

# Glocal Language Awareness through Participatory Linguistic Landscape Research

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## Abstract

This article will explore the local experience of language awareness, scholastic linguistic identity and language ideologies through a scholastic linguistic landscape (schoolscape) (Brown, 2012) study in three schools in Canada where French was the language of instruction. Glocality is an especially useful frame for linguistic landscape studies (Manan et al., 2017) and has been used to look deeper into youth identities (Grixti, 2008). Photographic images of each school and photo-elicitation interviews with 37 students were used to qualitatively analyze the visible, written language found on the school walls of secondary schools offering three different French instructional programs. Glocality is used to draw the connections between the local schoolscape and the global themes of language ideologies, scholastic linguistic identity and language awareness. Involving students in linguistic landscape research results in discussions surrounding linguistic diversity and can lead to multilingual language awareness. At the same time, such a practise can result in incidental language learning. The results showed that students were aware of the importance of their schoolscape as a representation of national language ideologies, as a symbol of their school's linguistic identity and as a vehicle for promoting language use and awareness. Although the findings are local, the insights gleaned from the students are relevant to a global audience interested in language learning and multilingualism. Particularly, student perspectives and participation in analysis offer a unique contribution to linguistic landscape research and educational research in general.

## Keywords

schoolscapes; language ideologies; minority languages; scholastic linguistic identity

## Glocal Linguistic Landscapes and Schoolscapes

The study of linguistic landscapes involves analyzing “visible written language” in public spaces (Gorter, 2013). The focus is generally on the signs in urban settings such as store window fronts, street signs and advertisements. Canadian scholars Landry & Bourhis (1997) first used linguistic landscapes in their study on the ethnolinguistic vitality of French in Canada. Since then, this field of research has evolved extensively and studies have taken place in a wide variety of settings around the world. One main objective of linguistic landscape studies is to analyze the relationship between the languages of a particular area as seen through signs. In

particular, the presence of English on signs in locations such as Taipei has often been attributed to the global power of English since it infiltrates many local contexts (Curtin, 2008). In this sense, linguistic landscape research takes place in a specific, local context while at the same time it often illustrates global implications. While not often stated, many linguistic landscape studies adopt a glocal perspective in that they reveal “the interconnectedness of local and global systems” (Hauerwas et al., 2021, p. 192). Applying glocality to the study of linguistic landscapes is useful since it sheds light on the symbolism of linguistic landscape not only for local citizens and tourists but also for global citizens. For example, Manan et al. (2017) used the concept of globalization in their study on a

Pakistani linguistic landscape. They defined glocalization and glocal English as the influence of a global language (English) on “local non-English speaking countries” in order to analyze the use of English on Pakistani signs (Manan et al., 2017, p. 658). The use of glocality in this study showed the interconnectedness of the local and global (Hauerwas et al., 2021). Although linguistic landscape studies have generally been conducted on urban, public spaces, there are studies that are starting to apply this type of research to semipublic spaces, such as schools (Gorter, 2013).

Linguistic landscape studies specifically focused on schools are defined as schoolscape (Brown, 2012). Two important studies on schoolscape were conducted by Dressler (2015) on a Canadian elementary school and Brown (2012) who studied three Estonian schools. More recent schoolscape studies have employed a “tourist guide technique” wherein teachers or principals are interviewed while the researcher takes pictures of the schoolscape (Amara, 2018; Biró, 2016; Przymus & Kohler, 2018; Szabó, 2015). These interviews add another level of richness to the data comprised traditionally and solely of linguistic landscape images. Student participation in such methods is an area that has yet to be developed in the field of schoolscape research. In photography as in linguistic landscape research, a useful technique is being able to zoom in and out. Zooming in permits the photographer to focus on a particular object while zooming out focuses on the context in general. The glocal perspective applied to this schoolscape research will look at local school signs while also expanding outward to look at the messages found in those signs in order to show the interconnectedness of the local and global (Hauerwas et al., 2021).

## Local Context and Approach

In Canada, both English and French are the national official languages. However, in the province of Manitoba only 3.5% of the population speaks French as a first language (Government of Canada, 2013). While French is clearly a minority language in Manitoba, the influence of national language policies have made it possible for French to be the language of instruction in some of the province’s schools. Manitoban parents may select the regular English program for their children who will learn Basic French roughly an hour a week since it is mandatory from grades 5 to 8 (ages 10 to 13) (Lightbown, 2014). They may also select a French immersion program wherein all subjects except English language arts are taught in French. Schools that offer this program do so either by reserving an entire school for the program (single-track) or by offering it alongside the regular English program within one school (dual-track). The French immersion program is designed for non-French speakers and was initially meant to offer the possibility of bilingualism to Canadian Anglophones (Pilote & Magnan, 2008). Yet another program is designed for minority Francophones, the French-language program, which seeks to maintain the French language and culture among the students while offering all courses in French except for a mandatory English language arts class (Landry & Forgues, 2007). While dual-track and single-track French immersion and French-language schools all offer instruction in French for the majority of the school day, the student populations are quite different. French-language students can typically claim Francophone heritage (Landry & Forgues, 2007) whereas French immersion students typically cannot. For that reason, I conducted a schoolscape study on three Manitoban secondary schools: one dual-track, one single-track and one French-language school to better understand the

similarities and differences between them. While the larger study involved 37 students, two interviews and over 300 schoolscape images, I will be reporting in particular on the results of the second interview (photo-elicitation interviews) wherein the participants analyzed images from their own and the other schoolscales.

The study adopts a sociolinguistic approach which focuses “on communicative behavior: talk and text”, while at the same time placing great value on the way participants view their own lives (Marshall & Rossman, 2011, p. 20). This is in line with glocality since “listening to multiple perspectives and considering different points of view happens on a local and global scale” (Hauerwas et al., 2021, p. 192). Of particular importance in this study are the participants’ language choices and how they are shaped by their personal language attitudes and by context-specific language ideologies (Roy & Galiev, 2011). In line with a glocal approach (Næss, 2016), this schoolscale study of three high schools will focus on the local characteristics of the schoolscales in order to draw the connections on a more global level to themes such as language ideologies, scholastic linguistic identity and language awareness. The main belief in this sociolinguistic approach is that:

Speakers are social actors who use language as a resource to interact and establish social relations with others ... linguistic signs are taken as representations of the world, and these connections to the world are never neutral (Moyer, 2008, p. 22).

Therefore, this study will analyze the glocal interaction between the local “linguistic signs” and the global “talk and text” as they occur in and outside of each school context

(Moyer, 2008, p. 22; Marshall & Rossman, 2011, p. 20). The guiding question for this study was: How do students interpret elements from each schoolscale?

