Moving Beyond the Classroom

Translanguaging and Trans-semiotising in Dutch CLIL Classes

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Abstract

Following the abolishment of nationally-enforced monolingual policies for Dutch bilingual education, schools are faced with designing their own rules regarding language use in the classroom (Oattes, 2021). In this light, the present study empirically uncovers the current communicative practises of teachers and students in secondary education CLIL classes from the theoretical lens of translanguaging and trans-semiotising. The data (i.e., audio recordings and observation notes) were gathered from biology, geography, history, and physics CLIL lessons in a third year of a certified senior bilingual school in the Netherlands. The findings indicate that teachers use translanguaging and trans-semiotising practises to scaffold content in their lessons. Where subjects in the natural sciences more frequently relied on physical demonstrations, subjects in the social sciences employed temporal methods of scaffolding. The results regarding students' translanguaging and trans-semiotising suggest that students use these communicative practises to express their identities and roles, and to incorporate humour in the classroom. The current paper concludes by proposing that the implementation of these practises in the classroom might help foster an inclusive environment in which both teachers and students feel validated.

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Chapter 1 Introduction

After its first appearance in 1989, bilingual secondary education has experienced a tremendous increase in the Netherlands throughout the recent decades (Maljers, 2007). Current figures indicate approximately 130 secondary schools offering bilingual education to supply the popular demand (Nuffic, n.d.-a). The majority of these schools follow a Content and Language Integrated Learning (CLIL) pedagogy in which students are required to learn subject-specific content alongside a target language (TL) which is predominantly English (Mearns et al., 2024). The first *L* in the term corresponds to three theoretical perspectives on language: (1) language *of* learning, (2) language *for* learning, and (3) language *through* learning (Coyle et al., 2010). The first perspective delineates disciplinary language; that is, the different styles and genres associated with a specific subject (Llinares et al., 2012). Language *for* learning describes the language used for pedagogical purposes; it refers to the language that is used in the classroom. The last principle, language *through* learning, underscores the process of acquiring a language through active engagement. It highlights the interwoven nature of language and cognition. As students acquire new knowledge, they simultaneously acquire new linguistic forms to express that knowledge. These three perspectives interweave with each other, accentuating "the idea that language is a set of meaning-making resources used when learning different academic subjects" (Sohn et al., 2022, p. 357).

Despite these theoretical underpinnings, the language-learning aspect is frequently constrained to solely using the TL, flowing from monolinguistic policies (Llinares, 2024; Nikula et al., 2016). Where prior to 2019, the use of languages other than the TL was prohibited by nationally-enforced bilingual education policies in the Netherlands, recent developments have allowed schools to develop their own rules regarding first language (L1) use (Oattes, 2021). This leeway notwithstanding, the "English-first approach remains the most important means to stimulate the second language development" (Oattes, 2021, p. 13). Whether monolingual policies should be upheld in Dutch bilingual education remains in the realm of scholarly debate (Mearns et al., 2024). Still, schools offering CLIL classes have to consider designing the right policy to support their students' content and language development. Hence, it is imperative that these policy-makers are well informed about how teachers communicate to clarify class topics and how students engage in communicative practises to negotiate meaning. The present study endeavours to offer a deeper understanding in how teachers and students use their communicative practises. These insights will, in turn, provide Dutch policy-makers with a more comprehensive view on how to shape language policies for bilingual education.

Translanguaging is a theoretical perspective that would shed light on how teachers and students use their linguistic resources for meaning-making. This approach first emerged in the 1990s to denote the strategic planning of English and Welsh in bilingual classrooms (García, 2009; García & Kleyn, 2016). The term was adopted by García (2009), who extended the definition to include "*multiple discursive practices* in which bilinguals engage in order to *make sense of their bilingual worlds*" (p. 45, emphasis in original). Specifically, this theory considers all linguistic resources of an individual as one entire pool of resources. Whilst strategically and dynamically negotiating between these linguistic resources, an individual can navigate creating meaning in a specific social context. By approaching utterances in this manner, the focus lies on the individual instead of on "the socially and politically defined boundaries of named languages" (García & Kleyn, 2016, p. 14). Moreover, translanguaging embraces the fact that people "think beyond language" (Li Wei, 2017, p. 18). Alternatively phrased, our linguistic utterances are an output of our cognitive processes which are not structured using "phonemes, words, [and] sentences" (Li Wei, 2017, p. 17). Hence, adopting this approach to study linguistic resources in classrooms allows for a deeper understanding of the relationship between verbal utterances and cognitive meaning-making.

