



Теорія та методика навчання

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**Опанування другої мови в контексті вищої освіти:
парадигми та теорії**

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***Анотація: Мета.** У статті представлені теоретичні засади опанування мови (ОМ), незалежно від того, чи йдеться про першу, другу чи будь-яку наступну мову, яку опановує людина. Метою цього дослідження є системно простежити розвиток основних теоретичних моделей ОМ, здійснити їх критичний аналіз у контексті базових цілей і принципів, переваг і недоліків, а також узагальнити відповідний науковий доробок з огляду на точки конвергенції та дивергенції. Окреме завдання – розкрити взаємозв'язок між теоріями та гіпотезами ОМ та їхніми імплікаціями для методики навчання мови у ЗВО. Основним завданням цієї праці є запропонувати комплексні, науково обґрунтовані теоретичні засади для дослідників, викладачів і студентів спеціальностей, пов'язаних з іноземними мовами.*

***Методи.** У дослідженні застосовано методи системного критичного аналізу теоретичної літератури з проблематики ОМ. Методологія передбачає вивчення хронологічного розвитку ключових теоретичних парадигм ОМ та*



оцінку їх фундаментальних принципів, починаючи з Емпіризму (Дж. Локк), Девелопменталізму (Ж. Піаже, Л. Виготський), Соціокультурної теорії когнітивного розвитку (Л. Виготський), Біхевіоризму (Б. Скіннер), Когнітивного Конструктивізму (Ж. Піаже), Нативізму, Універсальної граматики та Механізму засвоєння мови (Н. Хомський), до Когнітивізму (Ж. Піаже, Л. Виготський, Дж. Брунер, Н. Хомський, У. Найссер), теорії Схем (Ф. Бартлетт), концепції Мови думки (Дж. Фодор), теорії Формування навичок (Дж. Андерсон), Соціокультурної теорії (Л. Виготський, Дж. Вертч), та Емерджентизму (Дж. Мілль, Н. Елліс, Б. Мак-Вінні, В. О'Грейді).

У статті критично проаналізовані засадничі позиції, переваги та недоліки кожної із згаданих теорій. На ґрунті синтезу інформації, отриманої з фундаментальних праць та новітнього наукового доробку (зокрема, досліджень останніх п'яти років), простежується сучасний стан розуміння заявленої проблеми, визначаються стійкі теоретичні дискусії (як-от, дихотомія «природа проти виховання», співвідношення когнітивних і соціальних чинників) та актуальні виклики в подоланні розриву між теорією та практикою в навчанні мови у ЗВО.

Результати. У статті висвітлені результати критичного аналізу та оцінювання низки парадигмальних та теоретичних підходів, які пропонують різні трактування процесу ОМ. Так, Емпіризм акцентує увагу на ролі досвіду, тоді як Девелопменталізм пов'язує навчання мови з ширшими когнітивними та соціальними процесами, вводячи таке поняття, як зона найближчого розвитку; Біхевіоризм наголошує на формуванні навичок через тренувальні вправи та позитивне підкріплення, пропонуючи спостережувані результати, але опускаючи внутрішні когнітивні процеси та творчість суб'єктів навчання; Нативізм революціонує цю проблему, висуваючи гіпотезу про Вроджений механізм засвоєння мови та Універсальну граматику, що пояснює легкість і швидкість опанування першої мови; Когнітивізм зосереджується на внутрішніх



ментальних процесах, розглядаючи ОМ як складне автоматизування навичок; Конструктивізм підкреслює активну роль суб'єктів пізнання, зокрема, когнітивний конструктивізм пов'язує навчання з етапами внутрішнього когнітивного розвитку індивіда.

Поглиблений аналіз окремих когнітивних теорій засвідчує, що теорія Схем пояснює конструювання значення через інтеграцію нової інформації з попередніми когнітивними структурами (схемами), розрізняючи лінгвістичні, змістові та формальні схеми, які сприяють навчанню. Разом із тим, теорія Мови думки Дж. Фодора може вважатися крайнім проявом нативізму, адже вона стверджує, що навчання є лише репрезентацією вродженої універсальної «ментальної мови», а не засвоєнням нових понять, – позиція критикована за еволюційну нереальність. Теорія формування навичок розглядає ОМ як перехід від експліцитних, декларативних знань до імпліцитних, процедурних через практику – від свідомих зусиль до автоматичного виконання, нехтуючи емоційними аспектами та індуктивними шляхами засвоєння. Соціокультурна теорія просуває ідеї культурної медіації та соціального походження вищих психічних функцій. Зрештою, Емерджентизм робить виклик нативістським поглядам, постулюючи, що складність мови не є наперед запрограмованою, а виникає із взаємодії між загальними механізмами навчання та насиченим мовним середовищем, в якому суб'єкт засвоєння виокремлює статистичні закономірності з величезних масивів вхідної інформації.

