



LINGUISTIC LANDSCAPE AND GENDER Interpreting the City as an Educational Tool

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Gender Perspective
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ABSTRACT

This paper presents a teaching innovation project that examines how the urban linguistic landscape reflects and reproduces gender inequalities and how its study can function as a pedagogical resource. Conducted within the Master's in Teacher Training and the Master's in Teaching Spanish as a Foreign Language at UDIMA, the project was structured in three phases: an initial assessment of students' knowledge and attitudes, the implementation of a teaching proposal, and a comparative evaluation of its impact. The methods employed included pre-test and post-test questionnaires, virtual seminars for theoretical development, analysis of visual materials drawn from urban signage, and reflective reports that integrated theory and practice from a gender perspective. Analysis of 272 responses indicates that students developed increased competence in critically addressing language use and the representation of gender in public spaces. The project concludes with the creation of a collaborative digital map, offering a transferable model for integrating linguistic landscape analysis into teacher training.

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1. Introduction

Cities are more than collections of infrastructure; they function as visual narrators that communicate social values through the linguistic signs present in public space. In this sense, the linguistic landscape, comprising signs, billboards, advertisements, graffiti and other texts visible in public space, operates as a discourse that articulates identity, ideology, and power (Blommaert, 2013; Landry and Bourhis, 1997). As Barthes (1986) observes, the city can be understood as a language that “speaks to us” through the signs that constitute it, which we continually interpret, even when we are not fully aware of doing so.

This approach aligns with recent perspectives in the analysis of the linguistic landscape, which conceptualise it as a complex semiotic system in which historical, social and political layers converge (Morlan and Byrne, 2024; Shirahata and Lahti, 2022). Scollon and Scollon (2003) propose that it be understood through “discourses in place”, that is, situated discourses shaped by the interaction between text, space and context. From this perspective, the physical arrangement of signs and their visibility within the city influence which narratives are prioritised and which remain marginal or unseen.

The growing interest in the study of the linguistic landscape over the past two decades also highlights its potential as a tool for understanding contemporary urban phenomena. Hu and Escribano Angulo (2023) note that research in this field has developed significantly, expanding into areas such as multilingualism, language policy, identity, and discursive practices. However, the analysis of the linguistic landscape from a gender perspective remains relatively underdeveloped, which underscores the relevance of the present proposal.

1.1. Gender and Identities in the Urban Space

A critical dimension in the study of these elements of the landscape concerns the representation of gender. Various authors, including Lakoff (1973), have highlighted that language contributes to the normalisation of structures of inequality, as it reproduces biases that position women in roles of subordination or invisibility. This phenomenon is also evident in urban space; for example, the limited presence of female names on street signage reflects a persistent tendency to prioritise male figures over female ones (Gutiérrez Mora and Oto Peralías, 2022). These symbolic absences (Figures 1 and 2) and presences (Figures 3 and 4) are not insignificant, as they construct narratives in which certain identities, such as gender, are afforded greater relevance than others.

Figures 1 and 2. Signs of the linguistic landscape where the generic masculine is used.



Source: Own elaboration, 2026.

Figures 3 and 4. Signs in the linguistic landscape where gender-inclusive morphological strategies are used.



Source: Own elaboration, 2026.

The influence of language on social perceptions of gender has been widely examined (Friedrich and Heise, 2019; Gygas et al., 2008). Studies such as that by Flaherty (2001) demonstrate that linguistic systems with grammatical gender not only reflect but also shape cognitive representations, influencing how individuals conceptualise and recall roles associated with different genders. Applied to the urban context, this phenomenon helps to explain how public spaces and their signage contribute to reinforcing particular symbolic hierarchies.

As Castells (2005, cited in Kolotouchkina, 2018) argues, the city constitutes a key site for the construction of both personal and collective identity, as it is within this space that shared values linked to language, history and culture are consolidated. In particular, “in the increasingly globalised world of capital, technology and information, the city reaffirms personal identity and the shared experience of language, history and religion” (p. 2). This identity-related dimension of urban space connects directly with a sociolinguistic perspective in which language not only describes reality but also shapes its representation. Eckert and McConnell Ginet (2013) emphasise that gender is constructed through the amplification of differences and the omission of similarities, a process that is reflected in the ways urban discourses represent women, men and other gender identities. Furthermore, many of the signs present in public space are multimodal, combining typography, colour, images and spatial arrangement to produce complex meanings (Scollon and Scollon, 2003) that extend beyond the textual dimension.

In this sense, the analysis of the use of inclusive and non-sexist language in signage, advertising and other components of the linguistic landscape acquires a dual significance. On the one hand, it enables observation of how such practices challenge linguistic structures that have historically rendered certain groups invisible. On the other, it introduces new discursive practices that invite a reconsideration of the role of language in the construction of identities (Flaherty, 2001; Lakoff, 1973), as well as the space these identities occupy within the city. The multimodal nature of the linguistic landscape also underscores its pedagogical potential for the development of key competences in contemporary contexts, such as multiliteracy, understood as the capacity to critically interpret messages that integrate visual, textual and symbolic elements.

1.2. The City in the Classroom: The Pedagogical Potential of the Linguistic Landscape

It therefore becomes evident that these reflections are highly relevant to education, as urban space functions as a complex semiotic environment. Its analysis helps to prepare students to understand and critically examine the messages they encounter on a daily basis, fosters the development of advanced interpretative skills, and offers the possibility of contributing to a more informed, inclusive and socially responsible citizenry.

Analysing the linguistic landscape enables future teachers to become active interpreters of their immediate reality, strengthening their capacity to promote inclusive discourse within their own classrooms. Working with the urban environment in educational contexts also contributes to the development of global competence, as promoted by the OECD (2019), which encourages the understanding of local issues through intercultural and ethical perspectives. It is also aligned with

Sustainable Development Goals 4, Quality Education, and 5, Gender Equality (UN, 2015), through the incorporation of a gender perspective (Santana Negrín and González García, 2025).

In pedagogical contexts, the linguistic landscape has proven to be an effective teaching resource for integrating observation of the urban environment into teaching and learning processes. Sáez Rivera (2021) demonstrates, for example, how the analysis and collection of samples from the linguistic landscape foster the development of critical and methodological skills in students by positioning them as active researchers. Complementarily, Shohamy and Gorter (2009) highlight that the incorporation of the linguistic landscape into education expands the boundaries of the classroom and connects theory with the real world contexts in which students live. From this perspective, the space we inhabit ceases to be understood as a passive setting and instead becomes a dynamic environment in which culture, language and identities are interwoven.

The potential of this approach is further reinforced by recent work in participatory mapping. Yousufi et al. (2023), in their work with students on a collaborative mapmaking project, emphasise that this type of activity enables learners to “bridge the world of data and the world of lived experience” (p. 3), transforming the map into a means of linking objective information about the city with personal and community narratives. From this perspective, mapmaking not only organises data but also legitimises students’ voices as producers of critical and socially relevant knowledge.

Inspired by this approach, the project described here culminated in the creation of a collaborative digital map based on signs collected by students in their everyday environments. This shared repository opens up the possibility of accessing linguistic landscape samples from different parts of the world, enriching analytical perspectives and offering teachers and students the opportunity to engage with other contexts without leaving the classroom.

