

Embodiment and Lexical Teaching in Spanish as a Foreign Language: A Transferable Model for Italian-Speaking University Students at Beginner Level

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Abstract: Research on embodied cognition has challenged the amodal conception of meaning that dominated cognitive science for several decades. According to Barsalou's simulation framework (1999, 2008), understanding a linguistic expression involves the partial reactivation of the perceptual, motor and affective states associated with experience of its referent. This paper develops a theoretical synthesis at the intersection of 4E cognition, embodied education and lexical availability research, and applies it to vocabulary teaching in Spanish as a foreign language for Italian-speaking university students at A1 and A2 levels. The typological proximity between Italian and Spanish is reinterpreted as a paradox, since it both facilitates initial lexical availability and exposes learners to interference and fossilisation. The lexical-enactive approach (Di Gesù, 2016, 2023) integrates Kolb's experiential learning cycle (1984), the contrastive-perceptual Lessico-Grammatica minima (Di Gesù, 2016) and the diagnostic apparatus of lexical availability studies. A five-phase teaching sequence is illustrated through the centre of interest *la casa*, and a quasi-experimental validation design is outlined.

Keywords: embodied cognition, lexical-enactive approach, lexical availability, Spanish as a foreign language, Italian-speaking learners, educational neuroscience



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1. Introduction

Research on embodied cognition has challenged the amodal conception of meaning that dominated cognitive science for several decades. According to Barsalou's simulation framework (1999, 2008), semantic comprehension involves the partial reactivation of the perceptual, motor and affective states associated with experience of the referent. Lakoff and Johnson (1999) and Gibbs (2006) extended this insight to the conceptual domain, showing that even apparently abstract notions rest on bodily and metaphorical scaffolding. The pedagogical translation of these findings, known as Embodied Education (Damiani and Gómez Paloma, 2015; Gómez Paloma, 2020), places the body and movement at the centre of instructional design.

Within this paradigm, vocabulary teaching in a foreign language assumes particular theoretical relevance, since lexical units are not symbolic tokens stored in passive memory, but access points to networks of sensorimotor, affective and pragmatic experience. This shift has direct consequences for closely related languages, in which the apparent transparency of cognates can conceal substantial differences in distri-

bution, collocation and pragmatic value. This paper addresses that configuration in the case of Italian-speaking learners of Spanish at A1 and A2 levels of the Common European Framework of Reference, asking whether an embodied and contrastive instructional model can improve lexical retention and reduce the interference characteristically generated by the proximity between Italian and Spanish. The argument moves from the theoretical foundations of 4E cognition and embodied education to the lexical-enactive approach developed by the author (Di Gesù, 2016, 2023), and from there to the paradox of typological proximity, the affective dimension of the lexicon, a verifiable teaching sequence applied to the centre of interest “la casa”, and a programme for quasi-experimental validation which remains an explicit proposal for future research.

2. Theoretical foundations

2.1. *The 4E cognition paradigm and embodied education*

The 4E paradigm holds that cognition is embodied, embedded, enactive and extended (Varela, Thompson, and Rosch, 1991; Schiavio and van der Schyff, 2018). Applied to the foreign-language lexicon, the embodied dimension indicates that words are anchored in the sensory, motor and emotional experiences first lived through the first language; the embedded dimension specifies that meaning depends on the situational context in which the word is used; the enactive dimension entails that the word interacts with context, is transformed by use and returns to the learner as new intake, a notion that López García-Molins (2017) defines as the only biunivocal relation between mind and language; and the extended dimension projects use towards other individuals and towards the cultural artefacts of the environment. If comprehension is partly simulation, activities that activate the body and the perceptual systems should consolidate more robust lexical representations than activities confined to formal manipulation. The pedagogical models of Gómez Paloma (2020) and Damiani and Gómez Paloma (2015) translate these assumptions into operational principles, reorienting the teacher's role towards the design of contexts in which meaning can emerge.

2.2. *The lexical-enactive approach*

The lexical-enactive approach developed by the author (Di Gesù, 2016, 2023) conceptualises lexical acquisition as a process guided by action and reflection, in line with Kolb's experiential learning cycle (1984). The mental lexicon is understood not as a passive storehouse, but as a dynamic network of interconnected nodes that reorganises itself in accordance with experience and use. From this perspective, the most readily available words are those that the learner has experienced most intensely and contextually, and the function of teaching is to multiply and qualify the experiences through which lexical entries are encoded. Within this framework, the author introduces the notion of “transposición neurofenomenológica” to describe the phenomenon whereby access to the target-language lexicon is initially filtered through the mother tongue. This filter is not merely a source of error to be eliminated, but a

cognitive operation that can become the object of reflective work and, when appropriately handled, a resource rather than an obstacle (Di Gesù, 2016).