Висновки. Проведене дослідження дозволило дійти висновку, що жодна окрема теорія не може запропонувати вичерпного пояснення ефективного й результативного процесу ОМ. Водночас, сукупність наявних парадигм та теорій дозволяє сформулювати ціннісні, хоч і часткові, уявлення про багатоаспектний характер цього феномену. Одтак, критичне осмислення й узагальнення різних наукових підходів – з урахуванням їхніх переваг, недоліків та точок перетину – є необхідною умовою для розвитку подальших досліджень. А



головне, це слугує підґрунтям для розбудови науково обґрунтованої та особистісно зорієнтованої педагогічної практики, вдосконалення навчальних програм і підготовки викладачів ЗВО в царині ОМ.

Ключові слова: емпіризм, девелопменталізм, біхевіоризм, нативізм, когнітивізм, конструктивізм, соціокультурна теорія.

Second Language Acquisition in Tertiary Education: Paradigms and Theories

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Abstract: Objective. *This study critically analyses theoretical foundations of language acquisition (LA) be it a first or a second, or any other additional language that the learner acquires. The paper aims to systemically trace the development of key LA paradigms and theories, conduct an in-depth examination of their underlying principles and assumptions, strengths and limitations, highlight the areas of their convergence/divergence, and outline their implications for practical language instruction in university settings. The overarching goal of this article is to present a coherent, scientifically grounded theoretical foundation for researchers, language instructors, and students majoring in foreign languages.*

Methods. *The study employs the methodology of a systemic critical analysis, exploring the theoretical literature on the issue of LA. This involves following the historical evolvment and evaluating the underlying tenets of foundational theoretical paradigms and theories, beginning from Empiricism (J. Locke) and*



Developmentalism (J. Piaget, L. Vygotsky), Sociocultural Theory of Cognitive Development (L. Vygotsky), through Behaviorism (B. Skinner), Cognitive Constructivism (J. Piaget), Nativism and Universal Grammar / LAD theories (N. Chomsky) to Cognitivism (J. Piaget, L. Vygotsky, J. Bruner, N. Chomsky, U. Neisser), the Schema Theory (F. Bartlett), Language of Thought (J. Fodor), the Skill Acquisition Theory (J. Anderson), Sociocultural Theory (L. Vygotsky, J. Wertsch), and Emergentism (J. Mill, N. Ellis, B. MacWhinney, W. O'Grady). The study critically discusses the assumptions, contributions and limitations of each theory.

The applied methodology synthesizes the information drawn from most recent scholarly publications (including research within the last five years) to trace the current state of the problem under discussion, identify persistent theoretical debates around the most controversial issues, and identify the ongoing challenges to bridge theory and practice for language instruction in university settings.

Results. *The article exposes numerous paradigms and theoretical perspectives offering distinct interpretations of the LA process. In particular, Empiricism emphasizes the role of experience, while Developmentalism ties language learning to broader cognitive and social development, introducing concept such as the Zone of Proximal Development (ZPD); Behaviorism prioritizes habit formation through drilling exercises and positive reinforcement, proposing observable outcomes but omitting internal cognitive processes and learner creativity; Nativism revolutionizes this field by hypothesizing the existence of an innate Language Acquisition Device (LAD) and Universal Grammar (UG), expounding the ease and rate of LA; Cognitivism focuses on internal mental processes, viewing LA as complicated skill learning, moving towards automaticity; Constructivism brings to the forefront the active learner, specifically, Cognitive Constructivism links learning to internal cognitive development phases of an individual.*

The exploration of particular cognitive theories discloses the Schema Theory postulating the idea that meaning is actively constructed by integrating new



information with prior cognitive structures (schemata). It differentiates between linguistic, content, and formal schemata, employed to facilitate foreign language pedagogy. J. Fodor's Language of Thought theory takes a strong nativist stance, arguing that learning is the re-representation of an innate, universal "mentalese" and not the acquisition of new concepts – a position criticized for evolutionary implausibility. The Skill Acquisition Theory (SAT) considers LA as the advancement from explicit, declarative knowledge to implicit, procedural knowledge through practice, from conscious effort to automatic performance. The Sociocultural Theory further enhances cultural mediation and social origin of higher mental processes. Finally, Emergentism challenges Nativist views by premising that complex language is not pre-programmed but emerges from the interaction between general learning mechanisms and a rich linguistic environment, where learners extract statistical regularities from massive input.

