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Braiding the Ropes: Adding Second or Additional Language Acquisition to Reading and Writing Metaphors

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Abstract: Drawing on second language acquisition theories and existing visuals, this article proposes a new educational metaphor, Lane's L2+ Acquisition Rope, to encompass the complexities of second or additional language learning. This metaphor integrates five major strands—external factors, social factors, affective factors, innate factors, and internal factors—to provide a comprehensive framework for understanding proficient second language acquisition. Implications of this visual highlight the importance of incorporating socio-cultural, neurological, and affective dimensions into educational metaphors to support diverse learners effectively. Lane's L2+ Acquisition Rope offers a promising avenue for educators to enhance instructional practices and promote equitable learning outcomes for English Language Learners and other student subgroups.

Keywords: language acquisition; English Language Learner (ELL); multilingual learners; emergent bilinguals; language proficiency; Scarborough's Reading Rope; Sedita's Writing Rope; Lane's L2+ Acquisition Rope; educational metaphors; instructional practices

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1. Introduction

Students whose first language is not English account for nearly ten percent of all U.S. public-school students and research has well established that English Language Learners (ELLs) are one of the fastest-growing, yet most underserved, populations of students across the United States [1–4]. Laws such as the Every Student Succeeds Act (ESSA) attempt to ensure that every child has equitable access to a high-level curriculum [5] (p. 4), and specifically requires curricula that have undergone evaluation and are founded on research documenting the implementation of established language acquisition theories [1] (p. 1). Additionally, standardized language proficiency assessments and their impact on school accountability ratings have led to the implementation of many different approaches and curricula to improve English Language Learner outcomes [1]. Unfortunately, despite the efforts of legislation and proficiency assessment-aligned curricula and resources, English Language Learners continue to exhibit observable patterns of diminished or declining performance in assessments throughout Texas and the United States and the reality remains that many schools and districts are hoping but failing to obtain equitable results due to outdated programming [3].

English Language Learners are not alone as an underserved population in the United States. Research shows that academic performance varies significantly across different student subgroups in U.S. schools [6]. Studies have shown that many U.S. students have historically struggled with the ability to acquire and transfer proficient reading and writing skills; as a result, many educational institutions have demanded the curation of innovative tools and evidence that can help schools across the U.S. improve their efforts in teaching students to read and write proficiently [7]. One response to that demand has been the curation of metaphorical visuals, with acquisition and transfer being the most frequent learning metaphors in educational research and practice [8]. The concept of learning is commonly likened to the brain intricately weaving skills into ropes [9], and this is illustrated

by Scarborough's Reading Rope [10] and Sedita's Writing Rope [11]. These two visuals in particular have simplified and clarified the complexities of reading and writing theory to help educators internalize that theory and transfer it to practice.

While many literacy educators have found instructional value and aid within the reading and writing ropes, a theory-to-practice gap still exists specifically among English as a Second Language (ESL) educators. Recent data indicate that around 75% of ESL teachers in the United States are native English speakers who may lack comprehensive understanding or training in second language theory and practices [12]. The Intercultural Development Research Association found that only about 35% of ESL teachers reported having adequate professional development in second language acquisition [13]. Additionally, according to the National Center for Education Statistics [14], nearly 60% of ESL teachers have not studied a second language themselves, which can hinder their ability to empathize with and effectively support their students.

These statistics, coupled with the nuanced and unique complexities of second or additional language acquisition, illuminate an urgent need for a visual curated specifically for ESL practitioners that can parallel the existing ropes to fill this gap for those educators and subsequently, their students.

2. The Rope as an Educational Metaphor

A metaphor is generally defined as "the transfer of a name or descriptive term to an object different from, but analogous to, that to which it is properly applicable" [8] (p. 681). Visual analogies and metaphors as educational tools do not have a statute of limitations. Whether utilized to fuel pedagogy or andragogy, visual analogies and metaphors play a crucial role in expediting the acquisition and transfer of knowledge [15]. This is evidenced by the volume and variety of such tools currently utilized by teachers, educational leaders, and curriculum creators alike. Examples include the "mind as a container" metaphor [8], seminal metaphors such as learning is consuming a mental meal, learning as improved vision, or learning is the adventure of climbing a mountain, and, specifically related to this discussion, "learning a language is like . . . crossing an ocean" [16] (p. 3). However, one specific metaphor has been called upon more recently in relation to foundational research on the science of reading and has begun a trend of extended metaphors in other literacy skill areas. Erard [9] established the rope metaphor as a more effective way for individuals to make a one-dimensional concept multidimensional. This visual analogy increases the understanding of complex skill development by enabling the viewer to visualize the weaving of social and emotional skill development into cognitive skill development [9]. The rope as an educational metaphor has taken root in the educational world of literacy skill acquisition through the works of researchers such as Scarborough et al. [10] and Sedita [11], and continues to aide in the global comprehension of these concepts and provide the data driven impetus for new educational approaches and resources to improve literacy learning.

2.1. The Reading Rope

One example of the successful application of the rope as an educational metaphor is Scarborough's Reading Rope [10]. The Reading Rope, developed by Hollis Scarborough, is a comprehensive model that illustrates the multifaceted nature of reading and the various skills involved in becoming a proficient reader. This model, as seen in Figure 1, emphasizes the complex interconnectedness between different components that contribute to successful reading comprehension. Scarborough introduced the Reading Rope as a metaphorical representation of the intricate and interwoven nature of reading skills.

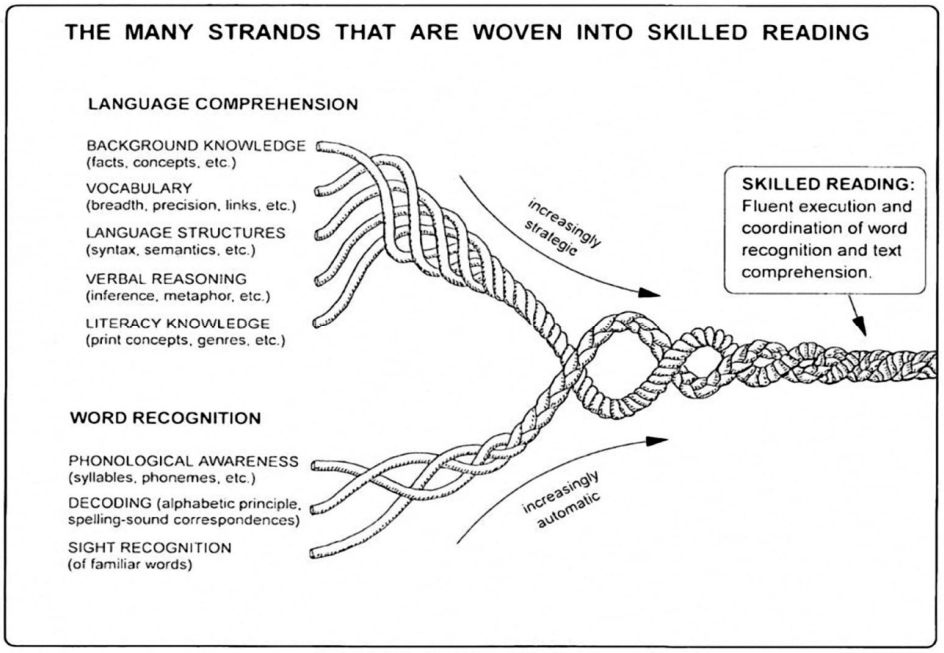


Figure 1. Scarborough's Reading Rope [10].

