A PROPOSAL FOR DEVELOPING ECO-HOLISTIC COMMUNICATIVE COMPETENCE IN STUDENTS AT A LIFE SCIENCE UNIVERSITY

Alina-Andreea DRAGOESCU URLICA[1], Carmen DURAU[1], Iasmina IOSIM[1], M. R. LUNGU[1]
[1]USVT 'King Michael I' from Timisoara, Romania
Corresponding author: **Iasmina IOSIM[1]**

Abstract. *The present paper puts forth a proposal for developing an ecological and holistic outlook for the language courses delivered to students in a University of Life sciences and natural sciences, by engaging with current research in an interdisciplinary manner. From an eco-holistic perspective, an expanded educational paradigm should include systems thinking, a holistic outlook across a range of topics of interest to students of languages for specific purposes (English for Life Sciences), as well as an understanding of complexity and the interrelatedness of phenomena. Such a project should target self-development and value-system development, which should not be limited to the training of skills for the employment market. As the global value systems are showing signs of crisis, we have to strive for a holistic repositioning of values, as well as for a restorative, healing cultural framework. We cannot hope to achieve a healthy society unless we include the development of interpersonal skills, sane communicative abilities, co-adaptive participation, and coherent management of one's worldview. Our main aim as educators is to help students create a sustainable world by partnering with and learning from natural systems, which would be mutually beneficial. Thereby, the scope of truly holistic education must include the need to raise awareness of ecosystems which support life in communicative interrelatedness.*

Keywords*: communication skills, English for Life Sciences, ecology, language learning, Biosemiotics, sustainable education.*

INTRODUCTION

Both from a systemic and cultural standpoint, language has a paradigmatic function in building sustainable educational systems based on human development principles, cultural exchange, and meaningful interaction (NUSSBAUM, 2011). This potential also has implications for acquiring skills in comprehensible exchanges in specific areas of SLA. The proposal raised in this paper relies on the fact that language teachers, especially ESP facilitators, have a wider window of opportunity to engage students in relevant communicative contexts about natural ecology.

In recent years, biosemioticians have shown more and more convincingly that communication and semiosis may be seen as fundamental to the understanding of life processes. By adopting the term "semiosphere", semiotics refers to the totality of semiotic processes, while the sphere of semiosis coincides with the sphere of life. Thus, from a semiotic point of view, an integrated view of semiosphere would include not only human culture, signs, symbols, but the whole biosphere. "We tend to overlook the fact that all plants and animals – all organisms, come to that – live, first and foremost, in a world of signification. Everything an organism senses signifies something to it" (HOFFMEYER, 1996: vii).

According to Hoffmeyer, semiotic quality of life manifests itself in all living systems, as they exhibit "semethic interaction" – signs become used and interpreted by other individuals in a co-evolving web which integrates all the planetary ecosystems into a global semiosphere "incorporating all forms of communication: sounds, smells, movements, colors, shapes, electrical fields, thermal radiation, waves of all kinds, chemical signals, touching, and so on. In short, signs of life" (HOFFMEYER, 1998: vii).

Furthermore, developing meaning-making and ecological communication practices that are coherent and meaningful relies on appreciating the important place of cultural codes and the

nature-culture interplay. In this respect, Kull (1998:346) discusses several key concepts in ecosemiotics, highlighting the semiotic aspects of the human-nature relationship, as well as the place of nature across various cultures, which is generally underpinned by semiotic mechanisms. This perspective highlights the place of culture within nature, as contrasted from construing it above or outside it. Researchers emphasize the complexity of culture systems in interdependence with a range of factors which are to be harmonized to ensure quality and balanced outcomes (OKROS & POP, 2014:134).

The achievement of the full potential of human nature in information society strives towards values such as integrating and transcultural communicative competences within the highly dynamic semiosphere. The importance of cross-cultural and intercultural dimensions is also included in the newly extended digital semiosphere. Most importantly, from the point of view of communication studies, cultures are made up of values and belief systems, also including educational values and behavior (IOSIM, 2019: 190).

MATERIAL AND METHODS

The methodology is based on the biosemiotics framework, in conjunction with communication theory (FAVAREAU, 2007), as well as the ecology of learning, thus employing qualitative and hermeneutic methodology (VAN LIER, 2004). In addition, the ecological theory of communication is relied upon to make the point that meaningful dialogic processes are fundamental to all biological systems and pervade the entire biosphere (VAN LIER, 2000).

RESULTS AND DISCUSSIONS

The aim behind the study is to better understand how we may help students achieve integrated language learning to qualitatively change the vector of communicative development in the scenario of a new sociocultural reality. By acquiring ecological communicative competence, students in the Life Sciences are enabled to become "ecologically literate", based on the methodology of sustainable education (STONE & BARLOW, 2005).

Based on a review of the existing scientific literature on ecological learning, and particularly communicative approaches to language learning, the current paper identifies the need for the following gap to be filled: achieving a more holistic understanding of the interrelatedness of living beings as co-participants in multiple layered dialogues (STABLES & SCOTT, 2002). Moreover, in a networked environment where a tremendous abundance of data is available, it becomes essential to develop skills such as quality evaluation, value recognition, as well as the ability to synthesize (SIEMENS, 2004: 3). Understanding complexity from the perspective of systems thinking, as well as the acquisition of transversal competences across subject areas are important aspects for preserving the ecology of learning (LARSEN-FREEMAN, 2017; REȘCEANU & TILEA, 2020; REȘCEANU, 2020: 116). Also, it matters in what terms we represent or frame the environment to/together with the learners and according to what kind of language ecology we choose to share our worldviews (LAKOFF, 2010).

