

Exploring The Effects of English as a Foreign Language on First Language Development of Young Children: The Case of Greece

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ABSTRACT: *This study meticulously investigates the interplay between Early Second Language Acquisition (ESLA) and the potential emergence of first language disorders in the unique context of Greece. Embedded in the Complex Dynamic Systems Theory (CDST) paradigm, it aims to untangle existing ambiguities and explore implications for Greek society and education. Employing a Concurrent Mixed Methods Approach, the study attempts to unveil the intricate impacts of ESLA on First Language Development (FLD). Grounded in CDST's framework emphasizing linguistic system complexity, and interconnectedness, the research design employs a Descriptive Exploratory orientation through a Case Study Methodology. This facilitates comprehensive research into two cohorts of children aged four, representing monolingual Greek kindergartens (Cohort A) and English as a Foreign Language (EFL)-focused kindergartens (Cohort B). The research inquiries delve into multifaceted language development aspects amidst intricate linguistic dynamics. This involves nuanced analysis of potential performance disparities in the primary language pre- and post-interventions in early foreign language pedagogy, meticulous comparative assessment of both cohorts, and insightful exploration of EFL's implications on young children's nascent language development. Methodologically, data collection employs a language development assessment tool (Logometro®). The collection of both quantitative and qualitative data in this study is contingent upon the application of the Logometro® language assessment instrument. Thematic Analysis shapes the qualitative corpus, complemented by statistical analyses for quantitative data. Anticipated outcomes aim to enhance understanding among Greek educational authorities and the scientific community about intricate, adaptive ESLA impacts on FLD. Findings could influence enduring, impactful EFL policies shaped by Greek authorities. Overall, the research deepens comprehension of latent consequences tied to ESLA's effects on FLD, set within Greece's intricate context. Nested within CDST's theoretical framework, the amalgamation of research methodology and insights provides a robust foundation for future inquiries and invaluable guidance for policymakers navigating English language education decisions among young learners.*

KEYWORDS: early second language acquisition, first language development, Greece, communication disorders, complex dynamic systems theory, language assessment, EFL policies, logometro.

CONCEPTUAL AND THEORETICAL FRAMEWORK

The scholarly discourse around *Conceptual* and *Theoretical Frameworks* highlights their essential role in research, particularly in fields like bilingual language acquisition (Brydges & Batt, 2023; Kivunja, 2018; Luft et al., 2022; Mensah et al., 2020; Passey, 2020; Ravitch & Riggan, 2017; Varpio et al., 2020). This study, exploring *English as a Foreign Language* (EFL) and its effects on *First Language Development* (FLD) among young children in Greece, uses these frameworks to structure its investigation.

The *Conceptual Framework* in this research organizes key ideas, clarifying their relationships and highlighting research gaps, integrating scholarly literature to focus on the research questions (Luft et al., 2022; Mensah et al., 2020; Varpio et al., 2020). It reflects the importance of English as a global communication tool, influenced by globalization and technological advancement (Haidar & Fang, 2019; Ricento, 2018; Todorova & Todorova, 2018; Zeng et al., 2023). In Greece, the Ministry of Education's initiative in introducing English in kindergartens aims to foster comprehensive development through creative and enjoyable activities, emphasizing the use of English in a sensory-rich learning environment (Eurydice, 2023; Gazette, 2020).

The *Theoretical Framework*, anchored in *Complex Dynamic Systems Theory* (CDST), guides the study's focus and data interpretation (Brydges & Batt, 2023; Kivunja, 2018; Mensah et al., 2020). CDST facilitates the exploration of relationships between *Early Second Language Acquisition* (ESLA) and FLD, especially in assessing the influence of EFL on the natural development of the first language among young Greek children. This application of CDST enables an understanding of language acquisition as a dynamic, nonlinear process influenced by cognitive abilities, social interactions, and linguistic input (Chang & Zhang, 2021; Han et al., 2022; Hiver & Al-Hoorie, 2020; Verspoor & Lowie, 2022; Yang, 2021).

Employing CDST, this framework offers a multidimensional perspective on the relationship between language development theories and Greece's unique educational and sociocultural context. It underscores the importance of understanding the intricate interplay of factors affecting bilingual language acquisition, including the societal and educational implications of early EFL introduction. This condensed review preserves the essential elements and citations of the original literature review, focusing on the *Conceptual* and *Theoretical Frameworks'* roles in structuring and guiding research within the complex field of bilingual language acquisition.

First Language Development

FLD, or L1 acquisition, delineates the innate process by which individuals naturally attain proficiency in their native language during early childhood (Hutauruk, 2015; Izar et al., 2020). This phenomenon, illustrating the human capacity to acquire complex linguistic systems, spans phonology, morphology, syntax, semantics, and pragmatics, facilitated through a blend of biological predispositions, cognitive mechanisms, and environmental stimuli including interactions with primary caregivers (Baihaqi, 2020; Becker & Ud-Deen, 2020, p.3). FLD is

not only a testament to the unique human communication abilities but also a subject of study in psychology, linguistics, and cognitive science, shedding light on the interplay between nature and nurture and contributing to the understanding of foundational linguistic theories like *Behaviorism*, *Innateness*, *Interactionist Approaches*, and *Constructivism*. These theories collectively address the *Logical and Developmental Problems of Language Acquisition* and are crucial for comprehending the broader cognitive and linguistic theories related to FLD.

LPLA and DPLA. The *Logical Problem of Language Acquisition* (LPLA) articulates the enigma of children's rapid and complex mastery of native language grammar, a phenomenon that challenges the scope of their environmental linguistic input. Coined by Noam Chomsky, the concept underscores the inadequacy of the available input (Poverty of Stimulus) to fully explain the children's linguistic proficiency, hinting at an inherent, biologically predetermined cognitive architecture such as a *Language Acquisition Device* or *Universal Grammar*. This innate capacity is evidenced by children's ability to navigate through complex grammatical structures and ambiguity of language without explicit instruction, across all linguistic environments universally and efficiently (Becker & Ud-Deen, 2020, pp. 3-9, p. 15; Hutauruk, 2015; Ramirez et al., 2013).