The Reading Rope consists of two main strands: the "Word Recognition" strand and the "Language Comprehension" strand. Each of these strands is further divided into several component skills that are essential for proficient reading. These sub-strands include decoding, language comprehension as it relates to decoding, vocabulary knowledge, language structure, and verbal reasoning [10]. The research-based conceptual ideology that informs this metaphorical visual highlights the notion that proficient reading requires a balanced development of both word-level skills (such as decoding) and higher-level comprehension skills (such as vocabulary knowledge and reasoning abilities).

Scarborough's Reading Rope [10] has become a common foundational structure in both curricula revision and resources utilized in more current reading instruction. In addition, it has become the impetus for state-mandated professional development regarding reading instruction, including nationwide reading academies and science of reading trainings.

2.2. The Writing Rope

A second example of an application of the metaphorical rope to educational concepts is evidenced by Sedita's Writing Rope [11]. The Writing Rope consists of five main strands which include critical thinking, syntax, text structure, writing craft, and transcription. Sedita asserts that each of these strands are woven together for the greater outcome of a skilled writing capacity, and that each strand contains specificity to further delineate the makeup of it. The explanation of the Writing Rope highlights the importance of the writing process and its nuanced components, with a focus on their application in writing curricula.

Sedita also summarizes the rope as a potential tool for educators to utilize in both visualizing and conceptualizing all of the components of skilled writing, and uses the visual as a springboard for practical implications in lesson planning and writing activities that ensure all components are both included and fostered by teachers in all content areas and subjects. The rope is accompanied by the assertion that these elements should be incorporated into three main types of writing: quick writes, content learning tasks, and formal writing tasks [11]. The visual, with its five main strands and accompanying specificity, is depicted in Figure 2.

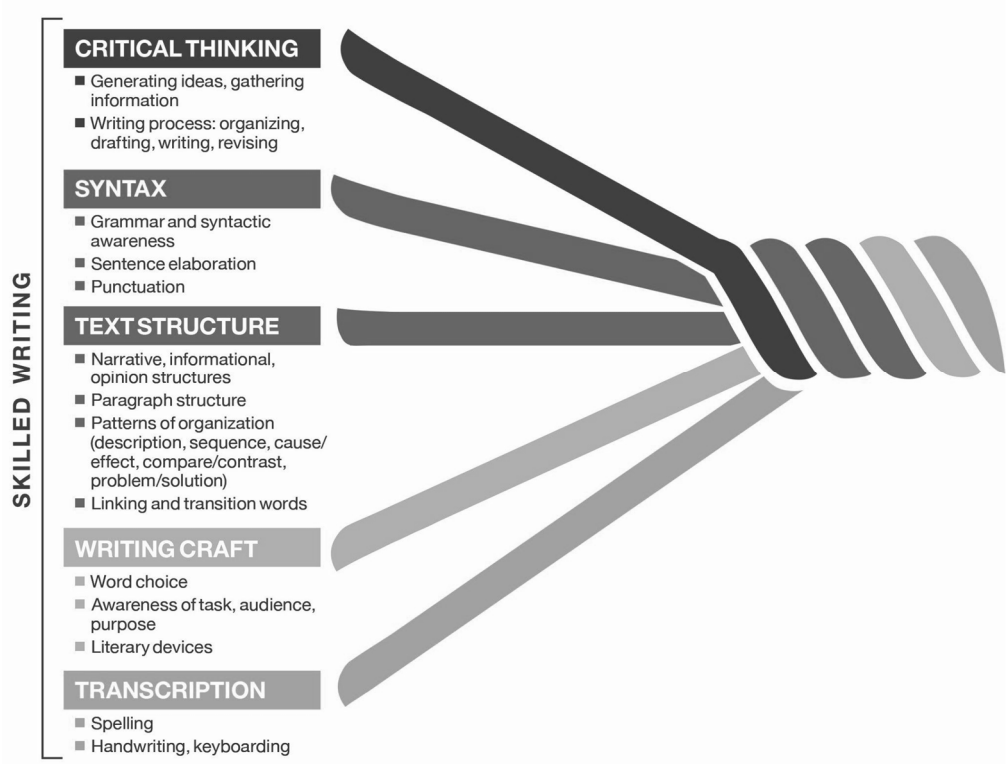


Figure 2. Sedita's Writing Rope [11].

3. Weaving New Educational Ropes

The research on educational metaphors, especially the analogous rope metaphor, has been well received amongst educational audiences; however, it is also well established that a singular metaphor or a limited set of metaphors cannot and should not be able to account for a complete explanation of all learning [8,9]. The already existing assertion that the tenets of acquiring an additional language lend themselves well to the metaphor of weaving a rope [9], combined with the crisis of underserved and underperforming English Language Learners in U.S. schools and the lack of adequate training for ESL educators, indicates an urgent need to develop a third rope to braid in the nuances of language and literacy as it relates to second or additional language acquisition.

3.1. Synthesis of Second Language Acquisition Theory

The research on language acquisition theories, as synthesized by Friedrichsen [5], highlights several key theories that are pivotal in educational settings. For example, Schumann's acculturation model highlights social-psychological factors impacting language proficiency, emphasizing cultural congruence and social immersion. This school of thought aligns with Vygotsky's Sociocultural theory which focuses on social experiences and their influence on learning [5,17]. Conversely, Chomsky's Universal Grammar Hypothesis and Interlanguage theory center primarily on biological language acquisition capacities independent of environmental influences [5] (p. 8). Building on biological components, brain studies, such as those by Roberts et al. [18] and Coggins et al. [19], emphasize the brain's role in language learning, highlighting distinctions between explicit and implicit language acquisition processes [18]. Additionally, research indicates that the natural progression of additional language acquisition unfolds in a sequential process beginning with listening, progressing to speaking, then moving on to reading, and finally, culminating in writing [20,21]. The "natural approach" to language learning, coined by Krashen and Terrell [22], emphasizes exposure to comprehensible input and similarly focuses on language acquisition to the way individuals acquire their first language. These four language domains (listening, speaking,

reading, and writing) are widely accepted as the foundational tenets to comprehensive literacy [10].