2. Research Objectives

This study aims to analyse the impact of an educational intervention centred on the potential of the linguistic landscape as a pedagogical resource, integrating a gender perspective as a key element in fostering critical awareness and transformation in teacher training. The overall objective is to assess the extent to which this experience contributes to the expansion of students’ conceptual knowledge, the development of their capacity for critical observation of the urban environment, and the transformation of their attitudes towards gender equality and the inclusive use of language.

The following specific objectives derive from this general aim:

1. To assess students’ initial and final knowledge of the concepts of gender, stereotypes and the linguistic landscape through the administration of a validated questionnaire in pre-test and post-test phases.
2. To analyse students’ ability to observe and critically examine the urban environment, identifying patterns of gender representation within the linguistic landscape of their cities and immediate surroundings.
3. To explore students’ attitudes and perceptions regarding the impact of gender representation in public spaces following their participation in the educational experience.
4. To design and implement a collaborative digital map based on the collection of urban signs carried out by students, with the aim of creating an open repository that enriches analytical perspectives, promotes intercultural exchange and enhances critical literacy across diverse educational contexts.

3. Methodology

The following section outlines the methodological design of the study, the sample used for the analysis, the materials employed, and the procedure followed by the researchers.

3.1. Design

The research design is conceived as a study of educational innovation with a quasi-experimental approach, mixed in nature and exploratory in orientation, situated at the intersection of urban and gender studies. The project is grounded in the premise that the linguistic landscape constitutes a valuable methodological resource for analysing how the city reflects and reproduces social and gender inequalities, and that its integration into teacher training can foster both critical awareness and the development of transformative proposals. Given the constraints of the university context, where the random assignment of participant groups is not feasible, a quasi-experimental design has been adopted, combining quantitative measures, through questionnaires administered in pre intervention and post intervention phases, with qualitative evidence derived from fieldwork, student reflections and the teaching materials produced throughout the intervention.

The methodological structure is organised into three successive phases: initial assessment, educational intervention and final evaluation. In the first phase, a questionnaire validated by specialists is employed to explore students' prior knowledge and attitudes towards the urban landscape and the representation of gender in public space. The second phase centres on the educational intervention, carried out through specialised seminars and urban observation activities, in which participants use photographs to document the messages and signs present in their city, analyse the gender stereotypes identified, and examine strategies of linguistic and visual inclusion or exclusion. This evidence is subsequently systematised in reports and pedagogical proposals, which contribute to linking a critical reading of the city with educational practice in the classroom. Finally, the evaluation phase compares the initial and final results, incorporating both statistical analysis of questionnaire responses and qualitative examination of the outputs and reflections generated.

This design enables an assessment of the impact of the intervention in terms of academic learning and, more significantly, in relation to the understanding of urban space as a symbolic environment shaped by inequalities and potential avenues for transformation. The combined use of quantitative and qualitative techniques, together with the triangulation of questionnaires, visual materials and pedagogical proposals, ensures the robustness of the findings and reinforces the relevance of the study within the field of urban studies from a gender perspective. Finally, this research design contributes to the development of open educational resources through the creation of a collaborative map.

3.2. Sample

The research was conducted within the framework of two postgraduate programmes offered at the Distance University of Madrid (UDIMA): the Master's Degree in Teaching Spanish as a Foreign Language and the Master's Degree in Secondary School Teacher Training. These academic contexts provide an appropriate setting for the development of the project, as they combine the training of future language teachers with that of secondary school teachers in the subject of Society, Family and Education. This configuration enables an exploration of how urban representations of gender can be interpreted and reappropriated from different educational perspectives. Participants were drawn from various regions of Spain and, to a lesser extent, from other countries, including Colombia, Italy, Mexico, Uruguay, Moldova, Germany, Greece, Romania, Chile and Morocco, thereby ensuring a diversity of perspectives on the urban and rural environments in which each participant conducted their fieldwork.

A total of 318 students participated in the pre-test, with a predominance of female participants (185, 58.2%), followed by male participants (124, 39.0%). Five students (1.6%) chose not to indicate their gender, and four (1.3%) identified as "other". Furthermore, 298 students (93.7%) reported that Spanish was one of their mother tongues.

In the post-test, 272 students participated, with female participants continuing to predominate, accounting for 163 participants (59.9%), followed by male participants (103, 37.9%). Four students (1.5%) did not specify their gender, and two (0.7%) identified as "other". In addition, 255 students (93.8%) indicated that Spanish was one of their mother tongues.

With regard to age, in the pre-test the largest group comprised participants aged 29 to 39, with 141 individuals (44.3%), followed by 100 students aged between 18 and 28 (31.0%). A further 65 participants were aged between 40 and 50 (20.7%), and 12 were over 50 (3.8%). In the post-test, the distribution remained similar, with the 29 to 39 age group again predominating, with 126 participants (46.3%), followed by 73 participants aged between 18 and 28 (26.8%), 60 aged between 40 and 50 (22.1%), and 13 aged over 50 (4.8%). This generational diversity ensures a range of perspectives on the city and public space.

3.3. Materials

The principal data collection instrument used in the study was a structured questionnaire, designed specifically to assess both students' prior knowledge and their perceptions and attitudes regarding the linguistic landscape and the representation of gender in urban space. The questionnaire was created using the Google Forms platform, which enabled online administration and ensured accessibility across a range of electronic devices. The selection of this tool reflects the distance learning nature of the postgraduate programmes involved, as well as the need to collect data from participants geographically dispersed across national and international contexts.

The questionnaire was validated by six specialists in communication, linguistics and gender studies, including university lecturers and a social worker specialising in gender-based violence. This diversity of profiles ensured a rigorous and multidisciplinary review of the instrument, and their feedback enabled the refinement of the items so that they were fully aligned with the research objectives.

The questionnaire comprises a total of 29 items of mixed types, including closed ended, Likert scale, multiple choice and open-ended questions. The items are organised into four sections: knowledge, observation and analysis of the environment, attitudes and perceptions, and sociodemographic data.

In the knowledge section (Q1 to Q5), the survey explores students' general understanding of the concepts of linguistic landscape (Q1), inclusive language (Q2 to Q3) and gender stereotypes (Q4), in order to assess their conceptual literacy and their ability to recognise the sources that shape the written urban environment. This section also examines the relationship between gender roles and stereotypes and their manifestation in texts and visual media in public space (Q5), thereby bringing theoretical knowledge of gender into dialogue with the urban signs that form part of everyday life.

The second and third sections focus on the observation and analysis of the immediate environment (Q6 to Q25). The second section seeks to assess, using a Likert scale from 1 to 5, the degree of agreement with a series of statements regarding the representation of gender in the urban landscape (Q6 to Q7) and in education (Q8). This approach enables students' perceptions to be translated into numerical data that can subsequently be compared, averaged and correlated. Within the section on observations and perceptions, the questionnaire includes items relating to inclusive language (Q9 to Q19), which are of particular relevance within the field of linguistics and whose responses will be examined in future studies. Questions 20 to 24, formulated with three response options, yes, no or not sure, aim to explore students' assessment of the educational potential of the linguistic landscape and the association of visible signs in public space with the transmission of ideologies and power structures.

