# *Parlure Games*: Leaping Outta the HVPT Lab and into the Ecological Classroom

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*Reterritorialization is an imperial process that creates settler colonial nations, like Canada, and funds intergenerational settler policies to assert intergenerational control over unceded territory, like English-only and French-only teacher education programs. This results in pedagogies designed to discourage learners from exploring other languages, instead focusing on the learning of low-variable, standardized materials (e.g., from mass media), which privilege social speech markers indexed to white native speakers. Such invariability is neither sociocognitively advantageous to learners nor linked to robust language learning, predicting miscommunication. To address this lack of variation in the imperial language curriculum, we developed* Parlure Games, *a computer-assisted language-learning tool that promotes exposure to and interaction with highly variable audiovisual social speech markers (via high-variability phonetic training: HVPT, a technique that enhances learning through varied input), while also scaffolding land-sensitizing activities critical of imperial sprawl using online mapping. In this paper, we report on the development of* Parlure Games, *explore its pedagogical affordances, and assess its acceptance as a de/colonizing audiovisual learning tool by teacher candidates enrolled in a TESL program in Quebec. By providing opportunities to interact with diverse social speech markers,* Parlure Games *provides a means to pluralize the imperial classroom while sensitizing instructors to its reterritorializing processes.*

*La reterritorialisation est un processus impérial qui crée des états coloniaux, comme le Canada, et qui finance des politiques intergénérationnelles de colonisation afin d'exercer un contrôle intergénérationnel sur des territoires non cédés, comme les programmes de formation des enseignants de l'anglais ou du français uniquement. Il en résulte des pédagogies linguistiques conçues pour décourager les apprenants d'explorer d'autres langues, se concentrant plutôt sur l'apprentissage de matériels standardisés à faible variabilité (par exemple, du contenu des médias de masse) qui privilégient les marqueurs de discours sociaux associés aux locuteurs natifs de race blanche. Cette invariabilité n'est ni sociocognitivement avantageuse pour les apprenants ni liée à un apprentissage solide de la langue, prédisant plutôt des erreurs de communication. Pour remédier à ce manque de variation dans les programmes d'enseignement des langues impériales, nous avons développé* Parlure Games, *un outil d'apprentissage des langues assisté par ordinateur qui favorise le contact et l'interaction avec des marqueurs de discours sociaux et audiovisuels très variables (à travers l'entraînement phonétique de haute variabilité : une technique qui promeut l'apprentissage à l'aide d'un intrant diversifié), tout en favorisant des activités de sensibilisation*

*aux territoires qui critiquent l'étalement impérial à l'aide de la cartographie en ligne. Dans cet article, nous rendons compte du développement de* Parlure Games, *explorons son potentiel pédagogique et évaluons son acceptation en tant qu'outil d'apprentissage audiovisuel décolonisant par de futurs enseignants inscrits à un programme d'enseignement de l'anglais langue seconde au Québec. En offrant la possibilité d'interagir avec divers marqueurs de discours sociaux,* Parlure Games *fournit un moyen pour diversifier la classe impériale tout en sensibilisant les enseignants à ses processus de reterritorialisation.*

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A language becomes imperial when it "deterritorializes" from its ancestral homeland and "reterritorializes" onto foreign lands (Motha, 2014). Emerging from imperialism is settler colonialism, characterized by allochthonous (non-Indigenous) peoples asserting ownership over stolen territory using monoculturally oriented ecological structures (e.g., plantations, monolingual policies) intergenerationally to form their national identity, one that is ultimately premised on "eliminating" Indigenous ecosystems (i.e., plants, animals, peoples) so as to replace them (Veracini, 2022). English, French, and Spanish all qualify as imperial languages when their pedagogical aim engages these indigenocidal, reterritorializing processes on Turtle Island (North America). In the imperial second language (L2) classroom of Canada, standardized varieties are privileged (Lau, 2022), which are socially invariable dialects representing the communicative patterns of "whiteness and higher socioeconomic class" via textbooks and multi-billion-dollar–funded mass media, stigmatizing other dialects, and resulting in low-variable learning (Curzan et al., 2023, p. 23). The imperial English and French languages, and the L2 teaching programs in Canada that disseminate them, perpetuate reterritorializing settler policies when their pedagogies are monolingual (e.g., English-only), actively discouraging learners from exploring or mixing other languages (Wei & García, 2022).

To address the monolingual orientations of imperial L2 teaching pedagogies in the settler colony called Canada, this paper tracks the development of *Parlure Games*, a plurilingual teaching tool that supports imperial teachers in having critical conversations about imperialism. Using an interactive online map, and following high-variability phonetic training (HVPT) characteristics, online videos are posted either locally or globally, providing users opportunities to attune to the multiple voices that constitute the imperial language and visualize its geographic sprawl. Questions related to video content afford critical discussions related to reterritorialization processes of imperial learning. Criticality is defined as problematizing normalized assumptions about knowledge and social practices, questioning power and inequality, and focusing on broader issues that seek visions for change and inclusivity, using self-reflexivity practises (Lau, 2022). When applied to Canadian L2 teacher education, this involves confronting its settler colonial history (Sterzuk, 2022).

The goals of PG are to

(a)    expose learners to high-variable social speech markers using diverse audiovisual materials (e.g., online videos sourced from non-mass media);
(b)    develop plurilingual competencies for processing multiple speakers; and
(c)    afford opportunities to critically discuss the reterritorializing sprawl of imperial languages using land-sensitizing activities (e.g., mapping).

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To substantiate these goals, we follow Cardoso's (2022) four-stage chronological framework for developing new or existing computer-based pedagogies that assist L2 learning, which involves an iterative approach of repeatedly developing, testing, and improving the software system over multiple cycles (Larman & Basili, 2003). Our exploratory study begins with Stage One, the development of *Parlure Games*, followed by Stage Two's review of its pedagogical affordances, and in Stage Three, we assess its suitability for in-classroom use, using feedback from English L2 teacher candidates in Quebec via the Technology Acceptance Model (Venkatesh & Davis, 2000). We conclude with considerations for improving *Parlure Games* before Stage Four, involving in-class implementation to test its pedagogical effectiveness.

## Background

### *Stage One: Development of* Parlure Games

Stage One of Cardoso's (2022) chronological framework tracks the theoretical rationale behind *Parlure Games* as it relates to the perception of social speech markers in human voices, the role of listening to multiple voices in L2 learning, and how these concepts connect to imperial language teaching and learning.