### **Qualitative Linguistic Landscape Methodology**

A variety of quantitative and qualitative approaches have been used in linguistic landscape research. For example, “qualitative content analysis” (Leung & Wu, 2012, p. 122) involves sorting the images based on themes and “nexus analysis” (Hult, 2008, p. 88) focuses on social actions, norms and practice. However, these types of studies use the photographs as their only data source and rely mainly on a visual analysis of that data. Akin to other forms of qualitative research, this study explored participants’ experiences and aimed to collect data, in the form of interviews and linguistic landscape photographs, that would offer a rich description of those experiences (Hill, 2005). This qualitative approach allowed for picture analysis within each local schoolscale while at the same time it explored the global experience and perceptions of the participants with regard to their own and other schoolscales.

### **Student Participation and Visual Methods**

There exists a gap in the literature because educational research rarely includes the voices of students (Bautista et al., 2013; Borrero & Yeh, 2010; Hands, 2014; Nieto, 2010). Marshall & Rossman (2011) note that “those most affected by educational policy and programmatic decisions – the students – are absent from inquiry” (p. 157). Hands (2014) argues that one of the reasons why students are underrepresented in educational research is because the voices of authority, administrators and teachers, are too often legitimized over student voices. Students were selected for this

research project in order to bridge that gap. Students offer a unique point of view about their schools and their perspectives can help to develop solutions to the issues they consider important (Bautista et al., 2013). This study's participants were especially involved in the analysis of the schoolscapes. Students may benefit from being involved in this way in research since they may notice aspects of their environment they had not previously recognized (Sweetman, 2009). Research should be conducted "with" students instead of solely "about them" (Danaher et al., 2013, p. 3). In this way, the participant perspectives play an important role in this study.

Collecting linguistic landscape images can be classified as a "visual research method" when the images are used "to explore the research questions" (Rose, 2014, p. 25). Visual research methods add another analytical dimension to research especially when they are used in "photo-elicitation interviewing" (Biag, 2014, p. 166). Using images during interviews can encourage participants to reflect on aspects of their life that they may not have previously noticed (Biag, 2014; Rose, 2014; Sweetman, 2009) and may even help them to describe the complexity of their personal identities (Matteucci, 2013). Because students spend a significant amount of time in their school, many aspects of their schoolscape may go unnoticed. It was important to have visual prompts for the participants since Tupas (2015), who wished to include participant perspectives on the linguistic landscape, quickly realized that the participants had trouble remembering what signs were in their environment. When regular interview data was compared to photo-elicitation interview data, it was found that photo-elicitation interviews "improved participants' recall, generated longer statements, and prompted richer and more emotionally involved storytelling" (Gubrium & Harper, 2013, pp. 69–

70). Since rich data is especially important for qualitative research, photo-elicitation interviews were a useful method to employ. However, "someone must be behind the camera ... and produce the image itself" (Galman, 2009, p. 198). Although participants were included in the analytical process, I ultimately framed what was to be analyzed. I acknowledge that this subjectivity has impacted the data.

### **Data Collection and Analysis**

Photo-elicitation interviews were conducted with 37 participants; 12 French-language (DSFM) students, 11 single-track students and 14 dual-track secondary school students. All participants were between 15 and 17 years of age and had attended their respective schools for at least one year prior to participating in the study. Consequently, they were exposed on a daily basis to their respective schoolscape. The photo-elicitation interviews were digitally recorded and transcribed. All interviews were conducted in a conference room at the student's respective school and the photo-elicitation interview was the second interview conducted with these participants. The first interview was took place a month before and will not be included in the analysis of this text. Participants were given the choice of conducting their interview in either French or English, resulting in bilingual interview data. Data collection also involved taking pictures of the schoolscapes. No pictures were taken of individuals and any names found on the pictures were removed using photo-editing software. This resulted in a corpus of 336 photographs of the permanent and non-permanent signs in the schools. Eleven images were selected to create a PowerPoint presentation. Another six images were printed and displayed on a table in the interview room. The purpose this display was to allow the students some choice with regard to which images they wanted to analyze. It was beneficial

to have printed images since the students could then touch and move around the pictures if they wanted to do so. Woolner et al. (2010) found that using printed out photographs as visual prompts resulted in more engagement from the student participants.

Limiting the number of images to fewer than 20 was intentional in order to avoid confusion and distraction (Matteucci, 2013). These 17 images were selected in order to represent the three school contexts and to show the diversity of signs present in specific schools. In total, the 17 images used during the photo-elicitation interview included three from the DSFM school, five from the single-track school and nine from the dual-track school. Participants were asked to describe the images, one by one, from the PowerPoint presentation. They were also asked to explain their thoughts with regard to the picture and to attempt to identify from which school context they thought the image was taken. Next, they were asked to select one, some or all of the six pictures on display and to describe them. As well, participants were asked to share their own interpretations of the images and I purposefully refrained from offering my own interpretation. This was done in order to encourage the participants to analyze the images in a way that was meaningful to them. Ultimately, this method allowed for the schoolscape analysis to be co-constructed and to represent a diversity of perspectives.

Since the data that resulted from the photo-elicitation interviews was mostly descriptive, using NVivo 11, I created nodes based on the photograph the participants were describing. This resulted in a document for each photograph that contained each participant's thoughts on it. The photographs on display were coded in this way as well. However, since participants had the choice to speak about the photographs that interested them, I also coded this data to determine how many times a given

photograph was selected by the participants. For example, Figure 10 was selected and commented on by 33 out of the 37 participants. In the following section, original quotations from the participants will be presented followed by their pseudonym and a reference to their school context (DSFM: French-language school; ST: Single-track school; DT: Dual-track school). Translations from French to English were done by me and will be provided as footnotes in order to respect the students' interview language choice.

### **Zooming in to the Signs**

The following section will present the findings by focusing on each specific school context starting with the French-language school (DSFM), the single-track school, the dual-track school and ending with a section on the glocal schoolscape expectations which will present data from all three school contexts. These local findings will then be discussed globally by exploring the themes of language ideologies, linguistic identities and language awareness.

#### ***Local DSFM signs***

Participant expectations for their own and other schoolscales were generally accurate. For them, there was or should be a clear link between the school's identity and its schoolscape. Eveline (DSFM) shows how she associates her school's identity with its schoolscape: "*ici c'est vraiment en train de promouvoir qui on est comme personne puis comment on représente*

*qui on est et notre culture de notre école*<sup>1</sup>. Malana (DSFM) clearly states that the purpose of her schoolscape is to encourage students to speak only French “I think they should be in French because we are a French school and they’re always encouraging us to speak French and only French”. At the DSFM school, most participants believed that the majority of the signs would and should be only in French. Since everything students create must be written in French, an entirely English poster was considered foreign to the DSFM schoolscape. Elektra (DSFM) even states that students would be punished if they had written a poster entirely in English. The single-track students also indicated that they would not be allowed to create a poster entirely in English. As Zara (ST) indicates, at her school, “nothing that a student would make would ever be 100% in English”.

