Review Article

Comparative insights into traditional language therapy and gestalt language processing in autism: a scoping review

Hamamah Ansari[1], Amina Asif Siddiqui[2]*, Tahmeena Tabish[3], Kehkashan Kanwal[3]

ABSTRACT

Background: Language and communication difficulties are common in children with Autism Spectrum Disorder (ASD). Traditionally, behavioral and analytic therapies have been used to address these challenges. Gestalt Language Processing (GLP) proposes that some children with ASD acquire language through memorized multiword units (gestalts) that later develop into meaningful sentences. However, empirical evidence for GLP-based interventions remains limited.

Objective: To identify and compare the existing literature on Gestalt Language Processing and traditional language therapy interventions for supporting language development in children with ASD.

Methods: The study followed a scoping review framework based on PRISMA 2020 guidelines. Two systematic searches were conducted for existing literature. Four databases were searched: PubMed, Scopus, Cochrane Library, and ScienceDirect. The search included English-language studies published between 2020 and 2024. The first search focused on Gestalt Language Processing literature. The second search examined traditional language therapy interventions.

Results: The search yielded 4,074 GLP records and 4,253 on traditional language therapy. No empirical GLP intervention studies were identified; the literature was mainly theoretical. In contrast, eight empirical studies on traditional language therapy reported improvements in expressive and receptive language, lexical development and functional communication following structure interventions such as Applied Behavior Analysis, Discrete Trial Training, and TEACCH-based programs.

Conclusion: Traditional language therapy is supported by empirical evidence demonstrating improvements in language outcomes in children with ASD, whereas GLP remains largely theoretical. Further research is needed to determine the effectiveness of GLP-based interventions

Keyword: autism spectrum disorder, echolalia, gestalt language, natural language acquisition, language intervention, processing, scoping review

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INTRODUCTION

Autism Spectrum Disorder (ASD) is a neurodevelopmental condition described as difficulties in social communication, challenges, and behaviours, often accompanied by restricted or repetitive patterns of activity and interests[1]. Repetitive speech, including echolalia, is considered to be a primary feature of Autism, with over 75% of children with ASD exhibiting it[2]. Whilst children with ASD repeat speech more often compared to other children, research on the factors influencing this behavior remains limited, although echolalia is widely considered a prime feature of ASD[3]. Internationally, ASD affects approximately 1 in 100 children, with prevalence rates contrary across regions, ranging from 0.09% to 1.07% in South Asia and up to 2.9% in Gulf countries due to discrepancies in awareness, diagnostic training, and monitoring systems[4].

In Pakistan, autism and developmental disabilities are underreported, where limited studies show a significant rise in rates, such as 2.57 per 1,000 for autism and up to 6.5% for mild intellectual disability. Compared to general Asian trends of rising ASD recognition, Pakistan's lack of large-scale epidemiological data highlights the need for more studies, awareness, and early intervention[5]. However, despite innovations in research, most ASD cases remain idiopathic, underscoring the complex etiology and growing public health impact of the disorder[6].

Earlier to Gestalt Language Processing (GLP) being introduced, gestalts such as repetitive speech, or echolalia were observed as something SLPs needed to correct or eliminate in speech. It was often misinterpreted into meaningless utterances. However, the findings from both previous and recent research[7]. GLP has been proposed as a naturalistic developmental model. Peters was one of the pioneer to describe this process as moving from the whole to the parts, and together with Prizant, helped to established the initial understanding of GLP that informs the line of work today[8]. Before GLP's framework, SLP interventions generally relied on traditional language therapy approaches i.e. clinician-directed methods like discrete trial training, with earlier shifts toward child-led approaches in naturalistic developmental Interventions[9].

The objective of this study is to critically investigate and integrate current studies on Gestalt Language Processing (GLP) in autism, comparing it with traditional language therapy (TLT) approaches. This research is based on the rationale that employing TLT for children with ASD and echolalia may not be the best intervention. Considering TLT as a 'one size fits all' for all children having ASD is not the best methodology. This study aims to explain the usage of GLP, discuss its developmental stages, and evaluate the effectiveness and clinical relevance of ASD intervention therapeutic models. As a result, the study will facilitate clinicians, researchers, and educators with a thorough understanding that advances neurodiversity-affirming, naturalistic language development while considering the intervention methods. The discussion contains existing literature, research gaps, clinical effects, and guidelines for future investigation to improve communication outcomes for children with ASD.

METHODOLOGY

Study Design

This scoping review examines two basically different approaches in therapy for children with ASD, known as GLP-based intervention and traditional language therapy. Due to the significant theoretical and clinical differences between these two approaches, the available literature is diverse in terms of conceptual frameworks, intervention models, outcome measures, and study designs. Therefore, a scoping review framework was selected to systematically map the scope, nature, and descriptions of existing data rather than to evaluate the effectiveness of a single intervention through closely defined outcomes.