Finally, the questionnaire includes a sociodemographic section that collects information on participants' self-reported gender, as well as their age, place of origin and mother tongue (Q26 to Q29). The questionnaire was designed for aggregate analysis; therefore, sociodemographic variables are not correlated with the responses obtained.

In addition, in order to ensure consistency and continuity in the urban symbols documented by the students, a georeferenced digital map was developed, bringing together contributions from the various groups within a single accessible visual environment. The map provides open and collaborative access to the data, enabling both researchers and future cohorts of students to enrich it progressively through the addition of new examples. In this way, the collected materials

move beyond isolated instances and become an organised corpus that enables ongoing feedback, facilitating the identification of patterns and the comparison of national and international contexts.

Beyond its function as a research tool, the digital map constitutes a valuable open access educational resource based on real, geolocated examples, fostering critical and contextualised learning. As highlighted by Pons Rodríguez (2024) and Moustaoi Srhir (2019), this type of initiative supports the integration of innovative methodologies into teaching by placing students at the centre of processes of observation, analysis and knowledge construction.

3.4. Procedures

The study followed a sequential three phase design comprising initial diagnosis, teaching intervention and comparative evaluation, implemented during the second semester of the 2024 to 2025 academic year in the virtual classrooms of the Distance University of Madrid (UDIMA).

In the diagnostic phase, students enrolled on the selected courses accessed an online questionnaire created using Google Forms via Moodle. The use of this instrument, previously validated by specialists in language and gender studies, enabled the identification of initial levels of knowledge and attitudes in relation to the linguistic landscape, inclusive language and gender representation. The questionnaire was completed individually, voluntarily and anonymously, with an estimated completion time of 15 to 20 minutes. The results were coded and stored securely, serving as a baseline for subsequent phases.

During the educational intervention phase, students attended four virtual seminars, which were recorded and made available through institutional platforms. These seminars introduced the conceptual foundations of the linguistic landscape and examined how the signs and texts present in everyday environments shape experience and influence the construction of identities and social relationships. The relationship between the linguistic landscape and gender studies was also addressed, alongside its pedagogical potential in both teaching Spanish as a Foreign Language and teacher training contexts, highlighting the value of urban and rural environments as transformative educational resources. Following the seminars, participants completed practical activities adapted to their respective programmes. Students enrolled in the Master's in Teaching Spanish as a Foreign Language collected and analysed photographic samples of signage from their local areas, which they subsequently organised into observation sheets and a final report incorporating critical reflections. Students in the Master's in Secondary School Teacher Training conducted fieldwork in schools and their surrounding environments in order to document and evaluate how gender and diversity were represented in educational settings. In both cases, the activities culminated in the development of teaching proposals, which were submitted via Moodle and compiled by the research team.

The comparative evaluation phase consisted of administering the same questionnaire as a post-test, with the aim of identifying developments in knowledge, perceptions and attitudes. The data collected were analysed using descriptive and comparative statistical techniques. For questions with three response categories, yes, no and not sure, response frequencies and percentages are presented. For questions with five response categories, based on a Likert scale from 1 to 5, the mean, median, mode and standard deviation were also calculated, providing a more comprehensive description of the distribution of responses. In the case of question 8 in the post-test, a qualitative analysis was conducted through a process of coding responses in order to identify emerging patterns and categories in students' contributions.

Given the categorical nature of the data, the absence of normal distribution and the heterogeneity of variances, non-parametric techniques were applied to assess statistical significance. For questions with three response options, Pearson's chi square test was used. For items measured on a five-point Likert scale, the Mann Whitney U test was employed, as it is appropriate for comparing ordinal distributions between two independent groups. The analyses were conducted using the free open source application Jamovi (The jamovi project, 2025). The results are presented in the following section.

The teaching proposals developed by the students, relating to the linguistic landscape of their cities and towns, will be published in an open repository, in accordance with the principles of open science and the transformative orientation of the project.

With regard to the creation of the map, the initial stage involved filtering the samples obtained from the student activities, selecting only those with complete location data that could be accurately displayed for subsequent inclusion. Images that were not fully aligned with the objectives of the study were excluded.

Following the filtering process, the selected images were incorporated into a structured database. In order to ensure the anonymity of contributors, a coding system was implemented based on the initials of the corresponding course, followed by the number of the submitted activity and the number assigned to each collected example¹. This system enables the traceability and organisation of the data without exposing personal information.

In this way, a corpus was constructed and organised around three core elements: title, consisting of the assigned reference code; location, including the full address to enable subsequent georeferencing of each sample; and date, corresponding to the moment at which each photograph was taken.

Once the database design was finalised, all the collected samples were transferred to a Once the database design had been finalised, all collected samples were transferred to a georeferenced digital map using the Google Maps application (see Figures 5 and 6)². In addition, access to the information via Google Earth was enabled, thereby expanding the possibilities for exploration and analysis through the three-dimensional representation of the environment.

¹ With regard to the urban signs compiled by the research team, the IPL (Investigadoras Paisaje Lingüístico) coding system has been adopted.

² Access the map on Google Maps:

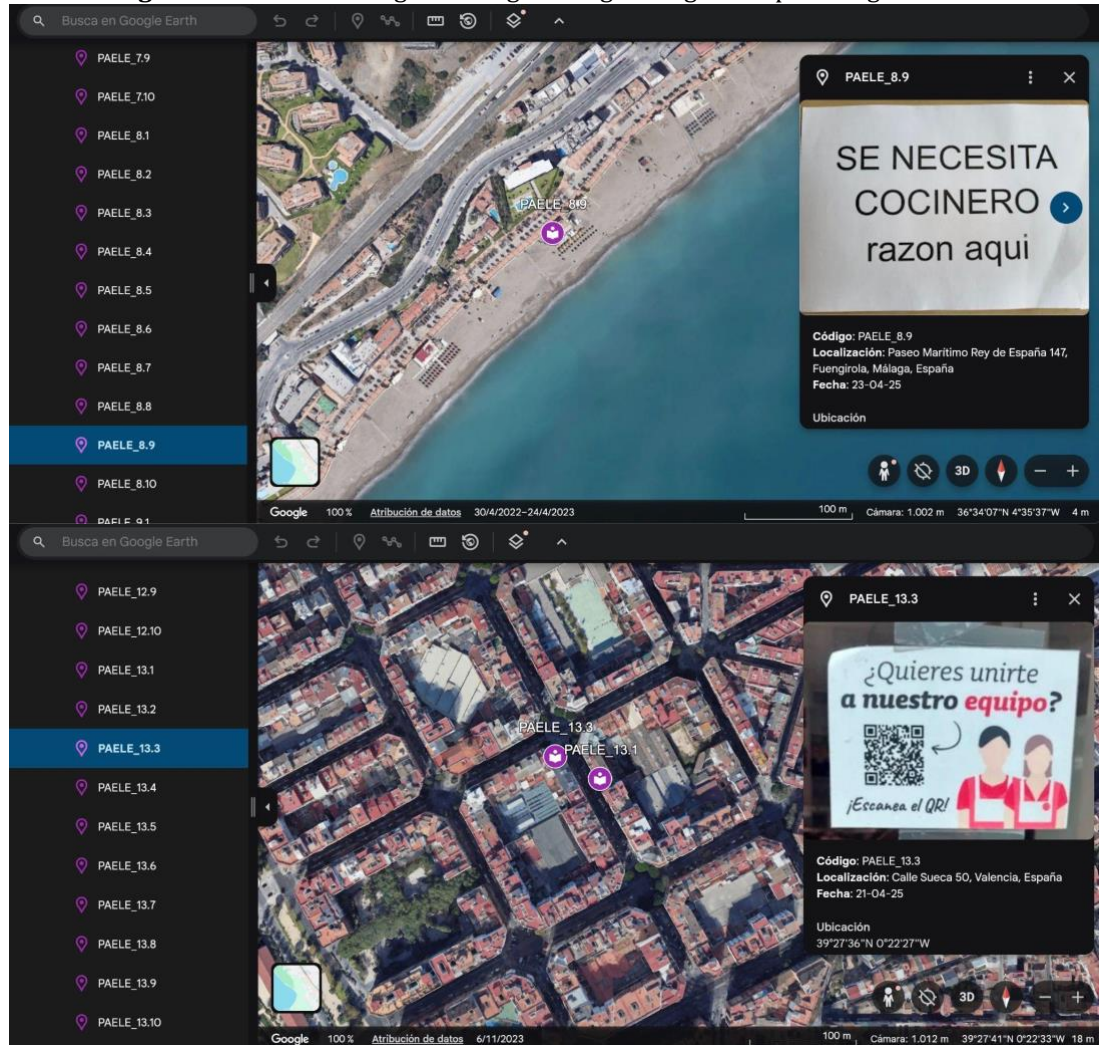
https://www.google.com/maps/d/u/0/edit?mid=12LGbxEz547S_j16JLL4YeMh_xpAZkfU&usp=sharing