### Social Speech Marker Perception and Learning

The learning environment is not static; rather, it exists within complex and dynamic socioecosystems of nested micro-sized (e.g., home, classroom) to macro-sized (e.g., ministries of education, mass media) scales (van Lier, 2011), and differentiating between these systems is a core language skill set, without which all languages would be indistinguishable (Larsen-Freeman, 2020). In L2 listening, this differentiation process is called "attunement" and involves direct perception of the constellation of sounds characterizing a language; and with sufficient attunement experience, intermediate-level listening skills emerge, which are sensitive to frequencies in the language, and affect L2 speaking (Flege & Bohn, 2021, p. 92). Speech perception, or attuning to "voices," means accurately processing both the linguistic content of speech and the extralinguistic and paralinguistic social speech markers of its speaker. Extralinguistic markers are unlearnable and uncontrollable by the speaker (e.g., vocal tract length, age, race), whereas paralinguistic markers are learnable and involve processing visual (e.g., facial expressions, gestures), semiotic (e.g., signs), affective (e.g., tone of voice), and sociocultural (e.g., class, education) information (Laver & Trudgill, 1979). The role social speech markers play in first language acquisition was studied in three waves: the first analyzed sociophonetic variation in regional and social dialects; the second wave focused on the ethnographic embodiments of speech makers for forming speaker identity; and the current third wave investigates how learners use linguistic and semiotic variation to become stylistic agents and assemble sociocultural meaning, signalling their membership to a particular community (Hall-Lew et al., 2021). These three waves demonstrate how social speech markers have developed from atomistic views into one where learners dynamically engage multiple modalities to communicate the plurality of their evolving identities.

Our understanding of listening is based on research in visual learning (van Lier, 2011), demonstrating how aural and visual perception have always been linked. For example, visual markers related to paralinguistic speech markers, like facial expressions and gestures, facilitate language learning over listening alone, with audiovisuals recommended for L2 learning (Hardison & Pennington, 2021). Moreover, research in extralinguistic social speech markers demonstrate how aural and visual processes work together to affect speech processing. Extralinguistic markers related to older age involve processing visual (e.g., greying hair) markers that often co-occur with acoustic markers (e.g., vocal jitters, slower

speech rate; Laver & Trudgill, 1979). The aural and visual extralinguistic markers related to race, defined as distinct from ethnicity and involving the perception of physical differences (e.g., skin colour, facial features; Kubota, 2021), is known to affect listening comprehension—the effort required to understand speech. For example, English voiced by Asian-faced native speakers was rated as less comprehensible than English voiced by white-faced native speakers, resulting in "accent hallucination" for non-white English speakers (Lippi-Green, 2011, p. 285). This audiovisual indexing of whiteness to English is typical of imperial languages and is a well-studied phenomenon in raciolinguistic research (Rosa & Flores, 2023). Recommendations call for exposing L2 learners to diverse voices so as to ameliorate "misinterpreted markers" by the listener (Laver & Trudgill, 1979, p. 26) and to destigmatize exploration beyond standardized white dialects, often heavily featured in mass media (Curzan et al., 2023). Such inclusive practices are linked with sociocognitive development, where learners value themselves not as deficient speakers of a language but as plurilingual users of a multimodal communicative repertoire in their own right (Wei & García, 2022). Despite calls to pluralize the imperial L2 classroom, monolingual orientations persist (Lau, 2022). High-variability learning, as we discuss next, is a computer-based methodology that supports teachers in creating curriculum that amplifies multiple voices and fosters inclusive, long-term language learning.

## L2 Listening and HVPT Learning

The effect of high-variability learning is attested across multiple modalities (e.g., visual and motor learning; Brekelmans et al., 2022). Since the 1990s, high-variability phonetic training (HVPT) has supplied empirical evidence that using multiple "voices" builds more accurate and robust L2 listening and speaking skills (Barriuso & Hayes-Harb, 2018). This computer-mediated methodology involves training listeners to perceive and identify segmental (e.g., consonants, vowels) or suprasegmental (e.g., intonation, stress) features not found in learners' first language, or first dialect (Clopper & Pisoni, 2004), which affect differences in meaning (e.g., /r/-/l/ in rock-lock). HVPT training has five distinct characteristics (Logan et al., 1991):

1. talker variability (voiced by at least five speakers);
2. human (not computer-manipulated) speech;
3. real words;
4. multiple exposures to speakers using identification training tasks (classifying a feature) over discrimination tasks (grouping like-sounding features), as the former demands categorical judgement linked to long-term learning; and
5. testing conditions that match training conditions with immediate feedback required on tasks.

Over the years, HVPT replications have focused on the learning order and set-size of segmental (e.g., consonantal contrasts and diphthong vowels by Japanese and Korean ESL learners) and suprasegmental features (e.g., lexical tones in Mandarin Chinese by English learners), by increasing/decreasing both talker variability and training period duration with consistently high rates of phonetic learning that generalizes to novel L2 linguistic features and new voices (Brekelmans et al., 2022). The success of HVPT methodologies is attributed to three factors (Barriuso & Hayes-Harb, 2018): first, it affords L2 learners attunement experiences for multiple voices, enabling them to habituate to the fluctuating extralinguistic and paralinguistic markers of speech, thereby freeing them to focus their attentional resources on comprehending the linguistic contents of speech; second, it underlines that the sociophonetic mechanisms engaged during multi-dialectal learning within a first language are the same ones engaged during plurilingual learning across languages; and finally, it demonstrates how computers can be effective means

for training L2 listening and speaking skills. Note that replications involving computer-altered speech or non-real words are considered inappropriate for HVPT training, because such learning is not based on actual voices or words found in the language, making it socially unusable for L2 learners (Logan et al., 1991).

Despite numerous studies over the decades reporting how HVPT sharpens L2 perception and production skills, low-variability standards continue to be used in L2 imperial classrooms (Curzan et al., 2023), which does not afford enough opportunities for extralinguistic and paralinguistic attunement, nor does it predict the kind of robust L2 learning attested in HVPT methodologies, inevitably affecting comprehension. Such monolingual pedagogies are ethically questionable practices in multilingual environments (van Lier, 2011) and underscore the need for Canadian L2 teacher education to support emerging teachers in designing multilingual pedagogies that challenge its white supremacist history (Lau, 2022), a reterritorializing process that invisibilizes non-standard dialects and non-imperial (e.g., Indigenous, immigrant) languages (Motha, 2014; Sterzuk, 2022). Although HVPT research remains tethered to the laboratory setting, more recent studies are trying to bridge this gap, extending HVPT to L2 classrooms (Barriuso & Hayes-Harb, 2018).

## Parlure Games*: Motivation*

In response to the ongoing use of invariable social speech markers found within imperial L2 classrooms, we created *Parlure Games* (PG), a play on the English term *parlour games* (describing lively group activities played indoors) and *parlure* (a Québécois term denoting how an individual speaks, linking them to a particular community). This computer-based platform extends HVPT beyond the laboratory setting, providing learners opportunities to attune to the variation of imperial voices. Audiovisual materials, like online videos, offer a wide variety of functionalities (pausing, playback, captioning) and genres that can be indexed by theme, tagged by keywords, and archived by date, enabling offline accessibility through downloading (Hubbard, 2017). In the next section, we provide an overview of a PG expedition.

## **Parlure Games*: Overview***

PG is an online plurilingual tool that uses existing media platforms to expose imperial L2 learners to diverse social speech markers via audiovisual materials, adding "authenticity" to standardized curricula (Seeger, 2019). Our design is based on a previous case study (Chung & Cardoso, 2022), which identified that L2 imperial teachers' audiovisual material selection is based on its duration, acoustic quality, and conformity with the lesson plan's theme. Although teachers held positive views toward variation, analysis of the duration and variability of five social speech markers (age, sex, race, region, and native speaker status) in their audiovisual materials, derived mostly from mass media, were invariable across most markers, resulting in speech featuring mostly middle-aged, white native speakers from the local region.