Communication, however, is not reliant on only linguistic utterances; it also involves the use of multimodal resources. Thus, some scholars have adapted translanguaging to encompass these other semiotic aspects of communication as well (Li, 2024). Lin (2015) coined the term *trans-semiotizing* which builds on Halliday's (2013, as cited in Lin, 2015) notion of trans-semiotic. Trans-semiotising particularly focusses on "analys[ing] language as entangled with many other semiotics (e.g., visuals, gestures, bodily movement) in meaning making" (Lin, 2019, p. 5). Moreover, the theory positions meaning-making as "unfolding activities across multiple material media and multiple timescales" (Lemke & Lin, 2022, p. 136). These communicative instances are not confined to one singular person in a singular time and space, but consist of "continuous flows of interconnections between the traces of past events and the theme being discussed in the ongoing event" (Lin & He, 2017).

Creating meaning in a classroom requires both linguistic and multimodal resources (Liu & Lin, 2021; Tang, 2019). Hence, adopting both a translanguaging and a trans-semiotising approach to study communication in a classroom would facilitate a deeper understanding in how meaning is negotiated. Given that studying all communication within a classroom is beyond the scope of the present study, the focus will be on communication during teacher-student interaction. After all, during these interactions, participants produce, modify, and transform meaning (Gardner, 2019). Hence, this paper aims to answer the following research question: *How are translanguaging and trans-semiotising practises used during teacher-student interaction in secondary education CLIL classes in the Netherlands?*

Chapter 2 Literature Review

A synthesis of the literature suggests that studies investigate translanguaging and trans-semiotising through either a top-down or a bottom-up approach. Where the top-down view emphasises pedagogies and teachers' behaviour, the bottom-up approach focusses on students' language behaviours as (emerging) bilinguals. Hence, to structure both these approaches in a logical way, the first section describes the literature from the pedagogical lens, emphasising the teacher's role in translanguaging and trans-semiotising. The subsequent part shows the findings of scholarly papers with a student-centred view, highlighting students' agency within the bounds of the educational systems. This chapter concludes with positioning the present study within the synthesised literature.

2.1 Teacher-centred Communication

As described in Chapter 1, an individual's communicative practises can be investigated by focussing on either linguistic resources or multimodal resources. The latter approach typically includes both verbal (e.g., speech and written text) and non-verbal (e.g., pictures, diagrams, bodies) components. Similarly, most studies investigating teachers' communicative behaviour fall in either of these categories. As the present paper aims to examine both translanguaging and trans-semiotising, this section of Chapter 2 synthesises studies dissecting teachers' use of the verbal, the non-verbal, and a combination of these communicative meaning-making resources.

Some scholars stay close to the roots of translanguaging and advocate that deliberate switches between languages serve to scaffold content and language in CLIL classrooms (Günther-van der Meij & Duarte, 2020; Lu et al., 2023; see also Karabassova & San Isidro, 2023). By navigating different linguistic utterances, teachers can clarify subject-specific diction (Bieri, 2018; Infante & Licona, 2021; Nikula & Moore, 2019; Zhou & Mann, 2021). Bieri (2018), for instance, illustrates teachers translating key lexis in English (TL) to German

