak a variety of languages and come from varied social, cultural, and economic backgrounds (Gonzalez et al., 2011).

- **Delay**: A practice used to systematically fade the use of prompts during instructional activities by using a brief interval between the initial instruction and any additional instructions or prompts (Hume et al., 2021).
- **Differential Reinforcement**: A systematic process that increases desirable behavior or the absence of undesirable behavior by providing positive consequences for the demonstration/non-demonstration of such behavior. These consequences may be provided when the learner is: (a) engaging in a specific desired behavior other than the undesirable behavior (DRA), (b) engaging in a behavior that is physically impossible to do while exhibiting the undesirable behavior (DRI), or (c) not engaging in the undesirable behavior (Hume et al., 2021).
- **Discrete Trial Training**: Instructional approach with massed or repeated trials with each trial consisting of the teacher's instruction and presentation, the child's response, a carefully planned consequence, and a pause prior to presenting the next instruction (Hume et al., 2021).
- **English Language Learner (ELL):** An ELL is a "national-origin-minority student who is limited-English-proficient. This term is often preferred over limited-English-proficient as it highlights accomplishments rather than deficits (U.S. DOE, 2020).
- **Evidence-based Practices (EBP)**: Demonstrates a statistically significant effect on improving student outcomes or other relevant outcomes based on: (a) strong evidence from at least one well-designed and well-implemented experimental study, (b) moderate evidence from at least one well-designed and well-implemented quasi-experimental study, (c) promising evidence from at least one well designed and well implemented correlational study with statistical controls for selection bias, (d) demonstrates a rationale based on high-quality research findings or positive evaluation that such activity, strategy, or intervention is likely to improve student outcomes or other relevant outcomes, and (e)

includes ongoing efforts to examine the effects of such activity, strategy, or intervention (ESSA, 2015).

- **Extinction:** The removal of reinforcing consequences of challenging behavior to reduce the future occurrence of that behavior (Hume et al., 2021).
- **Modeling**: Demonstration of a desired target behavior that results in the use of the behavior by the learner and that leads to the acquisition of the target behavior (Hume et al., 2021).
- **Naturalistic Interventions**: A collection of techniques and strategies embedded in typical activities or routines in which the learner participates to naturally promote, support, and encourage target skills and behaviors (Hume et al., 2021).
- **Parent-Implemented Interventions**: Parent delivers an intervention to their child that promotes their social communication, other skills, or decreases their challenging behavior (Hume et al., 2021).
- **Neurodiverse**: Having, relating to, or constituting a type of brain functioning that is not neurotypical (Merriam-Webster, 2023).
- **Peer-Based Instruction and Intervention**: Intervention in which peers directly promote autistic children's social interactions or other individual learning goals, or the teacher and other adult organizes the social context (e.g., playgroups, social network groups, recess) and, when necessary, provides support (e.g., prompts, reinforcement) to the autistic children and their peer to engage in social interactions (Hume et al., 2021).
- **Prompting**: Verbal, gestural, or physical assistance given to learners to support them in acquiring or engaging in a targeted behavior or skill (Hume et al., 2021).
- **Reinforcement**: The application of a consequence following a learner's use of a response or skills that increase the likelihood that the learner will use the response/skills in the future (Hume et al., 2021).

- **Response Interruption and Redirection**: The introduction of a prompt, comment, or other distractors when an interfering behavior is occurring that is designed to divert the learner's attention away from the interfering behavior and results in its reduction (Hume et al., 2021).
- **Self-Management**: The introduction of a prompt, comment, or other distractors when an interfering behavior is occurring that is designed to divert the learner's attention away from the interfering behavior and results in its reduction (Hume et al., 2021).
- **Social Narratives**: Interventions that describe social situations to highlight relevant features of a target behavior or skill and offer examples of appropriate responding (Hume et al., 2021).
- **Social Skills Training**: Group or individual instruction designed to teach learners how to appropriately and successfully participate in their interactions with others (Hume et al., 2021).
- **Task Analysis**: A process in which an activity or behavior is divided into small, manageable steps to assess and teach the skill. Other practices, such as reinforcement, video modeling, or time delay, are often used to facilitate acquisition of the smaller steps (Hume et al., 2021).
- **Video Modeling**: A video-recorded demonstration of the targeted behavior or skill shown to the learner to assist in learning or engaging in a desired behavior or skill (Hume et al., 2021).
    - **Visual Supports**: A visual display that supports the learner engaging in a desired behavior or skills independent of additional prompts (Hume et al., 2021).

LITERATURE REVIEW

Previous Research

Since Leo Kanner's work in 1943 recognizing the symptoms we would come to understand as ASD, we have been constantly evolving in our understanding of the condition. Even then, Kanner reminded us that every child must be treated as a unique individual person (Harris, 2018). Likewise, we are constantly evolving in our understanding of how to best scaffold the needs of ELLs. Both communities have suffered serious indignities in the past due to experimental practices intended to align them with society's expectations (Alvarez, 2020; Donvan & Zucker, 2017). This amplifies the need for evidence-based practices studied and supported by reputable advocates and experts in their respective fields.

Landmark studies by Ivar Lovaas helped practitioners to understand that contrary to previous thought, Autism was not an untreatable condition, and early interventions could make a significant impact on the lives of these children (Lovaas, 1987). This research helped to raise public awareness that Autism was not a static condition.

Trends in Autism research recently focus on etiology, seeking to find explanations or causes of occurrence (Sweileh et al., 2016). Advocates see this as an indicator that researchers and the medical community are seeking to find ways to prevent Autism from occurring (Chapman, 2019). Recognizing the personhood and vast individuality among these individuals cannot be ignored.

There is difficulty finding consensus in the Autism community regarding terminology. Many advocates prefer not to use "person first" terminology, instead choosing the "identify first" terminology. The National Society for Autism published a guide for practitioners and researchers to assist with the appropriate use of terminology concerning ASD (The International Journal of Research and Practice, 2023). In a survey of Autistic adults, the terms "Autism" and "on the Autism spectrum" garnered the largest approval (Kenny et al., 2015). As understanding and terminology advance, more consensus will evolve concerning a community establishing its voice

in the conversation. The naming and appropriate use of terminology concerning the grouping of individuals is a sensitive topic for discussion. Further research and understanding will prompt a more informed understanding concerning this topic.

Over- and under-identification of ELLs who qualify for special education services has been a frequently employed research topic (Zacarian, 2016). There are concerns among advocates that students that are still in the process of language acquisition are being incorrectly qualified. Conversely, barriers such as lack of health care, lack of insurance, cultural reluctance to diagnosis, differing understanding of disability, transportation issues, and translation issues are just a few obstacles that could hinder diagnosis for this population of learners (Sritharan & Koola, 2019). Working to remove these barriers will increase the likelihood that these students will be able to access critical early interventions.

