SIRD Società Italiana di Ricerca Didattica
Giornale Italiano della Ricerca Educativa
Italian Journal of Educational Research

The Guardabolario as Visual Mediator: Digital Tools and Metalinguistic Awareness with Learners of Italian as a Foreign Language at Maximal Typological Distance (Armenian, Burmese, Kazakh, Kyrgyz, Russian)

Il Guardabolario come mediatore visivo: strumenti digitali e consapevolezza metalinguistica in apprendenti di italiano come lingua straniera a distanza tipologica massimale (armeno, birmano, kazako, kirghiso, russo)

Valentina Isceri
Pegaso Telematic University, Naples (Italy)

OPEN ACCESS

Double blind peer review

Citation: Isceri, V. (2026). The Guardabolario as Visual Mediator: Digital Tools and Metalinguistic Awareness with Learners of Italian as a Foreign Language at Maximal Typological Distance (Armenian, Burmese, Kazakh, Kyrgyz, Russian). *Italian Journal of Educational Research*, S.I., 257-268. https://doi.org/10.7346/sird-1S2026-p257

Copyright: © 2026 Author(s). This is an open access, peer-reviewed article published by Pensa Multimedia and distributed under the terms of the Creative Commons Attribution 4.0 International, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. IJEduR is the official journal of Italian Society of Educational Research (www.sird.it).

Received: July 02, 2026
Accepted: November 04, 2026
Published: November 30, 2026

Pensa MultiMedia / ISSN 2038-9744
DOI: 10.7346/sird-1S2026-p257

Abstract
This paper documents a teaching experience carried out in the Foundation Year of the University of Rome Tor Vergata with international students whose first languages are Armenian, Burmese, Kazakh, Kyrgyz and Russian. The languages are heterogeneous in genealogical affiliation (non-Romance Indo-European, Turkic, Sino-Tibetan), morphological type and writing system (Cyrillic and Armenian alphabets, Burmese abugida). Three non-standardised, purpose-built questionnaires (preliminary, mid-course and final MILES) elicit learners' representations of their metalinguistic awareness, their use of digital and artificial-intelligence tools, and the difficulties they report in Italian phonology and orthography. The project work consisted in the collective production of a multilingual illustrated glossary, the Guardabolario, designed on Dual Coding Theory (Paivio, 1986; Clark & Paivio, 1991) and Learning Through the Arts (Bomgaars & Bachelor, 2020). The data are descriptive and lack a comparison group, so they allow neither causal inference nor generalisation; they do, however, support a discussion of the pedagogical potential of a multilingual visual artefact in classes marked by what is labelled, as a heuristic, maximal typological distance between the L1s and Italian.

Keywords: metalinguistic awareness; Dual Coding Theory; illustrated glossary; Italian as a foreign language.

Riassunto
Il contributo documenta un'esperienza didattica condotta nel Foundation Year dell'Università degli Studi di Roma Tor Vergata con studenti internazionali di L1 armeno, birmano, kazako, kirghiso e russo, lingue eterogenee per filiazione genealogica (indoeuropee non romanze, turciche, sino-tibetana), tipologia morfologica e sistema di scrittura (alfabeti cirillico e armeno, abugida birmano). Tre questionari non standardizzati, costruiti ad hoc (preliminare, intermedio e finale MILES), rilevano le rappresentazioni che gli apprendenti hanno della propria consapevolezza metalinguistica, gli usi degli strumenti digitali e dell'intelligenza artificiale e le difficoltà riferite nella fonologia e nell'ortografia dell'italiano. Il lavoro di progetto consiste nella realizzazione collettiva di un glossario illustrato plurilingue, il Guardabolario, progettato secondo la Dual Coding Theory (Paivio, 1986; Clark & Paivio, 1991) e il Learning Through the Arts (Bomgaars & Bachelor, 2020). I dati, descrittivi e privi di un gruppo di confronto, non consentono inferenze causali né generalizzazioni; permettono tuttavia di discutere le potenzialità didattiche di un artefatto visivo plurilingue in classi caratterizzate da quella che è definita, come etichetta euristica, distanza tipologica massimale tra le L1 e l'italiano.

Parole chiave: consapevolezza metalinguistica; Dual Coding Theory; glossario illustrato; italiano LS.

Credit author statement

Valentina Isceri: Conceptualization, Methodology, Investigation, Data curation, Writing – original draft, Writing – review & editing.