Access the map on Google Earth:

<https://earth.google.com/web/@9.99840554,->

[51.45886233,19.56129655a,12869177.08521009d,30y,0h,0t,0r/data=CgRCAggBMigKJgokCiAxMkxHYnhFejU0N1NfajE2SkxMNFllTWheHBBWmtmVSACOGMKATBCAggASgclje7qfBAB?authuser=0](https://earth.google.com/web/@9.99840554,-51.45886233,19.56129655a,12869177.08521009d,30y,0h,0t,0r/data=CgRCAggBMigKJgokCiAxMkxHYnhFejU0N1NfajE2SkxMNFllTWheHBBWmtmVSACOGMKATBCAggASgclje7qfBAB?authuser=0)

Figures 5 and 6. Viewing urban signs using the digital map in Google Earth



Source: Own elaboration, 2025.

4. Results

The results obtained within the framework of this project have been analysed using a mixed methods approach, combining quantitative analysis of questions 1, 4, 5, 6, 7, 20 and 21 of the pre-test questionnaire, corresponding to questions 1, 4, 5, 6, 7, 21, 22 and 24 of the post-test, with a qualitative analysis of question 8. The quantitative component has made it possible to identify whether the teaching intervention led to changes in students' knowledge and perceptions. The results are presented in accordance with the objectives of the study.

4.1. Objective 1. To assess students' initial and final knowledge of the concepts of gender, stereotypes and the linguistic landscape through the administration of a validated questionnaire in pre-test and post-test phases.

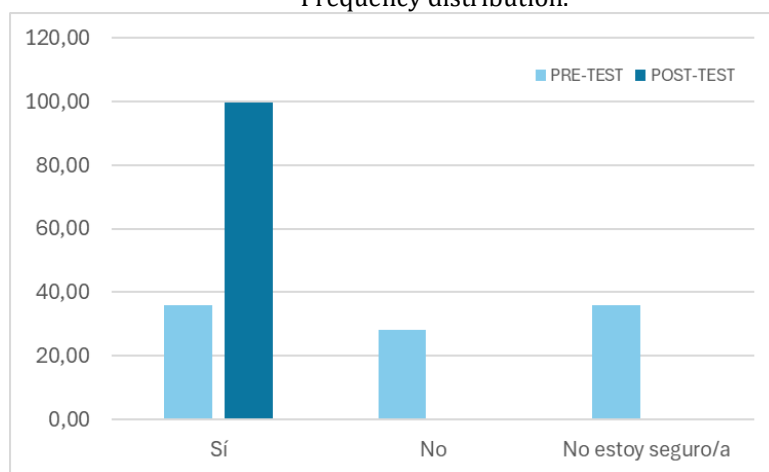
To address this objective, the results of questions 1 and 4 are presented through an analysis of the frequency distribution relating to knowledge of the concepts of the linguistic landscape and gender stereotypes in the pre-test and post-test. These results are complemented by a comparative graph illustrating the development of students' perceptions of both concepts.

4.1.1. Question 1. I am familiar with the concept of the linguistic landscape

Regarding knowledge of the linguistic landscape (Figure 7), the pre-test shows a balanced distribution of responses between those who reported being familiar with the concept (114 students; 35.8%) and those who reported not being familiar with it (114; 35.8%). In addition, a substantial group of students (90; 28.3%) expressed uncertainty regarding their knowledge. This distribution indicates a heterogeneous initial level of familiarity among participants.

In contrast, the post-test reveals a marked change in the distribution of responses, with a notable increase in reported knowledge of the concept, reaching 271 students (99.6%), while only one student (0.4%) indicated unfamiliarity. Furthermore, no responses expressing uncertainty were recorded. This difference between the pre-test and post-test distributions was statistically significant ($\chi^2 = 263.08$; $df = 2$; $p < 0.001$), demonstrating a highly significant impact of the educational intervention on students' understanding of the concept of the linguistic landscape. Overall, the results indicate a shift from an initially balanced distribution in the pre-test to a near unanimous level of agreement in the post-test.

Figure 7. Responses to the item “I am familiar with the concept of *linguistic landscape*”(Yes, No, Not sure). Frequency distribution.



Source: Own elaboration, 2025.

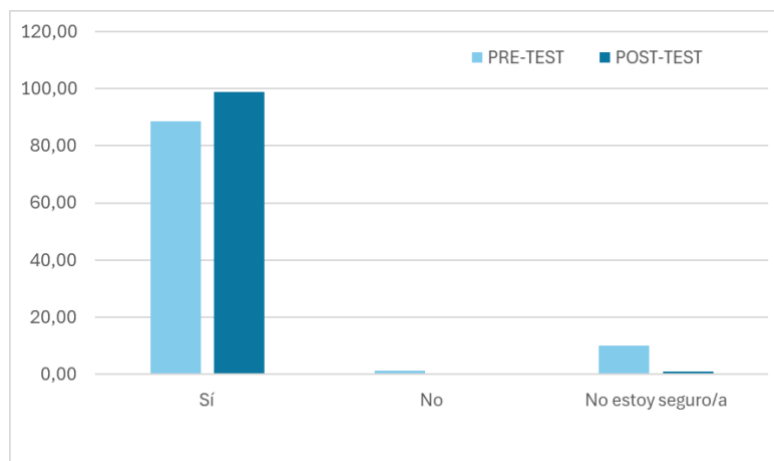
4.1.2. Question 4. I know what a gender stereotype is

Regarding knowledge of the concept of gender stereotypes (Figure 8), the pre-test results indicate that, prior to the educational intervention, a high percentage of students reported being familiar with this concept (282 students; 88.7%). Although the proportion of students who were unfamiliar with the concept was low (4 students; 1.3%), a small group (32 students; 10.0%) selected the option “I am not sure”. This distribution suggests that, while most participants reported prior knowledge, there was some variation in the degree of certainty with which the concept was understood.