(L1) in their own utterances: “airways are enforced by rings of cartilage, *knorpelspangen*” (p. 95). She furthermore shows that teachers translate words when their students ask for clarification. Additionally, through translanguaging, teachers can create a linguistically diverse environment that destabilises hierarchical power relations between languages. For example, Infante and Licona (2021) show how a teacher’s implementation of Spanish and English effectively facilitated a space in which “emergent bilinguals’ out-of-school discourse practices are valued and can be used in meaning making within the formal learning environment” (p. 922). Yet, Günther-van der Meij and Duarte (2020) write that, despite the fact that teachers translanguage in their classrooms, students in primary education “are not encouraged to use their languages” (pp. 248–249). Both studies, however, emphasise that the use of multiple languages in a classroom can help support all students in acquiring content and language knowledge regardless of their TL proficiency levels. The science teacher in Infante and Licona’s (2021) study “externalizes her thinking process by asking self-directed, open-ended questions that model the construction of her argument to meet the linguistic needs” of her students (p. 922). In doing so, the teacher actively engaged the students to “extend their use of everyday language to the academic terms needed” for acquiring disciplinary literacy (Infante & Licona, 2021, p. 921). Similarly, Nikula and Moore (2019) show in their analysis on CLIL classes in Austria, Finland, and Spain that the strategic use of different languages can support students’ learning. Specifically, translanguaging in the classroom can structure discourse and thereby address the “pedagogic and interpersonal concerns” of students (p. 244). They add that, while playfully engaging in their full linguistic repertoire, the teacher “introduces a humorous aspect in communication” (p. 243). Moreover, Zhou and Mann (2021) similarly point to the fact that translanguaging aids in managing the classroom by directing students’ attention to important topics.

Teachers can also communicate using multimodal resources to explain class topics. Q. He and Forey (2018) dissect meaning-making processes in a monolingual science classroom through creating a framework based on Lemke (1998, as cited in Q. He & Forey, 2018) typology for meaning-making. They highlight three different stages (i.e., orientation, identification, and explanation) in which teachers structure meanings in science discourse using language, animation, and gestures. The first stage is orientation, in which both language and animation are employed to direct the students' attention to a general overview of the concepts that are being taught. During the second stage, the teacher explicitly focusses on the main component of the class. The third stage, explanation, involves the use of language "to unpack and repack abstract technical knowledge" (p. 197). Particularly, meaning can be co-constructed through moving "along a register continuum from one end representing everyday concrete knowledge to the other end of abstract scientific knowledge" (p. 196). For example, nominalisation helps repack non-academic verbs (e.g., digest) to academic nouns (e.g., digestion). Moreover, teachers can rely on using synonyms, verbal metaphors, and everyday examples to explain scientific processes. Although not explicitly mentioned by Q. He and Forey (2018), the last stage specifically requires teachers to employ different registers (i.e., everyday discourse and scientific discourse): the teachers are translanguaging. Trans-semiotising occurs through metaphorically representing scientific processes with bodies as a medium (e.g., the squeezing of hands to represent the squeezing of the oesophagus). Metaphorical demonstrations are similarly seen in P. He and Lin (2024), who analysed CLIL classes in Hong Kong.

Lin (2019) combines translanguaging and trans-semiotising. She dissects communication in an EMI biology class, including students with a different L1 from the teacher. Similar to the findings in Infante and Licona (2021) and Q. He and Forey (2018), Lin (2019) demonstrates how academic language is scaffolded using students' linguistic repertoires. Compared to Q. He and Forey (2018), who advocate for the necessity for "explicit instruction to orient the flow of meaning" (p. 183), Lin (2019) suggests that "spontaneous translanguaging and trans-semitiozing [are] crucial semiotic processes in the dynamic, dialogic flow of co-construal of content meaning" (p. 14). By highlighting the spontaneity of translanguaging and trans-semiotising, Lin (2019) emphasises that these communicative practises are not always planned, but could also appear in natural conversations (Nikula & Moore, 2019). By analysing how translanguaging and trans-semiotising is incorporated in classrooms, the present study would further uncover the delicate balance between spontaneous and planned communicative practises.

