

The Multilingual Acquisition Theory (MAT): A Double-Helix Model of Cognitive and Environmental Influences in Language Learning

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Abstract: The Multilingual Acquisition Theory (MAT) is an educational framework designed to understand how people learn a second language by considering both internal (like motivation) and external factors (like cultural exposure). It is presented as a new way to look at language learning, different from traditional theories that might focus on just one aspect. MAT isn't just theoretical; it offers real-world uses, such as designing curricula that foster student-centered learning and training teachers to better support English Language Learners (ELLs). This can help create environments where learners feel confident and motivated, enhancing their language proficiency over time. Unlike traditional theories, models, or frameworks emphasizing the effects of intrinsic or extrinsic influences on the second language learning process, MAT integrates these two factors into a dual-strand model thus acknowledging that learners' self-efficacy, cognitive engagement, and motivation are shaped by instructional quality, social interactions, and external pressures. A key contribution of MAT is its emphasis on self-efficacy as a core determinant of linguistic proficiency, positioning it as both an outcome of and a prerequisite for successful language acquisition. The model also offers practical applications in curriculum development, teacher training, and learner assessment, advocating for dynamic instructional approaches that foster student-centered, contextually relevant language learning. By synthesizing cognitive and sociocultural perspectives, MAT provides a comprehensive and adaptable framework that informs pedagogical practices and supports diverse language learners in achieving long-term proficiency.

Keywords: *Second Language Acquisition, Multilingual Acquisition Theory, Self-Efficacy, Language Learning, Intrinsic Orb of Influence, Extrinsic Orb of Influence, Cognitive Engagement, Sociocultural Theory, Linguistic Proficiency, Curriculum Development, Teacher Training,*

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I. INTRODUCTION

Teaching English as a Foreign Language (EFL) to a diverse population of international learners is both rewarding and challenging. Each English Language Learner (ELL) brings unique cultural and personal funds of knowledge that can positively or negatively influence their ability to learn language. The author's experiences teaching English Second Language (ESL) students across Thailand, Vietnam, Uzbekistan, and the United States highlight personal observations related to self-efficacy being a critical factor in achieving second language proficiency. Bandura and Wessels (1997) state:

A strong sense of efficacy enhances human accomplishment and personal well-being in many ways. People with high assurance in their capabilities approach difficult tasks as challenges to be mastered rather than as threats to be avoided. Such an efficacious outlook fosters intrinsic interest and deep engrossment in activities. They

set themselves challenging goals and maintain strong commitment to them. They heighten and sustain their efforts in the face of failure. They quickly recover their sense of efficacy after failures or setbacks (p. 1).

The premise of this paper is to reconcile how the relationship between belief in oneself to achieve a desired outcome and the exertion of external acclimation pressures and internal motivators on the learning process affects whether or not a student succeeds in acquiring a second language. Research shows ELLs require several years to reach proficiency; some studies estimate six years or more, depending on the instructional approach and individual factors. This duration can vary, reflecting the diverse needs and backgrounds of learners (Ramirez, 1991). For the past several decades, research identifying these individual motivating components that exert pressure on self-efficacy has taken incremental steps toward a better understanding of the second language acquisition process.

Evidence from these research projects supports curriculum development, learning strategies, and best practices so that ESL students can sustain and build self-efficacy to achieve their objective of English second language acquisition. Raooffi et al. (2012) explains that “among the different findings, the most consistent one is that learners’ self-efficacy for foreign language affects performance in different language domains” (p. 62). Students are not alone in dealing with external pressures and internal motivators that influence self-efficacy. Primary, secondary, and college teachers who prepare lesson plans for their Second Language Acquisition (SLA) classes or working individually with an ELL are consciously or subconsciously synthesizing their own internal motivators and external pressures. For teachers this may include personal life experiences, acquired tacit and explicit knowledge from work-related activities, seminal and current research projects, self-reflection on extrinsic and intrinsic biases, and the intricacies of inter- and intra-personal relationships. This article aims to introduce a visual model, using the Multilingual Acquisition Theory (MAT), to illustrate how L1 (primary language) and L2 (secondary language) interact with wide-ranging factors, influencing a student’s second language proficiency either positively or negatively.

