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1 Reframing Language Education in the Light of Ecological Linguistics

Is the Ecological Perspective “Toxic” or “Vitamin”?

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ABSTRACT

The notion of Ecological Linguistics is not new and has been discussed many decades ago. However, its theoretical construction is still *open-ended* and its implication to practical areas, such as the language pedagogies, calls for more studies either theoretical, empirical, or experiential. This paper is written to sustain the *open-ended* discussion and elaborate on some important works which contribute to strengthening the theory and reframing the Language Education practices. It firstly discusses different lenses in understanding language from the simple one to the most complex assumption; the ecological view. It then continues with the overview of how the word “ecology” has been used in Applied Linguistics and called for the new area called *Ecolinguistics*, what are its strands and prospects for future studies in the field, and what are possible implications for language teaching practices, including those of *English as a Foreign Language (EFL)*. In conclusion, despite the ongoing snapshot of *Ecolinguistics*, this paper recognizes its visionary and transformative influence on language theories development and language education practices.

Keywords: Applied Linguistics, Ecological Linguistics, Language Education, EFL, Action-based Teaching

1. INTRODUCTION

1.1. Language and ecology

In Linguistics and Language Education, the relationship between language and communication has become an important area of study which provides insight and guidance for pedagogical practices [1]. Nonetheless, connecting language to ecology [2], [3], [4] can sometimes sound peculiar to people. Some might consider that connecting language to ecology tends to be exaggerated or unnecessary. Others consider that it is an interesting topic to be studied as a part of language science but its practical implications need to be further investigated. In the scholarly arena, it is a task well-worth considering [5], [6], [7], [8], [9], [10]. Connecting language to ecology invites new studies in the areas of Linguistics, Language Education, and others. Moreover, the complexity of the relation between language and ecology encourages multidisciplinary studies which might offer *open-ended* discussion to broaden and

develop language theories [5], [11], [6], [8], [9]. This view substantially challenges the *status quo* with a more systematic approach to Language Sciences and their theoretical underpinnings [12]. Particularly, the ecological perspective offers not only challenging agendas but also evidence of a better understanding of language in Linguistics and Language Education thereby having implications on practice [6].

1.2. A metaphor

To illustrate why the ecological view is emergent, we can imagine that we want to know the reality of the ocean. We might want to explore it from afar, by soaring above it. We will find beautiful nature such as the white sands, the waves, happy people playing with water, a number of fishes and planktons, and others. Alternatively, more challenging than the former is, by diving inside the sea to explore more reality inside the depths. While we are diving into the “new” environment, the deeper we dive, we will find an unlimited number of

creations with diverse characteristics. Sometimes we already have an assumption about all things based on what we see when we soared on the surface. But the deeper we dive; we will see unpredictable reality inside the sea which might be different from or extend our previous assumption. This is the case when we view language from an ecological perspective.

1.3. The objective of the paper

In Linguistics, we learn Sociolinguistics which connects language to the varieties of social environments and their properties [13]. In a more complex view, we can see that language connects to not only the social but also physical/biological environments and artefacts [2], [6], that is known as Ecological Linguistics or *Ecolinguistics* [8], [14]. This new area of Linguistics has extensively been studied since the 1990s, if not before. Nonetheless, there have been few studies bringing up the theory in more practical settings such as how can the tenet inform language pedagogies and teacher professional development. Therefore, the paper presents an ongoing snapshot of the ecological perspective in Language Teaching with a focus on the extent to which the notion may offer a better alternative of seeing language and how might the perspective inform language pedagogies including English as a Foreign Language (EFL) Teaching.

2. WAYS TO UNDERSTAND LANGUAGE

Even though language is ubiquitous and human beings are undeniably familiar with it, it does not mean that language is easy to understand [6]. Studies define it as words, sounds, sentences, and expressions in communication. As we develop a better understanding of language, we understand that it comprises mimicry, gesture, movement, signs, and others. The word communication itself can be understood as a linear process between the sender of the messages and the receiver. However, with the development of language and communication studies, this view is not sufficient to explain the reality of communication that involves the interconnected relationship among the interpersonal function, ideational concept, and textual forms [1]. When using a language in communication, all personal, social, and ecological elements are connected [6]. We are changing and growing mediated by the language we use.