2.2 Student-centred Communication

Whereas studies elaborating on teacher-initiated communication often incorporate both verbal and non-verbal meaning-making resources, scholarly literature on student-initiated communicative acts mainly rely on analysing students' uses of verbal resources. Moore and Nikula (2016) and Pavón Vázquez and Ramos Ordóñez (2019) discuss students' behaviours in CLIL lessons. The latter includes data from classes in Spain and the former from classes in Austria, Finland, and Spain. Both studies find instances where students translate key lexis in their native languages to clarify meanings. Furthermore, L1 use can be linked to the emotional aspects of a language. For example, whenever students feel indignation, their language switch to L1 is often emotionally charged (Moore & Nikula, 2016). Additionally, students prefer using their L1 to express feelings and emotions, or to describe their personal circumstances (Pavón Vázquez & Ramos Ordóñez, 2019). According to Pavón Vázquez and Ramos Ordóñez (2019), students' L1 use is also "determined by the interaction that takes place among them" (p. 44). Although Moore and Nikula (2016) also indicate this appearing in their data, they describe that language which was copied from surrounding conversations "signal[ed] alignment" (p. 230). They illustrate a student who changed their language choice within a conversation which could indicate a switch in their alignment from their peers (i.e., L1) to their teacher (i.e., TL). Thereby, Moore and Nikula (2016) underscore the “off-record” nature of L1 use (p. 230).

Poza (2019b) adds that translanguaging increased the creativity in the classroom, because the students could “work with new linguistic forms and ideas” (p. 427). This creativity aspect is also seen in other studies (e.g., Lin & He, 2017; Ollerhead, 2019). Lin and He (2017), for example, show how creative use of L1 and past knowledge fosters an environment in which multimodalities dynamically encapsulate the acquiring of new knowledge: “[the students] are making meaningful associations of the knowledge being discussed … with the funny cartoons they had watched before … which helped to exemplify the newly learned concept … in a more vivid and interesting way” (p. 241). Thus, through innovative translanguaging and trans-semiotising, students embed newly acquired knowledge in past experiences.

Viewing students’ creative linguistic behaviour from a sociolinguistic perspective underscores the discursive practises of identity expression. After all, language use and identity are inextricably linked (Bucholtz & Hall, 2004). Studies focussing on students’ identity expression through translanguaging are often situated in contexts where these students belong to the linguistic minority (e.g., Creese & Blackledge, 2015; Dávila, 2019; Lin & He, 2017). Within a group setting, these minority identities can be reaffirmed through mutual support and thereby create solidarity and cohesion (Dávila, 2019; Lin & He, 2017). Simultaneously, linguistic behaviour could be employed to assert an identity (Chan & Chou, 2022) and create distance (Poza, 2019a). Chan and Chou (2022) suggest that students’ use of marked linguistic utterances acquired in non-academic settings (e.g., internet slang) helps in constructing an “individual image and identity in relation to the teacher and other students” (p. 12). They furthermore underscore how translanguaging can facilitate in donning different roles (e.g., when students explain topics to other students, they adopt a teacher-like role), which is similarly seen by Lin and He (2017). Certain language choices, after all, index different social categories and personae (see for example Eckert, 2019).

It should be noted that the majority of these studies argue that students translanguaged when the teacher allowed them to use their multiple linguistic resources (e.g., Pavón Vázquez & Ramos Ordóñez, 2019). Particularly, Poza (2019b) describes that "students' translanguaging was facilitated by [the teacher's] positive dispositions toward translanguaging" despite conflicting ideologies of the school (p. 415). Yet, teachers' ideologies do not always coincide with their practises in the classroom (Bieri, 2018; Karabassova and San Isidro, 2023). Additionally, Lin (2019) shows that "students spontaneously translanguage and trans-semiotise to construct content meaning in dialogue despite the institutional monolingual policy" (p. 13). Thus, regardless of the school's policies and teacher's influences, "L1 is ubiquitous in CLIL classrooms" (Moore, 2024, p. 38).