1. Introduction

Learning a foreign language means engaging with repertoires, literacy experiences and communicative habits that do not necessarily coincide with those of the target language. In the group considered here, the L1s differ in genealogical affiliation, morphology and writing system, and Italian meets a heterogeneous set of prior linguistic resources. These differences are not assumed to produce uniform or predetermined effects: their weight has to be assessed in relation to individual structures, competences already developed and individual learning histories. The question that follows is how a teaching environment can value the plurality of repertoires and support the shared construction of meaning.

The experience and the material collected are guided by three questions: (a) how do learners describe, at different points of data collection, their metalinguistic awareness and the difficulties they encounter? (b) what uses and functions do they attribute to digital tools, including generative AI? (c) what difficulties in Italian phonology and orthography do they report or show in the documented activities, and what pedagogical potential do they recognise in the illustrated glossary produced by the group? Given the ad hoc nature of the instruments, the small number of respondents and the absence of a comparison group, the paper is presented as a documented teaching experience and an exploratory account, with no confirmatory claims.

Alongside the three dimensions investigated, the paper describes the teaching artefact, an illustrated glossary produced collectively, and discusses its functions of visual mediation, cooperation and lexical organisation, without attributing causal effects on acquisition to it.

2. Theoretical framework

2.1 From clay tablets to the illustrated glossary

The use of images in language teaching belongs to a long tradition of association between signs, words and visual representations. In the scribal schools of Mesopotamia, learning cuneiform involved progressive exercises on signs and lexical lists (Delnero, 2010; Veldhuis, 1997). Wolf (2007) reconstructs some cognitive steps in the history of reading and writing, among them the association of a sign with a referent and the correspondences between signs and sounds. This history is recalled as background, not as a direct analogy with the learning of Italian by Burmese speakers, because the writing systems and literacy processes involved differ historically and linguistically. The classification of vocabulary by semantic fields, attested in ancient school traditions, also offers a general precedent for the organising value of glossaries, without postulating a direct descent from ancient material to the Guardabolario.

A fully developed theoretical formulation of the association between image and word appears in Comenius. The *Orbis Sensualium Pictus* (Comenius, 1658/1887) is a systematic language-learning manual in which each page pairs an illustrated scene with the names of its elements (Philopedia, 2025). Published first in a bilingual Latin–German edition, it was soon translated into numerous European languages, with a plurilingual design that made it a precedent for modern visual didactics (Newberry Library, 2022).

Within this tradition the Guardabolario is a participatory and cooperative variant: unlike its historical antecedents, it was produced by the students themselves and not by the teacher for the students, and it is therefore a collective artefact built through the negotiation of meaning in a plurilingual group.

2.2 Dual Coding Theory and bilingual learning

The most direct theoretical foundation of the teaching choice is Dual Coding Theory, developed by Paivio from the 1970s. The theory postulates two distinct but interconnected representational subsystems: a verbal system, whose units (*logogens*) are processed sequentially, and an imagery system, whose units (*imagens*) are processed analogically and synchronically. The two systems communicate through referential connections: hearing or reading the word «apple» may activate both the verbal representation and the

mental image of the fruit (Paivio, 1971, 1986). Co-activation produces multiple retrieval codes, which make information more accessible and durable in memory.

In work on bilingual memory, Paivio and Desrochers (1980) discussed the relationship between verbal systems and imagery representations, hypothesising that images support the encoding and retrieval of meaning; Clark and Paivio (1991) examined its educational implications. These contributions motivate the association of word and image in the Guardabolario, but they do not warrant the assumption that learners with a given writing system favour a specific processing route. Research on L2 reading shows that the transfer of strategies from the L1 depends on several factors, including literacy experience, knowledge of grapheme–phoneme correspondences and the characteristics of the languages involved (Koda, 1988; Wang et al., 2003). The neurobiology of language (Friederici, 2026) and studies on linguistic experience in bilingual development (Mercure et al., 2020) offer a wider background on the relationship between linguistic experience and brain organisation, but they do not prove the effectiveness of an illustrated glossary and do not concern the L1s of the group.

For learners who use writing systems other than the Latin alphabet, the Italian word presents unfamiliar graphic conventions in addition to new phonotactic sequences. The image gives access to the referent without requiring, at first, decoding of the written form, and leaves the phonological and orthographic work intact: in the Guardabolario, word, image and translation are placed side by side to offer several modes of access to the lexicon.

Further support comes from research on internally generated context: understanding words through contextual clues that learners generate themselves yields better results than the context supplied by materials (Zhou & Wu, 2024). The finding is consistent with the choice to have students build the glossary rather than hand it to them ready-made.