Krashen and Terrell's [22] comprehensible input theory builds on both innate and social concepts by providing an important delineation between learning and acquisition, emphasizing both intentional learning efforts and the natural process of acquisition [5] (p. 10). According to the Input Hypothesis, language learners acquire language most effectively when they receive input that is comprehensible, i.e., they can understand it, although it is slightly challenging [22]. The idea is that this "i + 1" input, or input that is just beyond the learner's current level, stimulates language acquisition by exposing learners to linguistic structures and vocabulary in a meaningful context [22]. These concepts converge with foundational theories such as Sperber et al.'s [23] Relevance Theory, Bialystok's [24] Model, and Schmidt's [25] Noticing Hypothesis, underlining the interconnectedness of symbolic representations and social input in language learning [26].

Understanding these theories emphasizes the necessity for second or additional language acquisition learning visuals to blend social collaboration, brain stimulation through input triggers, and learning experiences that foster both learning and acquisition, aligning instruction with language acquisition theory for improved educational outcomes [4].

3.2. Second Language Acquisition Visuals

In the realm of language acquisition, including the acquisition of additional languages, there have been a variety of visuals curated to summarize, explain, and synthesize the complexities of language learning. These visuals include triangles, flow charts, and diagrams among other visual representations. The reach of these conceptual elements, rooted in language acquisition theory and research, can potentially be extended to deeper comprehension effectiveness by merging their individual components with the skill-building metaphor of rope weaving.

Thomas and Collier's [27] Language Acquisition for School visual, as seen in Figure 3, summarizes key principles and aspects of language acquisition for the academic setting in a triangular model. This work is deeply rooted in the second or additional language acquisition theories of James Cummins' [28] Linguistic Interdependence and Threshold Hypotheses which assert that there is a significant relationship between first and additional languages, as well as a certain level of proficiency that must be achieved in a first language before effectively transitioning to and acquiring academic skills in a second or additional language [28]. It is clear within the visual that it combines both the social and neurological components of grounded theory, highlighting the interconnectedness of each through connecting triangle sides.



Figure 3. Thomas and Collier's Language Acquisition for School Visual [27].

Similarly, Alam et al.'s [29] second language acquisition visual model incorporates theory with a focus on student confidence and efficacy as a critical factor in congruence

with the weight of the acquisition of language itself. In this visual, as illustrated in Figure 4, social and cultural influence is embedded throughout the progression in agreement with Collier's assertions but has increased specificity regarding different roles within those sociocultural factors and the unique impact they have on a student's second or additional language acquisition. This visual illustrates the unavoidable interdependence of both social and affective factors influencing successful second or additional language acquisition.

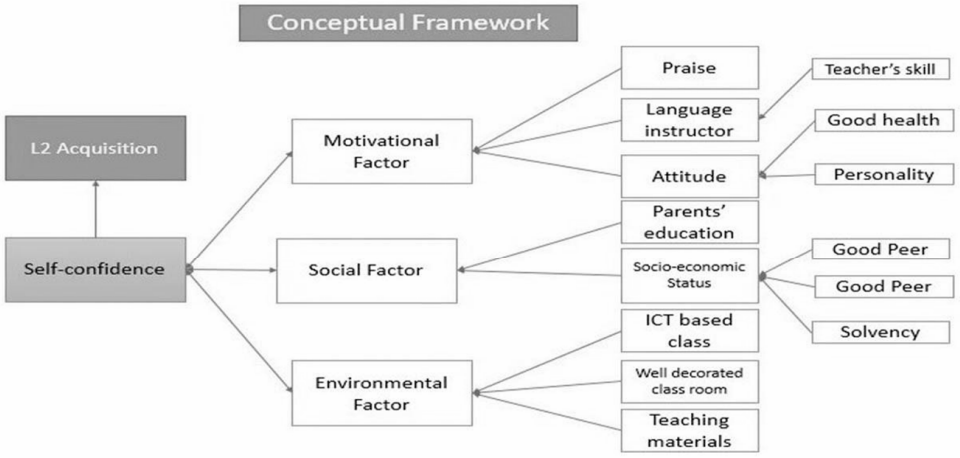


Figure 4. Alam et al.'s Second Language Acquisition Conceptual Framework Visual [29].

Conversely, Juffs' [30] approach to visualizing second or additional language acquisition leans more towards the innate and neurological theories of language acquisition with "crystallized cognitive systems capable of accumulating long-term knowledge" [30], and how that neurological component works under central executive function. Specifically, this visual, as seen in Figure 5, highlights the specific listening and speaking domains required in language proficiency in conjunction with working memory and the capacity for true acquisition outside of learning attempts. Juffs' work aligns with neurological language acquisition theories through a Neural Constructivist approach. This visual highlights the interconnectedness of neurological functioning and the innate human capability for language acquisition as it relates to the complexities of both the input and output of second or additional language acquisition.

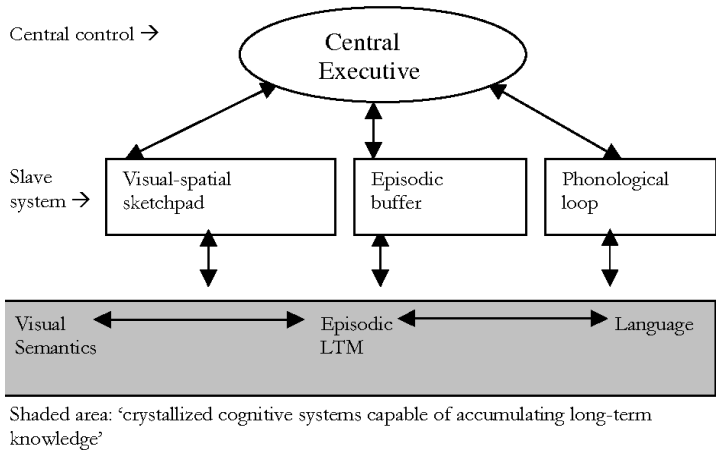


Figure 5. Juffs' Working Memory and Second Language Acquisition Function Flowchart [30].