Literature Search Strategy

To review the relevant comprehensive literature, two independent systematic searches were conducted for each therapy approach across four databases (PubMed, Scopus, Cochrane, and ScienceDirect), and the search processes were reported separately by following PRISMA 2020 guidelines. Unlike a systematic review, which aims to answer a specific research question through critical appraisal and synthesis of high-quality studies, this scoping review allows for the inclusion of a broad range of study designs without formal quality assessment, enabling identification of key concepts, research trends, and knowledge gaps. All included articles were published in English language between 2020 to 2024.

Search Strategy for Gestalt Language Processing

An intensive systematic search was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR)[10] criteria to identify relevant literature about Gestalt Language Processing on 20th September 2024, using the following terms *(Children with Autism OR Autism Spectrum Disorder OR ASD) AND (Gestalt Language Processing OR Echolalic Language Development OR Whole Phrase Language Learning OR Scripted*

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Language) AND (Language Development OR Communication Skills).

Eligibility criteria for GLP studies

The inclusion criteria were original research studies reported on children diagnosed with ASD who exhibited language development delays or impairments, intervention studies for children with autism or language disorders described as Gestalt Language Processors, their definition and stages of development and using experimental or quasi-experimental designs capable of evaluating intervention effectiveness of GLP, including randomized controlled trials (RCTs), non-randomized controlled trials, single-case experimental designs, and multiple-baseline designs studies reporting language-related outcomes, such as expressive language, receptive language, spontaneous communication, functional language use, or generalization and full-text articles published in English in peer-reviewed journals. The exclusion criteria were studies involving participants without a diagnosis of ASD or without identified communication or language impairments, as well as studies focusing on adolescents or adults with ASD. Studies were also excluded if they did not evaluate traditional or analytic language therapy approaches (e.g., studies focusing solely on behavioural management, sensory integration, visual perception, or other non-language-based interventions) or if they did not report language outcomes, such as receptive or expressive language skills. Additionally, non-empirical studies, conference abstracts, proceedings, editorials, commentaries, protocols, theses, or articles not available in full text and not published in English were also excluded.

Data Extraction for GLP

All records were identified through the described search strategy and imported into an EndNote library (version 20.6). Duplicate records were identified and removed. Subsequently, the titles and abstracts of all retrieved records were screened on basis of the predefined eligibility criteria. The database searches identified a total of 4074 records. After removing duplicate records (n=405) and records with titles or abstracts (n=3669) and excluded (n=3399). Then (n=270) were screened with the abstracts. Most of these records focused on Gestalt psychology, visual processing, or non-language-based constructs, rather than Gestalt Language Processing or language intervention. The remaining (n=06) records were retrieved for full-text review, as eligibility could not be determined from the title and abstract alone. Full-text assessment revealed that all 6 records failed to meet one or more inclusion criteria, most commonly because they did not involve intervention studies or did not evaluate the effectiveness of GLP approaches. In addition to database searching, (n=30) additional records were identified through other sources, including reference list screening and citation tracking, and were assessed according to the same eligibility criteria but after seeking retrieval for (n=30) and assessing (n=8) for eligibility, none met the inclusion criteria. As they were mostly on the literature and theoretical concept of GLP not on the intervention method. In December 2024 [11] published systematic review stating the similar results, searched 18 databases and clinical trial registries for intervention studies on GLP/NLA approaches and found no empirical research evaluating their effectiveness. The study did not fulfill the criteria of inclusion highlights the absence of empirical evidence, reveals critical research gaps, and cautions against premature clinical adoption of untested interventions like GLP/NLA and prompts the call for rigorous trials rather than anecdotal support. (figure 1)

The available studies were categorized by limited sample sizes and significant heterogeneity in participant characteristics, intervention approaches, and language outcomes. This variability limited comparison across studies and indicated gaps in the current evidence base.

Search Strategy for Traditional Language Therapy

The broad search was conducted again on traditional language therapy to review empirical studies on it and for the comparison with GLP. Four databases were searched PubMed, Scopus, Cochrane and Science Direct using the following terms *(Analytic language OR Traditional language therapy OR Discrete trial OR Incidental teaching OR Structured teaching OR Drill-based) AND (Autism OR "autism spectrum") AND (language).*

Eligibility Criteria for Traditional Language Therapy Studies

Inclusion criteria were original empirical research studies involving children diagnosed with ASD and/or developmental language disorder with communication or language impairments, studies evaluating traditional or analytical language therapy (e.g., analytic, developmental, or clinician-directed language intervention, structured teaching or discrete trial training), studies were experimental or quasi-experimental research designs capable of evaluating intervention effectiveness, including randomized controlled trials (RCTs), non-randomized controlled trials, cohort studies, single-case experimental designs, and multiple-baseline designs, studies reporting language-related outcomes, such as expressive language, receptive language, spontaneous communication, functional language use, or generalization and full-text articles published in English in peer-reviewed journals.