The *Developmental Problem of Language Acquisition* (DPLA) focuses on the observable, sequential progression and increasing sophistication of children's language skills over time. It encompasses the study of phonological, semantic, morphological, syntactic, and pragmatic development, marking each phase with developmental milestones and characteristic language behaviors. Notable aspects of this progression include the discernible order of grammatical acquisition, *Critical Period Hypothesis* suggesting a prime time for language learning, and the tendency for overgeneralization as children apply learned linguistic rules. Through examining these developmental trajectories, DPLA contributes significantly to understanding how nature (innate predispositions) and nurture (environmental factors) collaboratively shape the child's linguistic journey, a subject of extensive multidisciplinary research aimed at deciphering the cognitive mechanisms of language development (Baihaqi, 2020; Hutauruk, 2015; Ramirez et al., 2013; Siahaan, 2022; Visser-Bochane et al., 2020).

Behaviorism. *Behaviorism*, rooted in the works of John B. Watson and B.F. Skinner, views FLD as predominantly driven by environmental factors and observable behaviors. It posits that language learning occurs primarily through conditioning, reinforcement, and imitation, where children replicate linguistic patterns from their caregivers and surroundings, forming associations between words and their meanings through consistent exposure and reinforcement. This process is supported by positive feedback from caregivers which reinforces the likelihood of repeated linguistic behaviors. However, *Behaviorism* also acknowledges the role of *Operant Conditioning* in language development, emphasizing that behaviors leading to favorable outcomes are likely to be repeated, thereby shaping language acquisition through reinforcement and punishment strategies (Al-Harbi, 2020; Becker & Ud-Deen, 2020, p.15; Chinyere, 2022; Dastpak et al., 2017).

The concept of *Semantic Networks* within the behaviorist paradigm describes how words are interconnected in a complex system based on meanings and relationships, with children forming these networks through experiences and associations. These networks help children categorize and understand words within broader contexts, becoming more comprehensive with positive reinforcement from caregivers for correct usage. Additionally, generalization and discrimination play crucial roles in language acquisition, where children extend known words to new objects or contexts (overextension) and learn to differentiate between similar yet distinct words. Overextensions reflect the child's ongoing process of understanding and categorizing their world, demonstrating their attempt to use linguistic tools to make sense of new experiences (Banaruee et al., 2023; Estremera, 2023; Leeder, 2022; Melvin-Brown et al., 2022; B. F. Skinner, 1992).

Despite its contributions, *Behaviorism* faces significant criticisms for its limitations in fully explaining the complexities of language acquisition. Critics argue that *Behaviorism* inadequately accounts for the innate cognitive capacities and creativity evident in children's language use, the rapid acquisition of grammar, and the impact of critical periods, cultural variations, and cognitive processes. Furthermore, it's suggested that not all learning stems from reinforcement, overlooking the role of intrinsic motivation and observational learning. These critiques highlight the need for a more comprehensive approach that considers the multifaceted nature of language learning beyond simple associations and reinforcements (Abutalebi & Clahsen, 2018; Nor & Rashid, 2018; Palmer, 2006; Shormani, 2014; Virués-Ortega, 2006).

Innateness Theory (Universal Grammar). The *Innateness Theory*, also known as the *Universal Grammar* theory, posits that certain cognitive structures and predispositions for language are inherent in humans at birth, transcending mere environmental acquisition. This perspective, largely associated with Noam Chomsky, suggests that all human languages share a set of grammatical principles and structures (*Universal Grammar*), which individuals are innately equipped to learn. This innate linguistic capacity, thought to be unique to humans, is considered instrumental in children's ability to understand and generalize from the limited and often inconsistent linguistic input they encounter. Critical to this theory are concepts like the *Poverty of the Stimulus*, which argues that the available linguistic input is insufficient for complete language acquisition without inherent cognitive structures, and the *Critical Period Hypothesis*, suggesting an optimal phase for language learning (Broad, 2020; Hutauruk, 2015; Nor & Rashid, 2018; Zhao, 2022).

Central to the *Innateness Theory* is the *Language Acquisition Device* (LAD), a hypothetical brain mechanism that facilitates language learning by enabling children to infer rules and patterns from their linguistic environment. Despite substantial variation in individual language development and across different languages, the theory maintains that an innate predisposition exists within all humans for language learning. This innate capacity is observable in phenomena such as overgeneralization and creative language use, where children apply learned linguistic rules to new contexts. While *Innateness Theory* acknowledges the importance of environmental input and caregiver interaction in triggering and guiding these innate capacities,

it emphasizes the primary role of inherent cognitive mechanisms in language acquisition (Al-Harbi, 2020; Behme & Deacon, 2008; Hutauruk, 2015; Izar et al., 2020; Nor & Rashid, 2018).

Despite its influence, *Innateness Theory* faces criticism for its inability to account fully for individual and linguistic variations and for the lack of direct neurobiological evidence for *Universal Grammar* or a specific LAD. Critics argue that the theory may underestimate the role of environmental factors and caregiver interaction and that successful language acquisition can occur beyond the proposed critical periods. These critiques highlight the complexity of language development and the ongoing debate between the roles of innate structures and environmental influences in the process of FLD (Behme & Deacon, 2008; Nor & Rashid, 2018).

Interactionist Approach. The *Interactionist Approach* (IA) posits that FLD is a dynamic interplay among inherent cognitive capacities, environmental stimuli, and social interactions. Recognizing both the innate biological predispositions for language, as supported by nativist theories like Chomsky's *Universal Grammar*, and the critical influence of environmental and social factors as emphasized in *Behaviorism*, the IA navigates a middle ground advocating for a comprehensive understanding of FLD. It underscores the importance of inherent linguistic predispositions while concurrently highlighting the indispensable role of linguistic and social environments in shaping language acquisition. Key figures contributing to this approach include Lev Vygotsky, Jerome Bruner, and Michael Tomasello, among others, who collectively advocate that language development is a complex interaction of cognitive, social, and environmental factors (Alharbi, 2023; Bruner, 1983; Hiver et al., 2022; Tomasello, 1999; Vygotsky, 1978).

At the heart of the IA is the recognition of the intricate interplay between nature (innate biological factors) and nurture (environmental influences). The theory acknowledges that while children possess inherent linguistic capabilities, the trajectory of language development is profoundly influenced by environmental factors, notably the linguistic input from caregivers and the community. The IA posits that children actively engage with their environment using their innate capacities to discern patterns and learn language. This reciprocal relationship is further enriched through social interactions, with caregiver-child dynamics providing both the linguistic input necessary for language acquisition and a context for children to apply and refine their inherent linguistic skills (Alharbi, 2023; Mulyani, 2019).

