

**GSIRI Project: An Interdisciplinary Approach to Mapping Linguistic Landscapes in**

**Education**

**Final Report**

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### Summary of Research Activities

The purpose of this project was to explore the linguistic landscape of Columbus, OH using a mixed-method research design and to create a pedagogical unit to engage K-12 multilingual students in critical discussions of multilingualism across content areas. More specifically, this project aimed to answer the following research questions:

1. Linguistic Landscape as a sociolinguistic-spatial phenomenon:

- a. What do language representation, regional distribution, language function, and production of public signs reveal about the underlying social meanings and ideologies of the LL of Columbus, OH?
- b. How do local attitudes and perceptions about the LL contribute to a deeper, theoretical understanding of the LL as a sociolinguistic-spatial phenomenon?

2. Pedagogical Extension of Linguistic Landscape:

- a. How can LL research be used to engage and foster communication and collaboration among teachers, students, and the community?
- b. How can a cross-disciplinary LL unit inform higher-order thinking across the curriculum, including implementation in Mathematics, Science, Social Studies, and Language classrooms?

To answer the first set of research questions, a mixed-method design was employed to collect primary data including digital photographs of the LL in selected sites, semi-structured interviews and surveys, and secondary data such as demographic and population census reports.

For an overview of the research activities, see Table 1 below.

#### **Table 1**

*Overview of Research Activities*

Research Question	Data Sources	Analysis Plan
1 (a)	Photographic evidence from nine focus areas n= 1186	Descriptive Stats
1 (b)	Questionnaires n= 500	Two-factor ANOVA
	Interviews n=10 hrs	Thematic Analysis

A primary objective of this project was to create a comprehensive representational map of social class, linguistic diversity, and multilingualism in the linguistic landscape across the city of Columbus, Ohio. We decided to choose a number of sites that would represent the diversity of the city across the two main categories that we were interested in: SES and linguistic diversity. After consulting with an expert on urban planning, we created a map that overlays the linguistic and income data based on the 2017 U.S. census database. Using these maps, we identified nine survey areas that represent the different SES and linguistic diversity levels across Columbus, OH. The team physically went to each survey area and collected photographic data of multilingual signage using a smartphone app called Survey123.

Photos collected and unloaded via Survey123 were tagged and coded for regional distribution, language function, sign location, and language representation. Photos collected were first analyzed at a regional level (n = 9). Using R as the primary coding language, the first 100 signs within each site were analyzed for the purpose of systematic comparison of representative multilingualism across the nine sites. We wished to understand the relationships between public displays of multilingualism and SES and linguistic diversity across our data collection sites. We took a descriptive approach to assess the relationship between SES per location and frequency of

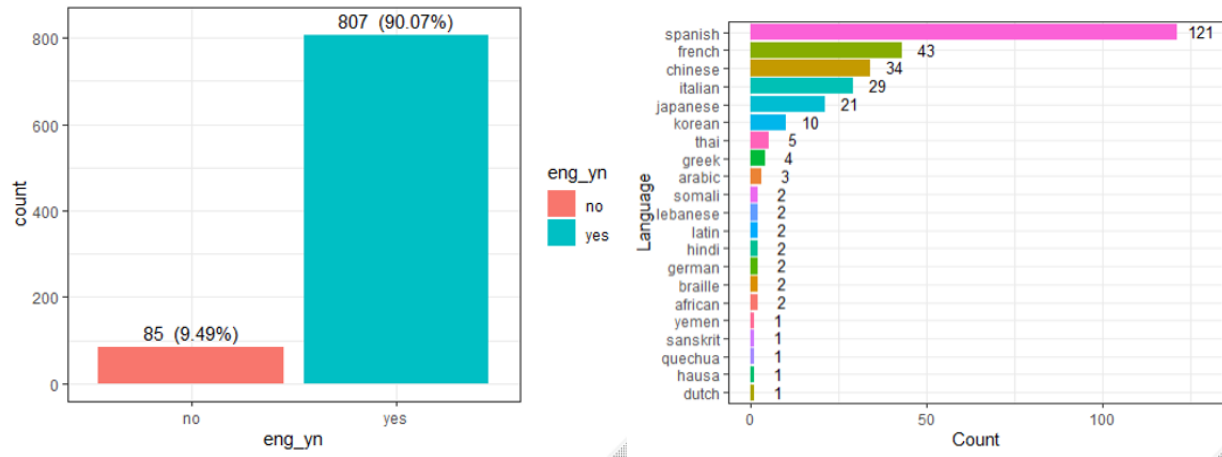
languages (Spanish, English, French/English, etc.), frequency of purposes (cautionary, informational, etc.), and total occurrence of multilingual signs, within our sample size.