2.3. Lexical availability as experiential depth

Read through the lens of enaction, lexical availability research reveals an experiential dimension. The construct, which originated in research on the fundamental vocabulary of French (Gougenheim, Michéa, Rivenc, and Sauvageot, 1964) and was systematised for Spanish by López Morales (1995, 1999) and the *Proyecto Panhispánico de Disponibilidad Léxica* (Samper Padilla, Bellón Fernández, and Samper Hernández, 2006), measures not how frequently a word appears in a corpus, but how immediately a speaker evokes it in response to a thematic stimulus, traditionally called a centre of interest. The words that emerge most immediately are those that have been embodied, embedded, extended and enacted in the learner's biography, while semantic networks facilitate both recognition in input and retrieval in production (Baralo, 2006). Three coordinated lines of intervention can therefore be derived for Italian-speaking learners: broadening the accessible repertoire through varied and meaningful exposure; improving experiential accessibility by strengthening the links between lexical units and their sensory, motor and affective referents; and safeguarding contextual appropriateness through situated semantic networks (Compagno and Di Gesù, 2025; Paredes García, 2015).

3. The paradox of typological proximity in Italian-Spanish

3.1. Apparent transparency and fossilisation risk

The typological proximity between Italian and Spanish is both an advantage and a trap. It provides initial transparency and high lexical availability in the earliest stages of learning, with positive transfer in pre-basic phases in which the message reaches the addressee even when the form is approximate. The very perception of familiarity, however, reduces the cognitive effort that learners devote to the language and prepares the ground for fossilisation. The notion of psychotypology accounts for the way in which perceived ease can diminish the cognitive investment required to internalise differences; at more advanced stages, transfer may become negative and turn into a systematic source of error (Odlin, 1989; Di Gesù, 2026a).

3.2. Interference, false friends, and contrastive-perceptual scaffolding

Concrete examples illustrate how proximity generates interference at several levels. The Italian verb *essere* corresponds in Spanish to two distinct items, *ser* and *estar*, whereas the Italian *portare* corresponds to *traer* and *llevar*. The Gestalt law of proximity provides a principled criterion for grouping cases in which a single L1 element corresponds to two contiguous L2 elements. The case of *manzana* exemplifies metaphorical extension, since the Spanish term designates both the fruit and the urban block (Di Gesù, 2016, 2026a), while the Gestalt law of similarity accounts for false friends. Gestalt categorisation transforms interference from an implicit obstacle into an object of conscious reflection. To manage these critical points, the *Lessico-Grammatica minima contrastivo-percettiva* (Di Gesù, 2016) integrates Rosch's

prototype theory (1978), the Gestalt principles of perceptual linguistics, the figure-ground organisation drawn from López García's liminal grammar, and Kolb's experiential learning cycle (1984). Learners organise the mental lexicon into conceptual areas articulated by relations of hyperonymy and hyponymy, distributed across basic, superordinate and subordinate levels, and apply the laws of similarity and proximity to categorise false friends, calques and metaphorical extensions, in a neurodidactic operation that favours the transition from short-term to long-term memory.

4. The affective dimension. The mental space of emotions

The affective dimension is a constitutive component of lexical access. The author has proposed a model of the mental space of emotions as an emergent topology that reconfigures itself when the subject acts, evaluates the consequences and readjusts the personal repertoire of meanings (Di Gesù, 2026b). Inventories of emotion words are not isomorphic across languages, and the first language typically activates a stronger affective resonance than the foreign language. Everyday emotions in an educational context such as *aprensión*, *vergüenza*, *orgullo*, *alegría*, *nostalgia* etc. emerge from patterns of situation, action and consequence that are relabelled over time, while affective conceptualisation is projected onto sensorimotor domains such as warmth, weight and movement (Lakoff and Johnson, 1999; Pavlenko, 2014). The 4E paradigm functions as an anchoring principle that connects linguistic input to experiences capable of enriching the affective space in the foreign language, and the emotional lexicon is learnt more effectively when it is embodied, embedded, extended and enacted (Compagno and Di Gesù, 2025).

5. The didactic model. A verifiable sequence for A1 and A2

5.1. Priority lexical categories and the five-phase sequence

The model identifies five lexical categories that lend themselves particularly well to embodied instruction: verbs of action and movement, body vocabulary, emotion words, spatial terms and the lexis of daily routine. The verbs *cocinar* and *dormir* are paired with iconic gestures, *la cabeza* and *la mano* with action and touch, *alegría* and *vergüenza* with mimicry and prosody, *en*, *sobre* and *debajo* with movement in space, and the centres of interest *la casa* and *la comida* with scenic simulation. The systematic review by Jusslin and colleagues (2022) indicates that embodied instruction is particularly effective with beginners.