2.3 Learning through the arts and cooperative work

The decision to produce a collective artistic product belongs to a line of research that treats art as a mediator of language learning. Studies conducted mainly in English L2/FL contexts[1] show that artistic activities such as drawing, painting and illustration make visible learners' beliefs about their own learning process (İnözü, 2018). A social dimension complements this individual one: the verbal negotiation that a shared visual product elicits among peers is a form of collaborative dialogue, or *languaging*, recognised as a source of language learning (Swain & Watanabe, 2013). Since these findings come mainly from EFL/ESL contexts[2], their extension to Italian as a second or foreign language[3] is taken as a working hypothesis and not as established fact.

Visual Thinking Strategies (VTS), born in museum education and later adopted in language teaching, rely on open questions about images that elicit oral and written production, associated with gains in written competence and oral production in the L2 (Bomgaars & Bachelor, 2020).

Cooperative project work adds a further level of elaboration. In a group of high linguistic variety, negotiating meaning in order to build a shared object (which words to illustrate, how to represent them, how to organise the product) is an authentic, situated and motivated communicative activity. Research on cooperative learning (Zheng & Zhou, 2022) links positive interdependence and peer support to perceived Foreign Language Enjoyment, with effects on motivation and performance.

1 L2 means second language, FL foreign language.
2 ESL: English as a second language; EFL: English as a foreign language.
3 Italian L2 is understood as Italian learned in a context where the language is that of the surrounding community, with freely available, ungraded and unrepeatable input, daily exposure that exceeds the classroom, and a mainly utilitarian motivation tied to integration and communicative survival; Italian FL (foreign language) is instead understood as Italian learned outside an Italian-speaking country, in a context where exposure to the language is mostly confined to the school or institutional setting, with selected, graded and repeatable input, and a more mixed or instrumental motivation (Balboni, 1994; 2014).

2.4 Typological distance and writing systems

The L1s of the group differ in family (Russian and Armenian are Indo-European, but of branches other than Romance; Kazakh and Kyrgyz are agglutinative Turkic languages; Burmese is Sino-Tibetan), in morphological type and in writing system. Russian, Kazakh and Kyrgyz are written in the Cyrillic alphabet; for Kazakh a transition to the Latin alphabet is under way, not uniform across contexts. Armenian has its own alphabet (Sanjian, 1996); Burmese is an abugida, in which the consonant sign carries an inherent vowel that can be modified by vowel signs, and it has specific conventions for notating tones (Daniels & Bright, 1996; Coulmas, 2003). These are systems that differ in history, graphic inventory and orthographic conventions, and individual reading and writing practices cannot be reduced to the classification of the system alone.

With respect to Italian, the group presents a situation of maximal typological distance: no L1 is Romance, none stably adopts the Latin alphabet, and the lexical heritage shared with Italian is limited to loanwords and internationalisms. «Maximal» is here a heuristic label describing the situation of the group, not a measure: no distance index was computed, and the L1–Italian pairs are not equidistant (Russian and Armenian, by genealogical affiliation, are closer to Italian than Burmese and the Turkic languages). The expression, moreover, recurs in the literature on vocabulary learning for typologically distant language pairs (Kang et al., 2025). The label serves to delimit the learning context and not to predict the difficulties of individual learners.

As regards phonology, the Speech Learning Model (Flege, 1995) and the perceptual assimilation model PAM-L2 (Best & Tyler, 2007) indicate that the perception and production of L2 sounds depend on their relationship with L1 phonological categories (*equivalence classification*, perceptual assimilation) more than on genealogical classification. As regards reading, the orthographic depth hypothesis (Katz & Frost, 1992) concerns the relationship between orthography and phonology: Italian has a transparent orthography, with regular grapheme–phoneme correspondences, but it presents digraphs and trigraphs (gn, gli, sc) and alternations that depend on the vowel context (c, g before e, i), which are points of local opacity. The hypothesis does not exhaust the complexity of L2 reading and writing processes (Pinto et al., 2018; Verhoeven & Perfetti, 2022). In the course some of these correspondences were considered (ca/cia, ga/gia, che/ce, ghe/ge, gn, gli), involving the postalveolar affricates /tʃ/ and /dʒ/, the velar stops /k/ and /g/, the palatal nasal /ɲ/ and the palatal lateral /ʎ/. The difficulties the learners indicated are to be read as situated perceptions, not as necessary consequences of the L1.

The Guardabolario associates words, images and translations and thus offers multiple support for the construction of meaning. Its usefulness is discussed on the basis of the description of the product and of the students' perceptions, not as experimentally demonstrated effectiveness.