4. Synthesizing to Braid a New Rope

Each visual has independently informed and influenced past and present instructional mandates and approaches to second or additional language acquisition pedagogy. While these visuals were constructed with sound language acquisition theory at their roots, they

each have their majority balance of the various informed theories, leaning either toward the sociocultural or innate neurological sides, respectively. If combined, these visuals could potentially encompass a more global synthesis of the complexities of language acquisition since research in this area has expanded. Furthermore, these visuals being united and organized into a familiar instructional metaphorical mnemonic could provide a crucial aide to help define and propel instructional efforts for sustainable second or additional language acquisition proficiency growth and improvement.

The need to close the theory-to-practice gap led to the creation of a third educational rope, merging both the effective rope metaphor and the synthesis of second or additional language acquisition theory and research. Lane's L2+ Acquisition Rope (see Figure 6) consists of five major strands that are woven together to curate a complete influential picture of factors impacting proficient second or additional language acquisition. This rope contains five essential strands synthesized from second or additional language acquisition theory and research: external factors, social factors, affective factors, innate factors, and internal factors. These five larger domains encompass the themes prevalent in both past and current research, with smaller concepts that are more specific to nuanced work categorized as threads from those larger strands.

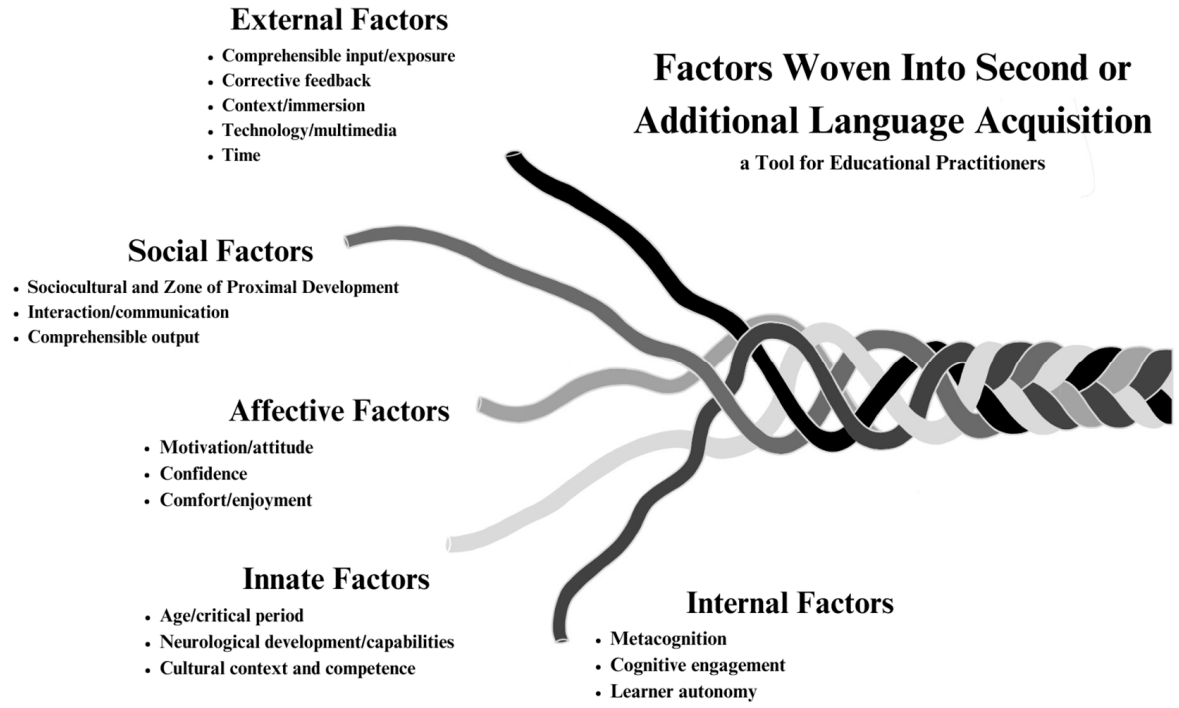


Figure 6. Lane's L2+ Acquisition Rope.

4.1. Lane's L2+ Acquisition Rope

Each major strand of Lane's L2+ Acquisition Rope is made up of sub-strands informed by second or additional language acquisition theory and research. The sub-strands include both theories and topics in the synthesis of past and current research that can be combined to formulate a global understanding of the complex strands woven into the rope of second or additional language acquisition. Each strand and sub-strand denotes a factor impacting the overall ability and proficiency level of acquiring a second language, with variation and complexity visible in the numerous sub-strands and the supporting theories and research.

4.1.1. External Factors

Second or additional language acquisition theories and research consistently note the influence and impact of external factors on successful language acquisition [22,24,31,32]. External factors include variables that are controlled by the environment they are situated

in, or in an educational context, the teacher or classroom setting. The first thread of the external strand is comprehensible input and exposure. Krashen and Terrell's [22] Input Hypothesis denotes that for optimal language acquisition, learners should be immersed in an environment where they are exposed to language that is both meaningful and just beyond their current proficiency level. This indicates that both careful diagnostics and the intentional planning of the material and activities on the part of the teacher should occur for maximized second or additional language acquisition. Similarly, the way the teacher responds to the language learner impacts second or additional language acquisition, with explicit correction versus implicit correction and immediate versus delayed feedback [32] at the root of the second thread within the external strand.

In line with careful planning for second or additional language acquisition instruction, the third thread encompasses context immersion such as a bilingual setting or the usage of authentic, planned learning experiences which both highlight the foundational assertions of Bialystok's [24] study of exposure and intentional language use, and practicing opportunities in the learning environment [24]. Research on the impact of Computer-Assisted Language Learning (CALL) software, technological devices and translation tools, and interactive multimedia on second or additional language acquisition regarding how these tools can accelerate the acquisition process [1] provides another thread. Lastly, the amount of time provided for each of the elements noted in the external factor strand can also impact a student's second or additional language acquisition trajectory when aligned with innate factors.

4.1.2. Social Factors

Social factors make up another crucial strand to weave into second or additional language acquisition. There have been many theories curated and research conducted to explore the impact of social interaction on the progress of second or additional language acquisition [33]. At the root of this strand is the Sociocultural Theory [34], which asserts that social interaction is crucial to the cognitive development of any learner, with the Zone of Proximal Development (ZPD) illustrating the importance of interactions with more knowledgeable peers or adults in addition to those in similar learning environments [34]. Long's Interaction Hypothesis [35] informs the second thread of the social factor strand with the assertion that the ability to navigate conversational adjustments significantly impacts successful second or additional language acquisition through interaction [35]. Additionally, linguistic interdependence through comprehensible output is a thread of the social factor strand due to the expansion on social theory through exploration conducted by Pica et al. [36] on the outcomes of typical conversational demands on second or additional language learners.