Moving into the future, larger consortia and advocacy groups have been involved in research to provide practitioners and parents with the most up-to-date understandings and appropriate practices. Using meta-analysis, they employ the expertise of many to come together to offer studied understandings that include the communities they serve. The evidence-based strategies we will examine in this review come from three entities: WIDA (formerly World-Class Instructional Design and Assessment), The National Standards Project, and the National Clearinghouse of Autism Evidence and Practices.

Evidence-based Strategies for ELLs

The WIDA consortium consists of 41 state departments of education, other territories, and professional organizations. This organization is responsible for the WIDA English Language Development Standards Framework, 2020 Edition. The original publishing of these standards was in 2012. In 2014, this consortium published the WIDA Essential Actions. These practices were evidence-based and intended to be a companion to the English Language Development Standards Framework. These actions are intended to increase the use of evidence-based practices and collaboration among teachers who work with these students (Gottlieb, 2015).

WIDA has provided the supporting research for each of the 15 Essential Actions in the handbook. Listed below are the essential actions, along with a brief synopsis of the overall concept and the primary research basis for the action.

WIDA Essential Actions-15 Research-Based Practices to Improve ELL Student Achievement

- **ACTION 1: Capitalize on the resources and experiences that ELLs bring to school to build and enrich their academic language.** This action concerns using student's funds of knowledge (González et al., 2009), nurtures dynamic bilingualism (Escamilla & Hopewell, 2010; Garcia & Kleifgen, 2010; Hornberger, 2003), and provides opportunities to text and talk daily (Gee, 2008). When planning for this action, teachers should ask themselves how the student's experiences and resources could be incorporated into and connected to the curriculum (Gottlieb, 2015).
- **ACTION 2: Analyze the academic language demands involved in grade-level teaching and learning.** These standards involve the Features of Academic Language involving linguistic complexity, language forms and conventions, and vocabulary usage. (Gottlieb, 2015; Echevarría et al., 2006; Snow & Uccelli, 2009).
- **ACTION 3: Apply the background knowledge of ELLs, including their language proficiency profiles, in planning differentiated language teaching.** This action involves using performance definitions in lesson planning to set expectations for learners, group students, or set lesson objectives (Gottlieb, 2015; Fairbairn & Jones-Vo, 2010; Tomlinson, 2003).
- **ACTION 4: Connect language and content to make learning relevant and meaningful for ELLs.** Determining how ELD standards can work with content standards. Helping students connect to the unique language features within the different content areas (Chamot & O'Malley, 1994; Gottlieb, 2012a, 2015; Echevarría et al. 2008; Kaufman & Crandall, 2005; Mohan, 1986).

- **ACTION 5: Focus on the developmental nature of language learning within the grade-level curriculum**. Consider age and developmental appropriateness when planning for instruction. Be aware of expectations in surrounding grades and consider them in instruction. (Gottlieb, 2015; Lightbown & Spada, 2006; Spolsky, 1989).
- **ACTION 6: Reference content standards and language development standards in planning for language learning.** Consider language demands and their relation to content standards and where language learners could be supported (Gottlieb, 2015; Lachat, 2004)).
- **ACTION 7: Design language teaching and learning with attention to the sociocultural context.** Honor students' identities and cultures. Connect school to home and the community and help students practice different contexts for language use (Gottlieb, 2015; Spivey, 1997).
- **ACTION 8: Provide opportunities for all ELLs to engage in higher-order thinking.** Consider how entering and emerging ELLs can engage in higher-order thinking skills(Gottlieb, 2015; Himmele & Himmele, 2009).
- **ACTION 9: Create language-rich classroom environments with ample time for language practice and use.** Identify topic-related language associated with the content. Ensure all students can interact with the topic-related language (Gottlieb, 2015; Scarcella, 2003).
- **ACTION 10: Identify the language needed for functional use in teaching and learning.** Incorporate functional language during instruction, and use language functions to identify language targets (Gottlieb, 2015; Derewianka, 1990).
- **ACTION 11: Plan for language teaching and learning around discipline-specific topics.** Approach topics in the curriculum in culturally and linguistically relevant ways (Gottlieb, 2015; Halliday & Martin,1993; Lemke, 1990).

- **ACTION 12: Use instructional support to help scaffold language learning.** Determine and use appropriate supports. Look for opportunities to use the home language for instructional support (Gibbons, 2008; Gottlieb, 2015; Walqui, 2003).
- **ACTION 13: Integrate language domains to provide rich, authentic instruction.** Consider language domains when grouping. Consider how strengths in one language domain could scaffold another. Ensure students practice using language in a variety of domains (Carrasquillo & Rodriguez, 2002; Gottlieb, 2015).
- **ACTION 14: Coordinate and collaborate in planning for language and content teaching and learning.** How can what the students are learning in class be expanded to collaborate with the language specialist? Attend to all three dimensions of academic language, including discourse, sentence, and word/phrase (Gottlieb, 2015; Haager & Windmueller, 2001; Ruíz et al. 1995).
- **ACTION 15 Share responsibility so that all teachers are language teachers and support one another within communities of practice.** Teachers outside the core content areas should understand the language of the curriculum (Gottlieb, 2015; Haager & Windmueller, 2001; Ruíz et al., Rueda, Figueroa, & Boothroyd, 1995).

Evidence-based Strategies for ASD

National Standards Project (NSP)-Phase II

In 2015, the National Autism Center and the May Institute's Center for the Promotion of Evidence-based Practice published Phase II of the NSP. The intent of the project was to extend the study of the specific outcomes of interventions to equip parents and providers with evidence-based interventions (NSP, 2015).

The National Autism Center provides practical information for families, provides intervention approaches, conducts research, develops training, and works to influence public policy on Autism. The May Institute is an award-winning non-profit that has evolved into a national support network. Trained reviewers evaluated peer-reviewed journal articles, and a standard evaluation led to a strength of evidence score. This led to 14 practices being named as evidence-based interventions (Hume et al., 2021).