Although Claire (DSFM) admits that on the rare occasion there are some signs in English at her school, she explains that these signs are from outside sources and that is why they are in English. For example, this bilingual poster (see **Error! Reference source not found.**) was found at the DSFM school.

The title in large font is in English. However, the information for the students is written in French on a paper that is used to cover up the English information. If you look closely, you can see the English words Date, Place and Time underneath the white paper. This shows that an effort was made not only to have the information in French but also to remove the English information. The fact that

the information for the students was written in French indicated to many dual-track participants that it would not be at their school because “it would be in English if it was at our school” (Élaine, DT). Since all the students at the dual-track school would be able to understand the English information, an effort would not be made to add French information. The mere presence of English incited some DSFM participants to say that it could not belong to their school. For example, “*j’imaginerais pas qu’on aurait une publicité comme ça dans notre école parce que d’habitude tout est en français*” (Raul, DSFM).

Remarkably, when there were English-only signs in the DSFM school, some participants thought that they were bilingual. Both Eveline (DSFM) and Lina (DSFM) spoke about the signs advertising programs at the University of Manitoba, where instruction takes place in English. While this poster is only in English (see Figure 2), both participants thought it was bilingual.

As Lina (DSFM) believes: “*il y a quelques affiches qui sont par rapport à l’université puis ça c’est ... je pense que c’est en anglais et français*”<sup>3</sup>. This is interesting since it indicates that participants expect the DSFM schoolscape to be only French or at least bilingual. As Table 1 shows, although the DSFM schoolscape is mainly French, it is not only French. In fact, there is a noteworthy amount of English-only signs in the DSFM schoolscape.

### ***Local single-track signs***

<sup>1</sup> Here it’s really trying to promote who we are as people and how we represent who we are and our school’s culture (Eveline, DSFM).

<sup>2</sup> I wouldn’t imagine that we’d have an ad like that in our school because usually everything is in French (Raul, DSFM).

<sup>3</sup> There are some posters that are about university and that’s ... I think that’s in English and French (Lina, DSFM).

A difference between the two French immersion contexts is that the single-track school does not need to justify the presence of French-only signs. In the dual-track school, “half the kids can’t speak French so they wouldn’t understand it so it should be English around the school” (José, DT). Since all the students in a single-track school speak French, there is no real need for English-only signs. As Zara (ST) believes, “we’re supposed to speak French here so why not have everything in French”. As Figure 3 exemplifies, all the permanent signs for locations within the school were written in French.

Participants believed that there was a relatively equal representation of both French and English in their school. Within the single-track school, student-created posters were often only in French.

With regard to this poster, some students commented on mistakes. For instance, José (DT) assumed a French immersion student had written the poster due to the mistakes:

José: I would just say that that is a French immersion school because the

French is bad.

Researcher: What is bad about the French?

José: It's just like not put together, it's put together like I would put it together and like not as a Francophone would put it together. (José, DT)

It is clear in this statement that José (DT) believes that Francophones have a more “correct” French and that he has not yet achieved that level. Both Léonore (ST) and Senna (ST) notice that whiteout was used on the poster. Both believe that students from a French-language school would not use whiteout on a poster. Léonore (ST) felt that “kids that are full French are like really good and you can tell” (Léonore, ST) so there would be no need for whiteout. While Senna (ST) admits that even if Francophones made a mistake in French they would not make the whole poster and then realize afterwards that they had made a mistake (Senna, ST). These comments seem to show that native French speakers are held in high regard.

Many French immersion participants also made a connection between the language of the schoolscape and language learning. To illustrate, Luc (ST) believes that bilingual signs help to retain French vocabulary, “*si tu vois quelque chose en deux langues tu peux voir ce que ça dit dans une langue et là dans la tête tu peux te souvenir ce que c'est dans l'autre langue*<sup>4</sup>”. Conrad (DT) made a similar comment about the importance of bilingual signs in his school, “of course if it's both, people can read in both languages, but it encourages people that are in the French track to actually read it in French and apply it more”. Some participants even felt that the more French signs there were in their school, the more students would speak French (Malana, DSFM; Senna, ST; Thea, DT and Vera, DT). The single-track schoolscape displayed a relatively equal number of French and English signs with a slight emphasis on French (see Table 2).

<sup>4</sup> If you see something in two languages you can see what it says in one language and then in your head

you can remember what it is in the other language (Luc, ST).

### **Local dual-track signs**

Participants from the dual-track school expected there to be mostly English signs in their schoolscape. Despite this expectation, many participants felt that because their school had the two programs, signs should be bilingual (Anora, DT and Nora, DT). In analyzing the single-track outdoor sign (Figure 5), Vera (DT) wishes her school would promote the French immersion program in the same way:

There's nothing ever French on that, like I see it all the time, I always drive by it, nothing ever is French, like they'll be like congratulations to the girls' volleyball team winning the championship ... I mean I think maybe once I saw like a Welcome *Bienvenue*, but I've not seen it since, I might have dreamed, I might just be wishing for it to be there.

For Vera (DT), the outdoor sign is especially important since it makes announcements that people driving by can see. She indicates that students and staff see it every day. In the same way that Eveline (DSFM) and Lina (DSFM) thought the University of Manitoba sign in their school included French, Vera (DT) thinks her outdoor sign might have had French once. However, she admits that this might be wishful thinking. Her comment also indicates that English would have been written first on her school sign.

Many participants noted that French was placed first in this sign. For them, that meant that it was either a French-language school or a French immersion school who emphasized French. The placement of French was especially important to some participants since it was on the outdoor sign. This showed

them that the language was important for the school. Nicolas (DT) said that seeing French on the sign even before you enter the school indicates that it is a bilingual school.

Nevertheless, as José (DT) noted, since the majority of the students at his school are in the English program, it makes sense for there to be more English signs. Since the French immersion students represent only 20% of the school population, it is then not surprising that French signs make up only 15% and bilingual signs 17% of the schoolscape (see Table 3). With that in mind, some students believe that everyone understands English and for that reason it would be excessive for everything to be bilingual (Nicolas, DT).

As Landry & Bourhis (1997) indicate, a change in language in the linguistic landscape signals a change in territory. It was clear that students felt this change in territory within their dual-track school. For example, “it depends where you are, in the French department they're [the signs] usually in French, in a French class they're always French but around the school it's English” (José, DT). Dalla (DT) went on to clarify that all the French posters in the French department were put up by the teachers. Her assessment is accurate since none of the French posters in the dual-track school appeared to be student-created. Moreover, there were also signs in English, advertising French, in the dual-track school (see Figure 6).

Many students noticed this incongruity. As Ayla (ST) states “*seulement une école anglophone aurait une annonce publicitaire à*



*propos de français en anglais*<sup>5</sup>. Like Ayla (ST), many felt that the poster was “selling French” (Gilbert, DT) since it spoke about the advantages of learning French.