These ideas are also supported by Schumann's Acculturation Model [37], which emphasizes the significance of social integration and its impact on second or additional language acquisition as well as Schumann's Output Hypothesis [38], which posits that input is necessary, but not sufficient for language learning, as output must be generated as well to increase language proficiency. Sperber et al.'s Optimal Relevance theory also supports the importance of social factors in second or additional language acquisition by shedding light on the specific communication infrastructure required to enable advancement in language acquisition [23], similar to the +1 theory [22], and Vygotsky's [34] ZPD concept. The work of Cummins [28] further contributes to the social factor strand through the discussion of the interconnectedness of second as well as multiple languages to first languages and the importance of developing context-embedded Basic Interpersonal Communication Skills (BICS), as they lay the groundwork for Cognitive Academic Language Proficiency (CALP) and provide important implications within the educational context of social and academic language acquisition.

4.1.3. Affective Factors

The third strand in Lane's L2+ Acquisition Rope consists of threads associated with affective factors in second or additional language acquisition. Affective factors are prevalent in much of the research on teaching and learning, particularly regarding language acquisition [29]. Threads included in the affective factors strand are motivation and attitude, confidence, comfort, and enjoyment, as they relate to second or additional language acquisition research and theory. Gardner and Smythe's [39] research highlights the impact of these factors by addressing the role of motivation and attitudes in language learning, with Horwitz [40] building upon these elements through the study of language learning anxiety as an affective factor influencing language learning. Additionally, Cummins [41] has specifically explored the connection between language, identity, and empowerment. His work emphasizes the importance of acknowledging and valuing students' linguistic and cultural backgrounds to enhance their confidence and comfort in educational settings, thereby boosting their motivation.

Unfortunately, the importance of this strand is underrepresented and understudied compared to other factors impacting second or additional language acquisition. It is often missing in inclusive illustrations and metaphors that attempt to address the global complexities of second or additional language acquisition [29]. Therefore, an affective domain factor needed to be included in Lane's L2+ Acquisition Rope to encourage its consideration and application in educational settings as well as its potential inclusion in future curations of second or additional language acquisition resources and programs.

4.1.4. Innate Factors

Innate factors related to second or additional language acquisition provide another essential strand for Lane's L2+ Acquisition Rope. It can be argued that next to social factors, the neurological side of language learning is the most extensively researched. Additionally, being aware of the history of the literature in this area could provide crucial insights for educators on how to best determine where the threshold of Krashen and Terrell's [22] +1 or Vygotsky's [34] ZPD exists for any particular student. Innate factors also include elements of second or additional language acquisition aptitude that are not able to be controlled or manipulated by external factors such as age, development and cognitive abilities, as well as cultural positioning. This consideration contained the seminal work of Lenneberg [42] and the Critical Period Hypothesis which suggested that there is a biologically determined window of time during which language acquisition occurs most easily [42].

Another consideration of this strand was the Universal Grammar Hypothesis which claimed that a set of innate linguistic principles are common to all humans, and that the ability to acquire any language is biologically determined at birth with an inherent capacity [43]. Selinker and Lamendella [44] addressed the innate variability among second or additional language learners included in this strand in terms of the stages and patterns of interlanguage development and argued that learners may follow different paths and timelines in reaching linguistic competence, leading to a range of interlanguage variations.

Also defining the innate factor strand is the literature behind the neurological component of second or additional language acquisition. This includes the investigation of innate capabilities uncontrolled by the learner such as working memory function. Ullman's [45] work proposed the Declarative/Procedural model, which delineates the neural basis of lexicon and grammar in second or additional language acquisition and suggests that there exist innate neural systems for different language components. Similarly, Abutalebi and Green [46] explored the neurocognition of language representation and control in bilingual language production, specifically as it relates to the neural mechanisms involved with managing and accessing multiple languages in the bilingual brain.

In line with these neurological abilities, Carroll's [47] Autonomous Induction Theory suggests that input presented in an external environment is not sufficient alone if no mental representations already exist for the learner [48]. This specifically builds on earlier explorations of language aptitude, or an individual's innate ability to learn a second or

additional language [48]. Genesee [49] added influence to this strand as well with the exploration of cognitive flexibility within bilingual children who successfully manage two or more linguistic systems.

Lastly, English Language Learners are impacted by their cultural competence and the cultural context they are born into. While not innate like neurological elements, this integrated cultural context is not chosen by the student or the teacher, and becomes internalized as an identity, which impacts linguistic understanding and application [50]. This indicates a need for an increased awareness and understanding of cultural contexts outside of the learner's innate understanding to facilitate second or additional language acquisition.

These threads collectively highlight the complex interplay between age, time, aspects of neuroplasticity, functional changes, and the interplay between language and brain systems shedding light on the critical periods, neurological proclivities, and developmental trajectories associated with language learning. It is important to clarify that although innate factors may be outside of an educational practitioner's control, they should not become justification for exclusive policies. For example, discussion of a critical period may indicate a most favorable window of time for second or additional language acquisition; however, it does not mean that acquisition cannot occur outside of those constraints. More recent discussion indicates that other strands, such as the affective domain and internal factors, may outweigh the idea of a critical age [51], further supporting the idea that each strand overlaps as it weaves into acquisition, with the strength and weight of each individual strand unique to each learner. The innate strand of Lane's L2+ Acquisition Rope simply presents factors that educational practitioners are not in control of, but need to be aware of and understand to differentiate their instructional planning and practice.

4.1.5. Internal Factors

Internal factors closely align and impact affective factors. Oxford and Ehrman's work discusses various language learning strategies, including metacognitive strategies such as planning, setting goals, and self-monitoring, asserting that learners use metacognitive strategies to regulate and optimize their second or additional language learning processes [52]. Additionally, Vandergrift [53] explored the relationship between motivation, metacognitive awareness, and proficiency in second or additional language listening, highlighting the importance of metacognitive processes in language task performance. With metacognition comes the necessary ability of a learner to intentionally and consciously note linguistic features in the input they receive for those features to be incorporated into their interlanguage system as supported by Schmidt's Noticing Hypothesis. Schmidt [25] argued that simply being exposed to language is not sufficient; learners must consciously notice certain aspects of the language to transform input into intake [54]. This ignition of cognitive engagement sparks many of the other threads and strands into connective action. In addition to metacognition and intentional noticing, a final thread within the internal factors strand addresses the impact of learner autonomy on second or additional language acquisition. Benson's work noted that not only does motivation increase with learner autonomy, but it significantly contributes to long-term language proficiency as learners become self-directed and lifelong learners [55].