NSP14 Evidence-based Practices for Autism (NSP, 2015)

- **Behavioral Interventions:** Examples in practice- Providing additional instruction and practice for behavioral, social, emotional, and academic skills, increasing adult support and supervision, positive reinforcement, increasing prompts or reminders, increasing access to academic supports, and increasing school-family communication (PBIS, 2023).
- **Cognitive Behavioral Intervention Package:** Examples in practice- Learners examine their own thoughts and emotions, recognize when negative thoughts and emotions are escalating in intensity, and then use strategies to change their thinking and behavior (Sam & AFIRM Team 2016).
- **Comprehensive Behavioral Treatment for Young Children:** Examples in practice**-** Contains components of discrete trial training, modeling, prompting, time delay strategies, and behavior momentum intervention (NCAEP, 2020).

- **Language Training (Production):** Examples in practice- Overlap with strategies involving modeling, prompting, reinforcement, visual supports, and musical interventions (NCAEP, 2020).
- **Modeling:** Examples in practice- Model as a prime (a) cue the learner to observe the model, (b) model demonstrates/performs behavior/skill, (c) wait for the learner to imitate behavior(Sam & AFIRM Team 2015).
- **Natural Teaching Strategies:** Examples in practice- Arrange the environment to elicit target behavior, engage the learner, use selected evidence-based practices and planned strategies with the learner, and provide naturally occurring reinforcement as appropriate (Amsbary & AFIRM Team, 2017).
- **Parent Training:** Examples in practice- Develop an implementation plan with parents, follow a coaching cycle, and monitor progress (Amsbary & AFIRM Team, 2017).
- **Peer Training Package:** Examples in practice- Assign peers to the learner with ASD, conduct a minimum of one regular 15-minute session daily, provide materials for the learner to participate in the session, and provide support and periodic feedback to peers (Sam & AFIRM Team 2015).
- **Pivotal Response Treatment:** Examples in practice- Get the learner's attention, use varied instructions (50/50 mix of easy and difficult), give choices (between or within activities), and follow the learner's lead (Suhrheinrich et al., 2018).
- **Schedules:** Examples in practice- Employing the use of first/then boards, object schedules, picture schedules, color-coded schedules, and schedule binders (Bryan & Gast, 2000).
- **Scripting:** Examples in practice**-** Teach script to the learner, use a script with identified communication partners, fade prompts needed to read the script, fade the script, test for generalization and revisit the script as needed (Griffin & AFIRM Team, 2017).

- **Self-Management:** Examples in practice- Provide the learner with a cue to begin using a self-management system, teach the learner how to self-record behavior in the target setting, and teach the learner to gain access to reinforcement when the criterion is reached (Sam & AFIRM Team 2016).
- **Social Skills Packages:** Examples in practice- Implement the training as planned, reinforce learner(s) use of target skills, support generalization of target skills to other settings/people/activities, and provide support to peer models if applicable (Griffin et al., Team, 2015).
- **Story-Based Intervention:** Examples in practice- Introduce the narrative to the learner, learner or adult reads the narrative, reviews key concepts with the learner, learner participates in the identified situation, and discusses participation in the situation (Sam & AFIRM Team 2015).

NCAEP Report

The National Clearinghouse for Autism Evidence and Practice studied the behavioral, educational, clinical, and developmental practices and service models available to Autistic students. This group continues the work begun by the National Professional Development Center on ASDs, which published research on this topic until 2011. Literature from 1990-2017 was reviewed to gain an understanding of strategies that had positive outcomes for Autistic learners. Strict criteria were employed to confirm the effectiveness of each strategy. This is the third generation of the review. The team at Frank Porter Graham Child Development Institute at the University of North Carolina at Chapel Hill has indicated that they plan to increase their study to include more demographic data, which may be helpful to researchers seeking to gain a better understanding of how these strategies apply to ELLs in the future. This review is updated yearly to ensure that the information provided is current. The literature provided in this study is applicable to Autistic persons from birth-22 years of age (NCAEP, 2020).

Evidence-based Strategies for ASD (NCAEP, 2020)

- **Antecedent-based Intervention**: Examples in practice- Using learner preferences, changing schedules or routines, implementing pre-activity interventions, using choice-making, Altering how instruction is delivered, and enriching the environment with sensory stimuli (Sam & AFIRM Team, 2016).
- **Cognitive Behavioral Instructional Strategies**: Examples in practice- Learners examine their own thoughts and emotions, recognize when negative thoughts and emotions are escalating in intensity, and then use strategies to change their thinking and behavior (Sam & AFIRM Team 2016).
- **Differential Reinforcement:** Examples in practice- Meet with the learner, follow the reinforcement schedule, and generalize strategy to other settings and times (Savage & Affirm Team, 2017).
- **Discrete Trial Training:** Examples in practice- When teaching a new stimulus: (a) present the new stimulus to the learner without any other items to choose from, (b) prove the learner with instruction, (c) prompt the target behavior, and(d) reinforce the learner's response if correct. Over time, prompts should be systematically faded until the learner can independently and consistently perform the skill with the one stimulus object. Alternately, once the learner can perform the skill independently and consistently with one stimulus, another stimulus (distractor) is presented in the periphery. The distractor stimulus should only vary from the target stimulus on the one specific dimension being taught. The team member will provide the instruction and then reinforce the learner's behavior if correct, teach generalization of the skill or concept by teaching discrimination of multiple stimuli, and applying the use of skill in multiple situations (Sam & Afirm Team, 2016).
- **Extinction:** Examples in practice- Identify an interfering behavior to conduct a functional behavior assessment (FBA) to determine the function of the interfering behavior and the

maintaining consequences to consistently withhold the consequence that maintains the interfering behavior (Morin & AFIRM Team 2018).

- **Modeling:** See suggestions on page 15
- **Naturalistic Interventions:** See suggestions on page 15
- **Parent-Implemented Interventions:** Examples in practice- Develop an implementation plan with parents, follow a coaching cycle, and monitor progress (Amsbary & AFIRM Team, 2017).
- **Peer-Based Instruction & Intervention**: Examples in practice- Assign peers to the learner with ASD, conduct a minimum of one regular 15-minute session daily, provide materials for the learner to participate in the session, and provide support and periodic feedback to peers (Sam & AFIRM Team 2015).
- **Prompting**: Examples in practice- Establish learner attention, deliver stimulus and provide the cue, wait for the learner to respond, and respond to learner's attempts (Sam & AFIRM Team 2015).
- **Reinforcement**: Examples in practice- Deliver reinforcement each time learner uses target skill/behavior, prevent satiation by varying reinforcers, thin reinforcers, and use reinforcers consistently across settings (Sam & AFIRM Team 2015).
- **Response Interruption & Redirection**: Examples in practice- praise independent use of appropriate behaviors, use identified procedure, prompt for the alternative behavior, and reinforce the use of the alternative behavior (Tomaszewski & AFIRM Team, 2017).
- **Self-Management**: Examples in practice- Provide the learner with a cue to begin using a self-management system, teach the learner how to self-record behavior in the target setting, and teach the learner to gain access to reinforcement when the criterion is reached (Sam & AFIRM Team 2016).
- **Social Narratives**: Examples in practice- Introduce the social narrative to the learner; the learner or adult reads the social narrative, reviews key concepts with the learner; the

learner participates in an identified social situation; and discusses participation in social situations (Sam & AFIRM Team 2015).