Many participants noted the change in language when they entered the French block and they seemed to believe that this was the only place in the school where there were French signs. This assessment was found to be inaccurate since throughout the school many permanent location signs were bilingual. Still, the bilingual permanent location signs were not all uniformly bilingual. Some washroom signs and other locations, such as the Media Production laboratory (see Figure 7) were only in English.

When the location signs were bilingual, English was placed on the left and thus in a position of power followed by French (see Figure 8) (Backhaus, 2008). Students understood the covert messages behind bilingual signs and the importance afforded to English.

In reference to Figure 8, many students noted that since the word *Cafeteria* is so similar in French and in English, the translation is futile. The purpose of this sign is then a symbolic one. José (DT) believes the two languages are present on this sign because “we’re a country of two languages”. On the other hand, others believe the French translation is there to offer “*une représentation égale des deux groupes*”<sup>6</sup> within the school. In that sense, the sign reflects the school population (Nicolas, DT). While Nicolas (DT) believes having both languages is a sign of equality, Vera (DT) notes the placement of English first: “English before French that’s usually how it goes because we are another afterthought .... You’ll never not see that because English is the first language”. Since the French

version is missing an accent (it should be written *Cafétéria* instead of *Cafeteria*), it is conceivable that French is in fact an “afterthought” (Vera, DT) because it was not deemed important enough to verify the spelling before ordering the sign.

When explaining why English was placed before or above French, students often referenced the importance of English. For example:

Nora: Often times they’ll use English to kind of catch people’s eye because it’s usually the first language and it’s easier to understand and this is important.

Researcher : So when something’s important it’s usually in English?

Nora: Yeah, even in class the teachers will talk to us in English if it’s something they really want to stick into our heads. (Nora, DT).

Both Elektra (DSFM) and Malana (DSFM) felt that it was a typical French immersion practice to place English first. At their school, they felt French always came first and more often than not English was not even there. These mistakes and the positioning of French on the signs indicate that French has a lower status within the dual-track school. While the dual-track school was the only school where I found grammatical and spelling mistakes on their permanent location signs, the single-track school also had some mistakes on other signs. Figure 9 is misphrased and is missing accents on

<sup>5</sup> Only an English school would have an advertisement about French in English (Ayla, ST).

<sup>6</sup> An equal representation of both groups (Nicolas, DT).

the French part of the sign, it reads “*la securite et l’hygiene du travail*” when it should say “*la santé et la sécurité au travail*”.

### ***Glocal schoolscape expectations***

Participants also expected that grammatical mistakes would be more common in the French immersion contexts than in the French-language one. When tourists in Bruyèl-Olmedo & Juan-Garau's (2015) study noticed mistakes in the linguistic landscape of the place they were visiting, it tended to have a negative impact on their experience. For the most part, participants did not notice these mistakes. However, when they did, they often associated the particular image with individuals who had a lower level of French proficiency.

Participants revealed attitudes and expectations towards their own and other schoolscales. Some participants recognized an image as belonging to their school and were able to identify where it was located within their school. For example, in recognizing a sign from his school, Apollo (DSFM) remarks, “everyone walks past that sign to go to their lockers” and Eveline (DSFM) said that she saw the sign every day. This indicates that students are in fact reading and remembering the signs in their schoolscale. Certain locations in the school, or high traffic areas, are important places to post French messages since they will be seen and seemingly remembered by everyone. When participants saw a French-only sign, they believed it came from the DSFM school. When they saw a bilingual sign, they thought it was from the single-track school. Finally, an English-only sign indicated either a dual-track or an English school, even though this was not an actual research site. Participants felt that the language(s) of a schoolscale are reflective of its identity.

During the photo-elicitation interview, the participants were also given the choice of analyzing schoolscale images from a selection of six images that were displayed on the table in the interview room. Some images in this section of the interview were selected more often for analysis than others. Some elements of the schoolscale elicit more interpretations than others. Figure 10 was the most referenced image since 33 out of the 37 participants chose to analyze it.

While not all the world’s languages could be included on such a poster (see Figure 10), the absence of certain languages, especially in the Canadian context, is noteworthy. Jonathan (DSFM) mentions how he immediately noted the absence of a language he speaks on the sign: “I looked at it earlier as soon as I walked in the room, I did a quick scan and I didn’t see Swahili in there, um, no, no, it says *Welcome* twice”. Such a sign gives the impression of inclusivity. It is doubly exclusive when you do not find the language you speak on the sign. Just like Jonathan (DSFM), many participants noted that *welcome* was written twice on the sign. Participants tended to think that this meant English was more important in the sign.

Many students also noted that *welcome* was placed at the top of the sign, in a large font and was in red. Font size and colour are often used in the linguistic landscape to indicate language status (Bruyèl-Olmedo & Juan-Garau, 2015). The following citations show how the participants noticed that there was an elevated status attributed to English on this sign:

The fact that *Welcome* is still at the top in huge letters, I think that if you were to walk in the school and you looked at it *Welcome* would be the first thing that you see ... and it's big and it's in red which is like an

eye-captivating colour.  
 (Jonathan, DSFM)  
 English is the bigger more  
 dominant one featured.  
 (Mycroft, ST)  
 It's kind of the one that catches  
 your eye first so maybe they're  
 saying English is still like the  
 main language. (Nora, DT)  
 I don't like that our English  
*welcome* is the dominant  
 because it's just like look we're,  
 it's also above everything else so  
 it's like we're holding ourselves  
 above you. (Vera, DT)

Although participants felt that the purpose of the sign was to “promote diversity and valuing other languages” (Nora, DT), they clearly saw that the most valued language in the sign was English. Many participants from the DSFM and the single-track school stated that such a sign would likely not be posted in their school because they did not have a diverse population of students and because French was not listed at the top of the sign. In analyzing this sign, Léonore (ST) describes her school population:

Léonore: We're not that  
 culturally diverse here.  
 Researcher: So what do you  
 mean by that?  
 Léonore: I mean, I don't mean  
 to be rude or anything or racist  
 or anything but I'm sure you've  
 walked around here, about 90%  
 of the people here are white I  
 mean I don't think we have

anyone from East India or like  
 anything like that.

Interestingly, Léonore (ST) was a participant with a non-Anglophone linguistic background. This perhaps rendered her more able to see the lack of diversity in her school.

In the DSFM context, some students felt the sign did not fit into their schoolscape because their school only promotes French. Although Eveline (DSFM) feels as though students at her school are very accepting towards individuals from different cultural and religious backgrounds, she still cannot picture this sign in her school because “*ils veulent vraiment promouvoir le français dans notre école*”<sup>7</sup>. Jonathan (DSFM) agrees and states that French-language schools “only roll with French”.