3. Methodology

3.1 Context and participants

The research was carried out in the Foundation Year of the University of Rome Tor Vergata, a preparatory pathway to degree programmes for international students. Because they do not meet the minimum requirement of twelve years of prior schooling, these learners must complete the Foundation Year to obtain eligibility for admission.

The group includes learners aged between 17 and 19, coming largely from urban centres, with non-Romance linguistic repertoires (the only exception being a learner who also spoke Spanish) and with English as the lingua franca for communication within the group. The seventeen-year-old participants were minors only at the time of the preliminary questionnaire and had reached adulthood by the later data collections. At the start of the course most participants were at levels A1–A2 of the Common European Framework of Reference for Languages (CEFR); some reported prior exposure to Italian through online resources or private lessons.

The context is that of Italian as a foreign language delivered at a distance: the course ran over three months and learners attended lessons from their countries of residence, with no immersion in Italy. The

course comprised 140 hours, 120 of synchronous teaching and 20 of self-managed asynchronous activities. Teaching was mainly in Italian, with English as a vehicular language. The questionnaires also collected statements on the autonomous use of digital tools outside synchronous sessions.

The questionnaires were administered through Google Forms within ordinary teaching activity. Each opened with a notice on the purposes of the data collection (research and course improvement) and on the anonymous collection of responses; in all data collections completion was voluntary and optional, and it was taken as consent to the use of the data. The instruments do not collect names or e-mail addresses. For the audio recordings of the final questionnaire, participants were invited to pseudonymise or anonymise the file before submission. No signed consent form was collected and no institutional ethical review was requested.

3.2 Instruments and data analysis

Data were collected at three points through three questionnaires built ad hoc for this context; none was validated or piloted, and this limitation is taken into account in reading the results. The preliminary (pre-course) questionnaire collects sociolinguistic profile, repertoire, prior experience with Italian, motivations and expectations, self-assessment of skills on a five-point Likert scale, and preferred learning styles and strategies (for example item C2, «Why do you study Italian?»). The reflection questionnaire (mid-course) includes self-assessment of progress in the four skills, residual difficulties, strategies adopted, the use of digital tools and AI, phonological awareness (the opposition between "hard" and "soft" sounds, digraphs) and open comments on the course (for example «Do you think your Italian pronunciation has improved since the beginning of the course?»); a block of items also asked learners to read aloud pairs such as mangia/magna, cielo/chielo and amici/amichi. The third instrument is the MILES (Metalinguistic Italian Language Evaluation Survey), administered at the end of the Foundation Year.

Eighteen learners responded to the preliminary data collection and fourteen to the two later ones, which involved the same participants: the reduction thus occurred between the first and second phase. The MILES was administered about five months after the mid-course data collection. Given the small numbers and the exploratory nature of the work, no inferential analyses were conducted; descriptive frequencies serve to contextualise the responses of each phase and are not representative estimates. Open responses were examined through an inductive reading inspired by thematic coding (Braun & Clarke, 2006), without the systematicity of a structured thematic analysis. The design is therefore an exploratory, qualitatively oriented account that integrates elementary quantitative descriptions and narrative material, and not a mixed-methods study in the full sense (Creswell & Plano Clark, 2018).

3.3 The Guardabolario as a pedagogical tool

The Guardabolario is a collective project work carried out by the students over the teaching activity. Each student, or small group, was responsible for illustrating a semantic field (the house, food, parts of the body, daily actions) through original images (drawings, photographs, collages) accompanied by the Italian word and its translation into the L1. The finished product is a physical and digital artefact shared by the whole group.

The design drew on three principles: (1) dual coding, whereby the association of image and word can activate different representational codes and offer more retrieval possibilities; (2) active generation of context, which gives weight to the personal construction of associations; (3) cooperative learning, which values negotiation and the production of a shared product. These principles guided teaching choices and were not subjected to experimental verification. The students' graphic and creative care is observable in the artefact; any effects on sense of belonging were not measured.

3.4 Analysis of the final product

The multilingual illustrated glossary entitled Guardabolario is the concrete outcome of the activity described. Its analysis proceeds on three planes (pedagogical organisation, linguistic content, communicative situations) and describes the artefact and the choices that characterise it, without measuring its effects on acquisition.

At the macrostructural level the product is organised in twenty numbered notional–functional units, and not in abstract grammatical categories: each card is anchored to a plausible communicative act («Sei al lavoro. Che lavoro fai?» – "You are at work. What do you do?"; «Andiamo al supermercato!» – "Let's go to the supermarket!"). The approach is consistent with the communicative approach: vocabulary always appears in a situation of use, never in isolation. The units also follow a concentric path from the self (the body, feelings) to the relational network (extended family, marital status) and on to the outside world (work, shopping, daily routine), in line with the immediate communicative needs of learners in the early stages of linguistic socialisation.