To gain an understanding of the local perspectives regarding the LL of Columbus, a total number of 500 surveys were collected via social media. Following the survey, we conducted semi-structured interviews with 10 participants to obtain an in-depth understanding of their language ideologies circulating LL. The survey data went through Two factor ANOVA using SES and bilingual status as variables. The interview data were coded and categorized according to prominent themes, then triangulated across the data set to identify recurrent topics.

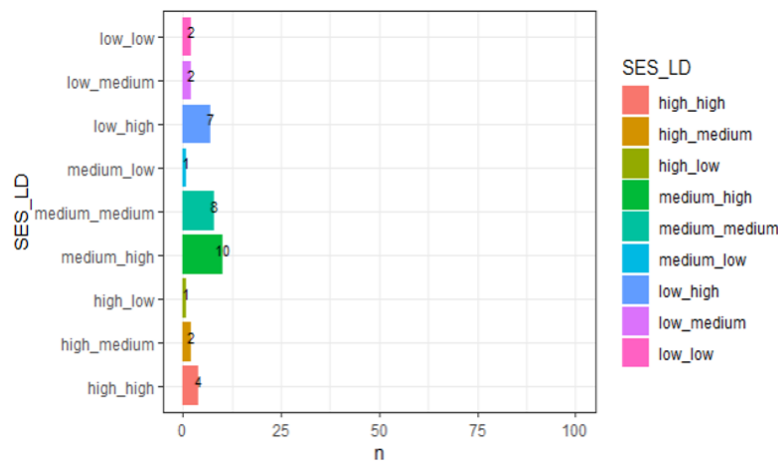
For the second set of research questions, we plan to collaborate with a local high school teacher to implement an LL unit in a science classroom. The team has obtained consent from the high school but is still awaiting a final IRB approval from OSU to begin the implementation. We plan to implement this 6-week unit by the end of the 2020-2021 school year.

### **Major Findings**

Our findings reveal that out of the nine neighborhoods that were mapped, 9.5% of signs are multilingual. This representation is consistent with the percentage of the immigrant population living in the surveyed neighborhoods. However, with the exception of Spanish, the multilingualism of the LL is not representative of multilingualism of Columbus.