As previously mentioned, there remains a gap in the literature regarding students' communicative practises using multimodal resources. In a tertiary education setting, Weliweriya et al. (2019) demonstrate how students use their bodies to solve physics problems. The student in their study uses the right-hand grip rule to determine the direction of the magnetic field in the problem. This finding suggests that adding other semiotic resources facilitates a deeper understanding of subject matter. Similarly, Williams et al. (2019) illustrate in secondary education how multilingual students rely on gestures to explain scientific phenomena when they were unable to retrieve the linguistic resources to do so effectively. The students furthermore share personal experiences to elaborate on their points, which facilitated a "shared consensus" (p. 17). Connecting subject-specific topics to everyday experiences is similarly seen in Book and Tandberg (2024). They suggest that students experiencing difficulty with understanding scientific subjects might be due to them having "a lack of experienced meaning and ability to connect abstract topics to emotions, curiosity, and interest from real-life experiences" (p. 10). By analysing students' translanguaging and trans-semiotising acts, the current paper aims to provide a nuanced understanding of how students use multimodal resources to comprehend subject-specific topics.

2.3 Conclusion

The majority of studies on translanguaging rely on analysing L1 use in a classroom where the purpose is to learn a TL (see Lisaitė & Smits, 2022, for a scoping literature review). In doing so, these studies frame students' acts of translanguaging as communicative practises which are a direct result of their teachers' explicit choice to disengage from monolinguistic ideologies (e.g., Günther-van der Meij & Duarte, 2020; Pavón Vázquez & Ramos Ordóñez, 2019; Poza 2019b; see also Lu et al., 2023). While the teacher's authoritative role in the classroom should not be ignored, it is important to underscore how students exercise their agency within the classroom. After all, understanding these communicative acts of power could be crucial in unravelling how students embed class topics in prior knowledge (Book & Tandberg, 2024). Hence, this study approaches students' discursive practises not only relative to the educational system but also as empowered acts from emerging bilinguals. Thereby, one of the aims of this study is to present how students fully engage in their (non-)linguistic resources.

Furthermore, studies frequently rely on analysing verbal acts of communication (e.g., Infante & Licona, 2021; Nikula & Moore, 2019; Zhou & Mann, 2021), and thereby they tend to overlook other dynamic semiotic repertoires. In essence, these studies thus fail to paint a full picture of meaning-making practises, as "language is almost always co-deployed with other semiotic resources and makes meaning as a *result of the orchestration of these modalities and resources* [emphasis added]" (Lim, 2019, p. 83). Kusters et al. (2017) similarly underscore this gap and write "researchers have attended to multilingual communication without really paying attention to multimodality and simultaneity, and to hierarchies within the simultaneous combination of resources" (p. 228). Yet, it is imperative that more research sheds light on these aspects, given how multimodalities have become ingrained in contemporary society (Liu & Lin, 2021; Lu et al., 2023). In this light, the current paper seeks to bridge the gap between analysing multilingual communication and multimodal resources in an educational context where they dynamically interweave to create meaning.

Similarly, P. He and Lin (2024) have attempted to fill this gap by showing how translanguaging and trans-semiotising can be used as theoretical lenses to analyse CLIL classes in Hong Kong. Their study demonstrates how meaning is dynamically co-constructed through different "mediums and spaciotemporal scales" (p. 20). For example, their findings suggest that the present is embedded in the collectively understood past. However, their study is conducted in an educational context where there is a prominent mismatch between the linguistic backgrounds of the teacher and the students. Due to this heterogeneity, the teacher and—in particular—the students are more likely to rely on translanguaging and trans-semiotising to communicate meaning (e.g., students translate English utterances to their native language to ensure that their peers understand the utterances). Hence, studying translanguaging and trans-semiotising in a context where teachers and students share a L1 would be beneficial in gaining a deeper understanding of how meaning can be conveyed by negotiating between different (non-)linguistic resources. In the Netherlands, the majority of bilingual education fit this context description; the teachers and students have a common L1 (Mearns et al., 2024). Simultaneously, Dutch CLIL classes serve as a good example for CLIL pedagogy. After all, the CLIL method is the official pedagogical model for Dutch bilingual education (Nuffic, 2019). Different universities in the Netherlands offer various refresher courses on CLIL (Nuffic, n.d.-b). By participating in these courses, teachers remain informed about the recent developments regarding this teaching method. Thus, "teachers and learners in Dutch CLIL classrooms may be well-positioned to provide a rich view of effective CLIL practice without deferring to more generic SLA models" (Mearns et al., 2024, p. 412).