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Exclusion criteria were the participants without ASD diagnosis, identified communication or language impairments, studies focuses on adolescents and adult autism, studies were excluded if they did not evaluate traditional or analytic language therapy approaches (e.g., studies focusing solely on behavioural management, sensory integration, visual perception, or non-language-based interventions) and not reporting language outcomes, articles were not available as full-text articles (e.g., conference abstracts, editorials, commentaries, protocols, or theses) and articles were not published in English were also excluded.

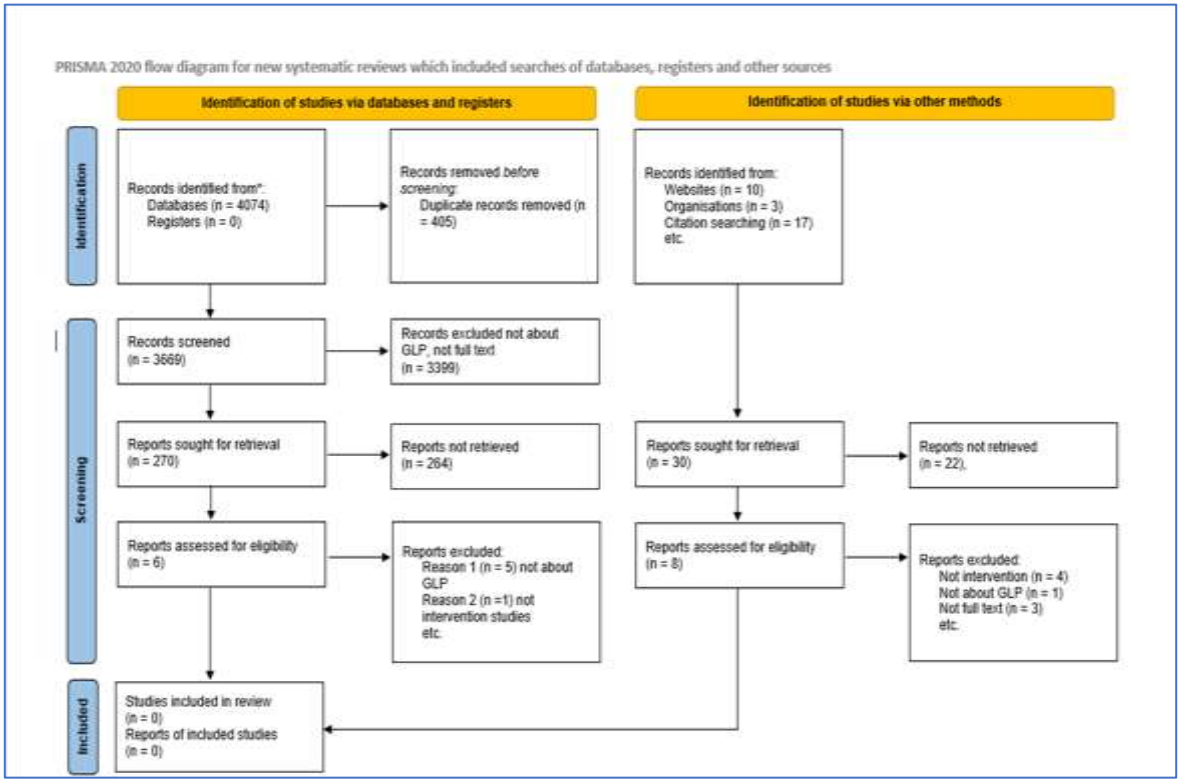

Figure 1: PRISMA 2020 diagram of systematic search and record screening for Gestalt Language Processing [12]

Data Extraction for TLT

The screening process, including the number of records identified, screened, and excluded at each stage of the review, along with the primary reasons for exclusion, is presented in a Figure 2. The database searches identified a total of (n=4253) records. Following the removal of duplicate records (n = 51) and records with titles or abstracts (n= 4202) and excluded (n=4164). Then (n=38) were screened with the abstracts and (n=33) were included for full texts. From which (n=8) were eligible for the designated criteria. Most were the empirical studies and one single case study on the effectiveness of traditional language therapy in developing language skills through structured methods. (Figure 2)