Central to the IA are concepts like Vygotsky's *Zone of Proximal Development* (ZPD), which emphasizes the importance of social interaction and scaffolding in language learning. The ZPD represents the range of tasks beyond a child's current capabilities but achievable with guidance, where caregivers play a crucial role in structuring interactions that advance a child's linguistic abilities. Peer interactions are also highlighted as significant, providing children with varied linguistic exposure and opportunities for imaginative play, problem-solving, and conflict resolution, all of which are integral to developing linguistic and social competencies. Such interactions foster not only language skills but also cultural awareness and adaptation to different linguistic registers (Alharbi, 2023; Vygotsky, 1978).

In essence, the IA offers a holistic view of FLD, integrating the roles of cognitive predispositions, environmental context, and social interactions. It emphasizes that language acquisition is neither solely the product of inborn linguistic mechanisms nor purely the result of environmental shaping. Instead, it is the outcome of a complex and dynamic interplay among these factors, all contributing to the rich tapestry of language development. Through its comprehensive perspective, the IA provides valuable insights into the multifaceted processes underpinning FLD, underscoring the synergy between an individual's inherent capacities, the linguistic input they receive, and the social context in which they develop (Alharbi, 2023; Mulyani, 2019; Vygotsky, 1978).

Constructivism. The *Constructivist Approach* represents a significant shift in the understanding of FLD, emphasizing children's active role in acquiring and constructing linguistic knowledge. It moves away from viewing children as passive recipients of language to recognizing them as dynamic agents who build their understanding through experiences, cognitive processes, and social interactions. Influential scholars like Jean Piaget, Lev Vygotsky, Michael Halliday, and Michael Tomasello have each contributed different perspectives to this framework, highlighting the interplay between cognitive stages, social interaction, cultural context, and the functional use of language in active language acquisition (Halliday, 1994; Piaget, 1972; Tomasello, 1999; Vygotsky, 1978). Empirical research, including observational, longitudinal, and experimental studies, supports the *Constructivist Approach*, demonstrating children's ability to engage with and adapt language from their environments and interactions (Duncan et al., 2020; Ortega & Iberri-Shea, 2005; Whitehurst & DeBaryshe, 1989).

The *Constructivist Approach* has profound implications for educational practices and policies, advocating for enriched and interactive linguistic environments that foster active language learning. It emphasizes the need for educators and caregivers to provide diverse and culturally responsive linguistic experiences, recognizing the significant influence of social interactions and cultural contexts on language development. However, the approach has faced criticism for potential ambiguity in implementation, variability in learning outcomes, and possibly overlooking the need for structured guidance in language acquisition (Alanazi, 2016; C. H. Liu & Matthews, 2005; Shah, 2019).

In essence, the *Constructivist Approach* offers a comprehensive and dynamic perspective on FLD, highlighting the importance of cognitive, social, and cultural factors in active language learning. While acknowledging criticisms, it continues to influence modern understanding of language acquisition and educational strategies, promoting an active, inclusive, and culturally sensitive approach to language learning. The approach encourages further research and innovative educational practices that recognize and foster the active role children play in their language development journey, adapting to the ever-changing linguistic and cultural landscapes they inhabit.

Future Directions. The current literature highlights significant research in FLD but also reveals gaps, especially in understanding negative influences in early language acquisition. Short et al., (2019) emphasize the need for more detailed studies on the various factors affecting

FLD and the possibility of mitigating negative impacts through targeted interventions. This points to the necessity for further research into the dynamics and modulation of risk and protective conditions to enhance language outcomes for children, marking an essential direction for future scholarly efforts in the field.

Critical Period Hypothesis

The relationship between age and language acquisition in both FLD and ESLA is a complex and extensively studied area. In FLD, infants and children naturally acquire language within a critical period, demonstrating rapid vocabulary and grammatical development, suggesting biologically determined optimal times for language learning (Azieb, 2021; Han & Bao, 2023; Martin et al., 2022; Siahaan, 2022; Singleton & Leśniewska, 2021; Singleton & Ryan, 2004; Vanhove, 2013; Zurlinden, 2004).

Meanwhile, second language acquisition focuses on acquiring additional languages later in life, with the CPH proposing a limited window for efficient language learning, significantly influenced by age. This inquiry into the temporal dimensions of linguistic development continues to unravel the depth of age's impact on language competence, guiding both theoretical understanding and educational practice in the fields of FLD and ESLA (Aljumah, 2020; Hartshorne et al., 2018).

Origins of the CPH

The CPH originated in the mid-20th century with pivotal contributions from Wilder Penfield and Lamar Roberts, particularly in their work *Speech and Brain Mechanisms* (Penfield & Roberts, 1959). Penfield's brain mapping and Roberts's neurological insights collectively highlighted the localization of language functions in the brain, indirectly supporting the concept of optimal developmental windows for language acquisition. Eric Lenneberg further developed the CPH, emphasizing biological underpinnings in language development and observing differential recovery in linguistic abilities post-cerebral injuries, suggesting a definitive critical period for language acquisition that typically concludes around puberty (Huang, 2022; Lenneberg, 1967; Penfield & Roberts, 1959; Siahaan, 2022; Vanhove, 2013).

Noam Chomsky's transformational-generative grammar and *Universal Grammar* theories in the 1950s revolutionized linguistic thought, proposing innate cognitive structures for language, contrasting with behaviorist models. UG's premise, the shared grammatical core across languages, implied a biologically determined window for optimal language acquisition, aligning with the CPH. Chomsky's ideas significantly influenced language acquisition studies, suggesting children's natural proficiency in acquiring their native language's grammatical structure within a critical period (Becker & Ud-Deen, 2020; Dąbrowska, 2015; Kibbee, 2010; Zhao, 2022).

Steven Pinker's work, particularly in *The Language Instinct*, emphasized language as an innate human ability, challenging behaviorist paradigms (Pinker, 1994). While not explicitly endorsing the CPH, Pinker's recognition of a biological basis for language aligns with the idea of critical developmental windows for language learning, highlighting the interplay between

cognitive maturation and language acquisition. His nuanced view suggests that while language learning may decrease with age, it doesn't abruptly stop after a certain period, contributing to a more dynamic understanding of the critical period in language development (Chen & Hartshorne, 2021; Franks, 2018; Hartshorne et al., 2018; Pinker, 1994).