In the post-test, the proportion of affirmative responses increased to 98.9% (269 students), with no negative responses recorded and only 3 students (1.1%) selecting the “I am not sure” option. This shift indicates not only an increase in the number of students who recognise the concept, but also a substantial reduction in initial uncertainty, resulting in a more consistent understanding following the intervention.

Statistical analysis confirms that the differences in the distribution of responses between the pre-test and post-test are statistically significant ($\chi^2 = 24.90$; $df = 2$; $p < 0.001$), supporting an association between the intervention and a clearer and more widely shared understanding of gender stereotypes.

Figure 8. Responses to the item “I know what a gender stereotype is” (Yes, No, Not sure). Frequency distribution.



Source: Own elaboration, 2025.

4.2. Objective 2. To analyse students' ability to observe and critically examine the urban environment, identifying patterns of gender representation within the linguistic landscape of their cities and immediate surroundings.

To address Objective 2, the mean values and standard deviations of items related to perceptions of equity and the identification of stereotypes in the linguistic landscape are presented. The results of questions 5, 6 and 7 are included, together with a graph illustrating the changes observed following the educational intervention.

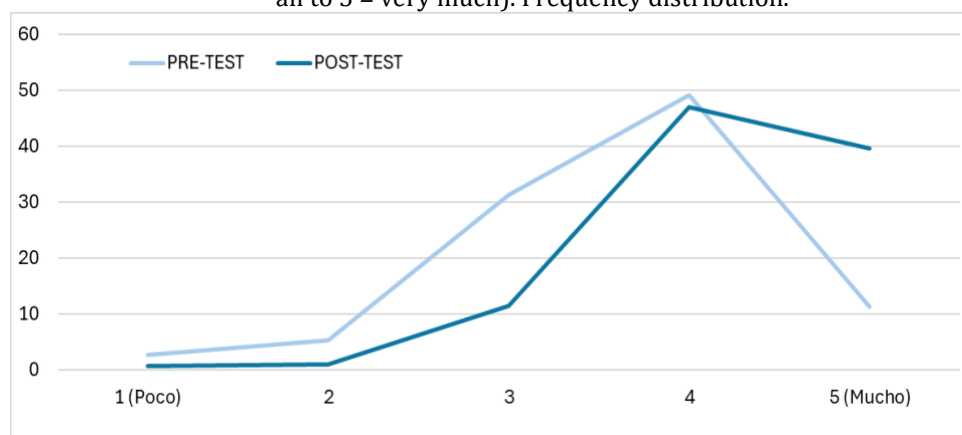
4.2.1. Question 5. I can identify gender stereotypes in written and visual texts

Regarding students' ability to identify gender stereotypes in written and visual texts (Figure 9), responses are distributed along a Likert scale ranging from 1 to 5, where 1 indicates “not at all” and 5 indicates “very much”. In the pre-test, the results show that a small proportion of students selected the lowest scores, indicating limited ability in this area, with 2.7% choosing “1” and 5.4% choosing “2”. A total of 31.3% selected the midpoint “3”, while the remaining responses were concentrated in the higher categories associated with greater proficiency, with 49.2% selecting “4” and 11.4% selecting “5”. The mean score was 3.61, with both the median and the mode at 4, and a standard deviation of 0.86, indicating a degree of dispersion in the responses.

Following the intervention, the distribution shifted towards the higher end of the scale. Only 0.7% of responses corresponded to “1” and 1.1% to “2”, while the midpoint “3” accounted for 11.5%. The higher values of “4” and “5” reached 47.0% and 39.6%, respectively. In this case, the mean increased to 4.24, the median and mode remained at 4, and the standard deviation decreased to 0.75, indicating a greater concentration of responses in the upper range of the scale.

Analysis of the data using the Mann Whitney U test indicates statistically significant differences between the pre-test and post-test ($U = 23.859$, $p < 0.001$), demonstrating a marked improvement in students' ability to identify gender stereotypes in written and visual texts following the educational intervention.

Figure 9. Responses to the item “I can identify gender stereotypes in written and visual texts” (1 = not at all to 5 = very much). Frequency distribution.



Source: Own elaboration, 2025.

4.2.2. Question 6. *The linguistic landscape is the collection of written expressions that appear in public space, reflecting the linguistic and sociocultural diversity of a community through signs, graffiti, stickers, posters and other visible elements*

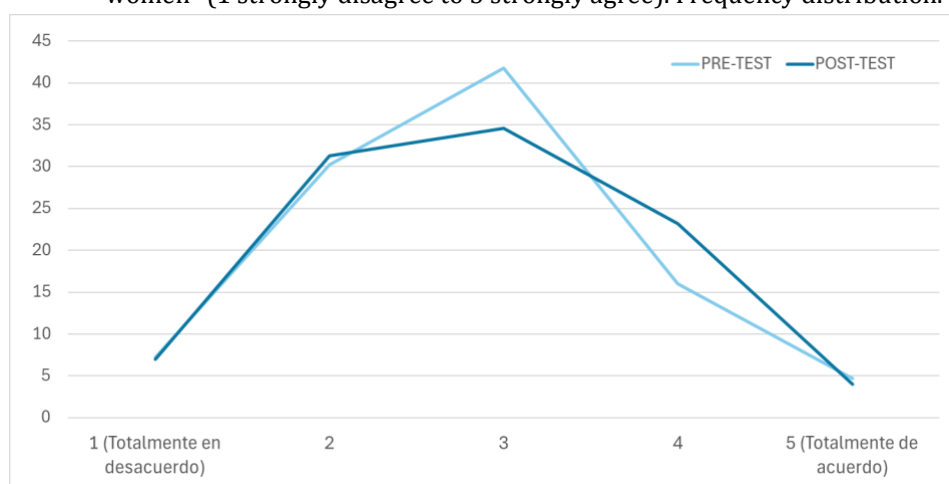
Bearing this in mind, I consider that in the linguistic landscape of my surroundings, neighbourhood, town or area around the school, there is equal representation of men and women.

With regard to this question, which examines students' perceptions of the equal representation of men and women in the linguistic landscape of their surroundings (Figure 10), the pre-test results show a varied distribution of responses on a Likert scale from 1 to 5, where 1 indicates strongly disagree and 5 indicates strongly agree. A total of 23 students (7.2%) selected “1”, 96 (30.2%) selected “2” and 133 (41.8%) selected “3”. The remaining participants indicated agreement, with 51 students (16.0%) selecting “4” and 15 (5.1%) selecting “5”.

In the post-test, the distribution of responses remained broadly similar. In this phase, 19 students (7.0%) selected “1”, 85 (31.3%) selected “2”, 94 (34.6%) selected “3”, 63 (23.2%) selected “4” and 11 (4.0%) selected “5”.