- **Social Skills Training**:See suggestions on page 16
- **Task Analysis**: Examples in practice- Prompt learner to perform first identified step, reinforce learner for completing the step, apply most effective reinforcer after the task, fade reinforcers as quickly as possible (Sam & AFIRM Team 2015).
- **Delay**: Examples in practice- Establish learner attention and provide cues, deliver controlling prompts, ncrease time interval, and respond to learner's attempts (Sam & AFIRM Team 2015).
- **Video Modeling**: Examples in practice- Show the video, prompt the learner to perform the skill or behavior, reinforce the performance of all or part of the skill or behavior, correct errors (if needed), and fade the video model (Cox & AFIRM Team, 2018).
- **Visual Supports**: Examples in practice-Show the learner visual cues, standing behind the learner when prompting the use of visual cues, using concise and relevant words or terms while teaching visual cues, and assisting the learner in participating in an activity or event with visual cues (Sam & AFIRM Team 2015).

Table1

Commonalities in Findings Evidence-based Practices for ASD

	Established Interventions Identified by NSP													
Evidence-Based Practices Identified (NCAEP)	Behavioral Interventions	Cognitive Behavioral Intervention Package	Modeling	Naturalistic Teaching Strategies	Parent Training	Peer Training Package	Pivotal Response Treatment®	Schedules	Scripting	Self-management	Social Skills Package	Story-based Intervention	Language Training (Production)	Comprehensive Behavioral Treatment for Young Children
Antecedent-Based Intervention (ABI)	✓												Language training did not emerge as a focused intervention by the NCAEP. Components of Language Training (Production) overlap with NCAEP identified practices that may support language production, such as modeling, prompting, reinforcement, visual supports, and music-mediated interventions.	The NCAEP did not review comprehensive treatment models. Components of the Comprehensive Behavioral Treatment of Young Children may overlap with many NCAEP identified practices, such as discrete trial training, modeling, prompting, time delay, and behavior momentum intervention.
Cognitive Behavioral Instructional Strategies (CBIS)		✓												
Differential Reinforcement (DR)	✓													
Discrete Trial Training (DTT)	✓													
Extinction (EXT)	✓													
Modeling (MD)	✓		✓											
Naturalistic Interventions (NI)				✓			✓							
Parent-Implemented Interventions (PII)					✓									
Peer-Based Instruction & Intervention (PBII)						✓								
Prompting (PP)	✓								✓					
Reinforcement (R)	✓													
Response Interruption & Redirection (RIR)	✓													
Self-Management (SM)										✓				
Social Narratives (SN)												✓		
Social Skills Training (SST)											✓			
Task Analysis (TA)	✓													
Time Delay (TD)	✓													
Video Modeling (VM)	✓		✓											
Visual Supports (VS)	✓							✓	✓					
Augmentative & Alternative Communication (AAC)	Identified as an emerging intervention by the NSP.													
Exercise & Movement (EXM)	Identified as an emerging intervention by the NSP.													
Functional Communication Training (FCT)	Identified as an emerging intervention by the NSP.													
Music-Mediated Interventions (MMI)	Identified as an emerging intervention by the NSP.													
Technology-aided Instruction & Intervention (TAII)	Identified as an emerging intervention by the NSP.													
Behavior Momentum Intervention (BMI)	The NSP did not consider this as a catergory for intervention.													
Direct Instruction (DI)	The NSP did not consider this as a catergory for intervention.													
Functional Behavior Assessment (FBA)	The NSP did not consider this as a catergory for intervention.													
Sensory Integration® (SI)	The NSP did not consider this as a catergory for intervention.													

(NCAEP,2020)

The following evidence-based strategies were found in common between the NCP Report and the NCAEP Report. Some examples of how these common strategies might be applied in the learning setting are included.

- **Antecedent-based Intervention**: Examples in practice- Using learner preferences, changing schedules/routines, implementing pre-activity interventions, using choice-making, altering how instruction is delivered, and enriching the environment with sensory stimuli (Sam & AFIRM Team 2016).
- **Cognitive Behavioral Instructional Strategies**: Examples in practice- Learners examine their own thoughts and emotions, recognize when negative thoughts and emotions are escalating in intensity, and then use strategies to change their thinking and behavior (Sam & AFIRM Team 2016).
- **Differential Reinforcement:** Examples in practice- Meet with the learner, follow the reinforcement schedule, and generalize strategy to other settings and times (Savage & Affirm Team, 2017).
- **Discrete Trial Training:** See suggestions on page 17
- **Extinction:** Examples in practice- Identify an interfering behavior to conduct a functional behavior assessment (FBA) to determine the function of the interfering behavior and the maintaining consequences to consistently withhold the consequence that maintains the interfering behavior (Morin & AFIRM Team 2018).
- **Modeling:** See suggestions on page 15
- **Naturalistic Interventions:** See suggestions on page 15
- **Parent-Implemented Interventions:** Examples in practice- Develop an implementation plan with a parent, follow a coaching cycle, and monitor progress (Amsbary & AFIRM Team, 2017).
- **Peer-Based Instruction & Intervention**: Examples in practice- Assign peers to the learner with ASD, conduct a minimum of one regular 15-minute session daily, provide

materials for the learner to participate in the session, and provide support and periodic feedback to peers (Sam & AFIRM Team 2015).

- **Prompting**: Examples in practice- Establish learner attention, deliver stimulus and provide the cue, wait for the learner to respond, and respond to learner's attempts (Sam & AFIRM Team 2015).
- **Reinforcement**: Examples in practice- Deliver reinforcement each time learner uses target skill/behavior, prevent satiation by varying reinforcers, thin reinforcers, and use reinforcers consistently across settings (Sam & AFIRM Team 2015).
- **Response Interruption & Redirection**: Examples in practice- praise independent use of appropriate behaviors, use identified procedure, prompt for the alternative behavior, and reinforce the use of the alternative behavior (Tomaszewski & AFIRM Team, 2017).
- **Self-Management**: Examples in practice- Provide the learner with a cue to begin using a self-management system, teach the learner how to self-record behavior in the target setting, and teach the learner to gain access to reinforcement when the criterion is reached (Sam & AFIRM Team 2016).
- **Social Narratives**: Examples in practice- Introduce the social narrative to the learner, learner or adult reads the social narrative, review key concepts with the learner, learner participates in an identified social situation, and discusses participation in a social situation (Sam & AFIRM Team 2015).
- **Social Skills Training**: Examples in practice- Implement the training as planned, reinforce learner(s) use of target skills, support generalization of target skills to other settings/people/activities, and provide support to peer models if applicable (Griffin et al. Team, 2015).
- **Task Analysis**: Examples in practice- Prompt learner to perform first identified step, reinforce learner for completing a step, apply most effective reinforcer after the task, fade reinforcers as quickly as possible (Sam & AFIRM Team 2015).