II. MULTILINGUAL ACQUISITION THEORY (MAT) OVERVIEW

The Multilingual Acquisition Theory (MAT) integrates both educational and non-educational experiences and processes that contribute to second language acquisition into a comprehensive theoretical framework. MAT posits that language acquisition is influenced by a dynamic interplay of intrinsic and extrinsic factors, conceptualized as distinct Intrinsic and Extrinsic Orbs of Influence (OOI). The context of the acronym “Ooi” is important to the MAT framework because the literal word “Ooi” originates from the Japanese language. It is loosely translated into English as “many” or “lots”. This is not only metaphorical jargon but also a literal interpretation applicable to the many internal and external influences exerted on an ELL student’s educational and language acquisition experience. The MAT model makes sense out of this chaos. It explains the interfunctionality of intrinsic motivators and extrinsic acclimation pressures educators, researchers, parents, and administrators know to be true, yet up to this point have not been able to capture in a working framework. Researchers are increasingly focusing their attention on the critical role that learners’ thoughts and beliefs play in learning and education, despite the fact that the learning process is complex and multifaceted, involving a variety of factors like pertinent knowledge, skills, intelligence, and cognitive abilities (Schunk, 2003). Application and clarity are both key components of why the MAT contributes an effective model that suits our ELL students.

The influence of internal and external motivation in learning a new language is well documented. C. Ng and P. Ng (2015) state in their review of intrinsic and extrinsic motivations of ESL learners: “A number of researchers and

theorists have contended that intrinsic motivation correlates more closely with language learning success than extrinsic motivation, but a learner’s total motivation is most frequently a combination of extrinsic and intrinsic motivation” (p. 24). A closer examination of MAT shows how the two types of Intrinsic and Extrinsic OOIs are in constant interaction throughout the language learning process. Running vertically along the L1 and L2 strands are the Intrinsic OOI and moving horizontally along the bridging segments connecting the L1 and L2 strands are the Extrinsic OOI. The Extrinsic OOI mimics the processes of DNA genetic sequencing by generating information that governs the speed by which Intrinsic OOI receives and synthesizes the new language connecting the two strands and facilitating learning transfer. Wang and Pape (2007) examined the factors influencing the development self-efficacy of three young Chinese students studying English as a second language in the United States in a qualitative study. The study found that learners’ self-efficacy was influenced by several elements, including their prior experience, interest, attitudes toward the English language, social persuasion, task complexity, and social and cultural context.

Over the past several decades, research has identified the multitude of factors influencing language acquisition. However, the mechanisms through which these internal and external determinants interact, leading to variation in individual learning rates, remain an area of active investigation. Understanding the difference between motivation and motivators is crucial for educators and support staff to accurately identify what is causing the ELL student to fall behind, fail, or succeed. In essence, motivators are the “tools” that generate motivation. “Motivators” are the elements or things that propel someone to act, whereas “motivation” is the general psychological condition or process that forces someone to act in the direction of a goal.

Self-efficacy plays a crucial role within the MAT framework. It is directly influenced by the learners’ motivation to succeed along with the intrinsic motivators and extrinsic acclimation pressures they encounter in school, home, and their personal lives. Mills (2014) emphasizes that self-efficacy beliefs can serve as predictors of future performance in second language acquisition, with higher self-efficacy correlating with greater achievement and proficiency. Similarly, Genc et al. (2016) demonstrates that ESL learners with medium to high self-efficacy scores perceive motivation as a significant factor in their learning process. The theoretical foundation for self-efficacy in language learning is rooted in Bandura’s (1997) seminal work, which emphasizes that self-efficacy impacts decision-making, effort, and resilience—all of which are critical for language acquisition.

The MAT conceptualizes second language acquisition as occurring along two vertically spiraling strands. The first strand represents the primary language (L1), while the second strand represents the secondary language (L2). Prior research on self-efficacy and education suggests that

learning frequently follows a spiral model of development (Olsen & Buchanan, 2019). Given this dynamic, MAT posits that second language acquisition mirrors the structure of DNA. This analogy is grounded in linguistic theory; as early as 1976, Chomsky proposed that human language develops according to genetically determined principles, with minor modifications differentiating languages (Barman, 2012). More recently, Berwick and Chomsky (2016) have asserted that language acquisition follows a sequential temporal ordering dictated by the demands of externalization. From an educational perspective, these theoretical positions lead to a logical inference that an individual's native language continuously interacts with the secondary language through what is commonly referred to as "coding". For instance, when a Spanish speaker learns the English word-"ball," they associate the image of a "ball" with the Spanish term "pelota". This ongoing process of accessing the image acts as a retrieval cue between the primary and secondary languages and fosters a developmental process in which second language skills evolve alongside the primary language (Hunt & Ellis, 2004).