The cards are of two types: lexical–thematic (family, work, house, food), made up of nouns and noun phrases, and functional–pragmatic with a first-person subject («Faccio la doccia» – "I take a shower"; «Vado a scuola» – "I go to school"; «Ceno» – "I have dinner"), in which vocabulary is conveyed by verb forms inflected in the first person singular of the present indicative. The paradigm is thus presented implicitly, without stating the rule: a case of incidental morphological exposure through use. The pairs of opposites (Fig. 2) finally form an autonomous micro-system that exploits direct visual contrast between antonyms to fix them in memory.



Fig. 1: Cover of the Guardabolario, an illustrated Italian/multilingual dictionary (English, Kazakh, Russian, Kyrgyz, Armenian, Burmese)

At the lexical level, the vocabulary comprises everyday areas (family, body, work, house, routine, food, pharmacy) and combines high-frequency words with expressions tied to the situations represented. The relevance of these areas should be referred to the profile and aims of the Foundation Year, not to survival needs or to a context of migrant settlement.

At the morphosyntactic level, some cards offer occasions for observation: gender in pairs with motion (attore/attrice, disoccupato/disoccupata); verb inflection in the first person singular, with frequent verbs such as fare, andare, studiare, leggere, scrivere; the formation of the plural of nouns in -e and -o (i genitori, i fratelli, i nonni, i cugini). The teacher can use these elements to draw attention to regularities and differences; it is not assumed that exposure to the glossary produced implicit acquisition of the structures, which would require specific and comparable evidence.



Fig. 2: Page of opposite pairs, direct visual contrast (for example giovane–vecchio “young–old”, bello–brutto “beautiful–ugly”) as a mnemonic for antonymy

At the graphic–visual level, the entries place Italian and English in the Latin alphabet next to the forms in the students’ L1s: Russian in Cyrillic, Armenian in its own alphabet, Kazakh and Kyrgyz in the scripts actually used by the participants, Burmese in its own abugida. The co-presence makes the plurality of the group’s written repertoires visible; no individual strategies of orthographic transfer are inferred from the mere presence of different scripts in the product.

Among the twenty units, some stand out for the variety of communicative situations: «La mia piccola farmacia» (“My little pharmacy”) introduces the vocabulary of health and of requesting products; «Andiamo al supermercato!» and «A tavola!» (“To the table!”) present situations of shopping and conviviality; the units on family, marital status and professions gather words and formulas for describing oneself and one’s context. These contents are described in relation to the course activities and not as priority needs of migrant learners.



Fig. 3: Professions card, high-frequency occupational vocabulary conveyed through figurative illustrations.

The block of first-person daily scenes («Vado a scuola», «Faccio i compiti» – "I do my homework", «Vado in palestra» – "I go to the gym") forms a small narrative script of the learner's day and offers a bridge between isolated vocabulary and coherent textual production.

4. Results

4.1 Entry profile of the group

Responses to the preliminary questionnaire describe a group with declared levels of Italian mostly A1, with some A2. These are self-assessments and not outcomes of a standardised test or of an independent placement test. The group is heterogeneous in linguistic background, prior experience and motivations, mainly academic and professional, alongside cultural interests; some participants report earlier exposure to Italian through online resources or private lessons.

As to anticipated preferences and difficulties, students say they are interested both in the explicit study of grammar and in communicative activities, and state that they already use digital resources such as apps, platforms and online videos. Vocabulary is often indicated as an area to strengthen, together with morphosyntax and pronunciation. These are initial expectations and perceptions, not a measure of individual competences or gaps.

4.2 The development of metalinguistic awareness

The descriptive comparison between the open responses at mid-course and those of the MILES shows a different specificity with which some participants name their difficulties. In the mid-course data collection general formulations recur («grammar is difficult», «verb tenses»); in the final one more circumstantiated references appear, for example to articles and gender agreement, clitic pronouns, passato remoto and passato prossimo, and to the distinction between comprehension and production. The examples suggest a possible broadening of the metalinguistic vocabulary with which students describe their learning, but alone they do not demonstrate an increase in competence or in metalinguistic awareness.