Conclusions. *The conducted research allowed arriving at the conclusion that no single LA theory provides a deep understanding of how successful LA can occur, but the integrated body of paradigms and theories offers valuable insights for this process. A critical understanding and synthesis of distinctive perspectives, such as acknowledging their strengths and weaknesses, alongside the intersection points, is vital to advancing research and, most importantly, to providing more evidence-based and learner-centered pedagogical practice, curriculum development, and teacher-trainee education according to curriculum goals in university language instruction.*

Keywords: *empiricism, developmentalism, behaviorism, nativism, cognitivism, constructivism, sociocultural theory.*

Introduction. The presented study of language acquisition (LA) is guided by a rich historical context of theoretical perspectives, each possessing a distinct conception of the LA process. This paper will expose a comprehensive overview of the major paradigms and theories of LA, chronologically tracing their development from



foundational schools like Empiricism and Behaviorism to the cognitive revolution sparked by Nativism and Cognitivism. The discussion will further explore the particular cognitive theories. By examining the benefits and limitations of each perspective, the study will integrate a detailed comprehension of LA procedures.

Literature Review. The academic research of LA boasts a long history, characterized by the development of various paradigms and a series of theoretical perspectives to account for this phenomenon. The following section overviews the foremost key paradigms and theories articulated in the scholarly literature to delineate the current state of knowledge in this domain, identify compelling research issues, and substantiate the academic interest underpinning the current research.

A review of the most recent literature (the last 5 years) indicates the ongoing engagement *with* and critique *of* the foundational theories of LA that have been proposed throughout the 17th to the early 21st centuries. In particular, the works by M. Alahmad [2] and M. Ameri [4] offer critical analyses of the strengths and foibles of Cognitivism and the Sociocultural Theory, respectively, points to the unresolved issues with regard to their universality and contextual considerations, while V. Kapur [25] examines Constructivism within the second language (L2) learning context.

Furthermore, contemporary scholarly inquiry continues delving into certain cognitive theoretical perspectives. Specifically, the Schema Theory is analyzed as a framework for active meaning construction, and current works of Y. Xiao [67] and W. Hu [22] trace its evolution from I. Kant [24] through the research of F. Bartlett [6] and J. Piaget [49; 50; 51]. The formalization of the Schema Theory in the context of reading instruction by D. Rumelhart [55] and J. Anderson [5] is still the subject matter in the study of T. Rudnytska and A. Slobodianiuk [54], whereas the emphasis of other scholars such as M. Jiang [23] and T. Zeng [69], is placed on its possible pedagogical implementations. The drawbacks of the Schema Theory, like the potential to be misdirected by current schemas and the requirement for more empirical evidence, are also mentioned in the work of Q. Yang [68]. Even more radical nativist perspectives,



such as Fodor's Language of Thought theory [19], are re-evaluated as well. In accordance with this theory, learning embraces the re-representation of an innate "mentalese," although its basic assumptions have been under ongoing critique for their evolvability and translation problems as it is indicated in the work of S. Laurence and E. Margolis [30]. Another prominent perspective, the Skill Acquisition Theory, analyzed by R. DeKeyser [13] and Y. Kee [26], builds on P. Fitts and M. Posner's [18], and Anderson's [5] early models to inform instructional approaches targeting automaticity.

Broad reviews, such as M. Almohawes [3], systemically examine how the most popular paradigms, such as behaviorism and interactionism, contribute to understanding the aspects like input, interaction, error correction, feedback, and first language interference in language instruction. Reflective analyses, like J. Lyu's [33], document shifts in pedagogical perspectives, often moving from imitation-based towards interactionist's views.

Recent publications by O. Vovk and V. Triukhan [61], and by Vovk and R. Shcherbukha [63] examine the fundamental concepts and major principles underlying the LA process, thereby attesting to the sustained topicality of these issues in contemporary Ukrainian academic contexts.