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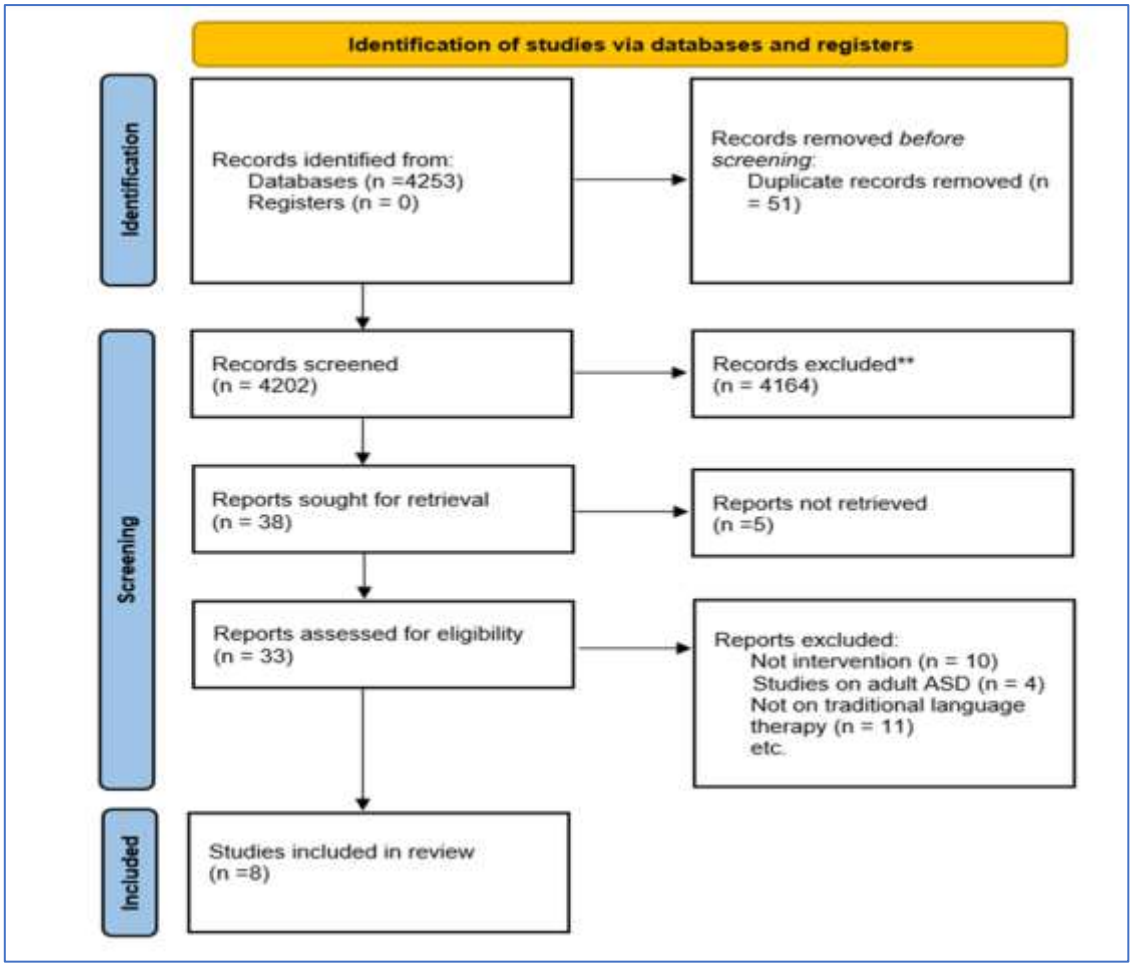

Figure 2: PRISMA 2020 diagram of systematic search and record screening for traditional language therapy [12]

RESULT

The scoping review identified a total of seven records examining Gestalt Language Processing (GLP) and Natural Language Acquisition (NLA) approaches for children with Autism Spectrum Disorder (ASD) [7, 8, 13,14,15,16,17,18].

All included studies were theoretical, literature reviews, editorials, or guidelines for clinical practice, with no empirical intervention studies meeting inclusion criteria. The primary aim of these works was to explain the GLP framework, its relevance to autism, and assistance with clinical practice. For instance, Hans Buffart and Haike Jacob (2021)[13] suggested that language develops from processing to multiword units rather than innate grammar, suggesting that meaningful communication occurs through understanding and altering these whole units. Similarly, Blanc et al. (2023, 2024) [7, 19] described the Natural Language Acquisition protocol, underlining the prospective for functional communication, grammatical pattern, and social communication in children with autism. Comprehensive review of GLP literature highlighted significant limitations. Hutchins et al. (2024)[20] and Beals (2024) [16] reported insufficient empirical support for the progression from memorized phrases to flexible, generative language, cautioning against the premature adoption of GLP in clinical practice. Editorials by Haydock (2024)[17] and Venker & Lorang (2024)[18] emphasized the importance of measuring language outcomes using evidence-based indicators rather than assuming progress within the GLP framework. A dissertation by Urwiler (2025)[8] described theoretical progression from gestalts to self-generated sentences but provided no empirical intervention data. Overall, the GLP literature is largely conceptual, highlighting a significant evidence gap for intervention studies. (table 1)