5. Application for Current Practitioners

Lane's L2+ Acquisition Rope can be utilized as an educational tool across a variety of contexts globally with implications and alignment to educational standards such as the World-Readiness Standards for Learning Language. The rope's external factors directly align with interpretive communication, presentational communication, making connections, and school and global community standards. This connection is illustrated by highlighting the educational context's role in supplying the external factors necessary for students to engage in these elements of communication. Similarly, the social factors strand directly correlates to interpersonal communication, relating cultural products to perspectives and acquiring information and diverse perspectives, which supports the crucial role of social

interaction as it relates to both educational and cultural understandings tied to language. The affective and internal strands align to the World-Readiness Standards for Language Learning through interpersonal communication, relating cultural practices to perspectives, making connections, interpretive communication, and lifelong learning. Conversely, the innate strand aligns to the skill of connecting cultural products and practices to perspectives. This enhances the learner's ability to make connections and cultural comparisons. All of these strands and their connecting standards illustrate the exploration of self-identity and the positionality of the learner as it relates to both first and additional languages.

In addition to its alignment with global language learning standards, Lane's L2+ Acquisition Rope directly supports educational standards for classroom implementation and implications as well. For example, the Texas English Language Proficiency Standards (ELPS) include five main domains of student expectations, including learning strategies, listening, speaking, reading, and writing. Within those student expectations, each domain is split into language acquisition skill sets that intertwine external needs, social expectations, and affective, innate, and internal growth such as "internalize new basic and academic language" (1.E), "share information in cooperative learning interactions" (3.E), and, "use visual and contextual support and support from peers and teachers. . ." (4.F). Similar connections are visible within the Texas Languages Other Than English (LOTE) standards, which interweave the five C's delineated by the American Council on the Teaching of Foreign Languages (ACTFL). ACTFL's five C's include cultures, connections, communication, comparisons, and communities. The content and guidance provided by the ELPS, LOTE, and ACTFL all align directly with the schools of research informing the five definitive strands of Lane's L2+ Acquisition Rope as well as their factors and influences.

5.1. Educator Training and Coaching

To address the problem of practice illustrated by the current statistics of second or additional language educators, this visual can be utilized as a foundational tool for educator training. Lane's L2+ Acquisition Rope was designed to be presented alongside other more familiar rope metaphors for an integrated and simple application for practitioners. Each strand could launch a deeper investigation into the literature connected to it, or could simply educate teachers on the factors that influence ELL student success at a glance. Having a comprehensive overview that avoids overwhelming amounts of research will help educators quickly and effectively grow their capacity and knowledge base on how second or additional languages are acquired.

Workshops or seminars could include a dissection of each strand by providing hands-on activities and practical examples of what instructional strategies connect, or an investigation of the parallels between this and other rope metaphors. Professional Learning Communities could include discussions on the visual and its content to share student progress, share strategies, and develop more specific and collaborative approaches to improving student outcomes. Additional training could be provided to explore how educational standards align to each strand of the rope and how that leads to informed practice in the classroom setting. It is suggested that this visual be utilized to begin the conversation related to the impact of the affective domain, and how to strengthen classroom culture and climate specifically for educators who do not share the same cultures or backgrounds of their second language learners.

5.2. Translation to Instructional Strategies

Lane's L2+ Acquisition Rope can help educators identify specific areas where students may excel or need growth to tailor their instruction accordingly. The individual strands can provide insight into more targeted instructional practices to address the specific and differing needs of students. For example, if a student is struggling in the affective strand, ESL educators can use the visual to begin planning activities focused on increasing the student's confidence. Utilizing this visual can also provide the relevancy and foundational understanding of why a specific instructional practice may be best suited for ELLs

specifically. This theoretical connection can provide the purpose needed for informed and confident decisions regarding instructional best practices such as the Sheltered Instruction Observation Protocol [56] and the reasons behind its construction. Educators will have an increased understanding of when to apply increased vocabulary, repetition, speaking opportunities, or technological learning to differentiate for students rather than applying a one-size-fits-all approach to curriculum adoption and implementation.

6. Limitations, Implications, and Conclusions

Potential limitations of this visual include the decisions for labeling, strand organization, and the inclusion and exclusion of primary elements. The body of research on this topic is vast and its theoretical discussions are ongoing. An important notation to this visual and the inclusion of theory as well as the labeling of the strands is that Lane's L2+ Acquisition Rope was curated by a practitioner for practitioners. As such, each strand was curated through the lens of what would be considered a practical understanding for an ESL educator with limited exposure or training in second or additional language acquisition theory. It is acknowledged by the authors that there are exponentially more contributions, ongoing discussions, and opposing viewpoints in the structure and justification of each of these components that can be included within these strands. However, in an intentional effort to simplify the larger discussions and to include the areas most relevant to informing classroom instruction and growing a practitioner's capacity, the strands have been organized and grouped as outlined.

Another limitation of this visual could include its broad, assuming nature. It is understood that although there is a discernable pattern of complex components related to second or additional language acquisition, each individual learner's proverbial rope will be constructed differently. For example, one learner's confidence and cognitive engagement may enable them to surpass unfavorable contexts, while another learner's social strengths may balance struggles with motivation. It is a widely accepted reality in educational practice that each individual learner constructs their learning experience through a different journey. The strands of this curated visual simply hope to inform and expand the competence and confidence of ESL practitioners planning for a wide scope of learners with limited experience themselves, but it may need to be differentiated for different learners.

The direct correlation of Lane's L2+ Acquisition Rope to global, national, and state standards for the teaching and learning of languages provides an important visual synthesis specifically for educators and those in educational contexts. This visual can be a referential tool for teachers and educational leaders alike to improve a quick and comprehensive understanding of the vast body of research informing this domain, as well as how each factor is interconnected. This increased understanding from a quick reference tool could accelerate educational decisions, policies, and instructional plans to greatly improve curated experiences for enhanced language proficiency.

This new visual synthesis has the potential to become a foundation for future language acquisition training and influence curriculum resource development and curation for English Language Learners as well as World Language Programs. This addition to the visual series of the extended rope metaphor can lead to increased understanding of the teaching and learning of a second or additional language as it relates to the domains of reading, writing, speaking, and listening. This provides a potential springboard to new solutions for the global data illustrating the limited progress with educational solutions for language learners. Lane's L2+ Acquisition Rope can also be utilized in conjunction with research and studies to inform future of bilingual education programs, mandates, and resources.

As this is a starting point for a second or additional language acquisition rope, future research endeavors could include its expansion, extension, or additional braiding into other ropes for increased global comprehension. The visual promoted within this manuscript was intended for implementation and use by practitioners in the field of education. More

research can be carried out as to how it could be revised for other audiences and populations such as adult language learners, business contexts, or medical fields.