The analysis of the schoolscape signs showed that the participants recognized elements from their own schoolsapes. Since they were familiar with their school's identity, they were also able to judge whether or not a sign might be a part of their schoolscape. In doing so, they often revealed the symbolism behind language placement and language use in the schoolscape.

### ***Zooming out to Ideologies, Identities and Awareness***

#### ***Language Ideologies***

In the DSFM context, English and French were the only languages represented in this schoolscape. Only French and English were the legitimate languages used within the school. Canada's dominant language ideology can be defined as a bilingual ideology. This bilingual

<sup>7</sup> They really want to promote French in our school (Eveline, DSFM).

ideology refers to a specific type of bilingualism: French-English (Heller, 2003; Kouritzin et al., 2009). An issue with this ideology is that other forms of bilingualism are not recognized as having the same status in the country (Mady, 2012). This ideology elevates the status of both French and English but it can also mask the importance of other languages. This was especially evident in the analysis of the Welcome Sign (Figure 10). No Aboriginal languages were present on the sign. While the five most widely spoken languages in Manitoba in 2011 were English, German, French, Tagalog and Cree (Government of Canada, 2013), Tagalog and Cree were not included on the sign. This is perhaps due to the fact that the sign was created in the United Kingdom. As well, only two out of the nine linguistic backgrounds mentioned by the participants (Hungarian, Icelandic, Lingala, Mandarin, Ojibway, Serbo-Croatian, Spanish, Swahili, and Ukrainian) were represented on the sign. Many DSFM students remarked that this particular sign would not be found at their school since their school focused only on French.

The focus on French and English as the country's official languages may be contributing to language loss of heritage and aboriginal languages in the Canadian educational system, as represented in their absence on the Welcome Sign. On a local level, this sign showed that the students are aware of language status outside and within their school and can read through the lines of language placement. Global English is unquestionably given an elevated status. French as well is important because it is the language used or supposed to be used at school. All other languages are either absent or masked at the local level. These linguistic landscape signs and especially the students' attitudes towards them are reminders that "the global and the local are also performative productions in their own right" (Grixti, 2008, p. 6). Locally, schools have the power to elevate the status of a language

simply by using it in their schoolscape. The choice of what languages are used in schoolscape is influenced by language ideologies present outside the school context and even globally. It is of utmost importance for all schools to recognize all the languages students speak and to use them in the schoolscape as this act globally elevates the status of a language. At the same time, it makes the students feel as though the languages they speak matter.

### ***Scholastic Linguistic Identity***

With regard to linguistic identity, the DSFM students as well as other participants felt that the DSFM schoolscape would be 100% French-only. This assumption holds some truth since the majority of the signs were written in French-only at the DSFM school. The schoolscape analysis of the DSFM showed that 22% of the signs were English-only and bilingual signs existed as well. The students are then creating an image of the DSFM school that reflects the importance it places on French. This French-only image is in no way a reflection of the DSFM's actual schoolscape.

What might be contributing to this French-only image envisioned by the participants is the fact that the DSFM's schoolscape, according to the students, is regulated by teachers and administrative staff. Students say that they are only allowed to post signs in French. Some students even indicated that they would be punished if they posted something in English. Despite the belief among the students that English is not allowed in their schoolscape, the DSFM schoolscape actually contains quite a few English-only posters. One can only assume that the English-only signs were then placed there by staff or teachers since the students say they would not be allowed to put up anything that was not in French. This

supports Hambye & Richards (2012) who noted that French-language schools are a “fictional creation” of a “monolingual space” (p. 179). While 22% of the signs are English-only, students do not see them. In their minds’ eye, the French-language school is a monolingual French space that does not allow other languages. This was evident when English-only signs were referenced by students as being bilingual signs. Although the signs in reality did not contain any French, the participants thought they were bilingual. This is perhaps due to their belief that if a sign was written in English in their school it would have to contain French as well.

Seeing the French language when it is not actually there could also be reflective of students’ single complex language repertoire (García & Kleyn, 2016). In this sense, students see both languages working together even when they are not both there. The English sign is then activating their bilingual language repertoire. In a linguistic landscape study, Gorter & Cenoz (2015) found that when multilingual participants read multilingual signs, they read all the languages and did not focus on just one. While my participants also read both languages, they more importantly created a bilingual sign in their mind when it did not in fact exist. In the process of this research study, all students were required to use their multimodal literacy skills and their entire linguistic repertoire, to read and speak in French and English and any other language they understood, which required them to explore multiple forms and use multiple literacy resources (Jewitt & Kress, 2003). While the school attempts to protect French by isolating French from English, the students’ bilingual and multilingual practices demonstrate that they are actually working with both languages in a more global way.

The single-track schoolscape included a greater number of bilingual signs and a more equal representation of both English and French than the other school contexts. Single-track participants believed that both French and English should be present in their school in order to represent the school’s identity as a bilingual school. For example, the school’s outside sign (Figure 5) contained information in both French and English. On the other hand, French-only signs were also accepted by the students, because, by virtue of their schooling, they should be able to understand them. In the single-track context, English is really only necessary for visitors or parents.

While they consider themselves and their school as being bilingual, this French-English bilingualism is not even. Although both English and French were represented in the schoolscape, they did not hold the same status. English was the unquestionable first language in this context. Advertising for student-led groups in the single-track school seemed to be done in French. This is one way for French to make its way outside of the classroom and to be used by the students for communicative purposes. Students even remarked that seeing French in their schoolcape encouraged them to read the French message, to learn new vocabulary and to use the knowledge learnt in class. However, an extended and continuous effort needs to be made to support French use in general since educators will always have to contend with the increasing power of global English.

A school’s linguistic identity, as seen through its linguistic landscape and according to its students, is congruent with a glocal linguistic identity in the sense that, globally, “young people everywhere increasingly appear to share similar tastes in styles of dress and entertainment, [but] there are still significant regional, ethnic, and cultural differences” (Grixti, 2008, p. 2). Schoolscapes are a reflection

of the school's locally chosen linguistic identity and of the global dominance of English in the greater society. Locally, students expect to see French in their school because it is the language of instruction. Despite the importance afforded to French in these schools, not even the French-language school succeeded in creating a purely monolingual French space. In terms of regional differences between the schools, both French and English were represented to different degrees in each schoolscape. While English is not the primary language of instruction in any of these school contexts, English nevertheless held a privileged status because it is the language of the majority provincially and highly regarded nationally and globally. Other schoolscape studies have also noted the importance afforded to English in schools where it is not the language of instruction; hence global English has infiltrated many local schools around the world (Amara, 2018; Biró, 2016; Szabó, 2015).