Intrinsic OOI comprise an inner nucleus and an outer shell, each playing a critical role in language acquisition. The nucleus consists of Universal Intrinsic Motivators (UIM), which encompass the three fundamental components of self-efficacy: motivation, knowledge, and skills. Surrounding this core, the outer shell consists of Functional Intrinsic Motivators (FIM), which include emotions, learning traits, metacognitive strategies, and cognitive processes such as memory and reasoning. In contrast, Extrinsic OOIs represent static external pressures associated with moving to a new country, such as economic stability, familial support, and access to resources. These external elements function as bridging mechanisms between the first language (L1) and second language (L2) systems, facilitating the transition between linguistic frameworks. However, Extrinsic OOIs exhibit limited flexibility, as opposed to Intrinsic OOI, operating as fixed horizontal bridge points that reconcile the interaction between L1 and

L2. The dynamic interplay between Intrinsic and Extrinsic OOIs is inherently delicate, with each exerting a reciprocal influence on language learning outcomes. Drawing a parallel to the structure of organic DNA, the integrity of the language acquisition process depends on the stability of the L1 and L2 strands, as well as their interconnecting elements. Disruptions, excessive pressure, or fragmentation of these strands may significantly hinder linguistic proficiency, ultimately obstructing the learner's ability to achieve effective communication. Educational environments serve as crucial ecosystems where these intrinsic and extrinsic forces interact, shaping an English Language Learner's (ELL) self-identity, self-efficacy, and overall trajectory toward English proficiency. Moreover, both Intrinsic and Extrinsic OOIs underscore the interdependent relationship between teacher self-efficacy and student language acquisition. A teacher's motivation, skills, and knowledge directly influence an ELL student's capacity to develop linguistic competence, reinforcing the critical role of pedagogical self-efficacy in second language acquisition (Raooofi et al., 2012, p. 66).

The functional properties of Intrinsic and Extrinsic OOIs within the MAT framework are described by their composition, function, and movement along the L1 and L2 strands. Existing research supports this dual-framework approach. Deci and Ryan (2000) discuss intrinsic and extrinsic motivation in "The 'What' and 'Why' of Goal Pursuits," emphasizing how intrinsic motivation (e.g., curiosity) and extrinsic factors (e.g., grades) drive behavior, with significant implications for language learning. Similarly, Dörnyei and Ushioda (2011) elaborate on the interaction of these motivators, noting that external pressures such as cultural norms can either enhance or impede progress. This model integrates theoretical insights and empirical research, providing a comprehensive understanding for educators and researchers. Figure 1 shows the relationship between the spiral development of L1 and L2 and how the Intrinsic OOI and Extrinsic OOI are positioned and move along the L1 and L2 strands.

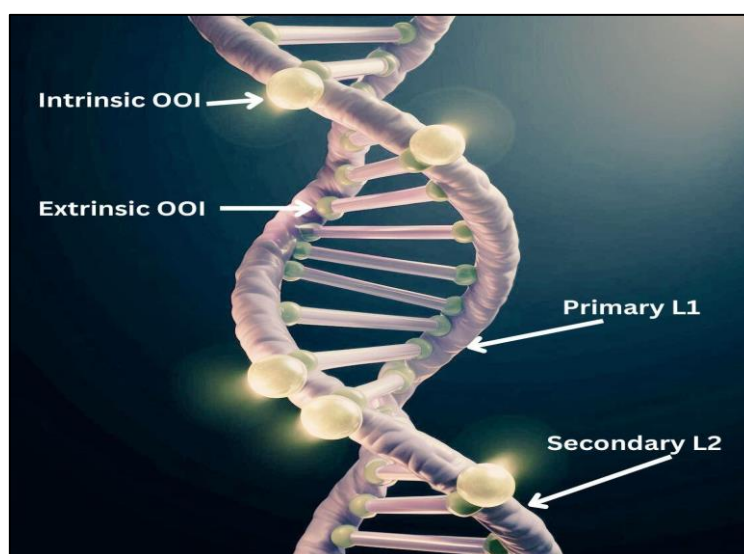


Fig 1 OOI Model

III. INTRINSIC ORBS OF INFLUENCE

Intrinsic Orbs of Influence (OOI) are internal factors that play a key role in how someone learns a second language. Gardner (1985) explains intrinsic motivation is the degree to which a person works or attempts to learn a language because of a desire to do so and the satisfaction this experience or activity brings. Raoofi et al.'s (2012) research summarized “there is a considerable body of educational research that supports the idea that learners’ self-efficacy influences their motivation to learn” (p. 63). This correlation between intrinsic motivators and self-efficacy lead to the conclusion that Intrinsic OOI are made up of two separate motivators: Universal Intrinsic Motivators (UIM) and Functional Intrinsic Motivators (FIM). UIM is the belief in one’s ability to succeed in learning the language while FIM are the emotions, feelings associated with how a student thinks and learns.