Lane's L2+ Acquisition Rope can offer valuable support as an instructional tool in educational environments, aiding school leaders and educators in addressing the broader challenge of meeting the needs of English Language Learners (ELLs) more effectively. Although each individual strand of the rope and its corresponding threads can have a substantial impact on second or additional language acquisition when considered separately, the complexity arises from the interdependence of these strands when woven together into the complete fabric of second or additional language acquisition. This interconnectedness underscores the need for the synthesized visual mnemonic represented by Lane's L2+ Acquisition Rope. Equipped with a visual that contains a global synthesis of the many nuanced elements impacting second or additional language acquisition, educational practitioners may better understand how to curate tools for successful outcomes.

Whether you come with strands of understanding ready to weave, or are starting from scratch, one thing is true: "the rope isn't going to weave itself" [9] (p. 8). U.S. public schools must scale incredible mountains to be successful, with meeting the diverse needs of English Language Learners arguably at their peaks. Let us continue weaving educational ropes to help educators with the climb.

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References

1. Lê, Q.T.N.; Polikoff, M.S. Do English language development curriculum materials matter for students' English proficiency? *SAGE Open* **2021**, *11*, 1–15. [CrossRef]
2. McClain, J.B.; Oh, M.H.; Mancilla-Martinez, J. Questioning the monolingual norm with conceptually scored bilingual vocabulary assessments: Findings from a research–practice partnership. *TESOL J.* **2021**, *12*, e585. [CrossRef]
3. Radd, S.I.; Generett, G.G.; Gooden, M.A.; Theoharis, G. *Five Practices for Equity-Focused School Leadership*; ASCD: Alexandria, VA, USA, 2021.
4. Villicana-Briseno, N. An Analysis of the Relationship Between the Texas English Language Proficiency Assessment System (TELPAS) and Student Achievement on the State of Texas Assessment of Academic Readiness (STAAR) in Third Grade Math and Reading (Doctoral dissertation, Tarleton State University). 2020. Available online: https://www.proquest.com/dissertations-theses/analysis-relationship-between-texas-english/docview/2448413624/se-2 (accessed on 8 May 2023).
5. Friedrichsen, A. Second Language Acquisition Theories and What It Means for Teacher Instruction. *NW Commons* **2020**, *34*, 1–33. Available online: https://nwcommons.nwciowa.edu/cgi/viewcontent.cgi?article=1200&context=education_masters (accessed on 8 May 2023).
6. Matheny, K.T.; Thompson, M.E.; Townley-Flores, C.; Reardon, S.F. Uneven progress: Recent trends in academic performance among US school districts. *Am. Educ. Res. J.* **2023**, *60*, 447–485. [CrossRef]
7. Gillam, S.L.; Vaughn, S.; Roberts, G.; Capin, P.; Fall, A.M.; Israelsen-Augenstein, M.; Holbrook, S.; Wada, R.; Hancock, A.; Fox, C.; et al. Improving oral and written narration and reading comprehension of children at-risk for language and literacy difficulties: Results of a randomized clinical trial. *J. Educ. Psychol.* **2023**, *115*, 99. [CrossRef]
8. Hager, P. Learning and metaphors. *Med. Teach.* **2008**, *30*, 679–686. [CrossRef] [PubMed]
9. Erard, M. *Weaving Skill Ropes: Using Metaphor to Enhance Understanding of What Skills Are and How They Develop*; FrameWorks Institute: Washington, DC, USA, 2013.
10. Scarborough, H.S.; Neuman, S.; Dickinson, D. Connecting early language and literacy to later reading (dis) abilities: Evidence, theory, and practice. In *Approaching Difficulties in Literacy Development: Assessment, Pedagogy and Programmes*; Fletcher-Campbell, F., Soler, J., Reid, G., Eds.; Guilford Press: New York, NY, USA, 2009; Volume 10, pp. 23–38.
11. Sedita, J. *The Writing Rope*; Brookes Publishing: Baltimore, MD, USA, 2023. Available online: https://brookespublishing.com/wp-content/uploads/2022/10/Sedita-Excerpt.pdf (accessed on 7 June 2023).