- **Delay**: Examples in practice- Establish learner attention and provide cues, deliver controlling prompts, increase time interval, and respond to learner's attempts (Sam & AFIRM Team 2015).
- **Video Modeling**: Examples in practice- Show the video, prompt the learner to perform the skill or behavior, reinforce the performance of all or part of the skill or behavior, correct errors (if needed), and fade the video model (Cox & AFIRM Team, 2018).
- **Visual Supports**: See suggestions on page 21

Theoretical Frameworks

The findings of this review provide examples and opportunities for teachers to integrate evidence-based strategies that have been researched as being effective for people with Autism and ELLs. Using evidence-based strategies infers that the educator believes that if the barriers to understanding are removed, learners will have the opportunity to be successful. This understanding has roots in the Cognitivism Theory. Cognitivism Theory is an attempt to understand the processes of student learning and remove barriers to how information is "received, organized, stored and retrieved by the mind" (Ertmer, Newberry, 1993).

Theories of great importance to the topic at hand are the medical and social models of disability and how they influence the attitudes of all stakeholders. The Medical Model of a Disability views the condition through a pathological lens and seeks to eliminate or treat conditions that hinder the lives of those affected. This model receives criticism for neglecting to consider the reality of social constrictions experienced by those with disabilities. This re-emphasizes the importance of using appropriate terminology and considering the affected community's viewpoint. The Social Model of Disability seeks to view disability as one aspect of a person's identity. Negative stereotypes, discrimination, and societal barriers to inclusion are seen as obstacles to a successful life (Olkin, 2022).

METHODS

This review focused on evidence-based practices appropriate for use with students diagnosed with ASD and ELLs. The intent was to find evidence-based strategies, provide for the specific needs of learners, and comply with the law (ESSA 2015; IDEA 2004).

Due to the many synonyms for Autism and ELLs, I began by creating a list of keywords from the research question. I determined those to be "evidence-based strategies," "English language learners," and "Autism Spectrum Disorder." Using those words and their synonyms, I began my search with the following keywords:

- Autism Spectrum Disorder
- English language learner
- Evidence-based practices
- EBP
- Evidence-based strategies
- ELL
- ASD
- Autism
- Autistic English language learners
- English language learners with Autism Spectrum Disorder

Multiple combinations of these keywords using the word AND containing all three topics yielded zero ERIC and Google Scholar results. I employed the use of the National Center for Educational Statistics, Center for Disease Control, What Works Clearinghouse, Google, SagePub, and PsychNet. I realized that it was going to be very difficult to locate research that was based on this specific population. I located a limited number of non-empirical peer-reviewed journal articles exploring concepts relative to specific subject areas, especially those related to language. I then adjusted my strategy to include "evidence-based practices" for Autism and ELLs, respectively.

Due to the limited nature of information specific to this topic, I expanded my search to include publications from 2015-2023. This helped to provide a few more references, but the majority focused on research dealing specifically with language strategies. I initially believed it would be more difficult to find reliable sources for evidence-based practices for Autism. However, I quickly learned that locating strategies for ELLs that had been fully vetted was more challenging. Some of the non-empirical articles discussed some strategies but had not systematically examined and rated those strategies for effectiveness. In selecting the literature for Autism, I chose two studies that had examined empirical studies from 1990-2017 and created a strict criterion for the strategies selected as "evidence-based." This meta-analysis of practices over a 27-year period of time increases the reliability and effectiveness of these methods. The comparative analysis table provided by the NCAEP inspired the organizational concepts for the findings of this research.

I chose the following data collection methods to support this review:

- Articles in professional journals
- Peer-reviewed journal articles
- Published literature sources
- Website material from reputable professional associations
- Statistical data from government websites
- Edited academic books

Inclusion/Exclusion Criteria-

Initially, I excluded search results that were not within the last five years and did not contain both topics. This resulted in a minimal pool of information, so the dates were expanded from 2015-2023. Only articles published in English were included.

The sources used were analyzed using a table to determine which were relevant to this review and ensuring it was focused on evidence-based strategies that met the selection criteria. From this group, it was clear that the NSP, NCAEP, and WIDA provided the most well-researched and supported evidence-based strategies concerning their fields that complied with the expectation of the law.

Table 2
SOURCE EVALUATION TABLE

Source information	Research objective	Problem or gap addressed	Findings and conclusions	Limitations or weaknesses	Implications or suggestions for future research	How your research can fill the gap
Wong, C., Odom, S. L., Hume, K., Cox, A. W., Fettig, A., Kucharczyk, S., . . . Schultz, T. R. (2014). Evidence-based practices for children, youth, and young adults with autism spectrum disorder. Chapel Hill: The University of North Carolina, Frank Porter Graham Child Development Institute, Autism Evidence-Based Practice Review Group	Evidence-based Strategies for Autism Spectrum Disorder.	Addresses the need for strategies to be proven according to criteria.	After reviewing 456 studies, 27 evidence-based reading strategies were found.	It only provides strategies for ASD.	How could this be integrated with our understanding of ELLs to refine strategies?	Provide evidence-based strategies that overlap with those specific to English language learners.
Jez, R. J. (2020, September 28). *Evidence-based practices for teaching learners with mild to moderate disabilities*	To provide evidence-based strategies for students with mild to moderate disabilities	The need for evidence-based strategies.	By using multi-tiered support systems such as (RtI) or (PBIS), schools can assess for, identify, and implement support for all learners.	Provides practices meant for mild to moderate disabilities but not specific to ASD or ELL. It does focus on cross-curricular strategies.	How could this be integrated with our understanding of ELLs to refine strategies?	Provide evidence-based strategies that overlap with those specific to English language learners
Piazza, S., Rao, S., Protacio, M., & Selena, M. (2015). *Converging recommendations for culturally responsive literacy practices ...* ERIC	To examine effective culturally responsive literacy practices.	Need for a more culturally responsive curriculum.	Found that dialogue, visual representation, collaboration, inquiry, and explicit instruction were the most effective means of these practices.	Only examines literacy practices. Does not consider practices specifically for Autistic English language learners.	Important to include and evolve a more culturally responsive curriculum.	This research focuses on Autistic and English language learners specifically.
Hume, K., Steinbrenner, J. R., Odom, S. L., Morin, K. L., Nowell, S. W., Tomaszewski, B., Szendrey, S., McIntyre, N. S., Yücesoy-Özkan, S., & Savage, M. N. (2021). Evidence-based practices for children, youth, and young adults with autism: Third generation review. *Journal of Autism and Developmental*	Using evidence from 1990-2017, criteria are used to determine evidence-based strategies.	Addresses the need for strategies to be proven according to criteria. A comprehensive critical summary of evidence across practices.	Created a criterion-based list of evidence-based strategies.	Focused on interventions for ASD only.	Great starting point for future research on this population.	It can help to show connections between connected strategies for English language learners.