➤ Differentiation between Emotions and Feelings

Before continuing, it is important for second language learners and teachers to possess the knowledge and skills to differentiate between emotions and feelings. From the researchers’ experience and direct observations, there has been a tendency for teachers and students to think the two terms are synonymous with each other, but they are not. According to Damasio (2004), emotions “provide an immediate reaction to certain challenges and opportunities faced by an organism, feeling the emotions provides the organism with a mental alert for the significance of the object that caused the emotion and for thoughts consequence to respond emotionally” (p. 56). Educators who can make clear delineations between the two terms are then able to respond appropriately when their students are exhibiting an emotion or a feeling. Damasio goes on to explain (2004) that students use their feelings to mentally navigate the emotion and will make future decisions to avoid or take advantage of

a situation. This is important to understand because learning a new language is a frustrating and often a tedious endeavor. Those teachers with the knowledge and experience to recognize when a student is having a negative or positive emotional reaction can appropriately provide tiered support strategies or socio-emotional support so that the ELL student can continue their progression towards proficiency.

➤ Intrinsic OOI Functionality

The Intrinsic OOI function by using built-in properties to organize and process meta-cognitive and cognitive data, allowing for smooth interaction and adaptability within the MAT model. The speed at which the Intrinsic OOI moves along the L1 and L2 strands positively and negatively affects the ELL student’s English language progression towards proficiency. Intrinsic OOI may be seen as moving up and down along two spiraling L1 and L2 helix strands. Movement along each strand accelerates or decelerates depending on the internal and external motivators the learner is experiencing during the language acquisition process. An interesting aspect is that the speed of this movement may be measured or observed based on a student’s learning needs and self-efficacy. Hsieh and Schallert’s (2008) study underscore self-efficacy as the most significant factor in predicting English achievement among South Korean students, emphasizing its vital role in language learning success. Intrinsic factors influencing speed variance depend on the learner’s internal state, including their confidence and emotions, which helps explain differences in progress, language development stalls, or lack of success.

The Intrinsic OOI is composed of two distinct yet cohesive parts. The first part are the Universal Intrinsic Motivators (UIM) that make up the nucleus of the Intrinsic OOI. Figure 2 shows a cross-section view of the UIM.

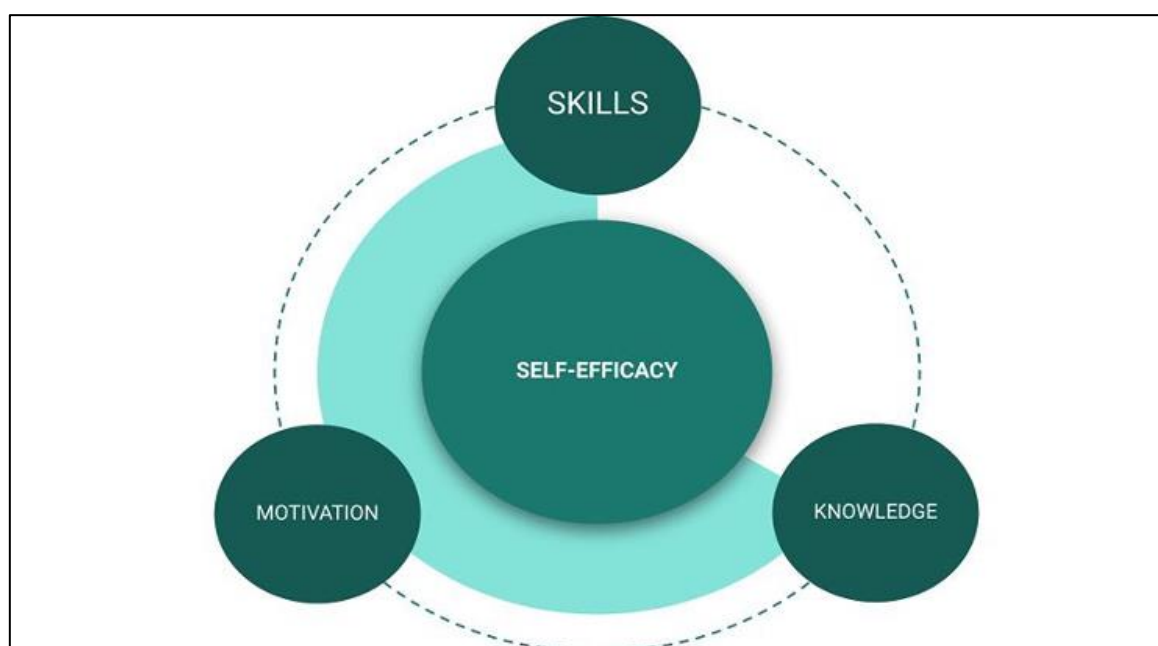


Fig 2 Universal Intrinsic Motivators (UIM)