In response, PG materials are sourced from non–mass-media outlets (e.g., social media, independent film boards), featuring voices missing from the imperial curriculum, specifically elderly, adolescent, non-white, and non-native speakers. One travel point involves student groups watching a video and answering feedback questions related to its content and speech markers, facilitating group interaction. Following HVPT characteristics, videos must be derived from five speakers (each with distinct extralinguistic and paralinguistic markers) to complete a PG "expedition." Five-point expeditions can be a "road trip" within a region (e.g., city or country) or an international "voyage" (e.g., previous or current colonies). Both expedition types involve tracking the imperial language across territory, sensitizing learners to how language use changes in relation to land.

## *Creating* Parlure Games

All PG tasks are hosted on Google-based applications, which are accessible across most operating systems (e.g., Microsoft Windows, macOS, Android) and devices (e.g., smartphones, laptops, desktops), giving the tool a ubiquity that boosts chances of smoother interactions and user familiarity. Creating a PG unit requires a Google account, navigating to https://www.google.ca/maps/d/u/0/ and selecting "create a new map" (Figure 1). Users must first decide whether they are creating a local "road trip" or an international "voyage" and rename the "layer" accordingly (Figure 2). Once a theme has been chosen (e.g., discussing art), corresponding audiovisual material (i.e., online video) is selected featuring a voice missing from the curriculum (e.g., non-white, non-native speakers), which is then geo-located to its region by dropping a pin onto the map (Figure 3). This pin is embedded with the video's URL, along with a link to questions related to the video's content and speech markers (Figure 4), which is hosted on Google Forms (Figure 5). Student groups confer and reply to these questions, and automated feedback is provided, complying with HVPT criteria. Once five points have been traversed, a PG expedition is complete (Figure 6), allowing users to visualize the spread of the imperial language across a given territory, supporting critical discussions related to imperial sprawl. Privacy settings for Google-based maps and forms can be adjusted for in-classroom use or made public and accessible outside the classroom.

Upon completion of a PG expedition, users will have attuned to and discussed the meaning of five distinct variations, and the resulting map provides a visual to facilitate critical discussions about imperial sprawl, sensitizing users to land-language variation. *Parlure Games*, therefore, promotes high-variation audiovisual learning related to reterritorialization processes, addressing regional and other social speech marker variations found to be missing from the imperial L2 curriculum.
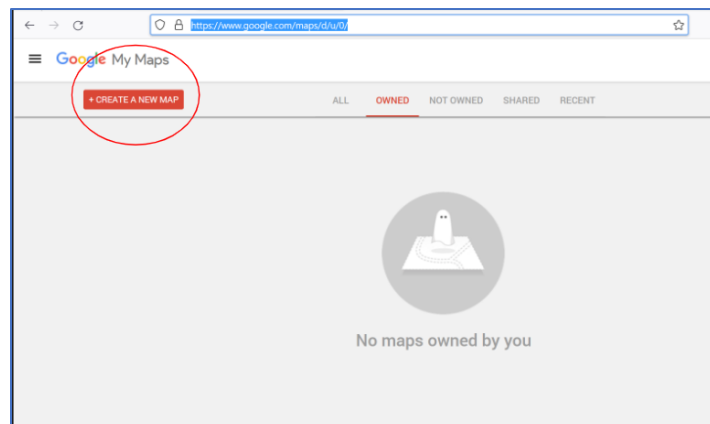
Figure 1

Creating a *Parlure Games* Map

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Figure 2

Renaming the Layer as a Local "Road Trip" or an "International Voyage"
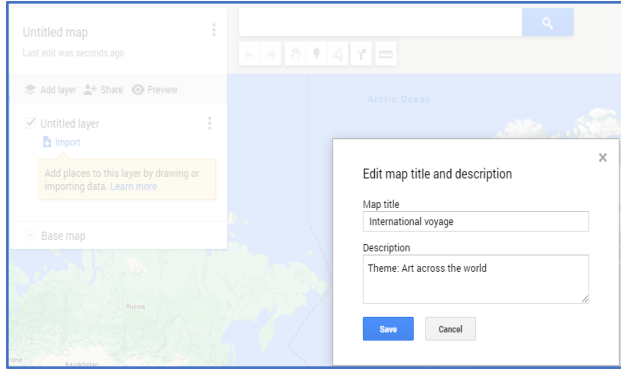


Figure 3

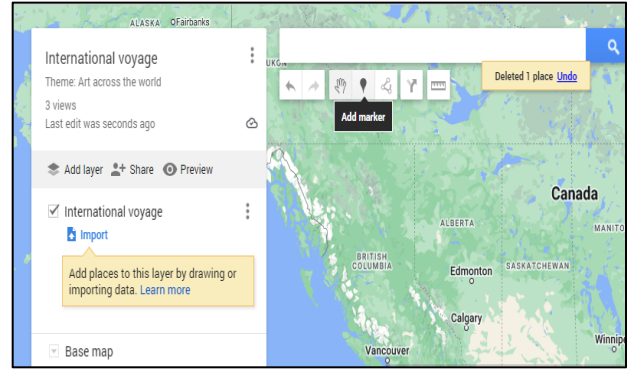Adding a Pin ("Marker") to a Google Map



Figure 4
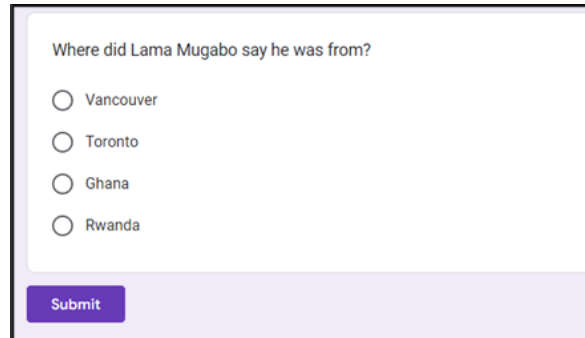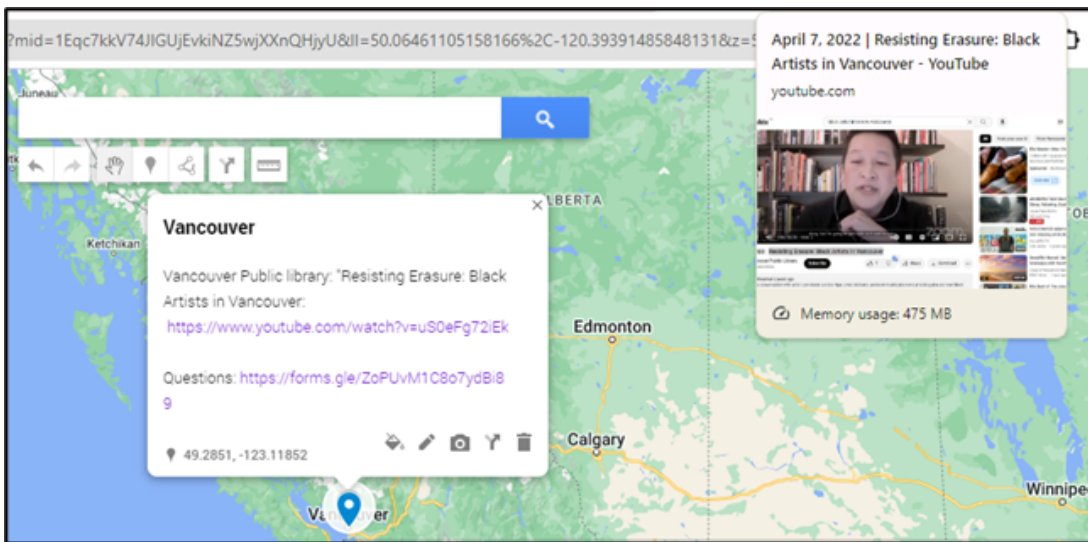Completed Pin, Including Links to Video and Group Questions