Early Language Development

Early language development is characterized by rapid vocabulary expansion and complex grammatical development. Young children can experience a *vocabulary spurt* between 18 to 24 months, rapidly acquiring new words daily. This period marks their transition from simple word recognition to constructing complex sentences, mastering plurals, verb tenses, and pronouns. Parallel to lexical growth, children develop an acute phonological awareness, initially discerning a wide range of phonetic sounds across languages, which later narrows to focus predominantly on the sounds of their native language. This phase includes critical milestones like cooing, babbling, first words, and telegraphic speech, each marking significant advancement in their linguistic capabilities (Beckman & Edwards, 2000; Eshghi et al., 2019; Gelman & Brandone, 2010; Rowe et al., 2012; Visser-Bochane et al., 2020).

The rapid progress observed in early language development supports the concept of a *critical period* for language acquisition, suggesting an optimal phase for learning with a high degree of efficiency. As this period concludes, learning new languages or aspects of language may become more challenging. However, variability is prominent in early language development, with children exhibiting a wide range of developmental timelines. This diversity leads to ongoing debates about the nature of the critical period, whether it is a rigid, universal timeframe or a flexible phase with varying individual trajectories. These discussions continue to drive research into understanding the nuances of language acquisition and the specific factors influencing each child's linguistic journey (Hernandez et al., 2021; McCauley & Christiansen, 2019).

Empirical Studies in FLD and the CPH

Empirical studies in FLD and the CPH have been pivotal in understanding age-related disparities in language acquisition. Longitudinal research has traced language development from infancy through early childhood, revealing patterns of rapid vocabulary expansion and intricate grammatical development unique to different age groups. Children exhibit astonishing lexical absorption rates, sometimes acquiring up to nine words daily during certain growth phases. Phonological sensitivity is another focus, with children initially perceiving a wide array of phonetic sounds across languages, which later narrows to focus predominantly on native sounds. These findings fuel debates about the nature of the critical period, whether it is a flexible developmental phase or a more rigid temporal framework (Al Otaiba et al., 2009; Friedmann & Rusou, 2015; Perkins et al., 2013; Vanhove, 2013).

Case studies of individuals like Genie and Victor of Aveyron, who experienced language deprivation, highlight the potential existence and impact of critical periods in language development. These cases show individuals with limited language development despite intervention, emphasizing the importance of early language exposure. Isabelle's story, in

contrast, suggests the possibility of language recuperation beyond the typical critical period, questioning its inflexibility. Overall, these cases, along with empirical studies, emphasize the variability in language development and the need for a nuanced understanding of the CPH. They also highlight the importance of early intervention and the interplay of cognitive, biological, and environmental factors in shaping language acquisition (Brown, 1958; Curtiss, 1977; Itard, 1962).

Age and SLA

In the realm of *Second Language Acquisition* (SLA), age is a vital factor extensively studied in relation to linguistic proficiency and the CPH. The CPH suggests a biologically determined optimal age range for language learning, positing that achieving native-like fluency becomes more challenging after this period. Empirical evidence often favors younger learners, especially in aspects like pronunciation and fluency, leading to discussions about an *Accent Advantage*. Yet, ongoing debates challenge the rigidity of the CPH, with evidence of adults attaining high proficiency, suggesting that motivation, aptitude, and learning context significantly influence SLA outcomes. Learning settings, cognitive changes with age, and individual differences, including documented instances of successful late SLA, further complicate the narrative, pushing scholars to consider a more nuanced and flexible understanding of the CPH and age-related effects in language learning (Han & Bao, 2023; Hartshorne et al., 2018; Hu, 2016; Singleton & Leśniewska, 2021; Vanhove, 2013).

Empirical Studies in SLA and the CPH

In the domain of SLA, empirical studies intensively explore the impact of learners' starting age on their language proficiency, revealing that younger learners typically excel in vocabulary and phonological aspects, including achieving native-like pronunciation, known as the *Accent Advantage*. However, longitudinal research presents a more complex picture, indicating that while younger learners often achieve higher fluency, adults can also reach advanced proficiency levels, challenging a rigid interpretation of the CPH. Contextual factors, such as immersive naturalistic environments, are shown to be beneficial for younger learners, closely mimicking FLD settings. Yet, individual differences in motivation, cognitive abilities, and prior language experiences crucially influence the language learning trajectory for all ages. Motivated adults, employing strategic learning methodologies and leveraging metacognitive skills, can effectively overcome cognitive declines associated with aging, suggesting a nuanced and adaptable landscape of language learning across the lifespan (Ozfidan & Burlbaw, 2019; Rahman et al., 2017; Xu, 2023; Yi Wu, 2022; Zhai, 2020).

Pedagogical Considerations

The CPH significantly influences language education, promoting early language learning initiatives and shaping bilingual and multilingual education by integrating immersive experiences similar to first language acquisition. This pedagogical shift, favoring young learners for their receptivity and potential for native-like fluency, has led to early-stage language programs worldwide. Yet, implementing such programs universally faces resource and infrastructure challenges, alongside considerations for instructional quality and age-appropriate content. Recognizing that age is only one of many factors affecting language

learning, educational strategies are increasingly inclusive, acknowledging adults' ability to achieve high proficiency through effective methodologies and immersive experiences (Papadopoulos & Shin, 2021; Papadopoulos, 2020, 2021, 2022). Technological advancements further democratize language learning, offering adaptable tools for all ages and emphasizing lifelong learning, thereby challenging the CPH's implications and advocating that language acquisition is viable and beneficial at any life stage (Du, 2010; Hakuta et al., 2003; Hartshorne et al., 2018; Hassan, 2020; Ozfidan & Burlbaw, 2019; Singleton & Leśniewska, 2021; Snow & Hoefnagel-Höhle, 1978; Vanhove, 2013).

Contemporary Challenges

The application of the CPH in the modern, linguistically diverse world presents challenges in devising universally applicable pedagogical strategies due to the variety of linguistic backgrounds, cultural environments, and age groups learners come from. The interplay of multilingualism and language contact in many learners' lives necessitates an adaptable approach to language education that considers these complexities (Darquennes et al., 2020; Hakuta et al., 2003; Hartshorne et al., 2018; Singleton, 2005, 2017; Singleton & Leśniewska, 2021; Vanhove, 2013; Zurlinden, 2004).

Moreover, the non-linear nature of language development and new insights into brain plasticity challenge the fixed maturational constraints of the CPH. Successful late bilingualism cases and the varying efficacy of language learning in different contexts highlight the need for a reevaluation of the critical period and emphasize the importance of motivation, strategic learning, and cultural sensitivity in language acquisition. This complexity necessitates a holistic and inclusive approach to language education, considering the intersecting factors of age, culture, socioeconomic status, and identity that shape individual language learning experiences (Ardila & Rosselli, 2022; Hiver & Al-Hoorie, 2020; Kuhl, 2010, 2011; P. Li & Jeong, 2020; Pradhan, 2021).