2.1. Common views of language

When we try to understand a language in the reductionist view, we can break it down into sub-categories or smaller elements of the language to enable us to investigate each element deeply. As we have commonly upheld, Linguistics is divided into phonology, morphology, syntax, semantic, pragmatics, sociolinguistics, psycholinguistics, and others. This so-called linguistics division has been well established for a long and influences the educational curriculum and pedagogical practices, especially, language education

(L1 or L2) ranging from schools to universities. The subjects offered in the curriculum construe smaller divisions of linguistics features such as structure or grammar, pronunciation, and skills such as listening, reading, writing, and speaking. Along with the development of language teaching and methodology, whatever the approach applied by the educators, they must be able to deal with the language components in different theoretical assumptions.

Leo Van Lier [6] collects 7 general theoretical views about language development: *computational*, *storage*, *either-or*, *componential*, *correctness*, *warring*, and *separateness*. The *computational* view assumes that language acquisition can be obtained by the mechanic process of information exchange which relies on input and output processes within the communication. The *storage* notion considers that (foreign) language can be acquired by building the schemata through the internalization process of knowledge and skill to nurture a new bilingual or multilingual habit. The view of *either-or* is underpinned by the theoretical perspective which divides a language into form and meaning. Therefore, language learning needs to deal with how far the learning focuses on the form (e.g. consciousness-raising) or the meaning (e.g. functional approaches). With the *componential* view, we assume that language comprises components that make what language is such as sounds (phonology, pronunciation, morphology), expressions (grammar, syntax, semantic), and texts (pragmatics, discourses). Correctness assumption believes that the language has standard and non-standard versions. Thus, the English language can be correct and incorrect, or native and non-native. Language has a conflicting nature between L1 and L2 in light of warring assumptions. It means that when we learn L2, our L1 becomes a barrier to acquiring the L2. While *separateness* assumes that language is an external reality of human beings and to acquire it we need to be drilled intensively with the language features and use. These assumptions are commonly manifested into various elaborated formulas which are not exclusively independent in themselves but can overlap and share particular ideological underpinnings.

2.2. Critical views of language

The above views about language demonstrate the extensiveness of Linguistics studies from way before the 1990s. Thus far, we have become familiar with reductionism which has significantly influenced educational practices over many decades. A critical question to ponder for future Linguistics development is: *Do these represent all reality about language? Are there other better perspectives in seeing language reality?*

Kravchenko [12] pinpoints that “*what was known for a scientific fact yesterday often turns out to be a fallacy, delusion, or misinterpretation of a particular phenomenon today*” (p.21). This is either critical or

optimistic. It keeps linguists and educators innovating in the areas that have not been studied much but may offer a better understanding of language and how to treat it appropriately in daily life despite its complexity. Fettes [7] states, “*ecological explanations offer a more promising foundation for critical reasoning than any of the alternatives...*” (p. 45). This is because the ecological theory accepts and tries to understand the reality of languages in their natural existence which tends to be divergent, complex, and heuristic.

According to Steffensen & Fill [8], Linguistics as a science can be saturated after all, as their strong statement, “*...the trajectory marked out by walking in the intellectual desert of form-based linguistics displays closed-loop circularity*” (p.7). It reminds us of the limitation of reductionism in Linguistics and Language Education [6]. Thus, considering the body of literature that has grown over the years, there has been an increased interest in *non-status quo* theories such as post-method pedagogies [15], poststructuralist theories [16] including studies of identity and investment [17], [18], [19], sociocultural theories [20], [21], multilingualism and unequal Englishes [22], complexity theory [23], critical pedagogies and ecological turn [24], [25], and others. Moreover, Pennycook [26] introduces Posthumanist Applied Linguistics which expresses a similar philosophical stance that represents the prominent development of Linguistics in areas that go beyond linguistic forms and human cognition [12].