The results indicate that the educational intervention did not produce a substantial change in students' perceptions of gender equality in the linguistic landscape of their immediate environment ($U = 41.908$, $p = 0.495$).

Figure 10. Responses to the item “I consider that in the linguistic landscape of my environment (neighbourhood, city, surroundings of the school, etc.) there is an equitable representation of men and women” (1 strongly disagree to 5 strongly agree). Frequency distribution.



Source: Own elaboration, 2025.

4.2.3. Question 7. Gender stereotypes are generalised and simplified beliefs about the characteristics, behaviours and roles considered typical of each gender in a given society

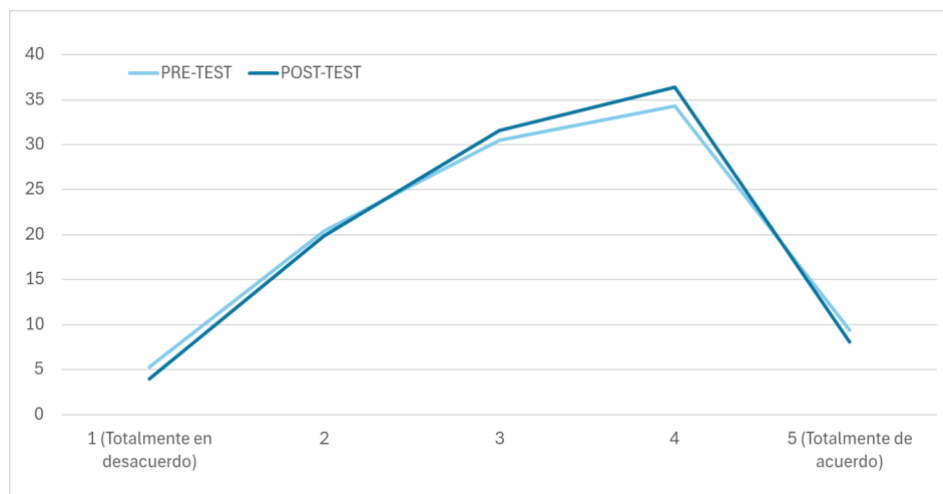
Bearing this in mind, I believe that the linguistic landscape of my environment reproduces negative stereotypes, reflecting gender inequality.

With regard to students' perceptions of the reproduction of gender stereotypes in the linguistic landscape of their environment (Figure 11), the pre-test results indicate that participants perceived a certain degree of inequality. The distribution shows a mode of 4, a mean of 3.22 and a median of 3, with a standard deviation of 1.05, reflecting moderate dispersion in the responses. In percentage terms, 5.3% of students (17) selected option "1", 20.4% (65) selected "2", 30.5% (97) selected "3", 34.3% (109) selected "4" and 9.4% (30) selected "5".

In the post-test, the distribution of responses remained broadly similar. The mode remained at 4, the mean increased slightly to 3.25, the median remained at 3 and the standard deviation decreased to 0.99. In terms of frequencies, 11 students (4.0%) selected "1", 54 (19.9%) selected "2", 86 (31.6%) selected "3", 99 (36.4%) selected "4" and 22 (8.1%) selected "5".

Statistical analysis using the Mann Whitney U test indicates no significant differences between the pre-test and post-test ($U = 42.724$; $p = 0.791$), suggesting that the educational intervention did not substantially alter students' perceptions regarding the reproduction of gender stereotypes in the linguistic landscape of their environment. In this respect, perceptions of inequality remained stable before and after the intervention.

Figure 11. Responses to the item "I consider that the linguistic landscape of my environment reproduces negative stereotypes, reflecting gender inequality" (1 strongly disagree to 5 strongly agree). Frequency distribution.



Source: Own elaboration, 2025.

4.3. Objective 3. To explore students' attitudes and perceptions regarding the impact of gender representation in public spaces following their participation in the educational experience.

The results relating to Objective 3 are presented through a comparison of the frequencies and distributions obtained before and after the educational intervention, specifically questions 21 and 22 of the pre-test and questions 20 and 22 of the post-test, concerning students' perceptions of gender representation in public space. The results of question 24 of the post-test are also included, as this item was designed to assess whether the experience contributed to students' ability to critically analyse both implicit and explicit messages about gender in their everyday environment.

4.3.1. Question 21 in the pre-test and 20 in the post-test

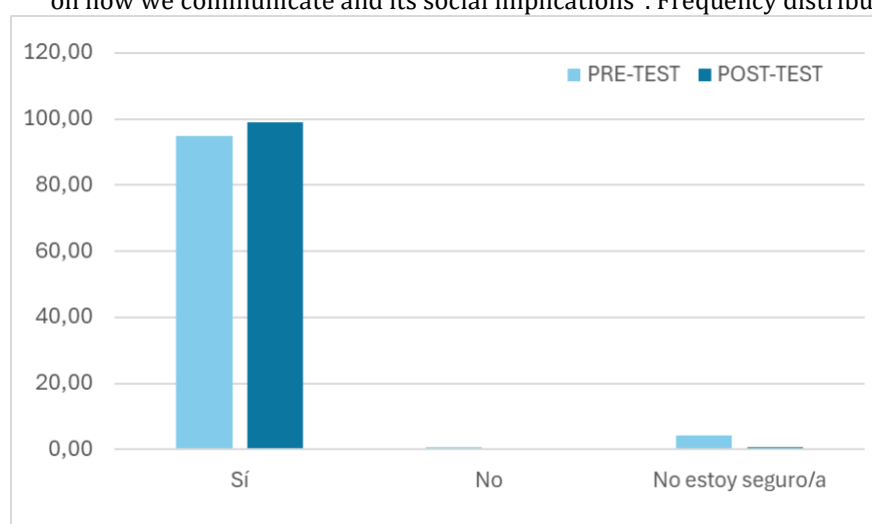
The linguistic landscape can be a useful tool for reflecting with students on how we communicate and on its social implications.

With regard to students' perceptions of the linguistic landscape as a tool for reflecting on communication and its social implications (Figure 12), the pre-test results reveal a high level of initial agreement, with 95.0% of students (302) responding affirmatively, only 0.6% (2 participants) indicating "no", and 4.4% (14) expressing uncertainty ("I am not sure").

In the post-test, this favourable assessment was not only maintained but further strengthened. The proportion of affirmative responses increased to 98.9% (269 students), while only one student (0.4%) selected "no" and two participants (0.7%) expressed uncertainty.

Statistical analysis of the distribution of responses between the two measurements reveals significant differences ($\chi^2 = 7.70$; $df = 2$; $p = 0.021$), suggesting that the educational intervention contributed to consolidating this positive perception. These results indicate that the training experience reinforced students' appreciation of the linguistic landscape as an effective tool for reflecting on communication and its social dimensions.

Figure 12. Responses to the item "The linguistic landscape can be a useful tool for reflecting with students on how we communicate and its social implications". Frequency distribution.



Source: Own elaboration, 2025.