The MILES self-assessment items also record the perception of recognising one's own errors more easily and of understanding grammatical explanations better. These perceptions must be distinguished from items of explicit knowledge (Bialystok, 1979; Ellis, 2004) and from the audio productions, which yield information of a different nature: positive self-assessments and performances that do not always correspond invite us not to conflate perceived progress, declarative knowledge and oral production. In the absence of systematic individual coding and of equivalent measures in all phases, the comparison remains descriptive and does not allow a change to be attributed to the course or to the Guardabolario.

4.3 Digital tools and artificial intelligence

Several learners state that they use digital tools outside lessons: ChatGPT, machine translators, Duolingo, video resources. Final responses also describe combinations of tools, such as AI together with audiovisual content in Italian or structured platforms such as ICoN. Since these are statements, the data document reported uses and subjective representations, not actual frequency or effectiveness of the tools.

Open responses express different attitudes. Some students describe these tools as a help in moments of difficulty («ChatGPT and various sites help me a lot; I found sites with visual materials that make the process easier for me»); others observe critically that grammar study risks prevailing over communicative practice («instead of studying grammar without a purpose, we should practise speaking Italian; grammar should be an additional tool for communicating»). These statements document how some participants reflect on their own strategies, but they are not a validated measure of metacognition.

Most respondents state that they use ChatGPT in English to obtain grammatical explanations about Italian. The practice points to paths of plurilingual mediation not foreseen in the course design, with En-

glish as a vehicular language also in the interaction with AI; it does not allow us to establish whether the choice improved autonomy or learning outcomes.

4.4 Difficulties and Italian phonology

The mid-course questionnaire collects perceived difficulties in some grapheme–phoneme correspondences, including ca/cia, ga/gia, che/ce and ghe/ge, that is, the distinction between velar stops and postalveolar affricates and the graphic role of i and h. Many respondents experience them as difficult, with uncertainties also reported for sequences with h. The datum describes perceived difficulty; it is not equivalent to a standardised test of phonetic discrimination or of reading accuracy.

In the MILES the items on gn (for example ogni, gnocchi) and gli (famiglia, figlio), that is, on the palatal nasal /ɲ/ and the palatal lateral /ʎ/, collect self-assessments of difficulty and, where provided, answers to recognition or explicit-knowledge questions. The audio recordings attached also allow some individual productions to be observed[4]. Declared difficulty, the answer to a metalinguistic item and oral realisation are, however, different sources, which do not measure the same construct and must not be merged into a single index of acquisition. In the absence of phonetic transcription and inter-rater assessment, observations on the recordings have descriptive and illustrative value.

The responses and activities collected do not allow specific error profiles to be attributed to individual language groups. The characteristics of the writing systems and phonological inventories of the L1s may be a relevant variable, but the small number of participants per language and the absence of a systematic comparative analysis do not allow us to claim that students from Myanmar encounter different or greater difficulties than speakers of Russian, Armenian, Kazakh or Kyrgyz. The hypothesis remains to be tested in a later study.

4.5 The glossary in the students' perceptions

Open responses from mid-course and those in the MILES contain references to the project work, to images and to peer collaboration. Some participants recall the activity as an occasion for cultural discovery («I learned very interesting phrases in different Italian dialects and aspects of Italian culture»), others value interaction with more competent peers («when I am surrounded by people who know Italian well, I learn better»). Among the strategies indicated as useful are also notes, listening to the teacher and images. The responses attest that the work and the visual materials were recognised by some students as significant elements of the experience, but they do not isolate the specific effect of the Guardabolario with respect to the other course activities.

The reference to images is consistent with the choice to associate verbal form and visual representation. The example cited («I found sites with visual materials that make the learning process easier») concerns visual resources in a broad sense, however, and cannot count as a direct evaluation of the Guardabolario. Autonomous production of the glossary offers a plausible occasion for selecting, organising and discussing vocabulary; the data do not allow us to establish whether it produced better retention than other ways of working.

The plurilingual composition of the group made it possible to place translations and representations from different repertoires side by side and to build a shared product. The negotiation of meanings and of representational choices is a pedagogically relevant dimension of the task. A possible development of met-

4 The three MILES words (mangia, Natale, amici) were chosen because, during the course, non-orthoepic realisations had been observed in the group, rendered as «mangna», «Natali» and «amichi»; «Natali» above all among Burmese speakers. For «Natali» classroom observation indicates a lack of distinction between /e/ and /i/, with the final vowel realised as [i]. This is a teaching observation and not a datum documented in the literature: the phonological description of Burmese gives /i/ and /e/ as distinct vowels (Chang, 2009), so the outcome might depend on the unstressed final position in Italian. «Amichi» and «mangna» might reflect a difficulty with Italian orthographic rules, which assign to c and g before e, i the value of a postalveolar affricate (/tʃ/, /dʒ/) and to gn that of a palatal nasal /ɲ/; these are hypotheses to be verified with further data.

alinguistic awareness through these interactions is a plausible interpretation, but it was not recorded through coded observations or systematic recordings of the interactions, and it must be presented as a hypothesis.