### ***Language Awareness***

The most notable difference between the schools was not the number of French or English signs within each school, but instead the way in which French was used in the schoolscape. In the dual-track setting, French was used as a decoration and to reinforce the economic value of French. Cenoz & Gorter (2008) note that many public signs have an economic purpose. Sometimes a language is present on a sign in order to attract tourists instead of being useful to the individuals who live there. Such a sign has an "indirect use value" (Cenoz & Gorter, 2008, p. 65). This was the way in which French was used in the dual-track schoolscape since there did not appear to be any student-created posters in French. French was also used to denote a change in territory, creating a physical separation between the English and French tracks within the school. In the dual-track setting, French use

is relegated to the classroom. While French is allowed a space outside the classroom, it is the teachers who are using the language to fabricate a French space. Teachers in the dual-track setting may feel as though the French wing is their responsibility. Similarly, the German signs in Dressler's (2015) schoolscape study of a German dual-track school were only located in the German wing and placed there by teachers. Since there are no examples of bottom-up or student-created signs in the French wing of this dual-track school, French becomes a "vogue display language" (Curtin, 2008, p. 221). It signals prestige and economic power in the same way that the use of English does in places like Taipei (Curtin, 2008). The only difference is that the school is "selling" (Gilbert, DT) the French language by marketing its linguistic capital (Flynn, 2013) and referencing Canada's bilingual ideology. While French is a local language, marketing is done with reference to European French, with symbols of the Eiffel Tower present in the dual-track schoolscape, adding a more global capital to the language. Moreover, the link to the national bilingual ideology also positions the language as not only being a local language but a national one with potential global power. This linguistic capital associated with the French-language is thought to encourage parents to enroll their children in French immersion programs in the first place (Yoon & Gulson, 2010).

Since many of the French-only signs are located in the French block, the change in language also indicates a change in territory. The dual-track schoolscape is a reflection of the way in which the French language is perceived and the status it is given within the school. French-only signs are mainly acceptable within the French block, where it is given a prestigious status. Although French is used elsewhere in the school, in those cases, it is commonly accompanied by an English translation and

placed in a secondary position vis-à-vis English. French is used in the schoolscape to advertise the program, to advertise the language to the students and to represent the students' presence within the school. Notably, students are aware of the status of French and the language marketing taking place in their school. The dual-track setting has made an effort to recognize the French immersion students by giving them a particular space within the school. However, that space is used mostly by the teachers. While the school also has bilingual signs elsewhere, permanent signs were not uniformly bilingual and mistakes were found on some of the French permanent signs. If it is worth putting French on these signs, it is also worth verifying that the message is grammatically correct. These mistakes, in turn, reflect badly on the students who already undervalue their own competence in French (Roy & Galiev, 2011). The dual-track schoolscape demarcates the French territory within the school, showing that the value attributed to the language is specific to particular contexts.

Students need to see a language being used in their schools in order to learn it and to develop a sense of belonging within their schools. This has to be done glocally. If the use of a language is bound exclusively to the confines of a few specific classrooms, evidently the only students benefiting from the language are only those taking that particular class. All students would benefit from being more globally exposed to French and other minority languages outside of the classroom. If this were the case, they would develop the awareness that other languages exist and are used to convey messages within the school. This in turn does more to recognize and value the minority language speakers within the school than sectioning

off a space within the school reserved just for those languages.

### ***Glocal Linguistic Awareness through Linguistic Landscapes***

The students who participated in this study were not linguistic landscape researchers yet, they demonstrated glocal language awareness while analyzing the schoolscales. Locally, they accurately identified the status attributed to each language through font size, colour and language placement on the signs in their own and other schools. These are intentional choices and students can read between the lines. Globally, they are aware that language is used in a schoolscape for a reason. While analyzing the signs, students used their multimodal literacy skills (Jewitt & Kress, 2003) and expressed specific attitudes and expectations with regards to the languages present in their schoolscales reflective of national language ideologies, of each school's linguistic identity and of their own language awareness.

Some students believed bilingual signs were meant to represent Canada's bilingual ideology while others felt they were meant to represent the two linguistic groups within the school. In some cases, English signs were invisible, perhaps due to its elevated status worldwide. At the French-language school, the presence of English was not seen since it was not supposed to be there. However, students are not immune to the global power of English and understand that it often placed in a position of power even within schools where it is not the main language of instruction. Students also noted the lack of other languages in the schoolscape, which they felt pointed towards the lack of diversity in the student population or to the masking of that diversity in order to promote

French. On a global level, this might reference the status of minority languages worldwide in comparison to English. This study has shown that students can recognize the covert messages written on signs within their schools and they offer a unique contribution to schoolscape and linguistic landscape research in general.

In terms of schoolscape research in linguistic minority settings, it is important for the minority language to be visible and globally used for communicative purposes in all schools that use it as a language of instruction, in and outside the classroom, no matter the program. It would also be beneficial for schools to focus on a mixture of minority-language-only signs and bilingual or multilingual signs. School contexts worldwide could benefit from allowing other languages a place in the schoolscape. Some schoolscape studies have started to include teacher or principal perspectives to the researcher's analysis (Amara, 2018; Biró, 2016; Szabó, 2015). This study focused on student perspectives and showed that they should not be excluded from future studies since their perspectives are unique. Schoolscape research should involve teachers, administrators and students so that they may then work together to change their space and to promote global language awareness.

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### **References**

Amara, M. H. (2018). Palestinian schools in Israel. *Asian-Pacific Journal of*

*Second and Foreign Language Education*, 3(1).  
<https://doi.org/10.1186/s40862-018-0047-1>

Backhaus, P. (2008). Rules and Regulations in Linguistic Landscaping: A comparative perspective. In *Linguistic Landscapes: Expanding the scenery* (pp. 157–172). Routledge.

Bautista, M. A., Bertrand, M., Morrell, E., Scorza, D., & Matthews, C. (2013). Participatory Action Research and City Youth: Methodological Insights From the Council of Youth Research. *Teachers College Record*, 115(10).

Biag, M. (2014). Perceived School Safety: Visual Narratives from the Middle Grades. *Journal of School Violence*, 13(2), 165–187.  
<https://doi.org/10.1080/15388220.2013.831769>

Biró, E. (2016). Learning Schools in a Minority Setting. *Acta Universitatis Sapientiae, Philologica*, 8(2), 109–121.  
<https://doi.org/10.1515/ausp-2016-0021>

Borrero, N. E., & Yeh, C. J. (2010). Ecological English Language Learning Among Ethnic Minority Youth. *Educational Researcher*, 39(8), 571–581.

Brown, K. (2012). The Linguistic Landscape of Educational Spaces: Language Revitalization and Schools in Southeastern Estonia. In D. Gorter, H. F. Marten, L. Van Mensel, & G. Hogan-Brun (Eds.), *Minority Languages in the Linguistic Landscape* (pp. 281–298). Palgrave Macmillan.

Bruyèl-Olmedo, A., & Juan-Garau, M. (2015). Minority languages in the linguistic landscape of tourism: The case of Catalan in Mallorca. *Journal of Multilingual and Multicultural Development*, 36(6), 598–619.