Disorders, *51*(11),						
National Standards Report-Phase II. National Autism Center. (2015)	To identify evidence-based practices.	To create a research-supported group of evidence-based practices for practitioners and parents.	They found 14 evidence-based practices to support ASD.	Only provides strategies for ASD.	Need further research on English language learners with Autism.	Provides correlation strategies effective with ELLs.
Gottlieb, M. (2015). WIDA 15 Essential Actions . WIDA	The Essential Actions, derived from current theory and research, provide a rationale for each component and element of WIDA's standards framework. They may be used in conjunction with WIDA's 2007 or 2012 Standards books or independently, once teachers have familiarity with the components and elements.	To provide research-based practices to improve access to the curriculum for language learners.	15 Essential Actions to use with the WIDA standards.	Only provides strategies for ELLs.	Perhaps an addition could be added to specifically address ELLs with Autism.	Will provide overlapping strategies for use with ELLs.
Sam, A. M., Odom, S. L., Tomaszewski, B., Perkins, Y., & Cox, A. W. (2020). Employing evidence-based practices for children with autism in elementary schools. Journal of Autism and Developmental Disorders, 51(7), 2308–2323	The purpose of this study was to test the efficacy of a comprehensive program model originally developed by the National Professional Development Center on Autism Spectrum Disorder (NPDC).	The need for evidence based practices for ASD.	Although reported use of EPBs is important, the teachers' use of the EBPs with fidelity is the second dimension of EBP use that is essential.	Intend for ASD learners only	How can good practices for these learners be incorporated in the curriculum with efficacy?	This research will focus on correlations between strategies rather than their effectiveness in practice.
A review of studies on cognitive and metacognitive reading strategies ... (2019)	A review of literature on 27 studies on the teaching of reading strategies (particularly cognitive and	Review of evidence-based reading strategies for language learners	Teachers need to choose the best strategies that are suitable to the students' needs rather than using the same strategies throughout the term	Focused on reading strategies.	This study helps to show the need for teacher training and purposeful instruction.	The results of this study can be used across the curriculum.

	metacognitive reading strategies) for ESL/EFL learners		or the year			
Liu, K. K., Thurlow, M. L., Lazarus, S. S., & Dosedel, M. (2020). A literature review of evidence-base d literacy assessment and instruction practices for English learners with significant cognitive disabilities (NCEO Report 422). National Center on Educational Outcomes	Evidence-based practices for learners with significant cognitive disabilities	The need for researched-based literacy strategies for this population	Formative assessments and individual needs must be considered before strategy can be determined. Process driven.	Glves some guidance but also found limited research on general strategies to support findings. These strategies are for English language learners but they are not specific to Autism, except in more significant symptoms.	Provides some supportive classroom strategies for general education.	My research focuses on Autistic and English language learners specifically.
High-Leverage Practices and Evidence-Base	To illustrate the importance of high leverage	Many of the general HLPs are appropriate for all	This High-Leverage Practices Writing Team developed	Does not specify for this population.	Further research may help to provide clarity	My research focuses on Autistic and
d Practices: A Promising Pair Erica D. McCray, Margaret Kamman, Mary T. Brownell University of Florida	strategies and evidence-based strategies.	teachers, and (b) many of the HLPs identified for special education vary only in intensity and focus.	HLPs in four domains: (a) collaboration, (b) assessment, (c) social/emotional and behavioral support, and (d) instruction		for EBPs for more diverse learners.	English language learners specifically.

After reviewing the literature for application to the research question, I narrowed the group to 26 journal articles, 16 resource articles and files, five online articles from reputable sources, and eight studies that involved the review of empirical evidence.

Study design

This narrative literature review examined patterns and trends in recent literature regarding the need for this study. Limited information was available on strategies specific to students who were diagnosed with ASD while simultaneously being served as an ELL. To effectively employ these strategies, teachers must understand what the ASD strategies look like

in practice in the general classroom. Using research from the United States Department of Education, applicable classroom strategies accompany the suggested practices. A qualitative comparison was made using the results of three studies to synthesize the results into a usable and explicit explanation of methods in which to integrate these evidence-based strategies into classroom practice.

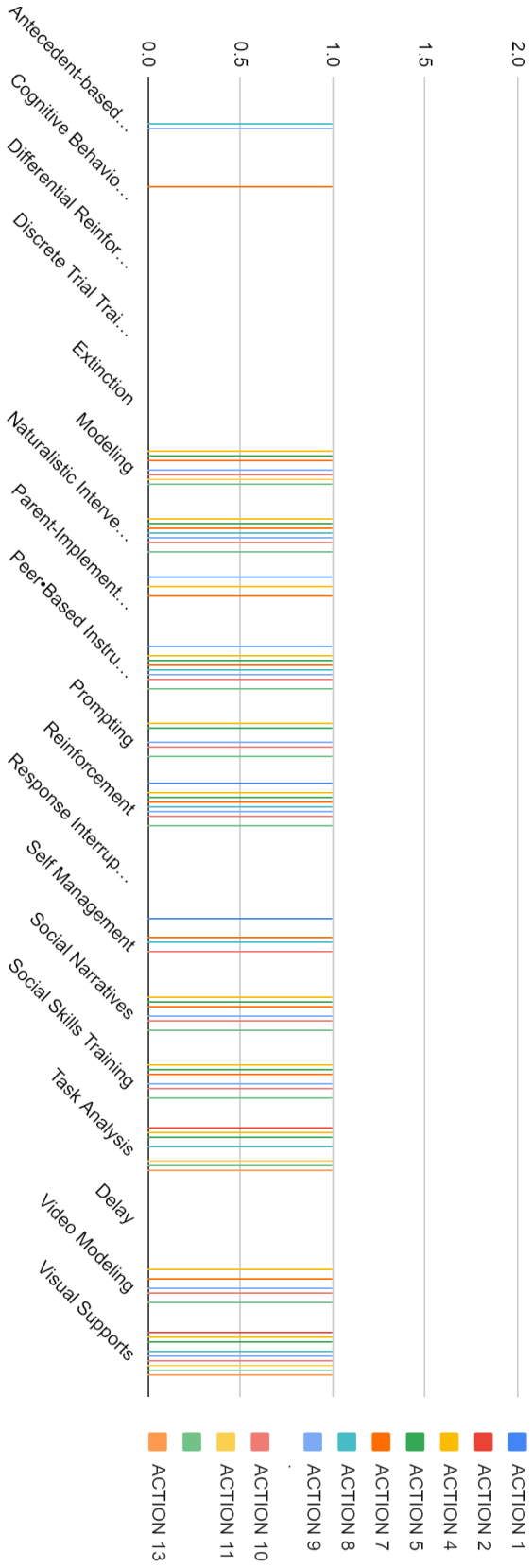
The literature and its effectiveness for this review's purpose were synthesized by creating a comparative table illustrating commonalities. I then used research-supported activity suggestions to help educators make connections to practice. The results of the findings are reported through the use of a graph illustrating areas of correlation.