Furthermore to this point, it is necessary to speculate on “the language-less environment” [6]. Can we imagine human beings living in such an environment? Can we imagine the earth with all social life, relationships, families, offices, or nations, but without languages? As language is ubiquitous, we sometimes do not realize that it impacts beyond the human communicative agendas. It is a systemic meaning-making process that involves more than the “language” itself construing the complex semiotic system that can be meaningfully understood in “its entirety” [11] (p.20). As a complex semiotic system, it is multidimensional and exists in symbolic, psychological, natural, sociocultural, and cognitive domains [8]. It exists in multiple contextual levels within the human discursive environment from micro, mezzo, to macro [27]. No one can separate her/himself from language. From the individual levels; even when we cannot say orally any words but we can think them in our mind, to the global levels that make humans connect beyond the words within the spaces in the past, present, until the future, language evolves while human beings are actively using it, or precisely, it refers to *linguaging* [28]. Furthermore, it gives evolutionary and transformational impacts, it shapes and transforms human life [2], [24]. In this case, staying in the box of the linguistics forms is considered insufficient for meaningful language praxis. On the other hand, accommodating the ecological perspective means accepting its complexity which implies the need for more systemic and complex approaches to linguistics and language education [6], [8], [9], [11].

Thinking of **language in** this perspective does not mean rejecting all the status quos, rather it encourages possibilities of exploring more than the prevailing assumptions by employing more heuristic and systemic frameworks than the former. This view needs transdisciplinary studies [5], [6], [8], [11]. As stated by Kravchenko [12], the ecological perspective “*opens up a radically new venue for the explorations of language, bringing together biology, ecology, psychology, semiotics, neuroscience, and interaction studies, thereby making the study of language part of life sciences*” (p. 27).

3. ECOLOGICAL LINGUISTICS

3.1 Ecology and Ecolinguistics

According to Leo van Lier, *ecology* is the study of the relationships among elements in an environment or ecosystem, in particular the interactions among such elements [27]. The word “ecology” was first defined by Ernst Haeckel in 1866 [6], [12], [29], [30], however, in Linguistics and Language Education, it was found in Edward Sapir’s work in 1912 when he connected language to the environment to signify that the physical and social forces (mediated by language) influence and transform the environment [2]. Some scholars consider that a stronger notion of the ecology of language was found in Einar Haugen’s paper in 1972 to refer to the study of interactions between any given language and its environment. The word environment in Haugen’s [31] notion is metaphorical rather than biological. Since then, this area of discipline has been enhanced by broad studies of Linguistics Ecology [3], [32] to represent the focus on ecology and Ecological Linguistics [6], [8], [12] to sustain its ecological reality of language. The scope remains divergent depending on how scholars view the environment or ecology. The International Ecolinguistics Association suggests a definition below to give direction for further studies.

Ecolinguistics explores the role of language in the life-sustaining interactions of humans, other species, and the physical environment. The first aim is to develop linguistic theories which see humans not only as part of society but also as part of the larger ecosystems that life depends on. The second aim is to show how linguistics can be used to address key ecological issues, from climate change and biodiversity loss to environmental justice.
(<http://ecolinguistics-association.org/>)

3.2. Ecolinguistics strands

Steffensen & Fill [8] suggest 4 theoretical strands of Ecological Linguistics: symbolic, natural, sociocultural, and cognitive, depending on the underpinning views on what the “environment” of a language is.

3.2.1. Symbolic ecology

Viewing the language environment metaphorically as Haugen’s leads to the notion of symbolic ecology. The

environment in this notion is not truly a physical or biological language ecology, but it symbolically represents social, political, or institutional contexts [8]. The word ecology is a symbol to represent the same notion as the learning context with its linguistic properties but with a particular concern on their relations. When learning English as a foreign language, the learning “ecology” is the classroom context in a local or institutional setting. In pedagogical practice, for instance, the educators are aware of the relations among the learned languages, the local languages, the student backgrounds, cultures, traditions, and other psychological and sociological aspects of the environment [31].