The UIM is surrounded by Functional Intrinsic Motivators (FIM). The structure of the UIM nucleus is representative of the belief in one's ability to achieve a desired outcome (self-efficacy or confidence). Self-efficacy, defined as people's confidence in their capacity to complete a task (Bandura, 1986), turns out to be a key factor in predicting students' performance. It is a tangible trait possessing a force capable of directing how the student will react in certain situations. In the MAT framework, self-efficacy consists of skills, motivation, and knowledge (Schunk, 2003). These are constant variables in the students' and teachers' educational and life experiences, exerting immense influence on self-efficacy and other areas related to growth, understanding, ability, engagement, and progress towards language proficiency. For a second language learner to reach their objective, they must be provided with the motivation, knowledge, and skills or have some inherent personality trait that promotes this self-awareness and resilience to persevere towards achieving their objective. Caprara et al. (2011) argues "that self-efficacy beliefs may mediate, at least in part, the influence of basic traits on specific abilities and performances, by sustaining the cognitive, affective and motivational processes leading to successful performance" (p. 79). The teacher plays a large part in the student's self-efficacy because they are often not

prepared and thus lack the knowledge to impart the strategies necessary to differentiate or scaffold second language instruction. This gap in teacher knowledge and skills is attributed to ELL methodology not being a component of many teacher preparation programs, teachers, to no fault of their own, are frequently ill-prepared to teach ELL students (Li & Edwards, 2010).

Functional Intrinsic Motivators (FIM) are bonded to the UIM in a symbiotic relationship and may be thought of as moving continuously around the UIM like a shell. The FIM are subject to external pressures just as UIM are; however, FIM have greater variation than UIM which makes FIM more fluid, dynamic, and sensitive to outside influences. Therefore, FIM are independent variables such as feelings, emotions, learning traits, meta-cognition, cognition, self-perception, logic and reasoning, short- and long-term memory, learning gaps from primary country, processing speed including auditory and visual, trauma, school avoidance behavior, and physical, emotional, and/or mental disabilities (Hassan et al., 2020; Ng, 2015). Because FIM and UIM are intrinsic by nature, they perform cohesively in the form of a holistic orb. Figure 3 shows a construct of the Intrinsic OOI motivator as it functions in agreement with FIM and UIM.