5. Discussion and teaching implications

The experience suggests some indications for activities in linguistically heterogeneous groups. First, the association of word, image and translation can offer more points of access to meaning, especially when learners have different literacy experiences and written repertoires. Dual Coding Theory provides a framework to motivate the choice (Paivio, 1986; Clark & Paivio, 1991); the data illustrate its teaching feasibility and its reception by some participants, but do not verify its effectiveness.

The statements on the use of ChatGPT and machine translators then suggest addressing explicitly the role of these tools in teaching. Learners can be guided to check answers, compare them with reliable sources and distinguish between support for comprehension and substitution of personal elaboration. The data document reported practices and attitudes, and do not allow us to conclude that AI acted as a metacognitive support or produced measurable improvements.

Some open responses also signal that part of the students perceived the pace of the course as fast relative to the time needed to consolidate the structures. The indication is useful for design, but it is a reported perception and not a demonstrated difference between language groups. A possible teaching response is to provide recurring moments of review, practice and self-assessment.

Finally, the production of a shared product gave students a concrete task and a tangible result around which to organise collaboration. The Guardabolario can be described as a teaching artefact that made collective work visible and gathered plurilingual contributions; the responses document some appreciated aspects, but do not allow a causal increase in motivation or language competence to be attributed to it.

The limitations are considerable. The instruments were built ad hoc and were not validated psychometrically; the group is small and the number of respondents decreases between the first and second data collection; there is no comparison group; the data collections do not include equivalent objective tests at all points; the open responses were read in an exploratory way, without an independent coding procedure. The experience should therefore be understood as a reflective documentation of a teaching practice, useful for formulating hypotheses and guiding later investigations, not as an effectiveness study.

6. Conclusions

The paper has described a teaching experience carried out with a small and heterogeneous group of learners of Italian as a foreign language in the Foundation Year. Through three ad hoc data collections, the description of the Guardabolario and the students' open responses, it has examined how participants represent their own learning, the digital uses they report and some difficulties of Italian phonology. The data do not authorise the reconstruction of an acquisitional path or a demonstration of the glossary's effectiveness; they allow us to document an experience, the perceptions collected and the teaching possibilities of a collaborative product that associates words, images and translations. The plurality of linguistic and written repertoires was a central feature of the context and a resource for building the common artefact.

Questions remain open that would require a study designed to answer them: whether and to what extent the Guardabolario favours lexical retention compared with other activities; how literacy experiences and linguistic repertoires affect reading and production in Italian; what changes are observable over time with comparable tests of explicit knowledge and performance; how AI tools can be critically integrated into the teaching of Italian in international contexts.