3.2.2. Natural ecology

From the perspective of natural ecology, language environment is seen as ecology in the physical or biological sense such as topography, climate, flora, and fauna [8]. The linguists are concerned about the relation between language and nature and thus the ecological issues become the central part of it. This notion has strong support from Halliday [5] who states:

What I have tried to suggest is that the things which may rule out this possibility and which we ourselves have brought about - classism, growthism, destruction of species, pollution and the like - are not just problems for the biologists and physicists. They are problems for the applied linguistic community as well. (p. 199)

Connecting to what is stated by Sapir [2], the environment is influenced by the physical and social forces mediated by language. When language exists in the ecology, it has transformative effects on the ecology [24]. In short, linguists engage in the academic and professional arenas to develop the fields of linguistics and at the same time contribute to maintaining nature for life sustainability and global well-being [10].

3.2.3. Sociocultural ecology

Sociocultural ecology is another strand that accommodates both symbolic and natural ecology. With this combination, it can cover very broad studies connecting linguistics to other related disciplines such as psychology, anthropology, sociology, biology, and others. Sociocultural ecology requires heuristic transdisciplinary studies [6], [8], however, it does not mean the same as having them together in a collection. The relationship among the disciplines is interconnected and systemic oriented toward the understanding of human activity and development.

3.2.4. Cognitive ecology

The last strand is cognitive ecology that focuses on the internal process of language development inside the human mind. Even though this view is similar to Chomsky’s theory of language as an internal entity to human beings, however, the notion of cognitive ecology construes that the cognitive processes in the human mind

are dependent on the dynamic interactions between a language and its environment [8]. There are two possible variations of this view. The first assumes that there is an explicit separation between language and environment, while the second considers that both are interrelated entities as one complex system.

These four strands portrait the vision of ecological linguistics that is broad and heuristic, which calls for further studies to investigate their relations in light of the systemic reality of ecology. However, since the strands are possibly derived from particular linguistics traditions such as semiotic, natural, sociocultural, and cognitive theories, there can be a huge bias potential in the absence of the ecological orientation. An essential question to ponder is, where shall it be directed? Is it possible to be more convergent for the sake of creating an elegant theoretical underpinning? or shall it sustain its divergence?

3.3. Ecolinguistics future

Linguistics is a dynamic science that reshapes itself to adapt to the newly found reality. In this case, the emergence of Ecolinguistics philosophically opens up a new world in Linguistics with an expectation to broaden and extend human knowledge of language and life [12]. To this point, Linguistics needs not be indulged by the elegance and explicitness of knowledge abstracted from reality, rather it actively seeks the possibilities of new ways to explore the “real” reality. As Larsen-Freman [9] says, “*This ecological orientation paves the way for the future*” (p. 110).

Broadly speaking, “*We are living in the Anthropocene Epoch.*” *Anthropo* means man or human being, while *cene* means the centre. *Epoch* is an age category. Therefore, it is like someone saying, “We are living in an age where human is the centre of the world”. The world we live in is shaped by humans in the past, while the future will be shaped by our past and today’s activity. One of the ideas behind the *Anthropocene Epoch* is the need for investigating the world in the past for sustaining the world in the future. Living in this age means whatever the role the human being plays, it needs to be concerned with the earth’s sustainability. As Halliday [5] says, it is also the problem of linguists. Therefore, since Ecolinguistics intends to maintain language reality as a systemic part of the human ecosystem to develop language theories while impacting life sustainability, it is not only a challenging study but also visionary and meaningful. Among the other areas of Linguistics, the ecological perspective concerned “preserving relationships which sustain life” [10] (p. 2).

4. ECOLOGICAL LANGUAGE TEACHING

Ecological Linguistics implies that the linguists’ responsibility basically beyond the linguistics items [5], [6], [10]. When applied in language education, the educator’s tasks are more than teaching students with language and communication skills. There are some prominent characteristics of ecological language

teaching in terms of philosophical underpinning, pedagogical strategy, and ethical issues, in which both the educators and students play an important role as inseparable members of the ecosystem.

4.1. Philosophical underpinning

As summarised by Ricento [33], the studies of linguistics, SLA, language planning, and education have flourished and can be characterized by 3 philosophical mainstream ideologies: structuralism, critical perspective, and ecological approach. Structuralist orientation is underpinned by the theoretical assumptions that consider languages can be abstracted from their social, historical, and political contexts, and therefore linguists can focus on the linguistics properties. On the other hand, the critical perspective appreciates the reality of the world that is not equal and questions the status quo or all of the prevailing assumptions related to language and language education [24]. However, the ecological approach is theoretically more systemic than the former connecting language to ecology [9], [33].