Identification of previously unresolved facets of the overall problem. Despite the significant progress achieved, some foundational issues in the LA domain still persist. Firstly, there is a continuous debate on theories that place emphasis on native mechanisms (Nativism), cognitive processes (Cognitivism), and sociocultural influences (Constructivism, Sociocultural Theory). A consolidating model that optimally incorporates these diverse dimensions – cognitive, social, affective, and biological – within the context of LA, especially in educational contexts, has yet to be developed. Secondly, while theoretical constructs such as L. Vygotsky's Zone of Proximal Development (ZPD) [14; 64] provide fundamental guidelines for instructional practices, there is a pressing need for supplementary research on their



applicability and effectiveness in a range of diverse teaching contexts, especially in tertiary education environments with varied student populations and emotional profiles [48]. Thirdly, the specific mechanisms whereby comprehensible input is converted into automatized linguistic output, as detailed in the cognitivist paradigm [11; 16], lack a deep understanding, especially with respect to complex psycholinguistic phenomena [43]. Lastly, the gap between research findings relevant to LA and their pragmatic pedagogical applications still remains a serious challenge to overcome. By basing the analysis on the reviewed paradigms and theories and directly addressing the limitations found in current research, the present investigation seeks to provide meaningful insights pertinent to LA study.

Formulation of the article goals (task setting). This study aims to display a holistic critical review of the paradigms and theories surrounding LA. That given, the major objectives of the study are:

– to assess and critically evaluate the historical evolution of the key paradigms and theories attempting to elucidate LA, including Empiricism, Developmentalism, Behaviorism, Constructivism (Social and Cognitive), Nativism, Cognitivism, Schema Theory, Language of Thought (LoT), the Skill Acquisition Theory (SAT), and Emergentism;

– to consolidate contemporary views on LA mechanisms, delineating the areas of their convergence and divergence, as well as open questions between key paradigms and theories of LA;

– to underscore the connections between abstract LA paradigms and theories and their practical implications for language learning, university curriculum design, teacher training, and the consideration of learner variables (e.g., affective factors and developmental stages), emphasizing the critical theory-practice link;

– to create a comprehensive and evidence-based theoretical foundation that contextualizes present-day research trends and pedagogical practices, serving as a



reference point for researches, educators and learners who wish to make sense of the process of LA and language instruction.

Research results. Yet in 1690, English philosopher J. Locke, a central figure in Empiricism, put forward the idea that the human mind is a blank slate, with all knowledge derived from experience [32, p. 166]. Within the context of LA, the empiricist view implies that language mastering stems from exposure to speech and is inherently driven to comprehend the environment [44, p. 202]. However, it is also argued that without adequate instruction, learners may struggle with trial-and-error learning, potentially reinforcing incorrect patterns and culminating in fossilized language mistakes [58, p. 1364].

Next, posited in the 1920s, the Developmentalist theory, formed by Swiss developmental psychologist and epistemologist Piaget [49, p. 237] and Soviet psychologist and semiotician Vygotsky [64, p. 189], greatly contributed to understanding the nature of LA by specifying how language is evolving. This theory centers on child cognitive, social, emotional, physical and behavioral development, which prompts corresponding pedagogical approaches and pinpoints the adaptation of instruction to the learner's developmental stage. At that, the educator functions as a facilitator who ministers a variety of experiences for children's linguistic and cognitive advancement.

The aforementioned theory further contests the perspective that language development is exclusively genetically predetermined. Specifically, the proponents of this theory [16, p. 43] assert that the Chomskian conception of LA does not offer a comprehensive clarification of the mechanisms by which the "mental organ" (the term for innate ability coined by American linguist and cognitive scientist N. Chomsky [9; 10]) acquires grammatical rules. Consequently, they propose a more intelligible account, positing that an individual's capacity for associative learning of co-occurrences and general cognitive mechanisms (such as analysis and categorization) constitute the primary internal factors in language learning. They also



emphasize the role of linguistically rich environments in children's vocabulary and grammar acquisition as being pivotal. Besides, they theorize that grammar acquisition in children arises from the analysis of linguistic input and the abstraction of grammatical rules from observed usage [15, p. 24; 37, p. 151]. It follows that linguistic features encountered with greater frequency are acquired earlier in the course of children's linguistic development [37, p. 151].

The Sociocultural Theory of Cognitive Development, formulated by Vygotsky in the 1920s and early 1930s [64], prioritises the social environment as being crucial to an individual's cognitive development. This theory posits that learning is an inherently social process, where development is driven by interactions with more knowledgeable community members, such as parents, teachers, and peers. A central concept is the ZPD, which is the gap between what a learner can achieve independently and what they can accomplish with guidance. Vygotsky argues that the most effective instruction occurs within this zone [14, p. 253]. He also asserts that, analogous to using physical tools to interact with the world, individuals cultivate psychological tools, primarily language, alongside signs and symbols provided by their culture – to mediate and shape their thought processes [25, p. 7069; 64, p. 6].