References

Balboni, P. E. (1994). *Didattica dell'italiano a stranieri*. Roma: Bonacci Editori.
Balboni, P. E. (2014). *Didattica dell'italiano come lingua seconda e straniera*. Torino: Loescher.
Best, C. T., & Tyler, M. D. (2007). Nonnative and second-language speech perception: Commonalities and complementarities. In O.-S. Bohn & M. J. Munro (Eds.), *Language experience in second language speech learning* (pp. 13–34). Amsterdam: John Benjamins.
Bialystok, E. (1979). Explicit and implicit judgements of L2 grammaticality. *Language Learning, 29*(1), 81–103.
Bomgaars, J., & Bachelor, J. W. (2020). Visual Thinking Strategies: Exploring artwork to improve output in the L2 classroom. *Journal of Foreign Language Education and Technology, 5*(1), 1–34.
Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101.
Chang, C. B. (2009). English loanword adaptation in Burmese. *Journal of the Southeast Asian Linguistics Society, 1*, 77–94.
Clark, J. M., & Paivio, A. (1991). Dual coding theory and education. *Educational Psychology Review, 3*(3), 149–170.
Comenius, J. A. (1887). *Orbis Sensualium Pictus* (C. W. Bardeen, Ed.). Syracuse: C. W. Bardeen (Original work published 1658).
Coulmas, F. (2003). *Writing systems: An introduction to their linguistic analysis*. Cambridge: Cambridge University Press.
Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). Thousand Oaks: SAGE.
Daniels, P. T., & Bright, W. (Eds.). (1996). *The world's writing systems*. New York: Oxford University Press.
Delnero, P. (2010). Sumerian extract tablets and scribal education. *Journal of Cuneiform Studies, 62*, 53–69.
Ellis, R. (2004). The definition and measurement of L2 explicit knowledge. *Language Learning, 54*(2), 227–275.
Flege, J. E. (1995). Second language speech learning: Theory, findings, and problems. In W. Strange (Ed.), *Speech perception and linguistic experience* (pp. 233–277). Timonium: York Press.
Friederici, A. D. (2026). Brain structural networks underlying language. *Physiological Reviews, 106*(1), 645–674. https://doi.org/10.1152/physrev.00004.2025
nözü, J. (2018). Drawings are talking: Exploring language learners' beliefs through visual narratives. *Applied Linguistics Review*. https://doi.org/10.1515/applirev-2016-1062
Kang, S., Gwon, M., Kwon, S. Y., Lee, J., Lan, A., Raj, B., & Singh, R. (2025). PhoniTale: Phonologically grounded mnemonic generation for typologically distant language pairs. In *Proceedings of the 2025 Conference on Empirical Methods in Natural Language Processing* (pp. 25561–25593). Association for Computational Linguistics.
Katz, L., & Frost, R. (1992). The reading process is different for different orthographies: The orthographic depth hypothesis. In R. Frost & L. Katz (Eds.), *Orthography, phonology, morphology, and meaning* (pp. 67–84). Amsterdam: Elsevier.
Koda, K. (1988). Cognitive process in second language reading: Transfer of L1 reading skills and strategies. *Second Language Research, 4*, 133–156.
Mercure, E., Kushnerenko, E., Goldberg, L., Bowden-Howl, H., Coulson, K., Johnson, M. H., & MacSweeney, M. (2020). Language experience impacts brain activation for spoken and signed language in infancy: Insights from unimodal and bimodal bilinguals. *Neurobiology of Language, 1*(1), 9–32. https://doi.org/-10.1162/nol_a_00001
Newberry Library. (2022). *The world according to Comenius: Seen and unseen in the Orbis Sensualium Pictus*. Digital Collections for the Classroom. https://dcc.newberry.org/?p=19386
Paivio, A. (1971). *Imagery and verbal processes*. New York: Holt, Rinehart & Winston.
Paivio, A. (1986). *Mental representations: A dual coding approach*. New York: Oxford University Press.
Paivio, A., & Desrochers, A. (1980). A dual-coding approach to bilingual memory. *Canadian Journal of Psychology, 34*(4), 388–399.
Philopedia. (2025). *Johann Amos Comenius*. https://philopedia.org/philosophers/johann-amos-comenius/
Pinto, G., Bigozzi, L., Tarchi, C., & Camilloni, M. (2018). Improving conceptual knowledge of the Italian writing system in kindergarten: A cluster randomized trial. *Frontiers in Psychology, 9*, Article 1396.
Sanjian, A. K. (1996). The Armenian alphabet. In P. T. Daniels & W. Bright (Eds.), *The world's writing systems* (pp. 356–363). New York: Oxford University Press.
Swain, M., & Watanabe, Y. (2013). Languaging: Collaborative dialogue as a source of second language learning. In C. A. Chapelle (Ed.), *The encyclopedia of applied linguistics* (pp. 3218–3225). Malden: Wiley-Blackwell. https://doi.org/10.1002/9781405198431.wbeal0664

Veldhuis, N. (1997). *Elementary education at Nippur: The lists of trees and wooden objects* [Doctoral dissertation, University of Groningen].
Verhoeven, L., & Perfetti, C. (2022). Universals in learning to read across languages and writing systems. *Scientific Studies of Reading, 26*(2), 150–164.
Wang, M., Koda, K., & Perfetti, C. A. (2003). Alphabetic and nonalphabetic L1 effects in English word identification: A comparison of Korean and Chinese English L2 learners. *Cognition, 87*, 129–149.
Wolf, M. (2007). *Proust and the squid: The story and science of the reading brain*. New York: HarperCollins.
Zheng, S., & Zhou, X. (2022). Positive influence of cooperative learning and emotion regulation on EFL learners' foreign language enjoyment. *International Journal of Environmental Research and Public Health, 19*(19), Article 12604. https://doi.org/10.3390/ijerph191912604
Zhou, W., & Wu, X. (2024). The impact of internal-generated contextual clues on EFL vocabulary learning: Insights from EEG. *Frontiers in Psychology, 15*, Article 1332098. https://doi.org/10.3389/fpsyg.2024.1332098