Future Directions

The CPH asserts an optimal window during brain development for language acquisition, yet its implications for ESLA in children need further exploration. Research is crucial to understand the biological ties of age to language learning, the existence of a critical period for ESLA akin to FLD, and the variability in timing and duration among individuals. As the CPH informs pedagogical approaches, future studies will enhance strategies for effective language learning across diverse groups by delving deeper into how age influences linguistic acquisition and addressing the need for a nuanced understanding of language learning throughout life (Han & Bao, 2023; Vanhove, 2013).

Second Language Acquisition Theories

SLA represents a complex intersection of cognitive, socio-linguistic, and psychological elements, shaping individuals' proficiency in languages beyond their native tongue. Influential theories in SLA include Stephen Krashen's *Input Hypothesis*, emphasizing the role of comprehensible language input slightly above the learner's current level; Lev Vygotsky's *Socio-Cultural Theory* and Michael Long's *Interactionist Theory*, focusing on the impact of

social interactions and meaning negotiation; Jean Piaget's *Cognitive Development Theory*, which provides insights into how language learners assimilate and accommodate new linguistic structures; and Ellen Bialystok's *Dual Language Systems Theory*, exploring the cognitive architecture in bilingual individuals. These theories together offer a multifaceted understanding of SLA, guiding educators and researchers in understanding how various factors contribute to language development across diverse linguistic and cultural landscapes (Ahmad et al., 2016; Alduais et al., 2022; AlHammadi, 2016; Bailey & Fahad, 2021; Barac et al., 2014; Bialystok, 2001, 2017; Bialystok et al., 2009, 2012; Bodrova & Leong, 2015; Higgs, 1985; Krashen, 1985; Lichtman & VanPatten, 2021; D. Liu, 2015; Mahn & John-Steiner, 2013, pp. 117-146; Marwaha et al., 2017; Oogarah-Pratap et al., 2020, pp. 133-148; Piaget, 1972; Vygotsky, 1978; Wang et al., 2023; Wilson, 2018).

Input Hypothesis

The *Input Hypothesis*, formulated by Stephen Krashen, has significantly influenced the field of SLA. It posits that language learners progress most effectively when exposed to comprehensible input just above their current level of understanding, known as $i+1$ (Krashen, 1985). This hypothesis emphasizes naturalistic language acquisition, paralleling FLD, where exposure and interaction with the language in meaningful contexts are paramount. In language teaching, this has shifted focus towards creating immersive, authentic environments, prioritizing listening and reading skills as gateways to language proficiency (Er, 2001; Krashen, 1985).

Empirical studies support the *Input Hypothesis*, investigating the relationship between comprehensible input and language proficiency, the effects of input modifications, and individual learner differences (Bailey & Fahad, 2021; Krashen, 1985). Technological advancements have expanded the potential for delivering diverse, interactive language experiences, aligning with the hypothesis's emphasis on meaningful language exposure (Chapelle, 2007; Salaberry, 2001). Pedagogically, the hypothesis has influenced language teaching approaches, advocating for communicative competence through task-based and communicative language teaching, and the integration of authentic materials (Er, 2001; Hong, 2008).

Despite its contributions, the *Input Hypothesis* faces criticism and ongoing debates. Challenges include defining and measuring comprehensibility, its focus on receptive skills at the expense of productive ones, and the need for explicit instruction in certain contexts. Critics also highlight the necessity of accommodating individual learner differences and the evolving landscape of digital language learning resources (Er, 2001; Vanhove, 2013).

In essence, while the *Input Hypothesis* remains a cornerstone in SLA theory and pedagogy, it continues to evolve with ongoing research and pedagogical innovation. It emphasizes the significance of comprehensible, meaningful input and the necessity of adapting teaching strategies to the changing educational environment and learner needs. As SLA research progresses, the *Input Hypothesis* endures as a crucial theoretical framework, guiding the

understanding and facilitation of language learning in various contexts (Bailey & Fahad, 2021; Er, 2001, p. 200; Krashen, 1985).

Interactionist Theory

Language acquisition, particularly SLA, is intricately linked to social interaction, a concept explored in depth by *Interactionist Theory*. This theory posits that language learning is a dynamic interplay between social interaction and cognitive processes, emphasizing the crucial role of interactive experiences in acquiring a second language. As the world becomes increasingly multilingual, understanding and applying the tenets of this theory is essential for educators, researchers, and language policy planners. This theory bridges the gap between social and cognitive factors in language learning, underscoring the importance of practical implications and challenges in language education. It promotes engaging instructional strategies that harness social interaction, fostering language development in diverse, continually evolving educational landscapes (Alharbi, 2023; Gass et al., 2020; Hall et al., 2006; Long, 1996; Rudd & Lambert, 2011; Swain & Lapkin, 1998).

The historical development of *Interactionist Theory* marks a significant departure from behaviorist to cognitively oriented understandings of language learning. Influenced by the works of Noam Chomsky and Lev Vygotsky, it shifted the focus towards the learner's cognitive processes and the role of social environment in language acquisition. As technology advances and global connections expand, the theory evolves to reflect these new realities, offering a robust, comprehensive framework for understanding SLA in a global context (Chomsky, 1957, 1965; Gass, 2010; Gass & Mackey, 2015; Mackey & Goo, 2012; Muho & Kurani, 2011; Sarem & Shirzadi, 2014; B. Skinner, 1957; Vygotsky, 1978).

Despite its extensive application and influence, the *Interactionist Theory* faces critiques concerning the definition of comprehensibility, the balance between receptive and productive skills, and the role of explicit instruction. These critiques call for a more nuanced approach that acknowledges individual differences and the changing landscape of digital language learning. The theory's focus on the integration of social interaction and cognitive processes, while foundational, requires ongoing examination and adaptation to diverse educational contexts and learner needs (Dörnyei, 2009; Firth & Wagner, 2007; Larsen-Freeman, 2018, 2021; Ortega, 2019).

In essence, *Interactionist Theory* remains a vital component of SLA research, offering insights into how language is acquired through social means. As the field progresses, it continues to guide understanding and facilitate effective language learning strategies. Addressing its limitations and integrating new findings will ensure its relevance and applicability in an ever-evolving educational landscape, helping learners navigate the path to linguistic proficiency and intercultural competence (Gass et al., 2020; Larsen-Freeman, 2018; Loewen & Sato, 2018; Ortega, 2019; Sauro & Zourou, 2019).