Extrapolating the aforementioned assumptions to university language learning classrooms, some researchers postulate that students cultivate the ability to apply knowledge and refine cognitive skills through engagement in diverse communicative environments – these demonstrably enhance collaborative oral communication, interpersonal acumen, and cooperative aptitudes [62, p. 359; 66, p. 90]. Consequently, educators should meticulously evaluate each student's proficiencies and challenges to furnish commensurate instructional resources within their ZPD.

Yet, some critics argue that Vygotsky's theory underestimates the internal, biological, or psychological processes involved in language development [4, pp. 1532–1533]. They note that the historical and cultural context, in which Vygotsky developed his theory, possibly restricts its universal applicability, whereas contemporary research



shows accelerating cultural, technological and societal changes that can challenge the theory's relevance to contemporary classrooms, especially in terms of digital mediation [53].

Initially proposed by American psychologist and behaviorist B. Skinner in the mid-1940s, the Behaviorist theory gained prominence in the 1950s and early 1960s. It conceptualizes language learning as habit formation primarily through imitation, drilling exercises, and positive reinforcement [37, p. 151; 59, p. 205]. The theory asserts that learners acquire language by repeating target speech patterns until habits are formed, thereby providing further effective communication [11, p. 364; 58, p. 1364]. While behaviorism is recognized for its predictable outcomes and measurable results, yet, critics contend that it neglects higher-order cognitive skills as well as internal factors such as emotions and thoughts in the process of language mastery by portraying learners mainly as passive recipients [2, p. 1587]. Nevertheless, the Behaviorist theory significantly shaped early perspectives on LA despite the limitations underscoring the importance of repetition and practice in the learning process [35, p. 1]. Given that, this theory does not fully account for learners' creative errors [37, p. 150], as the notion of free will, allowing for agency beyond mere stimulus-response associations, challenges the unidimensionality of behaviorism.

Proposed in 1952 by Piaget, Cognitive Constructivism prioritizes the role of learning over behavior [51]. Specifically, Piaget maintains that cognitive growth and language learning are interrelated. The concept, termed "cognitive determinism", within this theory, implies that cognitive development dictates the sequence of LA phases [25, p. 7068; 51, p. 154]. Piaget's view on children's intellectual development offers educators a general guidance on the expected complexity of children's thought processes across developmental stages. And yet, the temporal precision of these developmental stages is subject to criticism claiming that children may progress through the stages, but not necessarily at specific ages [58, p. 1364].



Additional criticisms point to constructivism's limited focus on the social aspects of knowledge creation, arguing for interactive, communicatively rich learning environments as better supporting successful language development [40, p. 360; 47, p. 2]. However, as a developmental theory, cognitive constructivism provides useful explanations of children's cognitive and linguistic progress [36].

The Nativist theory, introduced in 1957 by Chomsky's corpus of work on LA and the Nativist perspective, attained significant recognition following the publication of his foundational *Syntactic Structures* [10]. This theory advances the idea of the genetic predisposition for LA, asserting that children are endowed with an innate language mechanism [44, p. 213; 58, p. 1364]. Within this seminal work Chomsky introduced transformational-generative grammar – a theoretical framework, which poses that a universal grammar underlies all human languages.

Later on, in another work entitled *Aspects of the Theory of Syntax* [9], Chomsky holds that children exhibit a biological predisposition for language, and formally embeds the LAD concept, which facilitates the rapid LA in infants and the generation of grammatically correct sentences even without any explicit instruction. This fundamental tenet constitutes a challenge to the prevailing behaviorist perspective on language learning, which prioritizes the role of environmental stimuli and reinforcement in language development. In this context, the discussed theory considers language as an innate, fundamental constituent of the human genetic set intrinsic to human experience. It underlines an inborn capacity in individuals to organize linguistic rules, thereby expediting the natural acquisition of their native language. This, in turn, suggests that language-specific abilities underpin linguistic competence [31, p. 991].

However, critics argue that the Nativism is greatly dependent on the “poverty of the stimulus” argument, which means that children can learn grammatical structures that are not present in their linguistic input. Nevertheless, this argument is refuted by the existence of general cognitive mechanisms, such as statistical or probabilistic learning, which can delineate acquisition without an innate grammar [56, pp. 193, 197].