Figure 5

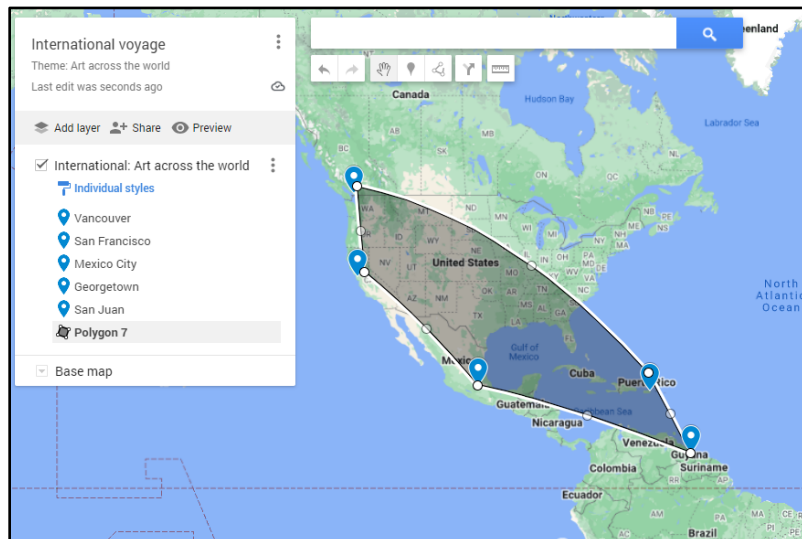Example of Comprehension and Identification Task Associated with Audiovisual Material, Hosted on Google Forms



Figure 6

Completed Expedition of a PG International "Voyage" to Canada, the United States, Mexico, Guyana, and Puerto Rico



## Stage Two: Exploring Pedagogical Affordances of *Parlure Games*

After development, Cardoso's (2022) second stage explores the tool's pedagogical affordances, following an iterative approach to software development highlighted earlier (Larman & Basili, 2003). To ensure that PG is compatible for L2 classrooms, we employ ecological language-learning pedagogy, which involves activities that explore language use in micro- (e.g., home or classroom) and macrosystems (e.g., national or mass media) and facilitate communication that is either dyadic (between two or more speakers) or triadic, where group exchanges depend upon interaction with non-human elements, like technology, signs, or land (van Lier, 2011). This action-oriented pedagogy advocates for critical plurilingual learning because it is

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sociocognitively advantageous for learners and ethically responsible for L2 teachers in multilingual environments. Table 1 outlines the ten characteristics of an ecological L2 classroom and how PG addresses them.

Table 1

Ten Characteristics of Ecological Pedagogies Applied to *Parlure Games*

| Characteristics | Definitions | *Parlure Games* |
|---|---|---|
| 1. Relationality | Language is relational; its meaning is based on its place and role with other elements nested within micro/macro ecosystems, and on how they are used by speech communities over time. | Audiovisual materials are sourced from five speakers located within a micro (e.g., city or country) or macro (e.g., global areas) system, supporting the learning of relationality in social and regional communities. |
| 2. Context | Meaning emerges within specific spatiotemporal and sociocultural contexts by language users, allowing communication with human and non-human interlocutors. | Learner groups use technology to geo-locate audiovisual material related to a particular theme, providing sociocultural context to a specific time and space. |
| 3. Systems | Language rules are not prescriptive but deduced through exposure to use by a speech community within a given socioecosystem; emphasis is on why one form is used over another. | Materials are sourced from non–mass-media outlets, representing exposure to authentic language use by diverse speech community members in a particular territory. |
| 4. Emergence | The communicative repertoire is in flux, constantly reorganizing and transforming information derived from active language use within a socioecosystem. | Learning tasks are interactive and completed in groups, encouraging discussions that help develop learners' multimodal communicative repertoire. |
| 5. Quality | Learning must be relevant to learner interests, have real-world implications, and engage their intellect and emotions. | Learning tasks involve group engagement to check comprehension of, and form opinions on, audiovisual materials that are based on students' communicative needs and interests. |

| | | |
|---|---|---|
| 6. Value | Education involves developing a moral and ethical stance toward the language one is learning to embody. | Acquiring an imperial language in settler-colonial contexts raises ethical questions about replicating its norms, cultivating a moral stance toward learning. |
| 7. Critical perspective | Opportunities are afforded to examine institutional structures, advocating for improvements from a clear ideological stance. This results in transformative pedagogies that develop learners' agency to articulate their perceptions in ways not always quantifiable via standardized testing. | Non–mass-media materials and maps afford opportunities to examine why such variation exists while visualizing imperial structures. This enables learners to articulate their opinions on using an imperial language. |
| 8. Variation | Involves noticing diverse regional and social dialects, allowing learners agency to decide which varieties to embody or reject, as they relate to their evolving identity. | Users interact with five distinct regional or social varieties, supporting them in choosing which linguistic identities they wish to converge with or diverge from. |
| 9. Diversity | Acknowledges individual learner differences, and promotes multilingual learning, which offers sociocognitive advantages over monolingual approaches. | Using HVPT characteristics offers plurilingual sociophonetic attunement and sociocultural learning opportunities. |
| 10. Agency | Promotes physical, social, and psychological (intellectual, affective) mobility within various socioecosystems through activities that engage in critical reflections on ethical learning. | Users virtually traverse multiple socioecosystems, developing their attunement skills for diverse speech communities, authoring their own ideas, and engaging in critical reflection on the ethics of imperialism. |

In sum, PG is a computer-mediated tool addressing the need for variation and critical discussion in the imperial L2 audiovisual curriculum by using HVPT characteristics, which hone attunement skills for social markers of speech, focusing learner attention on comprehending the linguistic content of speech. To move this lab-based methodology into the L2 classroom, PG follows 10 ecological characteristics, a plurilingually inclusive pedagogy supporting dyadic and triadic interactions with technology. We now report on evaluations of PG by imperial L2 instructors.