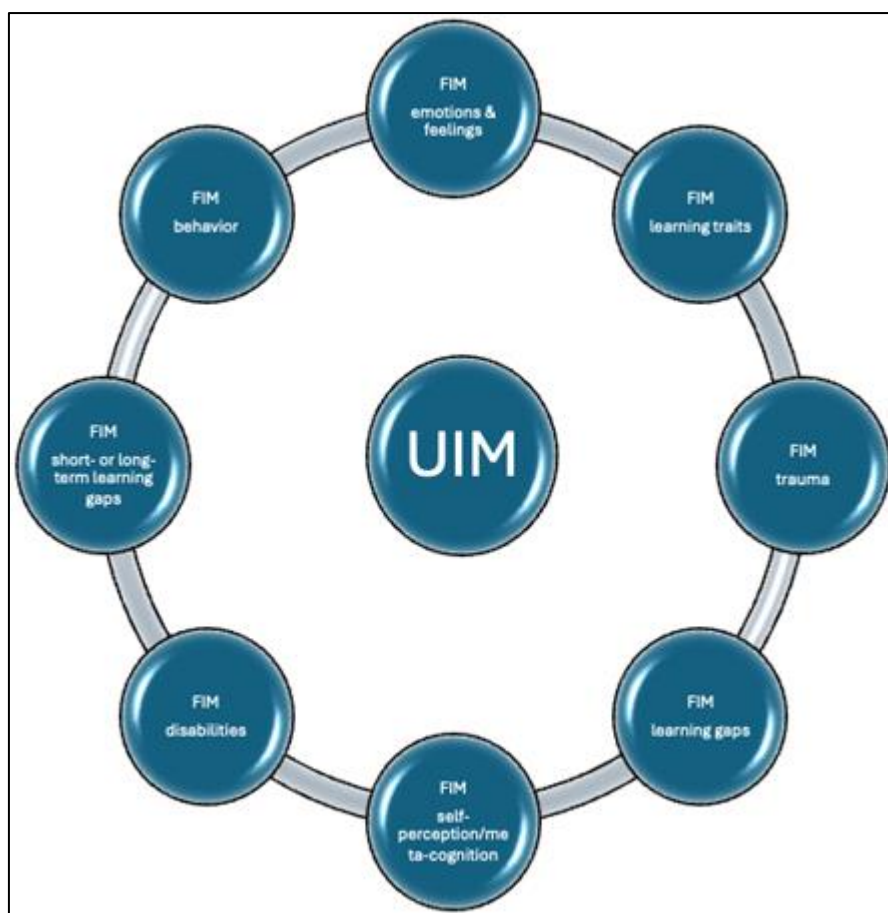


Fig 3 Construct of Intrinsic OOI

Table 1: Summary of Key Research Findings on Intrinsic OOI

Aspect	Key Finding	Source
Composition	Intrinsic OOI include UIM (self-efficacy) and FIM (emotions, cognitive traits)	Bandura (1997), Mills (2014), Deci & Ryan (2000)
Role in Motivation	UIM predicts better performance; FIM drives intrinsic motivation	Genc et al. (2016), Papi & Abdollahzadeh (2012)
Movement Along Strands	Moves vertically along L1 or L2 at varying speeds, reflecting engagement and learning	Dörnyei & Ushioda (2011), Dörnyei & Chan (2013), Cook (2001)

Since internal motivators are frequently dependent on uncontrollable external influences, this may contribute to the difficulties faced by ELL students in acquiring a second language. According to Pardee (1990), these motivating factors are those that stimulate, guide, and maintain improved performance. It is crucial to remember that every student's situation is unique, however while thinking about how to interact with each ELL student's experience, flexibility and fluidity must be used (Diaz, 2014). Hsieh and Schallert (2008) also demonstrated that among the different variables used in the study as predictors of achievement, self-efficacy was the strongest predictor of English achievement among South Korean students.

IV. EXTRINSIC ORBS OF INFLUENCE

The second type of Orbs of Influence (OOI) are Extrinsic OOI. They are as wide-ranging and diverse as their Intrinsic OOI counterparts. Extrinsic OOI are static in form and function because they are pressures that are unique to the student's external circumstances. Because Extrinsic OOI are for the most part fixed, they are positioned along the horizontal bridges connecting the L1 and L2 strands together. This is not to say Extrinsic OOI cannot be modified or undergo significant change. In considering the dynamics of the Extrinsic OOI, it is important to examine its capacity to shift from one static or slow-moving state to another. The first scenario shows the negative pressure exerted by an Extrinsic OOI and its possible negative effect on the Intrinsic OOI.

➤ Scenario 1:

An ELL lacks access to essential technological resources, such as high-speed internet or a personal computer. The Extrinsic OOI remains fixed on the bridging link between the L1 and L2 strands until an external intervention occurs, such as institutional support or policy changes that provide the necessary resources. If the static Extrinsic OOI is not changed or modified, then negative pressure is exerted on the Intrinsic OOI breaking the spiral language development between the L1 and L2 strand. The effect is detrimental to the ELL student's L2 progress by taking more time to learn the language and decrease in self-efficacy.

The second scenario demonstrates what might occur when the Extrinsic OOI are modified or changed leading to positive influence on the Intrinsic OOI.

➤ Scenario 2:

An ELL student arrives in their community from another country and experiences housing insecurity. Even though this situation is static, it can change due to numerous factors, all of which would have an influence on their Intrinsic OOI. If the student's parents are able to secure housing which the ELL student feels is satisfactory or better than what was in their native country, then the Intrinsic OOI are energized and able to move more freely between the L1 and L2 strands because the Extrinsic OOI bridge has been repaired.

What if in scenario 1 the ELL student is provided with technological resources like their peers? It may be rational to assume that the access to technology would elicit an emotional response related to the FIM in the learner, fostering increased engagement, enhancing motivation, and greater self-efficacy (UIM). Both scenario 1 and 2 highlights the interplay between the Extrinsic and Intrinsic OOI. This interplay between external structural factors and internal cognitive-affective responses underscores the dynamic nature of MAT, emphasizing the interdependence of environmental conditions and learner self-efficacy in the language acquisition process.