Additionally, the theory receives backlash for over-emphasizing syntax over meaning as well as social context, as alternative theories such as usage-based and emergentism hold that language evolves through communicative use as opposed to pre-programming biologically [29, p. 91].

The subsequent trend, Cognitivism, gained popularity in the 1960s and 1970s as a substantial departure from developmentalist/behaviorist learning theories (Piaget, Vygotsky, J. Bruner, Chomsky, and U. Neisser) [2, p. 1585]. It centers on mental operations, information processing, and cognitive structures pertaining learning and language development. Cognitivism conceptualizes cognition as a process of acquiring information through observation, reasoning, imagination, memory, judgment, problem-solving, and selective attention [15]. It further recognizes the multi-dimensional nature of human intelligence, the role of prior knowledge, and the significance of metacognition [41, p. 19; 58, p. 1364].

Cognitivist perspectives view learning a L1 as a cognitive skill analogous to domains like music or mathematics, reliant on general cognitive capacities and basic information processing. Respectively, these perspectives view LA as the attainment of complex skills aimed at automaticity in language processing, which entails promptly assimilating linguistic input and producing output unconsciously and effortlessly. However, specific mechanisms by which input knowledge translates into automatic language production in LA remain subject to ongoing investigation [11, p. 373].

Besides, critics also contend that the abstract nature of thought and the absence of consensus on definitions constrain cognitive perspectives within LA. Apart from this, Piaget's emphasis on universal stages of cognitive development and biological maturation does not adequately account for the impact of social and cultural contexts. Moreover, cognitive approaches overlook the influence of contextual factors, comprising cultural, educational and social backgrounds [2, p. 1589].

The ensuing approach to LA, the Schema theory, is a cognitive framework suggesting that individuals engage in the active creation of meaning by integrating new



information with existing mental representations called schemata [1, p. 80]. The schema theory is regarded as a response to behaviorist “bottom-up” models, which portray comprehension as a passive decoding operation [67, p. 113]. The concept that arose with German philosopher I. Kant’s philosophical framework in the 18th century [24] and later provided a foundation for language studies was significantly supplemented mainly by British psychologist F. Bartlett [6]. Further, it was elaborated in the constructivism theory by Piaget in the 1970s [20, p. 442; 50] and formalized by American cognitive scientist D. Rumelhart [55] and American cognitive psychologist J. Anderson [5], who in the 1980s, implemented the schema theory in teaching reading [22, p. 321; 54, p. 29].

Noteworthy, the schema theory distinguishes between three primary schemata: 1) linguistic (grammatical and vocabulary knowledge), 2) content (topical background knowledge), and 3) formal (rhetorical structure knowledge). They are all considered to be key factors in language comprehension [1, p. 84; 23, p. 335]. In educational practice, the theory informs a multi-stage teaching reading process comprising the activation of schemata before reading, promoting interaction during reading, and consolidating knowledge after reading [67, p. 117; 69, p. 156]. Its applications can be extended to vocabulary acquisition, grammar instruction, and discourse creation, reshaping the teacher’s role from an information transmitter to a facilitator of learning [22, p. 322; 54, p. 30; 68, p. 185].

Despite its value, the theory is thought to encounter with some constraints. Particularly, readers may distort and misinterpret data that conflicts with existing cognitive structures [1, p. 81]. The practical application is hindered by differences in classroom populations and available resources [69, p. 158], and specific implementations may require more considerable empirical support [68, p. 189].

Language of Thought (LoT) by American philosopher and cognitive scientist J. Fodor’s, initially presented in 1975 in his book *The Language of Thought* [19], is another significant theory of LA. It is viewed as a form of strong nativism known as



preformism. Being a cognitive science response to Behaviorism and spurred on by Chomsky [10], the theory argues that all learning is prompted by an innate, universal “language of thought”, or “mentalese” [12, p. 149; 17, pp. 2, 35]. According to Fodor, true learning of new concepts is impossible; rather, what is perceived as learning is simply an elaboration or re-representation of this inborn knowledge [17, p. 53].

The abovementioned theory also states that L1 learning is hypothesis-formation and hypothesis-validation against experience wherein a L2 is effectively translated into the previous LoT [12, p. 150; 17, p. 54]. This system presumes that children possess adult conceptual capacities, thereby opposing development stage theories [17, pp. 55–56]. Despite its impact on countering behaviorism, the theory faces intense criticism of the evolutionary improbability of such a robust native system, the translation challenges of LoT into natural languages, and the reliance on knowledge representation in an explicit format [19, p. 73; 30, pp. 581, 582–583].