Future Directions

SLA represents a dynamic field of study necessitating ongoing research due to the complex learning contexts ranging from formal education to community interactions, especially in an age dominated by globalization and digital platforms. Multilingualism, becoming increasingly common, adds layers of cognitive, social, and cultural dimensions to language learning that require detailed exploration to optimize teaching methods and materials across various learning environments. The integration of technology in language learning, offering extensive resources and innovative methods, calls for meticulous examination to maximize its benefits and address its challenges. Furthermore, individual learner differences, including motivation and learning preferences, underscore the need for personalized teaching approaches. Scholarly research also plays a critical role in evaluating and enhancing new pedagogical methods, ensuring they are empirically sound and practically effective (Bylund et al., 2023; Hartshorne et al., 2018; Larsen-Freeman, 2021, pp. 793-798; Lestari & Wahyudin, 2020; Mickan et al., 2019; Vanhove, 2013).

Understanding the sociocultural aspects of language learning is essential for fostering inclusive and culturally responsive educational settings (Papadopoulos & Shin, 2021; Papadopoulos, 2020, 2021, 2022). Lifelong language acquisition, from early childhood to later life, presents various challenges and learning scenarios, including professional development and heritage language maintenance, necessitating focused research on adaptive mechanisms and contextual factors influencing SLA at different life stages. Thus, continuous scholarly efforts are crucial in deciphering SLA's complexities, informing effective pedagogical strategies, and empowering learners to navigate the multilingual and multicultural world with enhanced linguistic skills and cultural awareness (Bylund et al., 2023; Hartshorne et al., 2018; Larsen-Freeman, 2021, pp. 793-798; Lestari & Wahyudin, 2020; Mickan et al., 2019; Vanhove, 2013).

Communication Disorders

Communication Disorders encompass a wide array of challenges in speech, language, and auditory processing, deeply influencing an individual's ability to interact and thrive. These disorders often stem from a complex interplay of neurological, genetic, environmental, and developmental factors. Key brain areas, including *Broca's* and *Wernicke's* regions, play critical roles in language development, with disruptions in these and other neural networks leading to various communication impairments. Understanding these disorders' multifaceted etiologies, ranging from genetic predispositions to environmental impacts, is crucial for effective diagnosis and intervention. The following subsections delve into the neurological aspects of *Communication Disorders*, their varied etiologies, the distinct types of disorders, and the intricacies of diagnosis and treatment. It underscores the need for a comprehensive, multidisciplinary approach to effectively address and manage these conditions, which significantly impact individuals' social and cognitive development.

Neurological Aspects

The journey of childhood communication development is fraught with complexities, underscored by neurological growth and the emergence of *Communication Disorders*. These disorders, stemming from inherent challenges or external factors like brain injuries, profoundly

impact the child's ability to communicate, affecting cognitive and social development. Early intervention is critical, leveraging the brain's neuroplasticity during this sensitive period. Understanding these disorders' neurological underpinnings through studies and neuroimaging is vital, aiding in developing tailored treatments and fostering a supportive environment for affected children (Bates et al., 1995; D. V. Bishop, 2017; Petitto & Marentette, 1991; Tallal, 2004; Yoshinaga-Itano et al., 1998).

Central to communication development are the brain structures intricately involved in speech and language processes. *Broca's* and *Wernicke's* areas, along with the *Arcuate Fasciculus* and the *Primary Auditory Cortex*, form a critical network orchestrating language comprehension and production. Disruptions in these areas can lead to specific aphasias, impacting communication abilities. The development and maturation of these areas, coupled with the brain's remarkable plasticity, are influenced by genetic and environmental factors, highlighting the interconnectedness of cognitive, motor, and emotional development with communication skills (D. V. M. Bishop, 2014; Brauer et al., 2011; Price, 2012; Romeo et al., 2018; Werker & Hensch, 2015).

Furthermore, the brain's complexity is evidenced by regions like the *Insula*, *Basal Ganglia*, and *Cerebellum*, each contributing to cognitive, emotional, and motor functions integral to communication. The *Insula's* involvement in emotional processing, the *Basal Ganglia's* role in motor control and cognitive processes, and the *Cerebellum's* contribution to fine-tuning motor actions and cognitive functions highlight the brain's intricate design and adaptive nature. The developmental trajectories of these regions reflect the influence of environmental and genetic factors, underlining the importance of a nuanced understanding of *Communication Disorders* and the comprehensive approaches necessary for effective treatment, support, and policy development (Craig, 2009; Haber & Knutson, 2010; Manto et al., 2012).

Etiology of Communication Disorders

Communication Disorders arise from a multifaceted interplay of genetic, environmental, neurological, developmental, and psychological factors, presenting a complex etiological landscape. Genetic predispositions, evidenced through studies on *Specific Language Impairment* (SLI), *Stuttering*, and *Autism Spectrum Disorder* (ASD), highlight the role of heritability and specific genetic markers like the *FOXP2* gene. However, these genetic factors rarely operate in isolation; they interact significantly with environmental influences, both prenatal (e.g., exposure to teratogens) and postnatal (e.g., socio-linguistic environments, early childhood trauma), affecting the developmental trajectory. Additionally, neurological considerations, such as anomalies in critical brain structures or functional connectivities, underscore the role of the brain's architecture in communication abilities. Advanced neuroimaging techniques continue to reveal subtle neurodevelopmental abnormalities, enhancing our understanding of the neural networks involved in speech and language (D. V. Bishop, 2002; Dale et al., 2003; Foundas et al., 2001; Kang & Drayna, 2011; Kuhl, 2010; May et al., 2009; Price, 2012; Roberts et al., 2004; Steinhausen & Juzi, 1996).

The developmental path to speech and language acquisition is intrinsically complex, with deviations potentially leading to various *Communication Disorders*. Critical periods of heightened neuroplasticity, such as those proposed by the CPH, suggest that adversities during these sensitive phases can have lasting effects. *Late-Language Emergence* (LLE) serves as a potential precursor or variant, highlighting the need for vigilance in developmental monitoring. Psychological factors, including stress and trauma, can exacerbate pre-existing vulnerabilities, leading to conditions such as *Functional Dysphonia* or *Selective Mutism*, while also creating a cyclical pattern where communication challenges heighten psychological distress. This intricate causative web necessitates a comprehensive, interdisciplinary approach to understand, intervene, and support individuals with *Communication Disorders*, integrating insights from genetics, environment, neurology, development, and psychology (Steinhausen & Juzi, 1996; Foundas et al., 2001; Bishop, 2002; Dale et al., 2003; Roberts et al., 2004; May et al., 2009; Kuhl, 2010; Kang & Drayna, 2011; Price, 2012).