With the plethora of studies, language educators are now exposed to a wide variety of philosophical and pedagogical approaches associated with any of them. Among the three, structuralist perspectives have been popular in language teaching until currently. While post-structuralism including the critical and ecological approaches has been inspiring for those who are interested in visionary, heuristics, and systemic tasks. *Non-status quo* theories are challenging since it innovates beyond the limitations of structuralism, accepting complexity beyond the linguistics limitations. Therefore, in light of this philosophical position, linguists and educators move beyond the prevailing assumptions assuming that language is seen as more than an instrument of communication; it is communication itself that exists in the emergent and complex environment.

Some *non-status quo* theories are in line and can provide strong support to the ecological tenet. Among them are languaging [28], grammaring [34], translanguaging [35], plurilingualism [36], multilingualism and unequal Englishes [22], language development [6] and investment [17], [19], socio-cultural scaffolding [6], language learning as a part of identity formation [18], [19], and others. These theories suggest that language is dynamic and more than the linguistics forms. Teaching language underpinned by an ecological view means accepting that learning will be meaningful when students are taught to accept and experience the language reality through the pedagogical processes and the ecological artefacts. In this way, learning a language means experiencing the process of development that transforms human agency to be fully functional agents with particular characters [37] (p. 67).

4.2. Affordance instead of input processing

One of the theoretical breakthroughs in the fields of Applied Linguistics and SLA is coming from the ecological perspective when van Lier [38] revisits the

notion of “input” which has been ubiquitously popular in language teaching worldwide including that of English as a Foreign Language (EFL) but is considered insufficient for understanding the complex reality of language development. He suggests that the term “affordance” can be used in light of the ecological perspective. It refers to relationships among learners and the environment including its physical and social aspects that learners perceive and act upon in ways that lead to further action [6], [38]. Larsen-Freeman [9] enriches the tenet of affordance by separating the external from the internal condition of learning. External condition is the index of opportunities opened to the students in actual situations inside or outside of classrooms which can be daily relational settings, discursive events, and mediated activity. The internal condition is the students’ perception in active engagement within *the ecological situations*; borrowing Kramsch and Steffensen’s terms [39].

Different from those of the rote learning processes, the ecological perspective starts with the student’s perception-in-action when learning [6]. It means that there is access to and engagement in the meaning-making process. When a student is engaged in ecological learning, he/she firstly interpret discursive and mediated processes which afford action and in turn in-depth perception, known as perception-in-action. This process is iterative and experiential involving awareness and consciousness in multi-layered cognitive levels and actions. It starts with activating and noticing (from unaware to aware), selecting and directing (aware to attending), intensifying (attending to focusing), and preparing (from focusing to vigilant). To put into the language awareness frame, affordances start, underpin, and remain in the whole language development process from apprehension, comprehension, to critical awareness.

Based on this tenet, language development is an impact of affordance rather than input processing. The concept of input processing represents that language and its elements are static objects [40], [6]. This view is considered insufficient to represent the humanistic and ecological nature of language. While in the ecological perspective, affordance means a relation of possibilities that is dynamic and systemic among the members of ecology [6], [40]. When learning English, language development is not achieved because a student successfully memorizes inputs in such a way, but because his/her perception perceives the meaning-potential environments (can be a person, books, texts, classroom, things, and other semiotic resources) and then he/she acts upon them in discursive events in some extent of intensive and autonomous engagement. In this case, affordance is dependent on the student’s identity and agency which is meaningful and empowering [6], [41].

In the whole notion, according to van Lier [6], [42], this process can be well-clarified by using Vygotsky’s sociocultural theory (SCT) of micro-genetic (immediate events), ontogenetic (individual lifespan), sociocultural (social activity of humans), and phylogenetic (humans undergoing natural evolution). Either the ecological

affordance or the SCT takes account the student's experience as a central part of the language development.