The Skill Acquisition theory (SAT), based on cognitive psychology, describes a complex process of skill acquisition as a progression from deliberate practice to an automatic execution of skills. Among the main principles, proposed by Anderson [5] in the Adaptive Control of Thought (ACT) model, is the conversion from explicit declarative knowledge (“knowing what”) to implicit procedural knowledge (“knowing how”) [5, p. 371]. This change occurs through practice-based proceduralization and then subsequent automatization, meaning that the skill is performed faster and, respectively, requires less conscious awareness [5, pp. 369–370].

The theory relies on the three-stage models developed by American cognitive psychologists P. Fitts and M. Posner [18], and British applied linguist D. Byrne [7]. These models specify a gradual transition from a declarative or cognitive stage to an associative or procedural stage, towards an autonomous phase [7, p. 2; 18; 26, pp. 3–7]. Involved in LA, SAT posits that learners first acquire declarative knowledge of grammar rules, then proceduralize it through meaningful practice, and eventually reach automaticity via communicative application. It happens in accordance with the Power



Law of Learning, which formalizes how performance increasingly improves with practice [13, pp. 125–127].

Pedagogically, SAT underpins an explicit instruction coupled with plentiful practice aimed at automatizing skills. The theory's constraints, nevertheless, embrace insufficient attention to affective variables influencing learning, a poorly defined mechanism for moving from declarative to procedural knowledge, and a potential disregard of natural acquisition orders [45; 60, p. 1974].

The Sociocultural theory, rooted in Vygotsky's work and elaborated by American anthropologist J. Wertsch in 1985, promotes the idea that human mental functioning is culturally mediated and situated in social contexts. Rather than solely arising from social interactions, individual cognitive structures and processes are also formed through these interactions [57; 65]. Wertsch identifies three core tenets within Vygotsky's framework that underscore the interdependence of social and individual processes in learning and development: 1) social interconnectedness, 2) the dependence of language and cognitive functions on social interactions, 3) the pervasive influence of culture on individual development. Individual development, encompassing higher-order mental functions, stems from social origins. Specifically, individuals accrue novel knowledge and strategies through participation in collaborative activities and internalization of the resultant joint outcomes. At that, human behavior is mediated by diverse mechanisms and semiotic signs at both societal and individual levels [4, p. 1531].

Despite the Sociocultural theory's recognized importance in understanding the development of human language and cognitive skills, its universality and versatility are debated. In particular, it is argued that the sign systems structuring relationships and psychological mechanisms reflect culturally specific values and ethos within societies, communities, or groups. For instance, many indigenous groups prioritize oral traditions, informal communication and symbolic representations over formal educational materials like textbooks [2, p. 1587].



The Emergentist theory, championed by figures like British–American psycholinguist N. Ellis [15], American psycholinguist B. MacWhinney [34], and American linguist W. O’Grady [46] in the late 20th and early 21st centuries (though its philosophical roots can be traced to thinkers like British philosopher and economist J. Mill [42]) posits that the complexity of language is not innate but “emerges” from the interaction between an organism’s general-purpose learning mechanisms and a massive linguistic environment [15, p. 22; 21, p. 95; 28, p. 9]. This stands in direct opposition to nativist accounts of a domain-specific UG, as emergentism denies pre-determined linguistic concepts, accepting only general innate capacities rather than innate content [21, pp. 95, 99]. At its core, the theory proposes that language is acquired via general cognitive processes, primarily associative learning that extracts statistical regularities and frequency-biased patterns from environmental input [21, p. 107; 39, p. 19]. These processes, which integrate factors like perception, memory, and social interaction, are often simulated using computational connectionist models to explain how linguistic structure arises [28, p. 9; 46, p. 447].

Being a potent alternative to nativism, emergentism faces several key criticisms. A primary challenge is its response to the Poverty of the Stimulus argument – how learners acquire complex knowledge from seemingly impoverished input without innate predispositions [21, pp. 95, 102; 28, p. 11]. Then, its central computational models are critiqued for slow and poor generalizations, being susceptible to “catastrophic forgetting”, and sometimes implicitly building in the concepts they are meant to learn [8; 21, pp. 112, 113, 117, 119; 38]. The theory is also criticized for lacking a comprehensive “property theory” of linguistic competence and for not fully explicating how abstract concepts are learned [21, pp. 120–123; 39, p. 23]. In comparison to the Skill Acquisition Theory, which is output-based and focused on automatizing skills through practice, emergentism remains distinctly input-based, emphasizing the extraction of regularities from exposure [27, pp. 43, 45].