Types of extrinsic pressures may include but are not limited to cultural norms, primary language spoken at home, food and housing insecurity, prior access or lack of access to educational opportunities related to country of origin, access to technology such as computers or high-speed internet, working outside the home, child care responsibilities, and access to affordable health care (Abedi & Gándara, 2006; Duran, 2008; Goldenberg & Coleman, 2010; Ng, 2015). At any time, one or more of these Extrinsic OOI might exert pressure on the Intrinsic OOI causing them to accelerate or decelerate along their vertical strands. If teachers, administrators, parents, and support staff are trained to identify and understand how these Extrinsic OOI positively and negatively affect Intrinsic OOI, then they can respond quickly to mitigate the issues. Hopefully, the educational system is prepared with a Multi-Tiered Support System (MTSS) to enable the student to overcome the challenges and reengage with the language acquisition process.

Table 2 : Summary of Key Research Findings on Extrinsic OOI

Aspect	Key Finding	Source
Definition	Extrinsic OOI are static factors like economic stability, family support	Deci & Ryan (2000), Dörnyei & Ushioda (2011)
Horizontal Positioning	Depicted as horizontal bridges connecting L1 and L2 strands in SLAT model	Provided text, SLAT model description
Creating Cohesion	Facilitate transition from L1 to L2, enhancing learning process	Cook (2001), Umansky & Reardon (2014)
Ensuring Stability	Provide stable environment, reducing barriers to language acquisition	Hakuta (2000), Alrabai (2014)

V. MAT FUNCTIONALITY

The Multilingual Acquisition Theory (MAT) functions as a framework that accounts for cognitive, meta-cognitive, and environmental factors in language learning. By integrating two primary domains—the Intrinsic Orb of Influence (OOI) and the Extrinsic Orb of Influence (OOI)—MAT provides a structured yet flexible model that captures the complexity of second language acquisition (SLA). This functionality allows educators, administrators, researchers, and policymakers to analyze the interdependent processes that contribute to linguistic development, language acquisition, and apply targeted strategies to enhance learning outcomes.

A. The Dual-Strand Model of Language Acquisition

MAT conceptualizes second language learning as a process influenced by two concurrent spiraling strands:

- **Cognitive/Meta-Cognitive Development & Linguistic Processing:** This strand encompasses the neurological, cognitive, and psychological mechanisms involved in language acquisition. It aligns with existing theories such as Krashen's input hypothesis (Krashen, 1992), which emphasizes comprehensible input, and Vygotsky's sociocultural theory (Lantolf, 2000), which highlights the role of interaction and scaffolding. MAT expands on these ideas by integrating self-efficacy as a core cognitive determinant—suggesting that learners' belief in their ability to succeed directly impacts language acquisition efficiency.
- **Contextual & Environmental External Pressures:** This strand includes social, cultural, and educational factors that exert pressure on the ELL student and shape their ability to learn a second language. Unlike traditional models that may treat external factors as secondary influences, MAT underscores their direct role in shaping motivation, engagement, and ultimately, proficiency. This aligns with Bandura's social learning theory, reinforcing the idea that learners construct knowledge through observation, imitation, and guided interaction. The MAT continually emphasizes that self-efficacy is not an isolated trait but rather a fluid construct that evolves through interaction with external influences. Effective instruction, positive reinforcement, and

scaffolded learning opportunities all contribute to strengthening self-efficacy, thereby enhancing overall language acquisition.

B. The Role of the Orbs of Influence (OOI) in MAT

MAT proposes that language acquisition is governed by two orbs of influence:

- **Intrinsic Orbs of Influence:** This includes factors such as self-efficacy, cognitive engagement, intrinsic motivation, metacognitive awareness, and prior linguistic knowledge. When learning a second language, a learner's ability to process and retain linguistic input may be largely determined by these internal mechanisms. MAT posits that when intrinsic motivation and self-efficacy are high, learners exhibit greater persistence, utilize more effective learning strategies, and demonstrate accelerated language development.
- **Extrinsic Orbs of Influence:** This encompasses external elements such as instructional quality, social interactions, primary and secondary cultural norms, and educational, home, and personal environment. MAT highlights that a supportive external environment, including positive teacher-student interactions and culturally relevant pedagogy, significantly enhances language acquisition by positively reinforcing internal motivation.

The interplay between these orbs is what makes MAT distinct. Unlike static models that separate internal and external influences, MAT posits that these forces dynamically interact. For example, a learner with strong intrinsic motivation but lacks access to medical care, has food insecurities, or work responsibilities may struggle to progress when learning a new language, while one with moderate motivation but decreased external stressors may achieve proficiency more effectively.