Findings

There were 79 correlations between the evidence-based strategies presented by the NSP, NCASP, and WIDA studies. Table 3 shows the correlations found in evidence-based strategies. The correlations found are listed according to their corresponding WIDA 15 Essential Actions and examples of related strategies for Autism that could be incorporated into the action explained accordingly.

Table 3

AREAS OF CORRELATION



Areas of Correlation

ACTION 1: ***Capitalize on the resources and experiences that ELLs bring to school to build and enrich their academic language***.

- **Parent-Implemented Interventions**
- **Peer-Based Instruction & Intervention**
- **Reinforcement**
- **Self-Management**

ACTION 2: ***Analyze the academic language demands involved in grade-level teaching and learning.***

- **Task Analysis**
- **Video Modeling**
- **Visual Supports**

ACTION 3: ***Apply the background knowledge of ELLs, including their language proficiency profiles, in planning differentiated language teaching*****.**

No direct correlation with evidence-based strategies for ASD, but various strategies could be applied during team planning and instruction with Action 3 in mind.

ACTION 4: Connect language and content to make learning relevant and meaningful for ELLs.

- **Modeling**
- **Naturalistic Interventions**
- **Parent-Implemented Interventions**
- **Peer-Based Instruction & Intervention**
- **Prompting**
- **Reinforcement**
- **Social Narratives**
- **Social Skills Training**

- **Task Analysis**
- **Video Modeling**
- **Visual Supports**

ACTION 5: ***Focus on the developmental nature of language learning within the grade-level curriculum.***

- **Modeling**
- **Naturalistic Interventions**
- **Peer-Based Instruction & Intervention**
- **Prompting**
- **Reinforcement**
- **Social Narratives**
- **Social Skills Training**
- **Task Analysis**
- **Visual Supports**

ACTION 6: ***Reference content standards and language development standards in planning for language learning.***

There are no direct correlations between Action 6 and the evidence-based practices for ASD, but these practices could be applied during planning when considering how to apply the standards.

ACTION 7: ***Design language teaching and learning with attention to the sociocultural context.***

- **Cognitive Behavioral Instructional Strategies**
- **Modeling**
- **Naturalistic Interventions**
- **Parent-Implemented Interventions**
- **Peer-Based Instruction & Intervention**

- **Reinforcement**
- **Self-Management**
- **Social Narratives**
- **Social Skills Training**

ACTION 8: ***Provide opportunities for all ELLs to engage in higher-order thinking.***

- **Antecedent-based Intervention**
- **Naturalistic Interventions**
- **Peer-Based Instruction & Intervention**
- **Reinforcement**
- **Self-Management**
- **Task Analysis**
- **Visual Supports**

ACTION 9: ***Create language-rich classroom environments with ample time for language practice and use.***

- **Antecedent-based Intervention**
- **Modeling**
- **Naturalistic Interventions**
- **Peer-Based Instruction & Intervention**
- **Prompting**
- **Reinforcement**
- **Social Narratives**
- **Social Skills Training**
- **Video Modeling**
- **Visual Supports**

ACTION 10: ***Identify the language needed for functional use in teaching and learning*****.**

- **Modeling**
- **Naturalistic Interventions**
- **Peer-Based Instruction & Intervention**
- **Prompting**
- **Reinforcement**
- **Self-Management**
- **Social Narratives**
- **Social Skills Training**
- **Video Modeling**
- **Visual Supports**

ACTION 11 ***Plan for language teaching and learning around discipline-specific topics*****.**

- **Modeling**
- **Naturalistic Interventions**
- **Peer-Based Instruction & Intervention**
- **Prompting**
- **Reinforcement**
- **Task Analysis**
- **Video Modeling**
- **Visual Supports**

ACTION 12: ***Use instructional supports to help scaffold language learning*****.**

- **Antecedent-based Intervention**
- **Modeling**
- **Naturalistic Interventions**
- **Peer-Based Instruction & Intervention**
- **Prompting**

- **Reinforcement**.
- **Social Narratives**
- **Social Skills Training**
- **Task Analysis**
- **Video Modeling**.
- **Visual Supports**

ACTION 13: ***Integrate language domains to provide rich, authentic instruction*****.**

- **Naturalistic Interventions**
- **Peer-Based Instruction & Intervention**
- **Reinforcement**
- **Task Analysis**

ACTION 14: ***Coordinate and collaborate in planning for language and content teaching and learning.***

There are no direct correlations between Action 14 and the evidence-based practices for ASD, but these practices could be applied during team planning for language and content teaching and learning.

ACTION 15: ***Share responsibility so that all teachers are language teachers and support one another within communities of practice*****.**

There are no direct correlations between Action 15 and the evidence-based practices for ASD, but these practices could be applied during team planning when considering how to apply the standards.

The greatest alignment between evidence-based practices occurred in the following categories. There were 11 correlations total for each:

- **ACTION 4:** ***Connect language and content to make learning relevant and meaningful for ELLs***
- **ACTION 12:** ***Use instructional supports to help scaffold language learning*****.**

Other areas with high alignment with ten correlations each were:

- **ACTION 7:** ***Design language teaching and learning with attention to the sociocultural context***
- **ACTION 9:** ***Create language-rich classroom environments with ample time for language practice***
- **ACTION 10:** ***Identify the language needed for functional use in teaching and learning***.