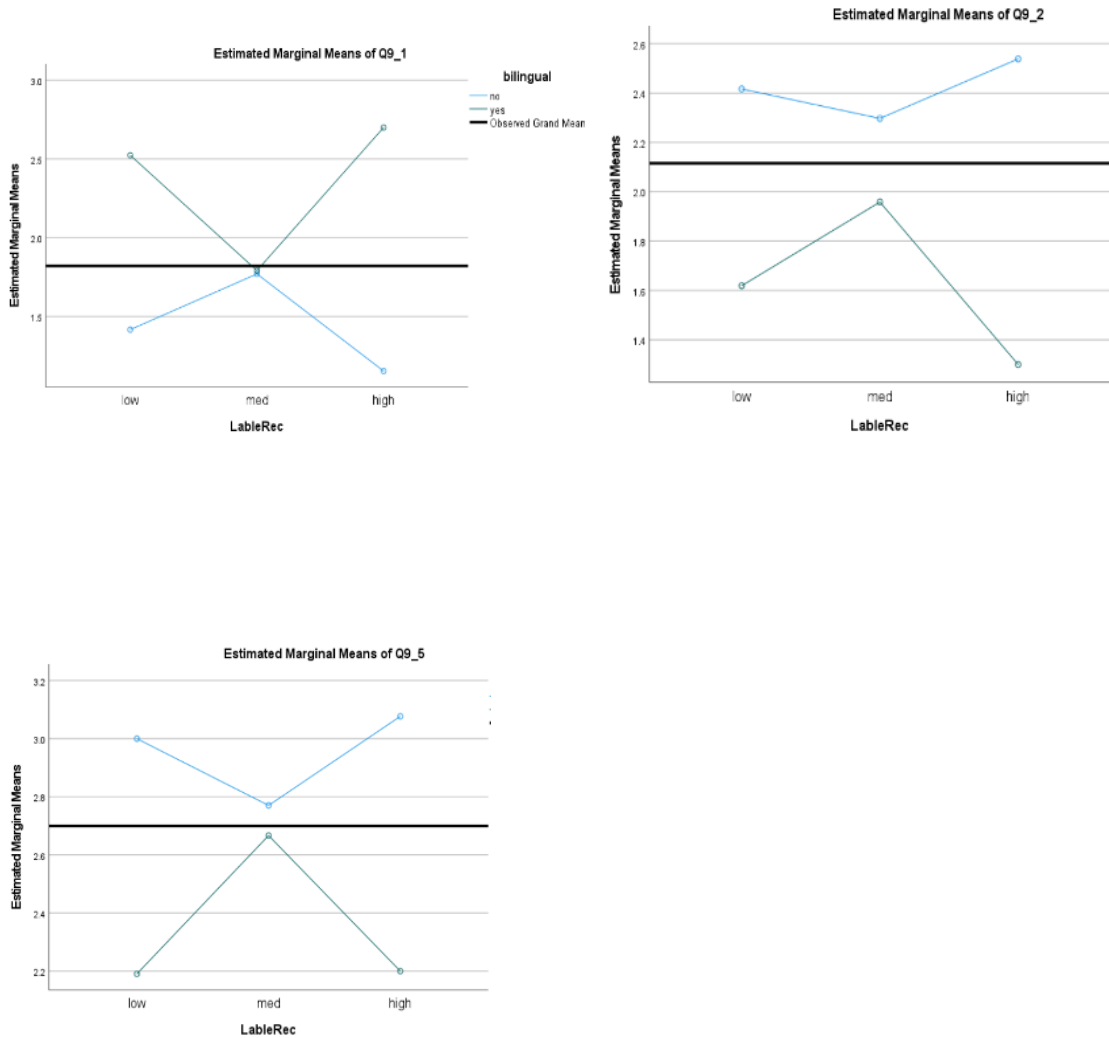


Overall, we found that linguistic diversity is a stronger predictor of LL multilingualism than SES. However, the correlation is not straightforward. The areas with the highest linguistic diversity do have the most multilingual signs, which suggests that for more recently arrived immigrants, multilingualism has a functional role for transactional purposes, such as money transfers. Whereas higher multilingual LL in middle SES areas often indexes higher status.



In addition to examining language representation in the public signage, we sought to explore local attitudes and perceptions about the LL. In this sense, we asked participants to rank

languages such as Chinese, Arabic, Spanish, Italian and French according to how well they thought those languages are accepted by the general public of Columbus, Ohio, on a scale from (1) the most accepted to (5) the least accepted. Findings from the survey revealed that high SES and low SES bilinguals and monolinguals show different perceptions around the acceptability of non-English languages on signs. In other words, we found that social class mediates the semiotic value with multilingualism in the LL, but only for high and low SES as shown in the graphs below:



### **Dissemination Plan**

Though the past year provided several unexpected turns, our team has remained extremely thankful for the support and flexibility of GSIRI. Our team has not only had the opportunity to complete several components of our research project, but we have also been able to share and put forth our findings both locally and on a larger scale through publications, at conference presentations, and through local engagement with the community at COSI (future), in public schools (future), and through engagement via social media.

Locally, we have been able to partner with a local Science teacher (Derek Braun) to implement and research a pedagogical framework that we have created with our data as a foundational component in 2021. The pedagogical framework that we have created is the *Transdisciplinary Sociolinguistic Landscapes in Education: (TSLEd) pedagogical framework*. It extends learning by focusing on transdisciplinary dynamic interplay between social actors, linguistics, technology, the physical space, and education. We not only plan to implement and research (IRB in progress) this into Beechcroft High School, we also plan to present on this framework at the top American Linguistics Conference in March of next year.