## Stage Three: Assessing the Suitability of *Parlure Games*

Once a tool is deemed pedagogically appropriate, Cardoso's (2022) third stage involves assessing its usability and acceptance ratings. The Technology Acceptance Model 2 (TAM2) provides such ratings and is designed to measure adaptation behaviours toward new technology. It theorizes that the effects of external variables on the intention to use a tool, like its features or design, can be mediated by two determinants: perceived usefulness, measuring "the extent to which a person believes that using the tool will enhance job performance"; and perceived ease of use, which measures "the extent to which a person believes that using the system will be free of effort" (Venkatesh & Davis, 2000, p. 187). Perceived usefulness is composed of three social influence (subjective norm, voluntariness, image) and four cognitive instrumental processes (relevance, output quality, results demonstrability, perceived ease of use) that together strongly determine user acceptance. As time is spent interacting with a technology, social influences regarding the use of a tool (e.g., peer influence) tend to wane, but cognitive instrumental processes (e.g., how relevant it is for learning) often remain stable. Perceived ease of use, on the other hand, refers to the degree to which a person believes that using a particular technology is free of effort. The higher the TAM2 ratings are on these measures (e.g., on a 7-point Likert scale), the more likely users will accept the adopted technology. Since the 1990s, the TAM2 has been a reliable model to predict acceptance of a technology at pre- and post-implementation among adult users.

In our study, we report on TAM2 ratings for perceived usefulness and ease of use of (see Tables 2 and 3 for target survey items), as well as written feedback on (see Appendix), *Parlure Games* as it relates to the tool's three teaching and learning goals: teaching variability, developing plurilingual competencies, and affording critical discussions. This paper is guided by the following research questions:

RQ1: To what extent do *perceived usefulness* and *perceived ease of use* influence L2 instructors' acceptance of *Parlure Games* as a pedagogical tool in their classrooms?

RQ2: What are L2 instructors' perceptions of *Parlure Games* for its three goals?

## Method

### *Study Context*

In 1642, France established a religious settler colony on the unceded territories of eleven Indigenous nations, reterritorializing it as Quebec, which eventually became a province in the larger settler-colonial macrosystem, reterritorialized as Canada. Education was largely overseen by divisive religious institutions, specifically the majority French Catholics and minority English Protestants. By the early 1900s, teacher education for anglophones was overseen by McGill University, but it would take until the Quiet Revolution in the 1960s for it to fall under the province's purview for francophones (Smyth & Hamel, 2016). Nationalist movements swept across Quebec, including the officialization of French under *Bill 22* (1974), making it the language of the workplace, signage, and schools, replacing previous religious tensions with linguistic ones. Unlike the rest of Canada, the teaching of ESL (TESL) in Quebec occurs mostly within francophone, not anglophone, primary and secondary schools, where ESL teachers must also pass a French-language proficiency test, making them bilingual (Riches & Parks, 2021). Currently, almost half of Quebeckers live on the island of Tiohtià:ke, reterritorialized as Montreal, where English is a minority language but where 28% of Montrealers increasingly report fluency in a third language other than Canada's official French and English languages, demonstrating an upward plurilingual trend in the city (Statistics Canada, 2021).

The assessment of *Parlure Games* was conducted in an English-medium university "Teaching Phonology" course required for the Bachelor of Education program, certifying graduates to teach ESL in Quebec primary and secondary schools. All educators seeking certification are subject to Ministry requirements related to the Quebec Education Program's (2021) 13 professional competencies, which include taking into account student diversity (competency #7), mobilizing digital technologies (#12), and acting in accordance with the ethical principles of the profession (#13). Classes consisted of 13 weekly two-hour-and-forty-five-minute in-class lectures, each involving group activities using computer-mediated tools (e.g., Google Drive documents, online videos). Weeks 1 to 9 focused on solving segmental and suprasegmental data sets related to the pronunciation of North American English. Weeks 10 and 11 involved individual and group jigsaw reading of Lau's (2022) article. Classroom activities focused on critical discussions about the history of and inclusive practices within ESL teaching in Canada and explored plurilingual techniques (e.g., cross-linguistic analysis; Galante et al., 2022) for teaching pronunciation. Students played PG on week 12, before their peer-teaching assignment, requiring designing a plurilingual pronunciation teaching technique.

## Participants

The 17 teacher candidates (female, $n = 8$; male, $n = 8$; non-binary, $n = 1$) who agreed to participate were all proficient speakers of English as a first ($n = 12$) and second language ($n = 5$) and had knowledge of French as a first ($n = 3$), second ($n = 9$), or third ($n = 5$) language. With the exception of one participant, all others had experiences with other English varieties ($n = 3$; e.g., American Sign Language, Guyanese, New York) or other languages, like Spanish ($n = 6$), Italian ($n = 4$), Japanese ($n = 3$), Vietnamese ($n = 2$), Arabic ($n = 2$), Cantonese ($n = 1$), Catalan ($n = 1$), and Tamil ($n = 1$) through heritage, study, travel, or media. Participants, therefore, were plurilingual, with interests in or experiences with languages outside of their ethnic backgrounds. Most were under 30 years old ($n = 14$), and three were under 45. With the exception of one older student with more than five years' ESL teaching experience, all others had limited experience outside of their concurrent teaching internship that semester.

Participants were placed in groups of three to four and provided with step-by-step instructions for selecting PG content (Figure 7). Each step was modelled to students, and a demonstration of a completed PG map was shown. For the first step, the class chose the theme of comedy, and groups were tasked with finding corresponding audiovisual material, geo-locating it using a pin, identifying a linguistic objective for how this feature could be taught, and presenting their travel point to the class (Figure 8).

Immediately afterwards, participants individually completed an online questionnaire consisting of three parts: biodata information (i.e., age, language background, length of teaching experience), TAM2 ratings based on a 7-point Likert scale (i.e., 1 = Totally disagree; 7 = Totally agree), and short-answer questions (see Appendix).

## Data Collection and Analysis

A mixed-methods approach to data collection and analysis was adopted. To answer the first research question, mean ratings were reported for the TAM2's *perceived usefulness* (see Table 2) and *perceived ease of use* (see Table 3) of *Parlure Games*, as it related to the three goals of teaching variability, supporting plurilingual competencies, and critically discussing imperial languages. Qualitative data were analyzed using an iterative inductive process of motif coding for recurring words or ideas, identifying patterns, and then forming categories that shaped the overarching concepts of participant feedback (Saldaña, 2021).

Figure 7

In-Class Instructions for Creating a *Parlure Games* Travel Point



Figure 8

In-Class Instructions for Presenting a PG Travel Point



## Results

### RQ1: TAM2 Ratings—Perceived Usefulness

Most participants agreed on the *perceived usefulness* of PG across all scalar items (*n* = 14), with the highest rating related to "making listening tasks easier to teach," followed by "be useful," and "enhance listening training programs"; these were also the ratings with the lowest standard deviation, supporting their reliability measures.

### Table 2

### TAM2: Perceived Usefulness

| Using *Parlure Games* in an ESL class could ... | *M* / 7 | *SD* |
|---|---|---|
| Improve the effectiveness of listening tasks | 5.65 | 1.41; 2:7 |
| Boost student productivity (e.g., speaking) | 5.35 | 1.23; 2:7 |
| Enhance my listening training program | 5.71 | 1.23; 3:7 |
| Be useful | 5.82 | 1.20; 3;7 |
| Permit me to complete listening tasks rapidly | 5.24 | 1.35; 2:7 |
| Make listening tasks easier to teach | 6.00 | 1.38; 3:7 |
| **Average** | **5.63** | **1.33** |

### RQ1: TAM2 Ratings—Perceived Ease of Use

Again, most participants agreed on the *perceived ease of use* of PG across all scalar items (*n* = 15), with highest ratings related to "easy to use." PG interaction was also highly rated for "smooth interactions," with ratings more tightly clustered between 4 and 7 compared to "clear and understandable," which had a wider rating spread from 2 to 7.