The remaining actions aligned as follows:

- **ACTION 5:** ***Focus on the developmental nature of language learning within grade-level curriculum*** correlated to 9 evidence-based practices.
- **ACTION 8:** ***Provide opportunities for all ELLs to engage in higher-order thinking*** This action correlated to 7 evidence-based practices for ASD.
- **ACTION 1:** ***Capitalize on the resources and experiences that ELLs bring to school to build and enrich their academic language*** aligned with four evidence-based practices.
- **ACTION 11:** ***The plan for language teaching and learning around discipline-specific topics*** allowed for three evidence-based strategy correlations.

The following aligned with two correlations:

- **ACTION 2:** ***Analyze the academic language demands involved in grade-level teaching and learning***
- **Action 13;** ***Integrate language domains to provide rich, authentic instruction***,

The essential actions with the least correlation to evidence-based strategies for ASD were **ACTION 3:** ***Apply the background knowledge of ELLs, including their language proficiency profiles, in planning differentiated language teaching***; **ACTION 14:** ***Coordinate and collaborate in planning for language and content teaching and learning;*** and **ACTION 15:** ***Share responsibility so that all teachers are language teachers and support one***

another within communities of practice. These actions are based on effective evidence-based strategies for teachers, therefore not connected to student practices.

We will consider the following actions to understand how these practices could be implemented in the classroom. ACTION 13: Integrate language domains to provide rich, authentic instruction, and offer an opportunity to look at appropriate interventions involving naturalistic interventions, peer-based instruction and intervention, reinforcement, and task analysis. To integrate naturalistic interventions into Action 13, we might incorporate a variety of writing, speaking, listening, and reading activities into center-based activities. This is an excellent time to individualize instruction and support activities with resources selected with the learner in mind. Reinforcement could occur in the form of a reward for completed activities.

Peer-based Instruction and interventions provide a wonderful opportunity to address many of the needs of autistic language learners. To engage these learners, the teacher should pair the Autistic language learner with a learner who shares a common interest area. Some students with Autism have an area of interest that can be used to harness conversation and encourage social bonds. Using 'conversation cards' can help to ease anxiety for learners who are reluctant to talk. These cards can be used to prompt conversations and encourage reciprocal exchange. The student pair might consist of a peer who can communicate in the learner's native tongue.

Employing task analysis is a crucial skill important to ELLs and students with Autism. Breaking down skills into manageable parts is less overwhelming and helps learners independently replicate those actions. Depending on the student's need, multiple language domains could be employed during peer intervention.

Reinforcement is an important element of both naturalistic interventions and task analysis. It should be a part of a multistep process to encourage independence and self-regulation. Non-verbal cues can be used as reinforcers with autistic language learners. Verbal

praise or tangible items may be given to promote appropriate participation. Allowing for breaks or a favored activity can help to ease anxiety for these learners.

Embracing the use of visuals has been a repeated theme in interventions for this population. These are essential tools for engagement, activating schema, expanding vocabulary, and improving comprehension. Providing verbal and written directions and ensuring students understand the task is also helpful for this population. Consider amplifying the teacher's voice in the classroom to help all students hear sounds clearly and stay engaged. Language learners and Autistic students will likely develop receptive language before expressive language, so the teacher must not assume that understanding is absent if expressive language is not being employed.

Research Question

This study seeks to answer the question-What are some common evidence-based strategies that are effective for students with ASD and ELLs? With the findings that have resulted from this review, we can see that there are 79 overlapping strategies, therefore, there are seventy-nine opportunities to provide an evidence-based practice that may be needed by an Autistic language learner in the classroom.

DISCUSSION

This research could lead to discussions about the specific effectiveness of these strategies for ELLs with ASD. Perhaps the combination of the two circumstances creates specific needs that may cause these strategies to be less effective.

Recent research suggests differing brain activity in female students with Autism (Supekar, 2022). It is necessary to conduct more research to determine the effectiveness of these strategies for all individuals with ASD. Do the studies used for comparison here consider the variations of ASD regarding gender?

Drawbacks

Teachers should not neglect strategies meant to benefit individual students in favor of those that apply to many. The individual learner's needs must be considered before assuming that an intervention will work.

Researchers have expressed concern and caution about labeling students into particular groupings and negating the multi-dimensionality of the individuals that comprise it (Gunderson, 2000). Each student's highly individual circumstances and abilities can influence the effectiveness of particular strategies. Attempting to strategize instruction for such a diverse group of learners is a large undertaking.

Advantages

Providing evidence-based strategies to teachers helps ensure they use scientifically based methodologies, increases effectiveness, and improves student outcomes. Using evidence-based strategies ensures that ethical treatment and vetting have taken place in the learner's best interest. The resulting table with commonalities of strategies along with examples in practice will help to provide multiple ways in which to scaffold these learners.

The law is clear that educators must use researched-based strategies. The strategies presented herein comply with laws requiring strategies used with these populations to be high-quality strategies based on research (ESSA 2015; IDEA 2004).

Limitations

Examining where evidence-based practices might be employed for every language development standard would be challenging. However, we can compare the 15 research-based actions to find areas where teachers could employ proven strategies for learners on the spectrum.

General strategies cannot replace specific plans due to the uniqueness of the individual child. Individualized Educational Plans must be followed. The commonalities provided do not account for where the student is along the spectrum of Autism or the spectrum of language learning. Do additional challenges present themselves for virtual learning? Does the strategy's effectiveness vary if the learner is both Autistic and an ELL? These are questions that have yet to be answered by the literature.

This list is not comprehensive but provides a starting point for educators looking for proven and effective methods of reaching all students. Further examination would be needed to know how many students with Autism participated in the initial studies for WIDA, conversely, how many language learners were involved in the study related to ASD. The author worked on this review for a period of three months and may have missed studies that could have provided additional information.

Conclusion

When I began this review, I sought practical and effective strategies to use with the Autistic language learners in my classroom. I also wanted to fulfill a need expressed by the staff at my school for suggestions of effective strategies to use with these students. Using evidence-based practices with individual needs in mind makes learning accessible for all. The implications for practice are an improved understanding that these learners are valuable individuals who are unique in their own right, like all learners. Access to various evidence-based strategies provides teachers with multiple ways to reach students. These strategies can guide teachers, interventionists, paraprofessionals, therapists, and parents. Upon completing this research, I

plan to share this information with colleagues to provide more effective, targeted tools for instruction.

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