In conclusion, none of the exposed theories of LA seems to be universally versatile and effectively applicable in diversified educational contexts, yet definitely, each of them beneficially contributes to the process of LA, offering valuable insights on how to obtain successful language learning outcomes. The summarised assumptions of the above LA theories, are charted below (Table 1).

Table 1

Theories of LA and Their Major Assumptions

Years	Authors	Theory	Key Principles
1690	J. Locke	Empiricism	The mind is a “blank slate” at birth.
			All knowledge is derived from experience.
			LA occurs through exposure to speech.
1920s	J. Piaget L. Vygotsky	Developmentalism	Language evolves with a child’s cognitive, social, and physical development.
			Learners use general cognitive mechanisms to abstract grammatical rules from input.
			Frequently encountered linguistic features are learned earlier.
			Educators act as facilitators.
1920s early 1930s	L. Vygotsky	Sociocultural Theory of Cognitive Development	Learning is an inherently social process.
			Development is driven by interaction with more knowledgeable individuals.
			Prioritizes the ZPD as a gap between what a learner can do alone vs. with help.
			Language is a primary “psychological tool” used to shape thought.
mid-1940s (proposed) 1950s- 1960s (prominent)	B. Skinner	Behaviorism	Language learning is habit formation.
			Achieved through imitation, drilling, and positive reinforcement.
			Learners repeat patterns to form habits.
			Views learners as passive recipients in a stimulus-response model.
1952	J. Piaget	Cognitive Constructivism	Prioritizes the role of learning over behavior.
			Cognitive Determinism: cognitive development dictates the sequence of LA
			LA is interrelated with cognitive growth.
1957 (initially) 1965 (LAD)	N. Chomsky	Nativism	LA is a genetic predisposition.
			Humans are born with a LAD.
			UG underlies all languages.
			Relies on “poverty of the stimulus”.
1960s 1970s	U. Neisser N. Chomsky J. Bruner	Cognitivism	Focuses on mental operations (information processing, memory, problem-solving).
			Language is a complex cognitive skill.



	L. Vygotsky J. Piaget		Learning is an active process of acquiring and organizing information. The goal is to achieve automaticity in language processing.
18th Century 1930s-1980s	I. Kant F. Bartlett J. Piaget J. Anderson D. Rumelhart	Schema Theory	Individuals create meaning by integrating new information with existing “schemata”. It is a “top-down” process, contrasting with passive “bottom-up” models. 3 key schemata: linguistic, content, formal. The teacher’s role shifts from an information transmitter to a facilitator
1975	J. Fodor	Language of Thought Theory	A form of strong nativism called “preformism”. All learning is prompted by an innate, universal “language of thought” (mentalese). True learning is impossible; it is a re-representation of inborn knowledge. Opposes developmental stage theories.
1967 1976 1982	P. Fitts M. Posner D. Byrne J. Anderson	Skill Acquisition Theory	Describes learning as a progression from deliberate practice to automatic execution. Involves converting explicit declarative into implicit procedural knowledge. 3 stages: cognitive, associative, autonomous. Practice → automatization.
1985 (and earlier)	L. Vygotsky J. Wertsch	Sociocultural Theory	Mental functioning is culturally mediated and situated in social contexts. Individual cognitive structures are formed through social interactions. Higher-order mental functions originate from social collaboration and internalization. Behavior is mediated by cultural tools and semiotic signs.
Late 20 th Early 21 st Centuries	W. O’Grady B. Mac-Whinney N. Ellis	Emergentism	Language is not innate but “emerges” from the interaction of other factors. Opposes Nativism and the concept of UG. Learning occurs by extracting regularities and frequency-based patterns from input. An input-based theory that uses computational models.

Source: Author’s development

Conclusions. To sum up, major LA theories contribute to distinct views on how individuals acquire language and develop cognitive skills. Despite the fact that no LA theory can be universally applied to all educational settings, when integrated, they reveal a variety of important factors, including internal processes, cognitive and social



dimensions, and others. By combining these views, both researchers and language instructors can develop more effective and individualized teaching strategies and tools to cater to a varied body of language learners, thus enhancing L2 mastery.

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