Table 1: Data extraction table for Gestalt Language Processing

Author and year	Title	Objectives	Intervention methods	Study Design	Participants	Language Outcomes	Type of Record
Hans Buffart and Haike Jacob, 2021 [13]	A Gestalt Theory Approach to Structure in Language	To propose and support a Gestalt-based cognitive model where language structure arises from the perceptual limitations of focus, not from innate grammar or usage alone.	N/A	Theoretical and Analytical Study	N/A	A meaningful communication develops through understanding and reorganizing these whole units, rather than learning isolated words first, progressing to functional, flexible language over time.	Journal Article
Blanc et al, 2023 [19]	Using the Natural Language Acquisition Protocol to Support Gestalt Language Development	Explain gestalt language development, a natural form of language acquisition, and demonstrate how the Natural Language Acquisition (NLA) protocol can be utilized to support children with autism and nonverbal individuals with language development.	N/A	Literature Review	N/A	Improved functional communication, increased grammatical organization, and better ability to express thoughts, emotions, and social communication.	Journal Article
Blanc et al, 2024 [7]	The natural language acquisition guide: Echolalia is all about gestalt language development	To guide clinicians and caregivers in supporting gestalt language processors using the natural language development framework.	N/A	Pamphlet/ Practical guide	N/A	Language becomes grammatically organized, intentional, and meaningful, supporting functional communication, social interaction, and self-expression.	Webpage
Tiffany L Hutchins, Sophie E Knox, E Cheryl Fletcher, 2024 [20]	Natural language acquisition and gestalt language processing: A critical analysis of their application to autism and speech language therapy	To critically review the theory of gestalt language processing, its links to autism, and associated theories (including delayed echolalia, episodic memory, and Blanc's language stages), highlighting definitional, theoretical, and empirical limitations.	N/A	Literature Review	N/A	The authors report that claims of progression to flexible, generative language lack sufficient empirical support, and that current evidence does not reliably demonstrate improved grammatical development or functional language outcomes compared to existing language intervention approaches.	Journal Article
Katharine Beals, 2024 [16]	A Linguist's Take on Blanc's Proposition of Gestalt Language Processing and Natural Language Acquisition: An Implausible Theory at Odds with the Research	This review analyses Blanc's Gestalt Language Processing (GLP) and Natural Language Acquisition (GLP/NLA), and related recommendations for clinical practice.	N/A	Literature Review	N/A	It should be measured by independent, generative grammar and productive sentence formation, which the authors argue is not yet convincingly demonstrated in the existing GLP/NLA literature.	Journal Article
Amanda Haydock, 2024 [30]	Embracing gestalt language development as a fundamental neurodiversity-affirmative practice	To advocate for recognizing gestalt language development as a valid, neurodiversity-affirming language acquisition style in autism and clinical practice.	N/A	Editorial	N/A	It focuses on meaningful communication that promotes self-sufficiency and identity rather than minimizing echolalia. Gestalt language development is acknowledged as a viable route that promotes adaptable, authentic communication.	Journal Article
Courtney E Venker and Emily Lorang, 2024 [18]	Continuing the conversation about echolalia and gestalt language development: A response to Haydock, Harrison, Baldwin, and Leadbitter	To critically respond to Haydock et al. (2024) by clarifying definitions, evaluating theoretical and empirical claims about echolalic speech and gestalt language development, and highlighting the need for stronger evidence to guide clinical practice.	N/A	Editorial	N/A	It highlights that language outcomes should be measured using clear, evidence-based indicators of comprehension and generative language, rather than assumed within the gestalt language processing framework.	Journal Article
Jordynn L. Urwiler, 2025 [8]	Literature Review: Understanding Gestalt Language Processing in Autism Spectrum Disorder	This study provides the clinicians with comprehensive information about gestalt language processing.	N/A	Literature Review	N/A	The children progress from using gestalts, memorized chunks to producing flexible, self-generated sentences with complex grammar. The outcome is functional, meaningful communication that supports social interaction, self-expression in everyday settings.	Dissertations