C. Self-Efficacy as a Core Mechanism in MAT

One of the key contributions of MAT is its emphasis on self-efficacy as a central driver of language acquisition. Research has shown that learners with high self-efficacy are more likely to:

- Persist through linguistic challenges and setbacks
- Take risks in language production and experimentation

- Engage in active learning strategies, such as self-correction and peer interaction
- Maintain long-term motivation, even in the face of difficulties

D. Time

Time is a critical yet often misunderstood variable in second language acquisition, significantly influencing the progress of English Language Learners (ELLs). Within the MAT model, longitudinal research by Ramírez et al. (1991) provides a foundational premise, demonstrating the considerable variability in the time required to achieve language proficiency. While some learners may attain proficiency within a few years, others require a significantly extended period, a finding further supported by Hakuta (2000), who emphasizes the prolonged nature of language development necessary for learners to reach parity with native-speaking peers. Ramírez (1991) estimates that English acquisition may take “six years or more,” yet this should be understood as a general guideline rather than a definitive timeframe. The actual duration of language acquisition is contingent upon the dynamic interplay between the Intrinsic and Extrinsic OOI, highlighting the necessity of a holistic perspective in evaluating individual learner trajectories.

E. MAT as an Evolving Framework

While MAT offers a robust model for understanding second language acquisition, it is designed to evolve with ongoing research. Future studies should explore the nuanced interactions between intrinsic and extrinsic factors across diverse linguistic and cultural contexts. Additionally, advancements in artificial intelligence and adaptive learning technologies could provide new insights into how MAT can be implemented in digital and hybrid learning environments.

Ultimately, MAT functions as both a descriptive and prescriptive model—describing the mechanisms of second language acquisition while also offering actionable strategies to optimize learning. By bridging cognitive, social, and educational dimensions, MAT provides a comprehensive framework that empowers learners and educators alike to achieve meaningful linguistic proficiency.

VI. CONCLUSION

MAT provides a comprehensive framework for understanding the dynamic and multifaceted process of learning a second language. By conceptualizing language acquisition as a dual-strand model influenced by Intrinsic and Extrinsic Orbs of Influence (OOI), MAT underscores the crucial role of self-efficacy, motivation, and external factors in shaping linguistic proficiency. Research indicates that language acquisition is not a linear process; rather, it is a complex interplay of internal cognitive and emotional processes and external environmental influences.

Educators can use MAT to tailor teaching methods, fostering self-efficacy through feedback and success experiences, and mitigating negative extrinsic influences. Incorporating L1 can facilitate L2 learning, and teacher

professional development can create paradigm shifts, enhancing learner outcomes by addressing diverse needs.

Self-efficacy emerges as a fundamental determinant in the success of second language learners. Students who possess strong self-efficacy are more likely to persist through challenges, engage deeply in language learning, and develop the resilience necessary to achieve proficiency. Likewise, teachers play a pivotal role in fostering self-efficacy by providing structured support, acknowledging individual learning trajectories, and utilizing differentiated instructional strategies. The evidence presented in this paper highlights the necessity for educators to recognize and address both intrinsic and extrinsic motivators, ensuring that learning environments are conducive to sustained engagement and long-term language development.

Understanding the interaction between L1 and L2 within the MAT framework offers practical implications for curriculum design, instructional methods, and policy development. The MAT's functionality extends beyond theoretical insights; it offers concrete applications in curriculum design, teacher training, and student assessment. By recognizing the dual-strand spiral model of development nature of MAT, educators can design curricula that balance cognitive engagement with contextual learning opportunities. For instance, ensuring ELL students are in a student-centered classroom environment can stimulate both intrinsic motivation and real-world language use. Teacher training is highly recommended to equip teachers with strategies to foster student self-efficacy, adapt instruction based on learners' OOI profiles, and create supportive learning environments.

By integrating insights from cognitive psychology, motivation theory, and educational linguistics, educators can better tailor their approaches to meet the diverse needs of English Language Learners (ELLs). Future research should further investigate how specific intrinsic and extrinsic motivators interact over time, particularly in multilingual and multicultural contexts, to refine the MAT model and enhance its application in second language education. English Language Learner assessment and evaluation strategies should also be examined to consider both cognitive growth and external support structures, ensuring that learners are evaluated within their unique learning contexts.

Ultimately, fostering second language acquisition is not solely about linguistic instruction but also about building the psychological, social, and academic foundations that enable learners to thrive. By embracing a holistic perspective on language learning, educators, policymakers, and researchers can contribute to a more effective and equitable approach to ESL education, ensuring that learners are empowered to navigate and succeed in an increasingly interconnected world.

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