Types of Communication Disorders

Communication Disorders encompass a broad spectrum of challenges in speech, language, voice, and auditory processing, each distinct in its etiology and manifestations, profoundly impacting an individual's social, educational, and personal life. *Speech Disorders*, categorized into *Articulation*, *Fluency*, and *Voice Disorders*, manifest as difficulties in producing sounds, disruptions in speech flow, and abnormalities in voice quality, respectively. *Articulation Disorders*, common among children, involve the inaccurate production of speech sounds, often due to structural anomalies, motor planning challenges, or phonological issues. *Fluency Disorders*, like stuttering and cluttering, disrupt the smooth flow of speech, with stuttering marked by repetitions and blocks, and cluttering by rapid, disorganized speech. *Voice Disorders* affect the pitch, loudness, or quality of voice due to structural, functional, or neurogenic causes, impacting an individual's ability to communicate effectively (McLeod & Baker, 2017; McLeod & McKinnon, 2007; Roy et al., 2004; Smith & Weber, 2017).

Language Disorders, divided into *Receptive* and *Expressive* types, affect a person's ability to understand or produce language. *Receptive Disorders* impair the comprehension of language, while *Expressive Disorders* hinder the ability to produce coherent language. *Cognitive-Communication Disorders*, often resulting from neurological conditions, affect cognitive aspects of communication, while *Social Communication Disorders* impact the use of language in social contexts. *Auditory Processing Disorders* (APD) challenges the brain's ability to process auditory information, leading to difficulties in discriminating, recognizing, and understanding sounds, especially in noisy environments. *Swallowing Disorders*, or *Dysphagia*, affect the ability to safely and effectively swallow food and liquids, posing significant health risks (D. V. Bishop, 2017; Chilukuri et al., 2018; Leonard, 2014; Moore, 2018; Sharma et al., 2009).

Within the realm of *Communication Disorders*, specific conditions like *Sigmatism* (commonly known as lisp) involve the mispronunciation of sibilant consonants and *Childhood Apraxia of Speech* (CAS) is marked by difficulties in motor planning for speech. Both conditions, along with other speech sound disorders, pose unique diagnostic and therapeutic challenges. The

diversity of these disorders underscores the need for specialized approaches in assessment, diagnosis, and intervention. *Phonological Disorders*, characterized by rule-based errors affecting multiple sounds, and *Sigmatism*, both affect speech intelligibility and require targeted intervention strategies. CAS, a neurological disorder affecting the precise planning of speech movements, underscores the complexity of diagnosing and treating *Articulation Disorders* (Ceron et al., 2017; Lewis et al., 2023; Namasivayam et al., 2020).

The diagnosis of *Communication Disorders* is often complicated by comorbidity with other developmental and neurocognitive conditions, such as ASD and ADHD. Shared symptoms, overlapping etiologies, and mutual impacts make it challenging to diagnose and manage these conditions effectively. Understanding the intricate relationships and common pathways between these disorders is essential for accurate diagnosis and tailored intervention. Genetic overlaps, neurobiological patterns, and shared environmental factors contribute to the complexity of these disorders and their interrelations (Foster et al., 2023; McGregor, 2020; Mueller & Tomblin, 2012).

Pharmacological and behavioral interventions provide a spectrum of strategies to address the multifaceted needs of individuals with *Communication Disorders*. While medication may support overall treatment, especially for comorbid conditions like ADHD or anxiety, behavioral and therapeutic interventions are central to management. Early intervention, speech and language therapy, cognitive-communication therapy, and social-pragmatic therapy are among the approaches employed to enhance communication abilities. These interventions often involve parents, caregivers, and educators, emphasizing a supportive and language-enriched environment (Armstrong, 2018; Committee on the Evaluation of the Supplemental Security Income (SSI) Disability Program for Children with Speech Disorders and Language Disorders et al., 2016; Law et al., 2017).

In essence, *Communication Disorders* are diverse and complex, with significant impacts on individuals' lives. They require a nuanced understanding and a multidisciplinary approach for effective diagnosis and management. Ongoing research, early identification, and individualized, evidence-based interventions are crucial for improving the lives of individuals with these disorders, enabling them to communicate effectively and confidently in their daily interactions.

Future Directions

Continued exploration into *Communication Disorders* is imperative to enhance comprehension and treatment of these intricate conditions affecting a substantial segment of the global population (Ribas et al., 2023; Spicer-Cain et al., 2023; Westby & Watson, 2021, pp. 560-561). Recent advancements have shed light on identifying and managing various speech and language disorders, yet significant gaps persist regarding their etiology, progression, and the most efficacious intervention strategies. Research endeavors must persistently seek to decipher the multifarious genetic, neurological, and environmental factors contributing to these disorders and to evolve more precise diagnostic tools alongside effective, personalized treatment plans (Plug et al., 2021).

Bishop (2017) underscores the necessity for clarity and consensus in terminology and diagnostic criteria, which are essential for propelling both research and clinical practice in developmental language disorders forward. Similarly, the CATALISE-2 consortium focuses on the need for standardized communication regarding developmental language disorders (D. V. M. Bishop et al., 2017). The profound impact of early language experience on subsequent outcomes, as demonstrated by Gilkerson et al. (2018), accentuates the critical requirement for early and efficacious language interventions. Furthermore, Faraone et al. (2021) provide a comprehensive consensus on the nature and treatment of ADHD, elucidating the intricacies involved in managing conditions that frequently intersect with *Communication Disorders*. Zhang et al. (2021) emphasize the effectiveness of interventions for children with primary speech and language delays/disorders, indicating a global imperative for informed and efficacious strategies. Therefore, a dedication to sustained research will not only deepen theoretical understanding of *Communication Disorders* but will also improve outcomes for individuals affected by these challenges, enhancing their quality of life and communicative abilities.