<https://doi.org/10.1080/01434632.2014.979832>

Cenoz, J., & Gorter, D. (2008). Language Economy and Linguistic Landscape. In E. Shohamy & D. Gorter (Eds.), *Linguistic Landscapes: Expanding the scenery* (pp. 55–69). Routledge.

Curtin, M. (2008). Languages on Display: Indexical Signs, Identities and the Linguistic Landscape of Taipei. In E. Shohamy & D. Gorter (Eds.), *Linguistic Landscapes: Expanding the scenery* (pp. 221–237). Routledge.

Danaher, P. A., Baguley, M., & Midgley, W. (2013). Imagining and Reimagining the Role of Participants in Education Research: Ethics, Epistemologies, and Methods. In W. Midgley, P. A. Danaher, & M. Baguley (Eds.), *Routledge Research in Education: Role of Participants in Education Research: Ethics, Epistemologies, and Methods* (pp. 1–10). Routledge.

Dressler, R. (2015). Signgeist: Promoting bilingualism through the linguistic landscape of school signage. *International Journal of Multilingualism*, 12(1), 128–145. <https://doi.org/10.1080/14790718.2014.912282>

Flynn, N. (2013). Linguistic capital and the linguistic field for teachers unaccustomed to linguistic difference. *British Journal of Sociology of Education*, 34(2), 225–242. <https://doi.org/10.1080/01425692.2012.710004>

Galman, S. A. C. (2009). The truthful messenger: Visual methods and representation in qualitative research in education. *Qualitative Research*, 9(2), 197–217. <https://doi.org/10.1177/1468794108099321>

García, O., & Kleyn, T. (2016a). Translanguaging Theory in Education. In O.

García & T. Kleyn (Eds.), *Translanguaging with Multilingual students: Learning from Classroom Moments* (pp. 9–33). Routledge.

García, O., & Kleyn, T. (2016b). *Translanguaging with multilingual students: Learning from classroom moments*. Routledge.

Gorter, D. (2013). Linguistic Landscapes in a Multilingual World. *Annual Review of Applied Linguistics*, 33, 190–212.

<https://doi.org/10.1017/S0267190513000020>

Gorter, D., & Cenoz, J. (2015). Translanguaging and linguistic landscapes. *Linguistic Landscape*, 1(1–2), 54–74. <https://doi.org/10.1075/ll.1.1-2.04gor>

Government of Canada, T. B. of C. (2013, March 20). *Linguistic Minority Populations by First Official Language Spoken (2011 Census Data) 12 / 18*. <http://www.tbs-sct.gc.ca/rp/mpol-pmlo/mpol-pmlo12-eng.asp>

Grixti, J. (2008). “Glocalised” Youth Culture as Linguistic Performance: Media Globalisation and the Construction of Hybrid Identities. *Noves SL.: Revista de Sociolingüística*, 1, 1–8.

Gubrium, A., & Harper, K. (2013). *Participatory visual and digital methods*. Left Coast Press.

Hambye, P., & Richards, M. (2012). The paradoxical visions of multilingualism in education: The ideological dimension of discourses on multilingualism in Belgium and Canada. *International Journal of Multilingualism*, 9(2), 165–188. <https://doi.org/10.1080/14790718.2011.644558>

Hands, C. M. (2014). Youth Perspectives on Community Collaboration in Education: Are Students Innovative Developers, Active Participants, or Passive Observers of

Collaborative Activities? *School Community Journal*, 24(1), 69–97.

Hauerwas, L. B., Kerkhoff, S. N., & Schneider, S. B. (2021). Glocality, Reflexivity, Interculturality, and Worldmaking: A Framework for Critical Global Teaching. *Journal of Research in Childhood Education*, 35(2), 185–199.

<https://doi.org/10.1080/02568543.2021.1900714>

Heller, M. (2003). Globalization, the new economy, and the commodification of language and identity. *Journal of Sociolinguistics*, 7(4), 473–492.  
<https://doi.org/10.1111/j.1467-9841.2003.00238.x>

Hill, D. A. (2005). The Poetry in Portraiture: Seeing Subjects, Hearing Voices, and Feeling Contexts. *Qualitative Inquiry*, 11(1), 95–105.  
<https://doi.org/10.1177/1077800404270835>

Hult, F. (2008). Language Ecology and Linguistic Landscape Analysis. In E. Shohamy & D. Gorter (Eds.), *Linguistic Landscape: Expanding the Scenery* (pp. 88–103). Routledge.

Kouritzin, S., Piquemal, N., & Renaud, R. (2009). An International Comparison of Socially Constructed Language Learning Motivation and Beliefs. *Foreign Language Annals*, 42(2), 287–317.  
<https://doi.org/10.1111/j.1944-9720.2009.01022.x>

Landry, R., & Bourhis, R. Y. (1997). Linguistic Landscape and Ethnolinguistic Vitality: An Empirical Study. *Journal of Language and Social Psychology*, 16(1), 23–49.  
<https://doi.org/10.1177/0261927X970161002>

Landry, R., & Forgues, É. (2007). Official language minorities in Canada: An introduction. *International Journal of the Sociology of Language*, 2007(185), 1–9.

Leung, G. Y., & Wu, M.-H. (2012). Linguistic landscape and heritage language literacy education: A case study of linguistic rescaling in Philadelphia Chinatown. *Written Language & Literacy*, 15(1), 114–140.  
<https://doi.org/10.1075/wll.15.1.06leu>

Lightbown, P. M. (2014). Making the minutes count in L2 teaching. *Language Awareness*, 23(1–2), 3–23.  
<https://doi.org/10.1080/09658416.2013.863903>

Mady, C. (2012). Official language bilingualism to the exclusion of multilingualism: Immigrant student perspectives on French as a second official language in ‘English-dominant’ Canada. *Language and Intercultural Communication*, 12(1), 74–89.  
<https://doi.org/10.1080/14708477.2011.592193>

Manan, S. A., David, M. K., Dumanig, F. P., & Channa, L. A. (2017). The glocalization of English in the Pakistan linguistic landscape. *World Englishes*, 36(4), 645–665.  
<https://doi.org/10.1111/weng.12213>

Marshall, C., & Rossman, G. (2011). *Designing qualitative research* (5th ed.). SAGE.

Matteucci, X. (2013). Photo elicitation: Exploring tourist experiences with researcher-found images. *Tourism Management*, 35, 190–197.  
<https://doi.org/10.1016/j.tourman.2012.07.002>

Moyer, M. (2008). Research as Practice: Linking Theory, Method, and Data. In L. Wei & M. Moyer (Eds.), *The Blackwell Guide to*

*Research Methods in Bilingualism and Multilingualism* (pp. 18–31). Blackwell Pub.