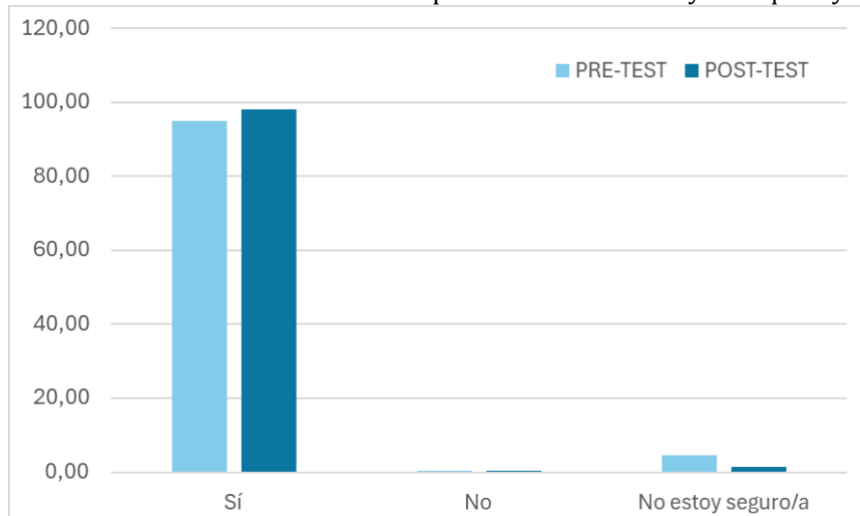
4.3.2. Question 21 (pre-test) and 22 (post-test). Observing the linguistic landscape in a given setting can help to better understand the beliefs and values present in a community

With regard to students' perceptions of the usefulness of observing the linguistic landscape in order to understand the beliefs and values present in a community (Figure 13), the pre-test results indicate a high level of initial consensus. Specifically, 302 students (95%) responded affirmatively, while only one participant (0.3%) responded "no" and 15 (4.7%) expressed uncertainty by selecting "I am not sure".

In the post-test, the proportion of affirmative responses remained high, with 267 students (98.2%) responding "yes", one student (0.4%) indicating disagreement, and four participants (1.5%) expressing uncertainty.

In this case, analysis of the distribution of responses using the chi square test indicates no statistically significant differences between the pre-test and post-test ($\chi^2 = 1.72$; $df = 2$; $p = 0.423$). These results suggest that the educational intervention did not produce significant changes in the distribution of responses. The data therefore indicate that students consistently perceive the linguistic landscape as a useful tool for understanding the beliefs and values present in the community, although this perception remains stable following the intervention.

Figure 13. Responses to the item “Observing the linguistic landscape in a given environment can help to better understand the beliefs and values present in a community”. Frequency distribution.



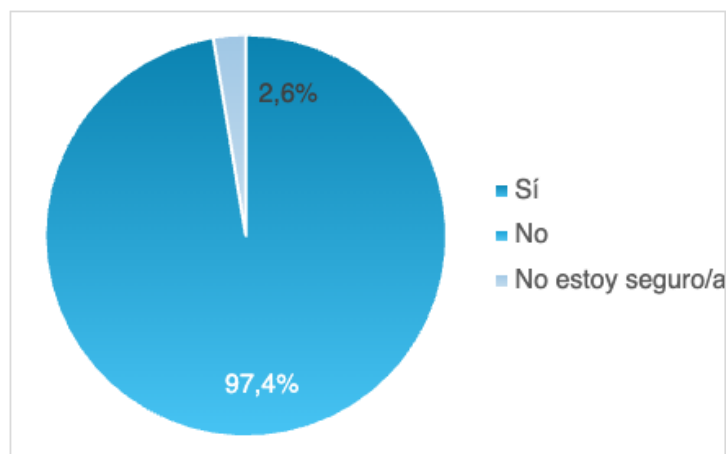
Source: Own elaboration, 2025.

4.3.3. Question 24. *This experience has helped me to learn to critically analyse implicit and explicit messages about gender in my everyday environment*

With regard to students' perceptions of whether the experience contributed to their ability to critically analyse implicit and explicit messages about gender in their everyday environment (Figure 14), the post-test results indicate a very high level of agreement. Specifically, 264 students (97.4%) responded affirmatively, no participants selected a negative response, and only seven students (2.6%) expressed uncertainty by choosing the option “I am not sure”.

These findings suggest that the experience had a strongly positive impact on the development of students' capacity for critical analysis of gender related messages in their environment, reflected in the high level of agreement and minimal degree of uncertainty among participants.

Figure 14. Responses to the item “This experience has helped me learn to critically analyse implicit and explicit messages about gender in my everyday environment”. Frequency distribution.



Source: Own elaboration, 2025.

To address this objective, an open-ended question was included in the post-test:

4.3.4. Question 8. *Now that you have observed the linguistic landscape of an educational institution and or its surroundings, what is your impression of the messages present in that linguistic landscape regarding gender roles, the representation and visibility of women, or gender equality?*

The qualitative analysis of the 272 responses identified a range of perceptions, which were coded into six recurring categories. The findings indicate that a majority of participants (59 responses) perceived the analysed linguistic landscape as conveying an inclusive representation in terms of gender, positively valuing efforts to enhance the visibility of women and to promote equality. Illustrative responses include “I have seen many messages on gender equality and raising awareness about gender-based violence” (PT8-14) and “There is an effort to challenge gender roles and stereotypes” (PT8-176, as shown in Figure 15). These responses point to an emerging awareness among individuals and institutions of the role of urban spaces as sites for raising awareness and fostering social transformation.

In contrast, a substantial number of responses (45) emphasised the limited presence or absence of inclusive representation in the linguistic landscape, revealing shortcomings in the use of non -exist language and the persistence of forms of invisibility or inequality. Examples include “Inclusive language is not taken sufficiently into account” (PT8-1) and “Men continue to predominate as figures of success, while women are sexualised and confined to specific spheres” (PT8-38).

Figure 15. Mural at El Chaparral State School (Málaga).



Source: Photograph taken by the pupils. SFE_56.1 (2025)

Alongside these contrasting positions, a set of intermediate responses was identified (58 in total, including mixed perceptions and multiple codes), reflecting a more nuanced assessment of the linguistic landscape. These responses acknowledge certain advances in gender representation while also highlighting the persistence of limitations. This is evident in statements such as “They try to be inclusive towards women, although there is still much to be done” (PT8-0) and “I think that, generally speaking, there is now an intention, compared with the past, to highlight certain issues, but these still rely on stereotypes or lack genuine integration” (PT8-161). Taken together, these observations point to a critical awareness among students, who perceive the linguistic landscape as a space in transition, in which inclusive discourses coexist with elements that continue to reflect inequality.

In addition, the analysis of eleven responses that explicitly referred to contextual factors made it possible to identify two main tendencies. First, participants emphasised a contrast between the messages present within educational institutions and those found in the surrounding urban environment. The former is generally perceived as more inclusive and oriented towards equality (Figure 16), as reflected in comments such as “I think that within schools an effort is being made to represent gender in a more egalitarian way and to promote greater equality” (PT8) and “In the case of Lucena, Spain, I have observed that there are more equality promoting posters inside schools than on the city’s streets” (PT8-4). By contrast, the wider urban environment is described as a space in which sexist and exclusionary representations persist more frequently (Figure 17), as illustrated by the comment “Outside educational institutions, the linguistic landscape is very sexist and unequal” (PT178).