Bilingualism and Communication Disorders

The intersection of *Bilingualism* and *Communication Disorders* in young children is a dynamic area requiring in-depth research and nuanced understanding. Children acquiring multiple languages face distinct developmental trajectories, which can complicate the identification and treatment of *Communication Disorders*. The dual challenge of mastering two linguistic systems may lead to variations in the acquisition rate and proficiency in each language, sometimes mimicking or masking symptoms of *Communication Disorders*. It's essential to distinguish between bilingual developmental milestones and indicators of underlying disorders to avoid misdiagnosis and ensure appropriate interventions (Aguilar-Mediavilla et al., 2019; Bonuck et al., 2022; Kay-Raining Bird et al., 2016; Kohnert & Medina, 2009; Lund et al., 2017).

In bilingual contexts, the assessment and intervention strategies for *Communication Disorders* must be culturally and linguistically responsive. Traditional monolingual norms may not apply, necessitating a shift towards more inclusive and representative diagnostic criteria and therapeutic approaches. Bilingual children with communication disorders benefit from support in both languages, contributing positively to their overall linguistic and cognitive development. Research underscores the need for tailored intervention strategies that respect and integrate the child's linguistic background, promoting balanced *Bilingualism* alongside communicative competence (Ebert et al., 2014; Hambly et al., 2013; Law et al., 2017; Nair et al., 2023).

Family and educational settings play a pivotal role in the language development of bilingual children, especially those with *Communication Disorders* (Drysdale et al., 2015). Parental involvement, bilingual education programs, and informed support systems can significantly influence language outcomes (Hoff, 2018). Educators and parents should be equipped with the knowledge to create enriched, supportive language environments that encourage the development of both languages in children with *Communication Disorders* (Arias & Friberg, 2017; M. Li, 2023; Nair et al., 2023)

Recent advancements in neurocognitive research have begun to illuminate how *Bilingualism* interacts with *Communication Disorders*. Neuroimaging studies reveal that bilingual brains may exhibit different patterns of activation and structural organization, influencing language processing and learning. Understanding these neural underpinnings is crucial for developing targeted interventions that leverage the bilingual brain's unique features and address its specific challenges (Arredondo et al., 2017; Kousaie & Phillips, 2017; Olulade et al., 2016; Pliatsikas, 2020; Valian, 2015).

Despite the challenges, *Bilingualism* also offers unique opportunities for children with *Communication Disorders*. The cognitive, social, and linguistic benefits of *Bilingualism* can serve as powerful allies in the intervention process. Bilingual children often demonstrate greater metalinguistic awareness and cognitive flexibility, skills that can be harnessed in therapeutic contexts to facilitate language learning and generalization (Barac et al., 2016; Blom et al., 2017; Davis et al., 2022; Kapa & Colombo, 2013; M et al., 2015).

In essence, understanding and supporting bilingual children with communication disorders requires a concerted effort from researchers, clinicians, educators, and families. Continued research is needed to develop reliable assessment tools, effective intervention strategies, and comprehensive support systems that address the unique needs of bilingual children. Embracing bilingualism's complexities and potentials can lead to more effective and empowering outcomes for young children navigating the challenges of Communication Disorders.

RESEARCH DESIGN & METHODOLOGY

This study investigates the interplay between ESLA and FLD among preschool children in Greece, employing a *Concurrent Mixed Methods Approach* within a *Descriptive Exploratory Research Design*, framed by a *Case Study Methodology*. The research is structured to provide a detailed, contextual analysis of linguistic development in two distinct cohorts: children attending monolingual Greek kindergartens and those in EFL-focused kindergartens. This integrative approach is specifically chosen for its in-depth, comparative insights into the dynamic nature of language acquisition influenced by secondary language exposure.

The *Concurrent Mixed Methods Approach* intertwines quantitative and qualitative methodologies to create a robust, multi-dimensional view of language development. Quantitative data, encompassing pre- and post-intervention assessments, is systematically gathered utilizing the Logometro® tool, which is instrumental in quantifying changes in language abilities. Concurrently, the Logometro® tool also facilitates the acquisition of qualitative data, offering in-depth, narrative insights into children's language usage. This qualitative aspect crucially captures the subtleties of how ESLA might influence FLD, thereby providing a comprehensive view that encompasses both statistical trends and nuanced linguistic developments.

Ethical considerations are paramount given the young age of participants; the study ensures all ethical standards for research with children are met, including informed consent, data

confidentiality, and ensuring a non-intrusive, child-friendly approach in all interactions and assessments.

Targeting a critical age for language development, the study focuses on children aged four, split into two cohorts to ensure a comparative analysis of monolingual and bilingual exposure. Each group consists of 25 participants, representing the diverse linguistic environments children in Greece are exposed to. This selection is strategic to ensure the research captures a broad spectrum of language development scenarios, thereby providing more generalized and applicable insights into the effects of ESLA on FLD.

In essence, the research, through its *Concurrent Mixed Methods Approach* within a *Descriptive Exploratory Research Design* and *Case Study Methodology*, is designed to offer a comprehensive understanding of how ESLA impacts FLD. By adhering to rigorous ethical standards and employing a methodologically sound approach, the study aims to provide valuable insights into the intricate dynamics of bilingual language development, contributing to academic discourse and offering guidance for educational policy and practice in Greece. The use of CDST as a guiding theoretical framework ensures that the study addresses the complexities and interconnectedness inherent in language development, providing a nuanced understanding of bilingual language acquisition

EXPECTED FINDINGS

The expected findings of this study aim to illuminate the intricate effects of ESLA on FLD in young children, specifically focusing on the Greek context. Statistically significant differences are anticipated in the language performance of children pre- and post-ESLA intervention, as measured by the Logometro® tool. For children in EFL-focused kindergartens, it is hypothesized that their exposure to a second language at an early age will reveal distinct patterns in language development compared to their monolingual peers. These differences may manifest in various facets of language, including vocabulary, syntax, and pragmatic skills. The study also expects to uncover whether ESLA has any adverse effects on the FLD, potentially identifying specific areas or skills within the first language that are most susceptible to influence from learning a second language.

Furthermore, the research anticipates contributing to the development of more informed language education policies in Greece. By providing empirical evidence on the impacts of ESLA on FLD, the findings could guide educational authorities in making decisions that optimize language learning outcomes and address any potential negative implications. This study aims to offer nuanced insights into the adaptive nature of language acquisition under the influence of ESLA, thereby equipping policymakers with data-driven recommendations. The comprehensive analysis of both qualitative and quantitative data is expected to shed light on the complexities of bilingual language development, fostering a deeper understanding among educators, parents, and policymakers about the best practices for nurturing language skills in a bilingual environment.

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