The teaching sequence proposed for A1 and A2 translates the lexical-enactive approach into five phases that activate, in succession, the four dimensions of cognition. The action phase activates the embodied dimension through perceptual reactivation of the referent by means of images, objects or short videos. The gesture phase integrates the embodied and enactive dimensions by associating the word with an iconic gesture and the corresponding image. The word phase consolidates the phonological and graphic forms, anchoring them to the experience just activated. The

utterance phase introduces minimal grammar within a contextualised frame, with locative prepositions and the verb *estar*. The communicative-use phase activates the embedded and extended dimensions through situated tasks in pairs and small groups, and a delayed test of retention closes the cycle (Di Gesù, 2026a).

5.2. Applied example. The centre of interest la casa

The articulation of the sequence around the centre of interest *la casa* illustrates the model at A1 and A2 levels. In the first phase, the teacher presents the rooms of the house without resorting to the written form, using images or a brief virtual tour. Learners associate each space with a conventionalised gesture: *cocina* with the gesture of cooking, *dormitorio* with that of sleeping, and *baño* with that of turning on the tap. This generates robust mnemonic constraints between word, referent and action. In the second phase, the basic grammar required for interaction with the lexicon is introduced: the locative prepositions *en*, *sobre*, *debajo de* and *al lado de*, together with *estar* as the predicate of location, bound to the concrete situation of describing a space. Learners work in pairs with situated questions and answers, for instance ¿Dónde está la cama?, simultaneously mobilising the available lexicon and minimal grammar, while contrastive noticing compares *estar* with the Italian verbs *essere* and *stare*.

5.3. Multimodality and the teacher as coach

Multimodality integrates several semiotic channels, namely the visual, auditory, kinaesthetic and tactile channels (Compagno and Di Gesù, 2025), and allows learners to construct meaning from different perceptual angles while strengthening the associative texture that supports access and production. McNeill (1992, 2005) has shown that gesture and word form an indissociable cognitive unit. The teacher's role undergoes a substantive transformation, since the teacher assumes the function of a “coach” who designs rich and pertinent learning contexts. The roots of Asher's Total Physical Response (1969) are coherent with Embodied cognition (Jusslin et al., 2022) and anticipate some of the assumptions of the present model.

6. Diagnostic and assessment instruments

The diagnostic and assessment core of the model rests on the integration of contrastive noticing and lexical availability. Administering a lexical availability test before and after the instructional intervention allows the teacher to diagnose the group's actual repertoire and calibrate the intervention. Guided noticing, in Schmidt's formulation (1990), ensures that the output produced becomes conscious intake, and centres of interest function as stimuli (Paredes García, 2015; Santos Díaz, 2017). Visualising semantic networks through tools such as LexPro or Gephi (Hernández Muñoz et al., 2023) makes it possible to compare the network produced at the start of the cycle with the network produced at the end. Assessment considers breadth, density, precision in the management of cognates and false friends, and pragmatic appropriateness, integrating quantitative and qualitative measures.

7. A proposed quasi-experimental design

The validation of the model is presented in explicitly programmatic terms, since no empirical data have yet been collected. The paper therefore offers a theoretical synthesis together with a proposal for future validation. A quasi-experimental design is hypothesised with an experimental group and a control group at A1 and A2 levels, with pre- and post-intervention measures comprising a lexical availability test and an interference test. The hypothesised dependent variables are lexical retention and the reduction of Italian-Spanish interference, while the independent variable is the implementation of the five-phase embodied sequence as opposed to comparable lexical instruction delivered through more conventional means. The systematic review by Jusslin and colleagues (2022) signals the near-total absence of research on adult learners, who constitute the majority profile in the university Spanish classroom. This lacuna justifies the need for a controlled design with combined quantitative and qualitative measures, formulated with prudence and operational rigour.

8. Transferability of the model

The sequence illustrated for *la casa* is transferable to other centres of interest that are productive in the Italian-Spanish contrast, such as *la comida*, *la ciudad*, *el cuerpo humano* and *la vida universitaria*, by recalibrating materials, pragmatic exponents and duration in accordance with the specific semantic field. The adaptation also takes into account the typological characteristics of the languages involved. In Spanish, greater transparency allows instruction to move rapidly towards the gestural and pragmatic dimensions, whereas in English, a typologically more distant language, greater attention should be devoted to phonological form (Di Gesù, 2026a). The adult profile of the university classroom remains a central design constraint.

9. Conclusions and limitations

The lexical-enactive approach articulates 4E cognition and lexical availability in order to overcome the dichotomy between form and meaning, and between memorisation and use. It offers a coherent framework for interpreting lexical availability and reinterprets transfer as an enactive transposition, thereby transforming the first language from an obstacle into a resource. It proposes a transferable and verifiable model for Italian-speaking learners at A1 and A2 levels. The scope of these claims, however, must be formulated with caution, since the articulation advanced here is interpretive in nature and requires operationalisation with appropriate methodological rigour. The paper does not empirically demonstrate the superiority of any single model, but opens a line of reflection and intervention that awaits validation through future research. A lacuna persists with respect to adult university learners (Jusslin et al., 2022), and the present work is intended to contribute to addressing it.

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