Figures 16 and 17. On the left, a sign located in the cafeteria of IES Sa Blanca Dona (Ibiza). On the right, a street sign located at Calle Doctor Cornago no. 9, Pozuelo de Alarcón (Madrid).



Source: Photographs taken by the students. SFE_55.2 and PAELE_6.5 (2025)

Secondly, responses referring to contextual differences include comparisons between geographical areas, noting that this sensitivity tends to be more visible in larger urban centres, while traditional stereotypes are more strongly reproduced in smaller towns. This is reflected in statements such as “We have also observed a gradual shift in the use of these concepts when we segment the samples by neighbourhoods or areas of the city or town, with this being more pronounced in marginalised or outlying areas than in more central or higher income areas” (PT8-67). Although fewer in number, these references reinforce the idea that the linguistic landscape is not homogeneous but is shaped by territorial dynamics that influence how different spaces reflect or resist discourses on gender equality.

Finally, a smaller group of responses (15 in total) explicitly pointed to the persistence of gender stereotypes, noting that “women continue to be seen in secondary roles” (PT8-22) or that “some of the messages observed in the linguistic landscape reinforce negative stereotypes, and gender inequality remains evident” (PT8-174). In addition, a small number of participants (7 responses) expressed reservations regarding the use of inclusive language, suggesting that it may be unnecessary or may hinder comprehension, as illustrated by the statement “I believe that inclusive language does not help, but rather complicates the message” (PT8-101).

4.4. Objective 4. To design and implement a collaborative digital map based on the collection of urban signs carried out by students, with the aim of creating an open repository that enriches analytical perspectives, promotes intercultural exchange and enhances critical literacy across diverse educational contexts.

To date, the digital map comprises 289 valid locations, drawn from an initial total of 312 records, of which 23 were excluded due to duplication. In several cases, a single location contains more than one element, as students documented different urban signs at the same point; consequently, the corpus consists of 405 samples. Each documented sign is associated with its corresponding geographical location through GPS coordinates, allowing it to be situated on the digital map and analysed within its spatial context.

Following a filtering process, the samples were recorded according to criteria of image quality, relevance to the research objectives, anonymity and traceability, thereby ensuring the sustainability of the repository for future research.

The results indicate a clear predominance of Spain, with a total of 213 locations, followed by Colombia and a smaller number of entries from other countries, including Chile, the United States and France. Within Spain, cities such as Madrid, Valencia, Málaga, Cádiz and Barcelona stand out, reflecting a higher concentration of samples in large urban centres.

5. Conclusions

The results of the study indicate that the educational intervention was effective in significantly enhancing students' knowledge of the concepts of gender, stereotypes and the linguistic landscape. Following the experience, participants demonstrated a more robust understanding of these notions and their interrelationship, while their capacity to observe and analyse their environment was also strengthened.

Moreover, almost all students reported that they had developed the ability to critically analyse implicit and explicit messages about gender present in the linguistic landscape of their cities and educational spaces. The qualitative responses in the post-test further revealed a close relationship between this action research experience and students' engagement with their surroundings, as contextual details were frequently incorporated into their analyses. It is also notable that references to non-binary gender identities were largely absent from the analysed examples, highlighting their limited visibility within the observed urban landscape or a lack of sensitivity in their recognition. This finding points to the need to broaden the inclusive perspective in future educational initiatives.

With regard to students' attitudes and perceptions, the results confirm that the intervention not only maintained but also reinforced the value attributed to the linguistic landscape as a pedagogical resource. A total of 97.4% of participants stated that their involvement in the initiative helped them to critically analyse implicit and explicit messages about gender in their everyday environment. These findings suggest that working with real examples drawn from public space facilitates more immediate and meaningful reflection on stereotypes, gender roles and equality, thereby confirming the potential of the linguistic landscape as a key element in educational innovation and public awareness.

However, the testimonies collected also reveal a number of tensions and contradictions. Several participants highlighted a marked dissonance between the internal environment of educational institutions and the surrounding public space, often describing a dual reality. While schools tend to promote a co-educational and inclusive discourse internally, messages and practices that reproduce gender stereotypes or inequalities persist in their immediate surroundings. This observation invites future teachers to recognise the gap that may exist between the principles promoted within the classroom and the broader social context, and underscores the importance of extending educational practice beyond the boundaries of the school. In this regard, it is noteworthy that many of the school façades documented included graffiti featuring slogans and images that promote gender equality, diversity and coexistence. These findings suggest that schools are seeking to engage with the wider urban environment through their façades, projecting internal values into the public sphere and transforming the educational building itself into a form of urban discourse that encourages collective reflection.

Finally, the development of a collaborative digital map confirmed its value as an educational, critical and civic tool within the project. This platform enabled the compilation of urban signs collected by students across a range of geographical contexts, offering a broad and diverse representation of the linguistic landscape from a gender perspective. By integrating contributions from participants in different regions, and in some cases other countries, in a georeferenced format, the map facilitated shared and comparative learning, functioning as an open repository subject to continuous development. Beyond its documentary function, the map fostered a critical reading of urban space by drawing attention to the social and symbolic dimensions underlying the signs and posters present in public space. For example, it revealed the presence, or absence, of

references to migrant women, the degree of commitment to gender equality in different contexts, and the representation of minority languages in public signage. In this way, the resource moves beyond data collection and becomes an educational and civic tool that encourages reflection on the city as a living text, in which citizens can identify, question and transform the narratives present in their everyday environment.

Among the limitations of the study, it is important to note that the data are based on students' perceptions, which do not always capture the full complexity of social dynamics, as well as the limited duration of the intervention, which restricts the generalisation of the findings. In addition, a more balanced geographical distribution of the collected samples would be desirable; however, this is inevitably shaped by the participants' own locations. Nevertheless, the practical implications underscore the importance of integrating activities centred on the critical analysis of the linguistic landscape into educational curricula, in order to promote greater awareness of issues related to gender and cultural diversity. Future lines of research include the development of longitudinal interventions that enable the observation of sustained changes in perceptions of gender equality, as well as the extension of this methodology to a wider range of educational and sociocultural contexts.

The study is of particular relevance due to its pioneering character, as there are very few previous investigations that systematically address the intersection between the linguistic landscape and gender representation in urban contexts from an educational perspective. Although the limited body of prior research precludes direct comparison, it underscores the originality of the present work and positions it as a valuable point of departure for future studies.

The linguistic landscape, as a site of symbolic negotiation, enables the visibility of social and cultural tensions across multiple dimensions. The observation of signs and posters may therefore also serve to identify discourses related to sustainability, migration or intercultural coexistence. In this sense, the findings of this research may be extended to other areas of inquiry and open the possibility of comparative studies that reinforce its interdisciplinary relevance.

Above all, this study demonstrates that the linguistic landscape constitutes a highly valuable pedagogical resource, capable of establishing connections between academic knowledge and students' everyday experiences of the spaces they inhabit. The analysis of urban signage, as an immediate and accessible form of discourse, creates opportunities to introduce discussions of inclusion, gender and power into the classroom. In this way, the city emerges as an expansive text open to interpretation, in which façades, bus shelters and street infrastructure become elements of an extended classroom that invites critical reading, reflection and learning in dialogue with public space.

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