4.3. Quality learning opportunity: emergent, discursive, and experiential

Since affordance is available in emergent, discursive, and experiential human activity, the expected learning opportunity which results in language development incorporates relational experience dependent on the environment and artefacts [6], [40]. When a student learns English, a teacher facilitates relationship-building among the agents (students, teachers) and the other ecological components including the meaning-potential artefacts (everything in the learning context that can be used to learn, including the textbooks). The essential aspects of the relationship are mutuality, autonomy, and engagement [6], [40]. They signify that the learning process concerns the quality of students' discursive experience in using the language meaningfully in authentic situations, as opposed to using it in linguistics drilling or merely for classroom simulations.

In this case, quality is crucial [6] since the experience nurtures, in the long term, either language development or identity formation [17]–[19], parts of human activity [37], [41]. As discussed earlier, the language development we commonly assume as the impact of input processing of the linguistics items, more correctly is the result of a more complex process of affordance which involves the intensive and continuous work of perception and action in discursive events. Since affordance can either enable or constraint language development [6], a pedagogical plan needs to focus firstly on the opportunity creation mediated by the ecological artefacts including the physical materials (e.g. grammar, texts, etc). The opportunity creation is not only the responsibility of the teacher but also all agents involved in the emergent process. It means that the learning context is mutually constructed by both the teacher and the learners in the settings in which the explicit, implicit and tacit pedagogical processes can take place [43]. This is a socio-ecological environment [8] by which both students and teachers are pedagogical agents who create the teaching and learning discourse. Within this process, issues related to agency become central since affordance cannot be separated from the intensive and continuous interaction which involves perception and joint activity [12], [41]. This activity involves “the continuous making of linguistic choices from a wide and unstable range of variable possibilities in a manner which is driven by highly flexible principles and strategies grounded in the praxis of our living as linguistic organisms” [12] (p.23). By taking this into account, language ability (including foreign language) is seen as interactional behaviour, a part of human activity [44].

As Walqui and van Lier [45] put it, deliberate and well-constructed teaching precedes language development. Thus, language development results from the quality learning process which is sufficiently experiential to influence the development of language ability. In an ecological design, educators plan to reach

beyond the teaching itself. This pedagogy covers all action-schemata including linguistic, perceptual, bodily, affective, and other real-world aspects of experiences as models for future activities that include sustainable repetitions with changes [41].

4.4. Multi-layered plan

Teaching language ecologically needs a heuristic plan taking account of the ecology and the reality of relations within and between the ecology members including the artefacts, and determining how to facilitate affordance in particular levels. Since affordance occurs in any communicative event, specific multi-layered situations are intentionally created inside and outside the classroom. It can be offline and online, synchronous and asynchronous, formal and informal, by which all agents mutually engage in the discursive situations. In this case, traditional teaching can complement ecological language learning within the overarching ecological framework. Therefore, it tends to be long-term, ubiquitous, and continuous rather than short-term and classroom-based processes. The ultimate purpose is strengthening the functional and discursive ability rather than linguistics memorization.

To plan ecological teaching, educators might consider the principles of awareness, autonomy, and authenticity [38]. Questions related to “What kinds of the ecological realities (including specific interactional and discursive ability) do the educators want their students to be aware of? How might the awareness facilitate affordance for language development for specific and meaningful purposes? How might the autonomous relational activity be organized to facilitate sustainable and intensive language learning? How might the authenticity of the situations and artefacts be planned in such a way to be available for authentic learning? And other related questions. The answer to these questions informs the educators for further guidance on what, why, and how to teach beyond the teaching itself.

Moreover, affordance provides opportunities for learners to create meaning within the authentic environment and to reproduce it in emergent discursive events. In the EFL context, these events genuinely exist in the specific settings of the mother tongue and other local languages (L1). Ecological plan appreciates both mother tongue and other local languages and takes these and their relation as the important resources to increase meaningful awareness of the language learned (L2) and to strengthen mutual engagement which makes possible scaffolding in L2. With quality and intensive scaffolding process, L2 development will be possible. When the emergent discursive events can successfully be created in the classroom, there will be plenty of scaffolding occurred either planned or emergent, with peers or more capable others, and mediated by the ecological artefacts; a situation in which learners are internally motivated to appreciate both L1 and L2, with the focus on L2 development. Within this process, the language pedagogies will be flourished with the robust learning opportunity of *grammaring, languaging,*

translanguaging, and other exploratory and experiential language learning to strengthen language development.