### Table 3

### TAM2: Perceived ease of use

| | *M* / 7 | *SD* |
|---|---|---|
| My interaction with PG is clear and understandable. | 5.88 | 1.02; 2;7 |
| I found PG easy to use. | 5.94 | 1.06; 3;7 |
| I found it easy to get PG to do what I wanted it to do. | 5.59 | 1.37; 2;7 |
| I found my interactions with PG to be smooth. | 5.88 | 1.02; 4;7 |
| Learning how PG works was easy. | 5.47 | 1.24; 3;7 |
| It was easy for me to become adept at using PG. | 5.64 | 1.03; 4;7 |
| **Average** | **5.73** | **1.12** |

### RQ2: Teachers' Perceptions—Open-ended Questions

To better understand these acceptability ratings, participants gave written feedback on what they liked and disliked about PG, specifically with regard to its three goals: teaching sociophonetic variability, developing plurilingual competencies, and affording critical discussions of imperialism.

## General Feedback

In terms of what participants liked about PG, three concepts were identified. First, it was viewed as engaging, derived from 16 codes categorizing PG as "engaging," "fun," "easy to use," and "interesting," because it contained "authentic materials." The second concept, derived from 15 codes, involved diversity, categorizing PG as facilitating either the learning or comprehension of diversity (e.g., languages, dialects, accents, cultures, and geographies), a process that was often described in terms of "comparing" or "adjust[ing] their listening quickly." The final concept, freedom to choose, was derived from 15 codes describing PG's ability to "choose," "change," or "pick" where on the map to go, what materials to use, and to "adjust levels as much as you want." Taken together, these concepts can be understood as the freedom to engage in linguistic diversity, which most participants ($n = 12$) stated was their experience: "it was an easy way to listen to examples of many different dialects back-to-back."

In terms of what participants disliked about PG, three main issues were identified. Many wanted more time navigating it ($n = 9$), while others focused on the "stress" ($n = 3$) of finding materials and wanted pre-selected content or a "list of countries" to choose from. Finally, the interface was described as too "simple," needing more interactivity, like "trivia" ($n = 2$), and others found it too limiting (e.g., "text box size"), wanting a mobile version for phones ($n = 2$). Five participants left no comment.

## Teaching Variability

All participants stated that PG could contribute to teaching linguistic variation. The most common description was its ability to provide "an approachable way to talk about the different components of these dialects and their possible differences or similarities with the target language or L1" by using "snippets of speech from different" regions. This sociophonetic learning was described in two ways. First was its ability to expose users to diversity (derived from 56 codes) based on three types of speech markers: phonetic ("accent"), regional ("place"), and social context ("authentic"). The following comment, for example, operationalized all three: "an accent from Newfoundland isn't usually presented and could be hard to understand if never experienced previously." The second concept was PG's engagement of attunement skills (derived from 24 codes) based on categories describing listening tasks, keeping users engaged, and developing sociocultural skills, which one user stated could include learning how to "identify people who … have the same dialect."

## Plurilingual Competencies

Almost all participants ($n = 16$) replied that PG could contribute to developing plurilingual competencies in two ways. The first, derived from 42 codes, was developing skill sets such as (a) perceptual differentiation in "listening," "comparing," or finding "similar[ities]" between different varieties and speakers, cultures, and subject matter; (b) production skills for pronouncing certain "segmental" and "suprasegmental" features or via discussions; and (c) cognition (e.g., "comprehension," "processing"). The second competence, derived from 22 codes, described a spirit of inclusion for diverse language, dialects, accents, and cultures, which could be "confidence boosting," with one user noting, "[it] helps to decentralize NAE [North American English] by highlighting other dialects, not as lesser, but just different ways of speaking English." Three participants provided plurilingual activities they would use: "upload[ing] different people reading texts," creating a "map to show how certain words are pronounced in different parts of the world" (i.e., isoglosses), and showing "examples of translanguaging" or using

translation for "mediation." One participant, however, reported unease, stating that there might be too "many examples … that a class would have to hear."

## Critically Discussing Imperial Languages

In terms of the tool's acceptability ratings for discussing imperialism, five participants were "unsure" or stated it could "potentially" be used. The remaining 12 noted three distinct ways in which PG could contribute to critical discussions. The first was to show the spread of English ($n = 10$), including "how easy it was to find videos of speakers in different countries speaking English, but you couldn't do the same with most other languages." The second was to discuss English's "origins," "history," and current "effects on local dialects, languages," with many ($n = 7$) wanting more historical and geographical knowledge: "imperialism … is rarely mentioned in class. I feel like I would need some material to have a stronger understanding and speak about it with confidence." One participant noted that teachers could assign "readings that discuss [colonial] topics" to help bridge this gap. The final concept involved normalizing talking about differences ($n = 6$), underlining that imperial L2 learners should "embrace … different dialects and that there is no end goal to what their English should sound like."

## **Discussion**

Following Cardoso's (2022) framework, we have provided the development and motivation for *Parlure Games,* an interactive online tool affording opportunities to explore and critically discuss the linguistic variation of an imperial language. We have discussed its pedagogical affordances and now turn to analyzing its acceptance and suitability for in-classroom use among plurilingual participants who had experience critically discussing imperial languages and completing plurilingual. In this study, ESL teacher candidates' acceptability ratings for PG's *perceived ease of use* ($M = 5.73$) and *perceived usefulness* ($M = 5.63$) were high, with participants indicating that it was user-friendly and beneficial for the three goals of our tool. These high TAM2 ratings, which posit that a tool's *perceived ease of use* (belief that a tool can enhance teaching performance) and *perceived usefulness* (belief that using the tool is free of effort) help determine users' acceptance and adoption of new technologies (Venkatesh & Davis, 2000), suggest that it is likely to be accepted and adopted by imperial L2 teachers. We now turn to discussing how the tool met each goal.

### *General Feedback*

Overall, teacher candidates liked the fact that PG gave them the "freedom to choose" and to engage with different varieties of the imperial language, by accessing "authentic" materials from non–mass-media sources. However, some also found this "freedom" stressful. This is a known phenomenon in computer-assisted language learning, as sorting through online material to fit the teaching context is time-consuming. Hubbard (2017) offers multiple sorting methods for teachers to curate their online content, like "explanatory" materials focused on phonetic learning, suitable for sociophonetic and plurilingual learning, and "regulatory" materials for metacognitive reflection on tasks, suitable for critical discussions on imperialism.