From the point of view of ecolinguistics and constructivist theory, learning has social and cultural, as well as personal components, which are strongly correlated with meaning being created by each learner through active engagement and participation. On the other hand, in connectivist theories of learning (SIEMENS, 2004), learning is regarded as distributed within a social and/or technological network. The outcomes of learning and factors influencing the acquisition of knowledge depend on the context and the perceived environment, in analogy to the ecology of learning approach and language socialization (KRAMSCH, 2002; KRAMSCH & STEFFENSEN, 2017).

Fekete discusses holistic approaches to language ecology in conjunction with complex systems theory, which have a highly educational and transformative potential on the learners' meaning-making skills and personality, more extensively (FEKETE, 2020; 2021; KRAMSCH, 2009). Moreover, in Fekete's (2019; 2021: 46-49) view, research on the ecology of language highlights the importance of identity construction through language education in a holistic model of communicative teaching/learning.

Kramsch (2009: 6) construes second language acquisition as making use of symbolic language, considering that "language is made up of a set of symbols conceived by a speech community to describe the world. Thus, by conforming to the linguistic and cultural norms of a speech community speaking the language as their native language (NL), the language learner can gain access to or become a member in this community" (in FEKETE, 2021: 47).

Also, by extending meaning-making process to a new language, the speaker gains access to a transformative potential that could enhance their cultural perspectives or even identities. "The virtual identity of the individual engaged in virtual communication is constructed and co-constructed in and via interactions with other online communicators […] the Self is co-constructed in dialogue with others, thus creating the Virtual Self" (KRAMSCH in FEKETE, 2021: 48).

Thus, complexity theory (LARSEN-FREEMAN, 2017) regards learners, teachers, the language, and the environment as complex dynamic systems that keep interacting with one another, leading to emergent phenomena. While the post-structuralist approach looks at language users as inseparable from the language (KRAMSCH, 2009), a more holistic view also requires considering the environment as inseparable from the application of qualitative research. Therefore, the theoretical foundations of the study rely on taking a holistic look at language learners' experiences, as success is measured not only based on linguistic proficiency, but also with regards to the profound cultural transformation the learner is experiencing (KRAMCH, 2009).

The present study also builds upon the ecolinguistic model of communication (DRAGOESCU URLICA, 2019), as well as the dialogical model and the "languaging" paradigmatic shift (BECKER, 1991; COWLEY, 2018). According to Becker's insightful view, meaning is not artificially created through normative language, which makes a definitive shift from classical structuralist theory. His explanation for contrasting structuralism to the new languaging framework rests on the fact that learners participate in on-going constructive meaning-making processes.

Therefore, language should not be seen as a static object, but as a dynamic complex system, which encapsulates, in our view, the essential point of languaging. When learning a language, children gradually "learn to reshape these particular little texts into new contexts. They learn text-building. They develop a repertoire of imperfectly remembered prior texts and acquire more and more skill at recontextualizing them in new situations", which is what makes it "a skill learned over a lifetime, not a system of systems" (BECKER, 1991: 34).

In the footsteps of Vygotsky's theory of cognitive development, Thibault (2018:49) reformulates dialogical selves as "individuations and crystallisations of the concrete social relations in which the self has participated along its life-trajectory." From the standpoint of the languaging framework, the mutual co-adaptation of one's "internal ecology" occurs through dialogical coordination and a "co-articulation" of "simplex" selves (transcending the binary pair simple/complex), thus contributing to one another's becoming (THIBAULT, 2018: 49).

The extent of this emerging holistic linguistic approach indicates the fact that linguists and language scholars have transitioned from a structuralist view of language. More and more scientists from other fields across the life sciences and natural sciences have embarked upon new

directions towards interdisciplinarity. Thus, all manifestations of life (including meaning-making and communication processes) are regarded from the standpoint of semiosis.

Furthermore, the principal aim of the humanities in this new direction of plurivocal semiosis is the achievement of the true meaning of the "University" – that of universality. From this perspective, the new University is synchronized with the new "Communication Age" and the ongoing "transformation will lead to Integrative Universities or Universities of Communication" (SCOTT, 2000). We are currently completely immersed in a more "integrative age" than ever and we are stepping over the threshold which is now perceived as "the Age of Communication and of the University of Communication" (SCOTT, 2000).

CONCLUSIONS

The conclusion highlights the importance of developing eco-literacy, communicative competences, and ethical attitudes towards the community of life. As shown, these tasks are contingent on a profound understanding of ecosemiotics in order to establish sustainable communication in ecological classrooms and more extensively in communicative encounters in general. In order to enable students in the fields of the life/natural sciences to achieve the goals of communicative education set in the present study, we reaffirm the need to develop a more holistic culture of sustainability benefiting from shared insights from all the fields of study related to ecology and communication.

Moreover, the semiosphere has been extended by adding the pervasive digital component, which introduces a new cultural dimension setting the stage for a different understanding of values, where digital platforms represent the basic landscape. The digital rationality highlights values such as speed, easiness of use, and efficiency to follow a transdisciplinary agenda replacing the old reductionistic culture (FINKE, 2018). The alternative would be the breakdown of scientific culture, which is mirrored by a similar breakdown of ecosystems around the earth.

On the other hand, seeing linguistic prospects through an ecological lens opens new vistas into the immaterial world for ecological thinking. Ecolinguists also emphasize systems thinking, as well as the systemic aspects of language, which are seen as 'ecosystemic'. For this reason, ecolinguistics could help shift gears in the direction of a new culture of global communicators across more 'ecological' platforms. The aim behind the study has been to better understand how we may help students achieve integrated language learning to qualitatively change the vector of communicative development in the scenario of a new sociocultural reality.

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