In contrast, eight empirical studies examining traditional language therapy (TLT) interventions were included[21,22,23,24,25,26,27,28]. These studies utilized a variety of designs, including randomized controlled trials, quasi-experimental studies, clinical trials, longitudinal studies, and single-case designs, with sample sizes ranging from 1 to 194 participants. Therapeutical methods included Applied Behaviour Analysis (ABA), Discrete Trial Training (DTT), TEACCH programs, Early Intensive Behavioural Intervention (EIBI), and adaptive interventions integrating parent training and naturalistic approaches. These studies consistently reported developments in expressive and receptive language, functional communication, lexical and semantic skills, and social interaction. For example, Meçe & Sherifi (2022)[25] and Bekmurat & Autayeva (2025)[28] demonstrated measurable gains in vocabulary, syntactic structure, and contextual language use following ABA-based methods. Frazier et al. (2021)[23] and Hartley et al. (2020)[22] reported that early language processing and comprehension skills predicted effective expressive and receptive outcomes, while Kasaria et al. (2025)[27] highlighted the efficacy of adaptive interventions for minimally verbal school-aged children (table 2).

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Table 2: Data extraction table for Traditional Language Therapy

Author and Year	Title	Objectives	Intervention methods	Study Design	Participants	Language Outcomes	Type of Record
Sigmund Eldevik, Hege Aarli, Kristine B. Titlestad, Ellie Kazemi, and Greg Elsky, 2020 [21]	Effects of Functional Discrimination Training on Initial Receptive Language in Individuals with Autism Spectrum Disorder	To examine whether functional discrimination training using functional support improves initial receptive (auditory visual) language skills in individuals with ASD who struggle with traditional teaching methods.	Functional Discrimination Training	Clinical Trial	8	The improvement was observed in receptive language, specifically in the ability to correctly respond to auditory–visual conditional discriminations (AVCDs) by selecting the correct object when given a verbal instruction. This improvement in functional language was associated with the use of functional reinforcement contingencies, where the reinforcement was directly related to the child's response.	Journal Article
Hartley et al, 2020 [22]	Comparing cross-situational word learning, retention, and generalisation in children with autism and typical development	1. Assess cross-situational word learning abilities between children with ASD and typical development children. 2. Examine whether children with ASD can use statistical co-occurrences between words and objects to infer word meanings in ambiguous contexts. 3. Evaluate the correlation between mapping, retention, and generalization in lexical learning as an integrated system.	Cross-situational word learning task	Experimental design	31	The study examined word learning outcomes, including word–referent mapping, retention of newly learned words, and generalisation of words to new category members in children with autism and typical development. These language outcomes were evaluated using the variable of cross-situational word learning with different attentional cues (social vs. non-social) to support word acquisition.	Journal Article
Thomas W. Frazier et al, 2021 [23]	A Longitudinal Study of Language Trajectories and Treatment Outcomes of Early Intensive Behavioral Intervention for Autism	1. To examine language development models and treatment outcomes in children with ASD receiving early intensive behavioral intervention (EIBI) over a period 2. To find indicators of language growth and educational placement.	Early Intensive Behavioral Intervention	Longitudinal Study	131	Its early language processing and comprehension skills are associated with better later expressive and receptive language outcomes.	Journal Article
Hongling Zeng a , Shuo Liu, Run Huang , Yi Zhou, Jun Tang , Jun Xie, Pan Chen, Bing Xiang Yang, 2021 [24]	Effect of the TEACCH program on the rehabilitation of preschool children with autistic spectrum disorder: A randomized controlled trial	To evaluate the efficiency of the TEACCH program (combined with Discrete Trial Teaching) contrast to DTT alone in improving the developmental outcomes of preschool children with ASD in China.	TEACCH and DTT	Randomized controlled trial	60	The study showed that stronger language processing and comprehension abilities are connected to better expressive and receptive language development.	Journal Article
Daniela Meçe, Edo Sherifi, 2022 [25]	Effectiveness of the ABA Method and Individual Education Programs for the Treatment of Autistic Children: A Case Study	The objective of this investigation is to evaluate and to focus on the efficacy of the ABA program in children with autism.	ABA	Single Case Study	1	The study stated significant improvement in language skills, including increased vocal imitation, labelling, sound production, and conversational abilities following ABA intervention.	Journal Article
Freeman et al, 2024 [26]	Effects of script-fading on social initiations during discrete-trial teaching with children with autism	To examine the use of embedding auditory scripts and script-fading procedures within standard Discrete-Trial Teaching (DTT) sessions for children with autism.	Discrete Trial Training	Experimental design	3	The study observed significant increases in socially appropriate language initiations, including requests for materials and instruction.	Journal Article
Kasaria et al, 2025 [27]	Adaptive Intervention for School-Age, Minimally Verbal Children with Autism Spectrum Disorder in the Community: Primary Aim Results	The study objective was to paradigm of 16-week, 2-stages, adaptive intervention containing of DTT (Discrete Trials Training, which is mostly considered usual care for children with autism), JASP-EMT (a blended, naturalistic, developmental Behavioral intervention involving JASPER [Joint Attention, Symbolic Play, Engagement and Regulation] and EMT [Enhanced Milieu Teaching]), and parent training (P) for improving spontaneous communicative utterances in school-aged, minimally verbal autistic children.	DTT, JASP-EMT, JASPER, EMT, Parent training	Randomized clinical Trial	194	The study revealed no significant difference in language outcomes between starting intervention with DTT or JASP-EMT. However, an adaptive intervention (beginning with DTT, adding parent training for early responders, and combining DTT + JASP-EMT for slower responders) produced the outcomes in spontaneous communicative utterances.	Journal Article
Bekmurat & Autayeva, 2025 [28]	The Application of Adapted Applied Behaviour Analysis Therapy for Developing Lexical and Semantic Skills in Preschool Children with Autism Spectrum Disorder	1. The characteristics of lexical and semantic speech in preschool children with autism aged 3 to 6 years. 2. The effectiveness in an adapted ABA therapy program in developing the lexical and semantic phases of speech in these children. 3. To evaluate the implementation of the adapted ABA therapy lead to measurable improvements in the communicative function of speech in preschool children with autism.	ABA	Quasi-experimental	60	The study indicated significant improvements in lexical and semantic language skills in preschool children with ASD who received the adapted ABA intervention, including gains in active and passive vocabulary, word categorization, and contextual language use.	Journal Article