Despite familiarity with Google-based applications, many participants wanted more time to navigate PG and felt pressure to find content related to the agreed-upon comedy theme, wanting pre-selected material. To the first point, time constraints are always a classroom issue and can be overcome by extending PG use over several classes or assigning it for at-home use. In a study measuring computer-based learning outside the classroom, L2 learners determined the quantity and schedule of their training sessions and demonstrated learning gains on the linguistic features under study (Barriuso & Hayes-Harb, 2018). To the

second point, offering pre-selected material entails pre-selecting a theme or linguistic objective, which may disregard ecological "quality" (be relevant to learner interests and needs; van Lier, 2011). Participant feedback provided a useful suggestion by having student groups in charge of selecting PG's audiovisual content (i.e., following the material selection guidelines; Figure 7), ensuring that materials are relevant to learner interests. In fact, another suggestion involved assigning at-home activities related to imperial histories and geographies (e.g., noting when the English arrived or its effect on local languages), which addresses concerns about needing more support in understanding imperialism's history. We further suggest that student groups also create the comprehension and social speech marker questions related to the video's content, as this enables learners to have multiple interactions with audiovisual materials, satisfying HVPT characteristics requiring multiple exposures to human voices. Finally, comments related to finding the interface too simplistic and wanting more interactivity, like trivia questions, is addressed under Future Directions below.

## Teaching Variability

All teacher candidates agreed that PG could contribute to teaching about the variation of an imperial language, describing it as "an approachable way" to expose learners to linguistic diversity. Their responses about how the tool could be used focused mostly on paralinguistic social speech markers in first-wave (e.g., regional accent learning) and second-wave (e.g., situational context learning) variation studies. Exposure to diverse regional accents and authentic situations have long been advocated for in imperial L2 classrooms to enrich the curriculum beyond its standardized invariability (Seeger, 2019) and to feature speakers other than its white and Eurocentric members (Rosa & Flores, 2023). Although attuning to regional variation has shown robust phonetic learning in both second dialect (Clopper & Pisoni, 2004) and second language (Brekelmans et al., 2022) learning, focusing on region alone ignores other social speech markers, like the variation found among diverse ages or racial groups, both of which have visual markers known to affect speech processing. In the event that regional variety is kept constant (e.g., North American English alone), then variation must occur in other markers (e.g., age, race, sex, or native-speaker status) to ensure that HVPT characteristics are met. Participants additionally described how PG could be used to sharpen skills such as listening, discussion, and sociocultural learning. As discussed in Stage Two, PG was designed to be an interactive ecological learning tool (van Lier, 2011), meaning that it facilitates the navigation of the nested, plurilingual, socioecological systems that L2 learners live in (Larsen-Freeman, 2020), which we discuss next.

## Plurilingual Competencies

Although one participant was concerned that PG would result in exposure to too much variation, a noted reservation found in L2 teacher education often linked to notions of keeping the imperial language "pure" (Motha, 2014, p. 32), most teacher candidates agreed that PG could contribute to plurilingual learning. Feedback overwhelmingly targeted attunement skills. For listening, the core skill set needed for oral language learning (Larsen-Freeman, 2020), the focus was on detecting and comprehending "differences or similarities with the target language or L1" for segmentals and regional accents. For speaking, the focus was on pronouncing and discussing "segmental" or "suprasegmental" features and how it contributed to comprehension and sociocultural learning, like differentiating between cultures. Specific plurilingual activities, like cross-linguistic analyses using isoglossic maps and translanguaging, can contribute to this cultural learning goal.

Relatedly, participants mentioned that PG promoted a "spirit of inclusion" by "decentraliz[ing]" the dominant North American English variety and showcasing "other dialects, not as lesser, but just different ways of speaking English," a move that they claimed could be "confidence boosting" for learners. Inclusion, however, involves more than showcasing linguistic diversity; it involves a reduction in communicative barriers (Chung & dela Cruz, 2024). One participant mentioned that PG could help learners "identify people" by their "dialect," a skill set linked to enhancing L2 comprehension (Brekelmans et al., 2022). However, dialects of imperial languages are not simply "different ways" of speaking English; they are varieties that emerge as resistance to native-speaker norms in the macrosystem, such as African American English, which challenges white-speaking norms in the United States and asserts inner-group affiliation (Baker-Bell, 2020). Again, showcasing regional varieties alone may not be sufficient to support critical multi-dialectal learning of an imperial language and may actually reproduce colonial logics, an issue we explore next.

## Critically Discussing Imperial Languages

Teacher candidates' acceptability ratings for PG's ability to contribute to discussing English imperialism received the most diverse feedback. Those who felt it did contribute to discussing imperialism focused on how it helped visualize its geographic sprawl and the fact that the widespread nature of English made it "easy to find videos of speakers in different countries." The tool, some concluded, normalized talking about differences, liberating learners from rigid ideals about "what their English should sound like." This spirit of radical inclusion, however, runs the risk of normalizing English imperialism. Although PG's use of mapping was intended to visualize imperial sprawl, maps can "reinforce colonial-era expansionist" mindsets, obfuscating its reterritorializing history on unceded territories and normalizing the imperial language (Bedecarré, 2022, p. 35). To avoid reproducing imperial expansionist logics, we adopt Bedecarré's (2022) suggestion of showcasing imperial maps at different time periods, which provides a time lapse of expansion, regression, and overlap with competing imperial powers, thus inviting learners to manoeuvre through diverse macrosystems and to question colonial borders. "Shuttling" between "global agendas, while simultaneously marking specific localized agendas", opens what Bhattacharya (2021) describes as a "de/colonizing" space that disrupts settler education's traditional mandate of perpetuating oppressive structures (p. 1), like reterritorializing monolingual policies. Additionally, this approach enables imperial language users, both teachers and students alike, to acquire vocabulary for critiquing imperialism (Bedecarré, 2022), supporting those who felt they needed more historical and geographical knowledge.

Overall, ESL teacher candidates' acceptability ratings for PG were high, indicating that it was user-friendly and likely to be adopted by users. However, we acknowledge the limitations of having conducted this study among plurilingual users living in Canada's most multilingual city, where English has a minority status, as this may have resulted in more favorable PG ratings. Following the iterative approach for software development (Larman & Basili, 2003), future PG testing should derive acceptability ratings from teacher candidates with less plurilingual experiences or who live in locations where the imperial language under study is dominant in the environment (e.g., French in Montreal) to ensure that the tool meets its three stated objectives. Doing so would help us to substantiate changes before in-classroom implementation, the final stage of Cardoso's (2022) framework for conducting computer-assisted language-learning research.

*Future Directions*

In Stage Four, *Parlure Games* is assessed for its pedagogical effectiveness. Based on the feedback received by pre-service teachers, the following modifications should be made to the interface and materials before in-class deployment.

## Interface

In response to participants finding the interface limiting and wanting more interactivity, like trivia questions, future PG iterations should have pins hotlinked to a singular site that can host both audiovisual content and questions simultaneously and that is accessible across multiple device (e.g., laptops, phones). Interactive gaming sites, like Kahoot, have such capabilities and can provide immediate feedback on responses, thus satisfying HVPT requirements. Moreover, response time to questions can also be captured with points assigned for correct responses, a feature known to boost user interactions and develop language skills (Cardoso, 2022), allowing instructors to track student progress, facilitating Cardoso's fourth stage of pedagogical testing.