12. Köylü, Z.; Tracy-Ventura, N. Learning English in today's global world: A comparative study of at home, anglophone, and lingua franca study abroad. *Stud. Second. Lang. Acquis.* **2022**, *44*, 1330–1355. [CrossRef]
13. Flores, R. ESL Strategies: What Works in Second Language Instruction. IDRA. Retrieved from IDRA. 2023. Available online: https://www.idra.org/resource-center/esl-strategies-what-works-in-second-language-instruction/ (accessed on 9 June 2023).
14. National Center for Education Statistics. *Condition of Education 2023 (NCES 2023144REV)*; U.S. Department of Education: Washington, DC, USA, 2023. Available online: https://nces.ed.gov/pubs2023/2023144.pdf (accessed on 12 May 2023).
15. Birello, M.; Pujolà, J. Visual metaphors and metonymies in pre-service teachers' reflections: Beliefs and experiences in the learning and teaching of writing. *Teach. Teach. Educ.* **2023**, *122*, 103971. [CrossRef]
16. Ormell, C. Eight metaphors of education. *Educ. Res.* **1996**, *38*, 67–75. [CrossRef]
17. Vygotsky, L.S. The dynamics of the schoolchild's mental development about teaching and learning. *J. Cogn. Educ. Psychol.* **2011**, *10*, 198–211. [CrossRef]
18. Roberts, L.; Gonzalez Alonso, J.; Pliatsikas, C.; Rothman, J. Evidence from neurolinguistic methodologies: Can it actually inform linguistic/language acquisition theories and translate to evidence-based applications? *Second. Lang. Res.* **2018**, *34*, 125–143. [CrossRef]
19. Coggins, P.E.; Kennedy, T.J.; Armstrong, T.A. Bilingual Corpus Callosum Variability. *Brain Lang.* **2004**, *89*, 69–75. [CrossRef] [PubMed]
20. Kennedy, T.J. Language learning and its impact on the brain: Connecting language learning with the mind through content-based instruction. *Foreign Lang. Ann.* **2006**, *39*, 471–486. Available online: https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1944-9720.2006.tb02900.x (accessed on 7 June 2023). [CrossRef]
21. Kennedy, T.J.; Reese, S. Using your cerebro: A look at research on foreign language learning and the brain. *Lang. Educ.* **2007**, *2*, 32–35.
22. Krashen, S.D.; Terrell, T.D. *The Natural Approach: Language Acquisition in the Classroom*; Pergamon Press: Oxford, UK, 1983.
23. Sperber, D.; Cara, F.; Girotto, V. Relevance theory explains the selection task. *Cognition* **1995**, *57*, 31–95. [CrossRef]
24. Bialystok, E. A theoretical model of second language learning 1. *Lang. Learn.* **1978**, *28*, 69–83. [CrossRef]
25. Schmidt, R. Consciousness and foreign language learning: A tutorial on the role of attention and awareness in learning. In *Attention and Awareness in Foreign Language Learning*; National Foreign Language Resource Center: Honolulu, HI, USA, 1995; Volume 9, pp. 1–63.
26. De Paiva, B.M.M.; Foster-Cohen, S.H. Exploring the relationships between theories of second language acquisition and Relevance Theory. *Second. Lang. Res.* **2004**, *20*, 281–288. [CrossRef]
27. Thomas, W.P.; Collier, V. *School Effectiveness for Language Minority Students*; NCBE Resource Collection Series, No. 9; Education Resources Information Center: Washington, DC, USA, 1997.
28. Cummins, J. The role of primary language development in promoting educational success for language minority students. In *Schooling and Language Minority Students: A Theoretical Framework*; California State Department of Education: Sacramento, CA, USA, 1981; Volume 16.
29. Alam, M.R.; Jahan, S.; Milon, M.R.K.; Ansarey, D.; Umar, S.; Al Hadi, F. Accelerating learners' self-confidence level in second language acquisition: A qualitative study. *Int. Cent. Res. Resour. Dev.* **2021**, *2*, 141–153. [CrossRef]
30. Juffs, A. Working Memory, Second Language Acquisition and Low-Educated Second Language and Literacy Learners. In Proceedings of the LESLLA Symposium Proceedings, Richmond, VA, USA, 2–3 November 2006; Volume 1, No. 1. pp. 89–110.
31. Freed, B.F. Language learning in a study abroad context: The effects of interactive and non-interactive out-of-class contact on grammatical achievement and oral proficiency. In *Linguistics, Language Teaching and Language Acquisition: The Interdependence of Theory, Practice and Research*; Georgetown University Press: Washington, DC, USA, 1990; pp. 459–477.
32. Truscott, J. Modularity, working memory, and second language acquisition: A research program. *Second. Lang. Res.* **2017**, *33*, 313–323. [CrossRef]
33. Li, P.; Jeong, H. The social brain of language: Grounding second language learning in social interaction. *Npj Sci. Learn.* **2020**, *5*, 8. [CrossRef]
34. Vygotsky, L.S.; Cole, M. *Mind in Society: Development of Higher Psychological Processes*; Harvard University Press: Cambridge, MA, USA, 1978.
35. Long, M.H. *Input, Interaction, and Second Language Acquisition*; University of California: Los Angeles, CA, USA, 1980.
36. Pica, T.; Holliday, L.; Lewis, N.; Morgenthaler, L. Comprehensible output as an outcome of linguistic demands on the learner. *Stud. Second. Lang. Acquis.* **1989**, *11*, 63–90. [CrossRef]
37. Schumann, J.H. Research on the acculturation model for second language acquisition. *J. Multiling. Multicult. Dev.* **1986**, *7*, 379–392. [CrossRef]
38. Schumann, J.H. Where is cognition?: Emotion and cognition in second language acquisition. *Stud. Second. Lang. Acquis.* **1994**, *16*, 231–242. [CrossRef]
39. Gardner, R.C.; Smythe, P.C. Motivation and second-language acquisition. *Can. Mod. Lang. Rev.* **1975**, *31*, 218–233. [CrossRef]
40. Horwitz, E.K. Some language acquisition principles and their implications for second language teaching. *Hispania* **1986**, *69*, 684–689. [CrossRef]
41. Cummins, J. Instructional conditions for trilingual development. *Int. J. Biling. Educ. Biling.* **2001**, *4*, 61–75. [CrossRef]

42. Lenneberg, E.H. The Study of Language and Language Acquisition. Available online: https://www.ling.upenn.edu/courses/ling5700/Yang2002klnl.pdf (accessed on 8 May 2023).
43. Chomsky, N. Knowledge of language: Its elements and origins. *Philos. Trans. R. Soc. London. B Biol. Sci.* **1981**, *295*, 223–234.
44. Selinker, L.; Lamendella, J.T. Updating the interlanguage hypothesis. *Stud. Second. Lang. Acquis.* **1981**, *3*, 201–220. [CrossRef]
45. Ullman, M.T. The declarative/procedural model of lexicon and grammar. *J. Psycholinguist. Res.* **2001**, *30*, 37–69. [CrossRef] [PubMed]
46. Abutalebi, J.; Green, D. Bilingual language production: The neurocognition of language representation and control. *J. Neurolinguistics* **2007**, *20*, 242–275. [CrossRef]
47. Carroll, S.E. Autonomous induction theory. In *Theories in second language acquisition*; VanPattern, B., Williams, J., Eds.; Lawrence Erlbaum Associates: Mahwah, NJ, USA, 2007; pp. 155–200.
48. Maftoon, P.; Esfandiari, L.T. Carroll's Autonomous Induction Theory: Combining views from UG and information processing theories. *J. Lang. Teach. Res.* **2015**, *6*, 423–428. [CrossRef]
49. Genesee, F. Second language learning in school settings: Lessons from immersion. In *Bilingualism, Multiculturalism, and Second Language Learning*; Psychology Press: London, UK, 2014; pp. 183–201.
50. Byram, M.; Harrison, B. Foreign language teaching and young people's perceptions of other cultures. In *Cultural Studies in the Second Language Classroom: Needs, Problems and Solutions*; Scheu Lottgen, D., Ed.; EDITUM: Murcia, Spain, 1997; Volume 43.
51. Pfenninger, S.E.; Singleton, D. Is there a best age for second language learning? Evidence from across the lifespan. In *Debates in Second Language Education*; Routledge: London, UK, 2021; pp. 52–65.
52. Oxford, R.L.; Ehrman, M. Second language research on individual differences. *Annu. Rev. Appl. Linguist.* **1992**, *13*, 188–205. [CrossRef]
53. Vandergrift, L. Relationships among motivation orientations, metacognitive awareness and proficiency in L2 listening. *Appl. Linguist.* **2005**, *26*, 70–89. [CrossRef]
54. Nhung, N.T.P. Noticing hypothesis in second language acquisition. *IOSR J. Humanit. Soc. Sci.* **2020**, *25*, 26–30.
55. Benson, P. What's new in autonomy. *Lang. Teach.* **2011**, *35*, 15–18. [CrossRef]
56. Echevarria, J.; Vogt, M.; Short, D. *Making Content Comprehensible for English Learners: The SIOP Model*; Pearson Education: Boston, MA, USA, 2008.

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