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DISCUSSION

This scoping review studied the current literature on Gestalt Language Processing (GLP) and Traditional Language Therapy (TLT) approaches used to facilitate language development in children with Autism Spectrum Disorder (ASD). The findings revealed a significant difference in the nature and strength of evidence supporting these two methods. While traditional language interventions are supported by multiple empirical studies employing experimental and clinical designs, the literature on GLP primarily consists of theoretical papers, reviews, editorials, and conceptual discussions rather than intervention-based empirical research.

Evidence Based for Gestalt Language Processing: The results of the present review indicate that the literature on GLP is largely conceptual and theoretical, with no empirical intervention studies meeting the inclusion criteria. Several publications describe the theoretical basis of GLP and its proposed stages of language development. For example, Buffart and Jacob proposed a Gestalt-based cognitive framework suggesting that language structure emerges from perceptual processing of whole linguistic units rather than isolated words [13]. Similarly, Blanc and colleagues described the Natural Language Acquisition (NLA) protocol, which conceptualizes language development as a progression from memorized language chunks (gestalts) toward flexible and generative language production [7,14].

These publications suggest that children identified as gestalt language processors may initially rely on echolalic or scripted phrases that gradually become reorganized into meaningful and functional language structures. The proposed outcomes of GLP-based approaches include improved functional communication, increased grammatical organization, and enhanced social interaction [7,14]. However, these claims are more theoretical in nature and lack empirical validation[11].

The current critical reviews also highlight the non-existence of empirical evidence for GLP interventions. Hutchins and his team observed that claims of the progression of echolalia speech to generative language are inadequately supported by empirical research[15]. Similarly, Beals observed that the current GLP literature not succeeds to provide clear evidence of improved independent grammatical production and generative language skills [29]. Editorial discussions also emphasize the importance of defining GLP, developing a consensus on outcome measures, and providing empirical evidence of GLP interventions before it can be advised for use[17,18]. These studies indicate that though GLP is gaining more attention in clinical and neurodiversity-related discourse, it is largely theoretical in nature, indicating a research gap for GLP interventions.

Evidence Based for Traditional Language Therapy: The studies on traditional language therapy is supported by wide empirical evidence from randomized controlled trials, clinical trials, longitudinal studies, quasi-experimental designs, and single-case studies. The intervention methods mostly used are Functional Discrimination Training, Discrete Trial Training (DTT), Applied Behaviour Analysis (ABA), TEACCH-based structured teaching, and Early Intensive Behavioural Intervention (EIBI). These methods emphasize systematic teaching, reinforcement, structured practice, and skill generalization.

Clinical studies have demonstrated improvements in various aspects of language development. For instance, Eldevik and colleagues reported that functional discrimination training improved receptive language abilities and communicative responding in individuals with ASD[23]. Similarly, Hartley and colleagues demonstrated that cross-situational word learning tasks support predictive language processing and receptive language development[24]. Longitudinal research has also indicated that early language comprehension and processing skills are associated with improved expressive and receptive language outcomes over time[25]. Structured educational programs such as the TEACCH model combined with Discrete Trial Teaching have shown positive outcomes in randomized controlled trials, with improved language comprehension and expressive language abilities among preschool children with ASD[26].