Recognizing LL's potential in formal and informal educational settings to develop linguistic awareness and critical literacy, we plan to collaborate with COSI in 2021 to develop interactive activities based on our LL study, offering the community an opportunity to explore the visual and inherent ideological representations found in the LL. We believe that the LL lens considers and values linguistic awareness in the local context and creates a tangible environment for COSI visitors to authentically uncover the impact of language representation on local public signs in understanding underlying social meanings and ideologies of the community in which they live. After spending one year collecting and analyzing local data, the team is motivated to

bring education and advocacy for linguistic justice that provides minority or less common languages public spaces that can lead to empowerment. This collaboration provides the opportunity to bridge research and action, applying the researchers' collected data/survey results into a public display that's easily accessible to the community, inclusive of all age ranges. Our project additionally seeks to join the fight for social justice that marginalized multicultural communities have historically been denied. Through collaboration with COSI, we look forward to creating spaces for reflection where visitors can learn about and further question narratives that alienate vulnerable communities in the city. We believe that through actively engaging the community in these reflections, we can raise awareness about these critical issues and contribute to making Columbus a better place for all.

In other efforts to engage with the local community, the team has received survey feedback from over 700 local residents of Columbus regarding their perceptions of local public displays of language. Additionally, we have conducted 10 in depth interviews with local residents, many of whom expressed interest in knowing the results of our study. During our study, we created a Facebook group for Linguistic Landscapes of Ohio, which saw a huge increase in page clicks, visits, and follows throughout the time of our study.

Additionally, various members of our team have also had the opportunity to participate in conferences over last year. We have presented on *Revolutionizing Technology in LL Studies* for a GURT (Georgetown University Round Table), a conference for which we subsequently got asked to re-present as a webinar for a special Facebook group with over 900 members at the time. Our team was also accepted to present a piece pertaining to Language Policy in the Linguistic Landscape at the Language Policy and Planning conference in Montreal, Canada last year. (The conference was unfortunately cancelled due to Covid. As previously mentioned, our



team has two proposals accepted to present virtually at AAAL conference in March 2021. One piece explores social class as a means for examining the LL, and the other presents the TSLEd pedagogical framework.

We have already started the publication process for areas of our work. Members of our time currently have a publication under review in the Journal of Linguistic Landscapes, which is the top journal in the field. This publication details our pilot study, addresses key methodological criteria that we used, and outlines our innovative site selection process, which uses SES and home languages as explicit determinants for site selection. We also plan to publish more journal articles in the future, including possible pieces on incorporating surveys LL studies piece (we are the first to survey without convenience or targeted audience), outlining the Interview component of our study, detailing the quantitative findings (SES and LD) in relation to representative multilingualism, and one final piece overview the entirety of our study. After next year, we are also interested in publishing our collaborations with COSI and Beechcroft High School. We believe this year has been extremely successful for our team, and we once again thank the GSIRI committee for their support throughout this process.

### **Group Reflections**

GSIRI represents a valuable initiative that allows us to build collaborations with other graduate students that otherwise we would have not had the experience to work with. Through GSIRI, our team had the opportunity to bring in peers from different programs including Foreign, Second and Multilingual Language Education, Language, Education and Society, Quantitative Research, Evaluation and Measurement, as well as from the Department of Geography. The expertise that each of our team's members contributed to our project on Linguistic Landscapes in Columbus proved to be an invaluable resource that helped to make our

research more rigorous and robust. Throughout our research project, we all have learned from each other's paradigms informed by the different disciplines and methodologies we operate from.

This opportunity for collaboration is unique, and it actively challenges the individualistic journey that often PhD programs get framed in. We consider that initiatives such as GSIRI are important because they seek to disrupt traditional approaches adopted in graduate school and instead promote collaborative projects across disciplines that result in more solid and comprehensive research. Through this experience, we have been able to grow both at a personal and academic level, and we look forward to continuing our professional development by means of future collaborations for conducting research across disciplines.

### **Recommendations**

Some ways that we felt GSIRI did a great way supporting us throughout the journey include quick responses to emails (and check-in emails), flexibility yet consistency with budget changes, inviting the GSIRI teams to collaborate and discuss with other teams during the colloquium, and being present when we presented at the EHE forum.