Næss, H. E. (2016). Creating “the Field”: Glocality, Relationality and Transformativity. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, 17(3), 1–20. <https://doi.org/10.17169/fqs-17.3.2600>

Nieto, S. (2010). *The light in their eyes: Creating multicultural learning communities* (10th anniversary ed.). Teachers College Press.

Pilote, A., & Magnan, M.-O. (2008). L'éducation dans le cadre de la dualité linguistique canadienne. Quels défis pour les communautés en situation minoritaire? *Canadian Issues*, 47–63.

Przymus, S. D., & Kohler, A. T. (2018). SIGNS: Uncovering the mechanisms by which messages in the linguistic landscape influence language/race ideologies and educational opportunities. *Linguistics and Education*, 44, 58–68. <https://doi.org/10.1016/j.linged.2017.10.002>

Rose, G. (2014). On the relation between ‘visual research methods’ and contemporary visual culture. *The Sociological Review*, 62(1), 24–46. <https://doi.org/10.1111/1467-954X.12109>

Roy, S., & Galiev, A. (2011). Discourses on Bilingualism in Canadian French Immersion Programs. *The Canadian Modern Language Review / La Revue Canadienne Des Langues Vivantes*, 67(3), 351–376.

Sweetman, P. (2009). Revealing habitus, illuminating practice: Bourdieu, photography and visual methods. *The Sociological Review*, 57(3), 491–511. <https://doi.org/10.1111/j.1467-954X.2009.01851.x>

Szabó, T. P. (2015). The Management of Diversity in Schoolscapes: An analysis of Hungarian practices. *Apples - Journal of Applied Language Studies*, 9(1), 23–51. <https://doi.org/10.17011/apples/2015090102>

Tupas, R. (2015). All of Myself Has to Change: A Story of Inclusion and Exclusion in an Unequal Learning Space. In R. Rubdy & S. B. Said (Eds.), *Conflict, Exclusion and Dissent in the Linguistic Landscape* (pp. 170–184). Palgrave Macmillan.

Woolner, P., Clark, J., Hall, E., Tiplady, L., Thomas, U., & Wall, K. (2010). Pictures are necessary but not sufficient: Using a range of visual methods to engage users about school design. *Learning Environments Research*, 13(1), 1–22. <https://doi.org/10.1007/s10984-009-9067-6>

Yoon, E.-S., & Gulson, K. N. (2010). School choice in the stratilingual city of Vancouver. *British Journal of Sociology of Education*, 31(6), 703–718. <https://doi.org/10.1080/01425692.2010.528871>

## Figures

Figure 1: DSFM Graduation Photos



Figure 2: University of Manitoba Poster



Figure 3: Single-track Gym Sign



Figure 1: Single-track Committee Poster

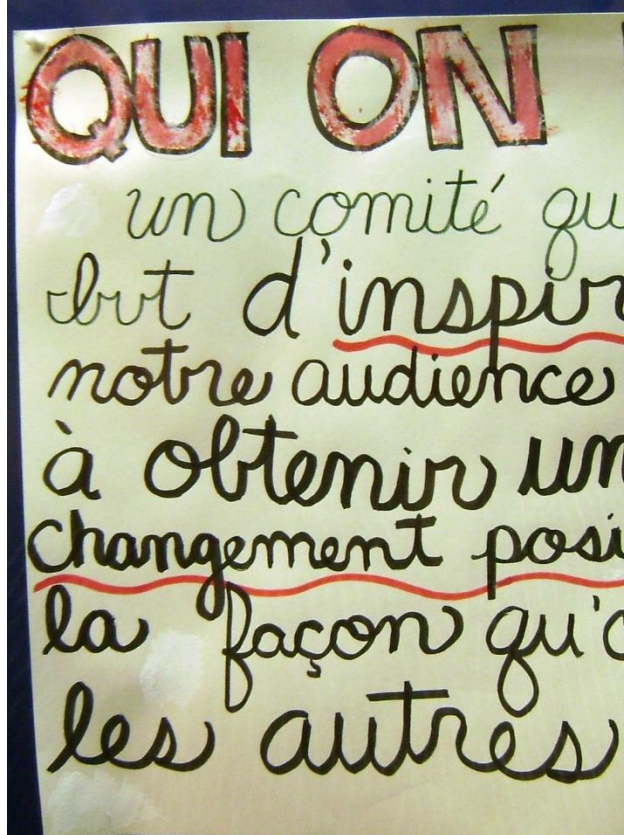


Figure 5: Single-track Outdoor Sign



Figure 6: Dual-track Learn French Poster



Figure 2: Dual-track Media Production Laboratory



Figure 3: Dual-track Cafeteria



Figure 4: Single-track Health & Safety

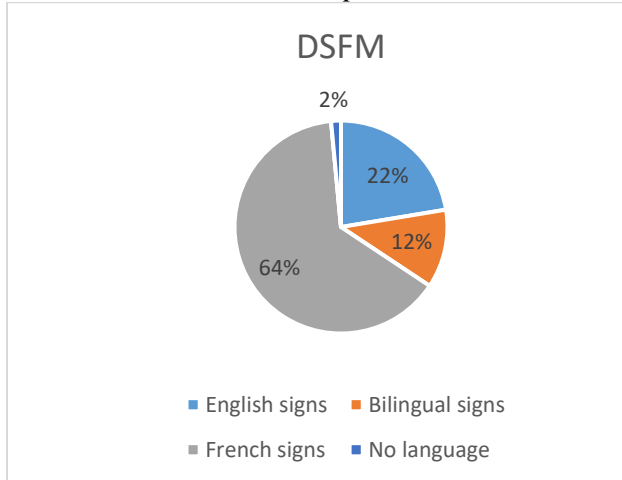


Figure 5: Dual-track Welcome Sign



## Tables

*Table 1: DSFM Schoolscape*



*Table 2: Single-track Schoolscape*

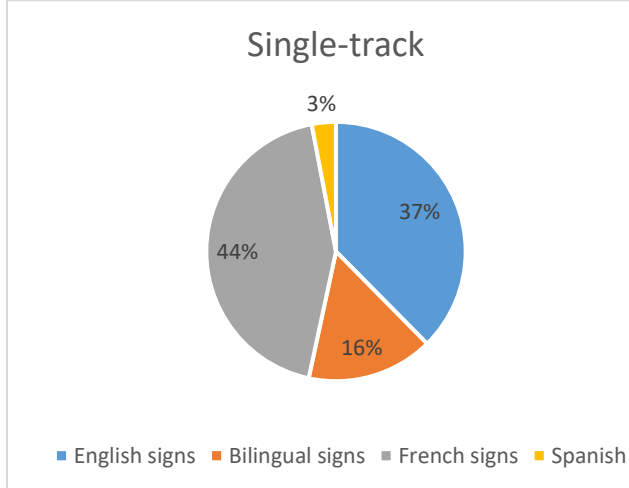




Table 3: Dual-track Schoolscape