In addition, interventions based on Applied Behaviour Analysis have been associated with improvements in vocal imitation, labelling, sound production, and conversational abilities following structured therapy programs [27](44). Experimental research has also demonstrated that embedding scripts and implementing script-fading procedures within discrete-trial teaching sessions can significantly increase socially appropriate language initiations[28].

More recent studies have explored adaptive and combined intervention models. Kasari and colleagues evaluated an adaptive intervention combining Discrete Trial Training, naturalistic developmental behavioural interventions, and parent training for minimally verbal children with autism[27]. Although no significant difference was observed between starting interventions with DTT or JASP-EMT, the adaptive intervention approach resulted in improved spontaneous communicative utterances. Similarly, quasi-experimental research

evaluating adapted ABA therapy reported significant improvements in lexical and semantic language skills, including gains in vocabulary, word categorization, and contextual language use among preschool children with ASD[28].

Comparison between GLP and Traditional Language Therapy: A key finding of this review is the contrast between the theoretical nature of GLP literature and the empirical foundation of traditional language therapy research. While a GLP framework focuses on holistic language acquisition through gestalt processing and echolalic language development, many available literatures provide conceptual discussions rather than experimental intervention models. Traditional language therapy, in contrast, has been evaluated through numerous controlled studies that measure language outcomes using structured and evidence-based methods. These studies consistently report progress in language comprehension, expressive vocabulary, social communication, and functional language use among children with ASD[23,24,25,26,27,28].

This difference does not inevitably invalidate the conceptual insights of GLP; however, it highlights the requirement for rigorous empirical evaluation of GLP-based interventions before their effectiveness can be compared directly with traditional therapeutic approaches.

Implications for Clinical Practice: The current evidence suggests that clinicians should use GLP-based interventions with cautious consideration, as the limited empirical support available. Traditional language therapy approaches, including structured teaching methods and behavioural interventions, remain the most evidence-supported strategies for promoting language development in children with ASD[23,24,25,26,27,28].

However, the conceptual insights provided by GLP literature may impact to a broader understanding of language development patterns in autism, specifically for echolalia and scripted speech in early communication[7,14].

Limitations: This scoping review has numerous limitations, including the fact that it is conceivable that relevant studies not indexed in the above databases or in the grey literature may not have been captured. Another limitation is the heterogeneity of the included studies in terms of intervention types, research designs, and population characteristics and outcome measures for comparison with other studies. A major limitation that there were no interventional studies that met the inclusion criteria related to the Gestalt Language Processing (GLP) intervention. As a result, the comparison between GLP and traditional language therapy was mostly based on conceptual literature for GLP and empirical studies for traditional language therapy. This discrepancy highlights the limited availability of experimental evidence evaluating GLP-based interventions.

CONCLUSION

This scoping review studied the current literature comparing Gestalt Language Processing (GLP) and Traditional Language Therapy (TLT) approaches in facilitating language development among children with autism spectrum disorder. The findings indicate prominent contrast in available evidence on both interventions. The literature on GLP is predominantly theoretical, consisting of conceptual discussions, reviews, and editorials that describe the recommended stages of gestalt language development and emphasize the potential role of echolalia in language acquisition. However, no empirical intervention studies evaluating the effectiveness of GLP-based therapy were identified within the inclusion criteria of this review. In compared to traditional language therapy approaches are supported by immense empirical research, including randomized controlled trials, clinical trials, longitudinal studies, and experimental investigations. These studies constantly report improvements in receptive language, expressive language, vocabulary development, and functional communication in children with autism.

Overall, the findings indicate a critical evidence gap in the empirical assessment of the effectiveness of the GLP-based intervention approaches, thus emphasizing the need for thorough research to establish their clinical effectiveness. In the absence of evidence, the traditional language therapy approaches remain the most supported intervention approaches in language development in children with Autism Spectrum Disorder.

DECLARATIONS & STATEMENTS

Author's Contribution

HA, AS, TT and KK: substantial contributions to the conception and design of the study.
HA, AS and KK: acquisition of data for the study.
HA and KK: interpretation of data for the study.
HA and AS, KK: analysis of the data for the study.
HA and AS: drafted the work.
HA, AS, TT and KK: revised it critically for important intellectual content.
HA, AS, TT and KK: final approval of the version to be published and agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. All authors contributed to the article and approved the submitted version.

Ethical Statement

NA

AI Use Statement

The authors used Grammarly to improve language clarity during manuscript preparation. All interpretations, conclusions, and original ideas remain solely those of the authors and approved by the authors.

Consent Statement

Informed consent was obtained from all subjects involved in the study.

Data Availability Statement

The data presented in this study are available on request from the corresponding author.

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None to declare.

Conflicts of Interest

None to declare.

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