To plan ecological teaching, further, an educator needs to answer how exactly the students' opportunity for acting can be provided in the classroom. The pedagogical plan construes that affordance is available in the multi-layered learning context started from the personal, interaction, situation, and culture. Therefore, learning activity is planned to obtain natural changes and development of language, as in Table 1.

Table 1: Ecological Language Teaching

<i>Layer/level</i>	<i>Expected Changes/Development</i>
Personal/Agency	Sense of ownership
Interaction	Technical, mechanical
Situation	Functional, communication
Culture	Critical, discourse

In the personal/agency layer, all possible questions related to agency and identity need to be explored to reveal the meaning of language learning and development for the individual agent. At this level, the expected change providing the students with the learning foundation is the development of a sense of ownership. Learning a language without this is meaningless, therefore, planning at this level cannot be exempted. Affordance means there is a mutual relationship among the agents and between them and their contexts. Thus, ecological language teaching focuses on the relationship-building among the members of educational ecology and concerns on sustainable and long terms changes and developments. This relationship-building occurs firstly in the level of interaction in which the orientation of the learning is on using the language linguistically, technically, and mechanically. At this level, the educator can orient the learning activities to the easy/simple, practical, and explicit learning tasks without ignoring the ecological values. The next level is to train the agents to be socially functional. At this level, an educator needs to provide the opportunity for the agents to engage in relevant discursive situations in which they can live and act authentically as themselves while actualizing the language learned [46]. The last level is culture. At this level, the pedagogical plan deals with discourse learning which is intended to nurture critical language development. Overall, like the notion of authenticity in language teaching, the learning process is seen as a unique meaning-making activity that appreciates diversity and variability which involves the members of ecology in the emergent environment [6]. In this case, values are emphasized since the meaning-making process is value-laden throughout all ecological procedures [6], [41]. They are critical since they question everything in light of the systemic reality of relations and their impacts on the ecosystem and human well-being [8], [10].

4.5. Action-based pedagogy

Language is systemic, but in reality, it is also practical since it is embodied in daily human life. When we learn language underpinned by the ecological lens, the most vital instrument we shall use is human activity [44]. As outlined previously, since human activity is discursive and interactional, incorporating human activity into the pedagogical approach needs to focus on how to create meaningful opportunities for all agents to act like human beings and nurture language development. Since the ecology can be symbolic, physical, socio-cultural, and cognitive, the language education setting can provide educators with unlimited resources (environment and artefacts) to create an ecological learning opportunity for learners.

To incorporate the ecological perspective into language teaching, Leo van Lier introduces Action-based (AB) pedagogy that is philosophically constructed based on some influential theorists such as Vygotsky and Piaget. As a pedagogical strategy [41], AB pedagogy:

“...requires a holistic, whole-person, whole-language and embodied approach.... does not deny the usefulness of such mundane and age-old practices as grammar teaching, phonological awareness-raising and so on, but rather it puts those practices in the service of meaning-oriented tasks and projects” (p.62)

AB pedagogy is broad and heuristic, however, since it puts the agency in the central role of the teaching and learning process, the agents' disposition and voice become paramount. This type of pedagogy relies on a participatory learning process (instead of acquisition) and it needs to be transformative (instead of summative). According to Leo van Lier, AB pedagogy is similar to other popular language teaching approaches such as task-based, content-based, project-based, exploratory, experiential, English for specific purposes (ESP), Community-based language socialization, Computer-assisted language learning (CALL), and others. However, not all pedagogies with these labels automatically become AB. Since AB is formulated by using an ecological perspective, it accepts the complexity of language, upholds the centrality of affordance, focuses on quality learning opportunities (emergent, discursive, experiential), and requires a multi-layered plan for its pedagogical practice. At the micro-level, practical learning activity can adopt from daily or professional contexts such as pair conversation, sharing activity, interactive presentation, small group conversation, focussed group discussion, debate, seminar, meeting, promotion, interviews, journalism, counselling, negotiation, and other participatory learning activities including those of project-based and experiential.