## Materials

To satisfy requests for a fully-loaded PG that uses regional variation first, to promote high-variability learning (but does not focus on one social speech marker alone) and, second, to challenge white-settler monolingual pedagogies (but without reproducing settler-colonial logics), we provide an example of a PG expedition voiced entirely by Indigenous speakers. Re-employing participants' choice of comedy as a theme, and using links to Kahoot, a local "road trip" can feature five comedians from any of the 630+ Indigenous communities across Canada (Government of Canada, 2024), or an international "voyage" involving five comedians from across the globe (Figure 9).

First, to ensure that regional variation is not the only speech marker targeted, elders and younger comedians from across the globe who are male, female, or two-spirit can be targeted, providing extralinguistic variation related to markers of age, race, and gender. As mentioned earlier, sourcing online material from non–mass-media outlets diversifies the monolingual, white-indexing standard of mass media currently overused in imperial L2 classrooms (Curzan et al., 2023). Moreover, social media plays an important role for Indigenous people to form connections to and articulate their Indigeneity, while resisting ongoing colonization and sharing their culture with non-Indigenous peoples (Crandall, 2023). Within Canada, government-funded professional associations can also be resources for non–mass-media content, often containing thematically indexed audiovisual material curated with and by Indigenous community members, making it easier for users to locate and organize "regulatory" and "explanatory" materials (Hubbard, 2017). For example, the Alberta Teachers of English as a Second Language organization offers online audiovisual resources themed "Indigenization," and the federally funded Immigrant Education Society offers resources themed as "Indigenous voices in the classroom." Second, Indigenous-voiced materials afford opportunities to learn about Indigenous issues, which are often pan-continental concerns related to the violence of imperial sprawl and reterritorialization processes, challenging colonial logics.

Making Indigenous-authored material part of the imperial L2 curriculum disrupts and unsettles the reterritorialization practices that settler education systems are intergenerationally built upon, specifically in its invisibilization of Indigenous voices (Sterzuk, 2022). It also addresses calls 62–65 of the federal Truth and Reconciliation Commission for Canadian teacher programs to decolonize their curriculum and

Figure 9

Expedition of PG International "Voyage" with Link to Questions Hosted on Kahoot of a Female Mniconjou and Sicangu Lakota Comedian Located on Land Reterritorialized as Oregon, United States
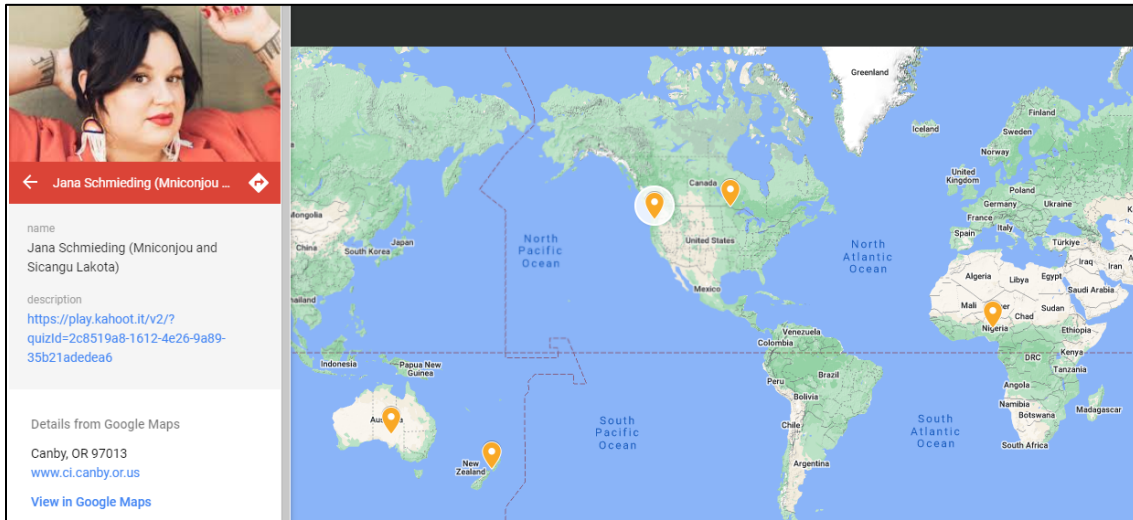


forward "Indigenist agendas," which involve promoting Indigenous authors and issues (Battiste, 2013, p. 73). In Quebec, this aligns with Professional Competency #15 to "value and promote Indigenous knowledge, worldviews, cultures, and history" (First Nations Education Council, 2020).

Finally, before creating Indigenous-centred curriculum, imperial L2 instructors are advised to first critically self-examine their personal relationship to the colonial process (Battiste, 2013). We recommend the Multimodal Autobiographical *Landguaging* Portrait (MALP), an arts-based self-reflection tool that enables imperial instructors to reflect, identify, and map their own linguistic experiences to the locations where they occurred, sensitizing them to how land has influenced their language use and to externalize these reflections with colleagues for feedback and professional development (Chung & Chung Arsenault, 2023). These self-reflection exercises were created to address the gap found in our case study (Chung & Cardoso, 2022), whereby imperial L2 teachers reported positive feelings about having a linguistic diverse curriculum, but their classroom materials were found to be sociophonetically invariable. To further support imperial L2 teachers in designing land-sensitizing pedagogies with Indigenous-authored materials that use plurilingual activities, we also recommend using the *Landguaging* template (Chung & dela Cruz, 2024).

## Conclusion

Monolingually oriented pedagogies found in the microsystem of the imperial L2 classroom are connected to the assimilative reterritorializing policies in the macrosystem, like the English and French settler colonies collectively called Canada. Such classrooms are known to diffuse low-variable, standardized dialects, indexed to white speakers, which are not diverse enough to promote the kind of robust language learning that HVPT predicts, nor is it socially useful in multilingual environments, like cities, where navigating diverse linguistic, cultural, and semiotic information is so normal, it is considered "mundane" (Pennycook & Otsuji, 2019). To diversify the social speech markers of the imperial L2 audiovisual curriculum, we

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followed Cardoso's (2022) four-stage framework for creating computer-assisted language learning curriculum, allowing us to track the development, pedagogical affordances, and acceptance ratings for *Parlure Games*. This online mapping tool uses HVPT and ecological characteristics affording users opportunities to multimodally attune to linguistic variability, promote plurilingual learning, and support critical discussions regarding the sprawl of imperial languages. Although chronological, this framework is not linear, and requires reiterative processes during design and development in response to user feedback and theoretical developments, making this tool adaptable to both instructor and learner needs. We have also provided pedagogical activities that centre Indigenous voices, opening possibilities to de/colonize the imperial L2 curriculum and promote inclusivity.

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**Teaching sociophonetic variation**
Based on what we learned in class regarding HVPT and the importance of listening to diverse dialects of the target language, could *Parlure Games* contribute to dialectal learning? How?

**Plurilingual teaching**
Based on what we learned in class regarding critical ESL and the importance of supporting plurilingual competence, could *Parlure Games* contribute to plurilingual learning? How?

**Critically discussing imperialism**
Could *Parlure Games* contribute to discussing English imperialism? How?

**Open constructs**
- What did you like about *Parlure Games*?
- What did you not like about *Parlure Games*?
- What would you like to see in future versions?
- Other comments?