Empirical studies related to ecological perspective in language teaching show that AB pedagogy is positive and impactful for student's development [46], [47]. Particularly, it can provide an experiential learning opportunity that helps the agents to transform their identity in the level of agency and gradually influence the

development of other related knowledge and ability. Studies in [46], based on research in English for Special Purposes (ESP) setting in the higher education, found that:

...an EFL teaching underpinned by ecological perspective facilitated by the features of mobile-assisted language learning had become a robust tool to develop the students' intrinsic motivation, to nurture the habits of ecological learning, to improve content-knowledge, to make students more confident in language use, and to strengthen technology skills. (p. 164)

The above study is complemented by another qualitative research in [47] which explores students' experience by using in-depth interviews and classroom observation. The findings indicate that AB pedagogy enhanced by technology can be very impactful for adult students, as follows:

Carried out in the higher education setting, AB-MALL (Action-based facilitated by MALL) had connected the need for learning content-knowledge and English. The connection between the two is important especially in the contexts of adult and professional educations which demand English skills as a part of communication and professional competency. (p. 73)

4.6 Ethical, moral, and new responsibility

Applying the ecological perspective into the language pedagogies will lead the educators to some ethical and moral consequences. Educators view foreign languages, local languages, their physical environment, society, the agents, and the meaning of learning through a new lens. Thus, language teaching ethically and morally concerns the impact of the ecological relations on language development, identity formation, human well-being, life sustainability, and how the experiential agendas of the classroom pedagogies inform studies to develop language science.

Teachers probably feel satisfied with the prevailing role in teaching students with English or other languages linguistically. However, given a new paradigm of the ecological perspective, being able to teach the students ecologically will become more challenging and meaningful for language teachers. Taking this position is not an easy job for all of the agents (students, teachers, policymakers), because we accept and work on complexity and try to avoid a speculative way of thinking. Accepting the ecological view means accepting a new authentic role of the educational agents as a human with ecological responsibility. In addition, bringing this into the educational arena means bringing complexity and divergence into the classroom [48].

In many EFL contexts such as those in Asia and others, students are taught and trained English with limited awareness of its true meaning [48]. For instance, EFL classrooms are usually underpinned by the instrumental perspective related to economic value and future betterment. At schools, the students merely learn the linguistics forms with certain approaches that orient

themselves to storing the linguistics forms as targeted on the curriculum. In this case, the purpose of learning is focused on facing the subject or school examination. Later when they graduated from school or university and start their professional activity, they wonder about the essence of English language learning and soon forget everything since the new life has no relationship with English. The ecological perspective brings back the meaning of EFL learning to classrooms and seeks the possibility to connect the learned language to the students' real life in the present and future times.

4.7 Future studies for language educators

For future studies, it will be challenging to explore the areas below in the light of the ecological perspective:

- How could the ecological perspective contribute to language curriculum at the level of policy, its development, and its implementation, e.g in [49]? How essential is its coherence between curriculum policy, pedagogy, and assessment, e.g in [50]?
- How will the language pedagogic discourse be ecologically reframed for the sake of powerful language development and life sustainability?
- What are the roles of technology [46], [47], [51], materials/artefacts, ethics, morality [52], and values [53] in the ecological discourse of language pedagogies?
- How could language educators innovate in specific areas of pedagogies such as grammar teaching [54], ESP, and others?
- How can we connect to the standardised tests of English (or other languages) when viewing language education in light of ecological perspective?

5. CONCLUSION

In conclusion, this paper has focused on how Language Education can be reframed in the light of an ecological perspective. Despite its ambitious, broad, and divergent theoretical characteristics, Ecological Linguistics can have positive and transformative influences on the development of language theories, Applied Linguistics and Language Education practices, and language teacher professional development. Firstly, the ecological perspective philosophically appreciates complexity and it is critical to the status quos, and therefore it calls for innovative studies which seek for addressing gaps, and elaborate various disciplines to develop language sciences. Secondly, it opens the gates to innovative pedagogical practices in the light of heuristic and multidisciplinary frameworks which has practical implications to practices that go beyond the status quo; not necessarily contradicting but can be complementary. Thirdly, it challenges the educators to re-orient their teaching practices to the students learning experiences with more participatory, transformative, and experiential approaches.

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