Studies on translanguaging in the Netherlands have, thus far, been done on primary level only (e.g., Günther-van der Meij & Duarte, 2020; Nap et al., 2023; Van Beuningen, 2021). To fill this gap, the present study aims to analyse both translanguaging and trans-semiotising practises in CLIL classes at a Dutch secondary school. In doing so, this study seeks to uncover how meaning is dynamically co-constructed across both linguistic and non-linguistic modes.

Chapter 3 The Study

3.1 Introduction

This chapter first describes the study's theoretical framework and methodology. The subsequent section details the research setting and participants which is followed by a section on the research methods including the data collection, procedures, and analysis. As this research is conducted with people, the necessary ethical issues are identified and elaborated on in the penultimate section. This chapter concludes with clarifying how the researcher's subjectivity influences the narrative of this paper.

3.2 Theoretical Framework and Methodology

The previous chapters have highlighted that translanguaging views an individual's utterances coming from an entire pool of available linguistic resources. During an interaction, not all these linguistic resources are utilised, but only relevant resources are employed. Despite this theoretical perspective, translanguaging is often criticised for being another name for code-switching (i.e., language alternation). After all, "it is difficult to analyse instances of speakers moulding verbal repertoires without resorting to codification (L1, L2, etc.) as a means of describing the process" (Nikula & Moore, 2019, p. 238). To circumvent this criticism, the present paper will adopt a theoretical model similar to Canagarajah's (2021) perspective on semiotic repertoires. According to him, semiotic repertoires are communicative resources that "emerg[e] from distributed activity" (p. 208). Specifically, he stresses that "semiotic repertoires have to be situated in communicative activities to understand the way they gain variable and unequal indexicality. They don't hold meaning or values outside activity, or generated in people's minds" (p. 208). To analyse semiotic repertoires, Canagarajah (2021) constructed three categories:

- **personal repertoires:** communication using personal linguistic abilities, gestures, and artefacts.

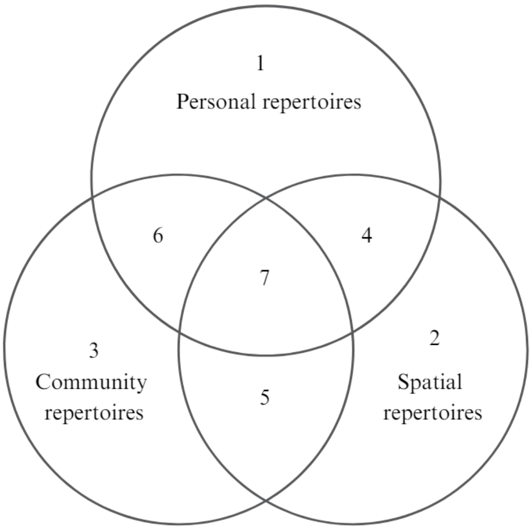
- **community repertoires:** communication using community-based (non-)linguistic characteristics which are inherent to a specific disciplinary community.
- **spatial repertoires:** the resources and spatial features in the immediate surroundings of the analysed conversation which are used to communicate meaning.

To investigate teacher-student interaction, the current paper will modify these repertoires slightly to fit within the educational context. Particularly, this study will consider all physical, non-linguistic resources belonging to the spatial repertoire, instead of the personal or community repertoire (similarly done in P. He & Lin, 2024).

In conversations, these three categories can occur in the manner shown in Figure 1. Using this as a basis to group linguistic communicative acts shows that translanguaging could occur in the spaces 1, 6, and 7. Translanguaging within space 1 (i.e., using different linguistic resources from the personal repertoire) can be identified by the marked occurrences of utterances. Despite being drawn from the personal repertoire, these linguistic resources gain markedness because of their unstandardised occurrence (Bucholtz & Hall, 2004).

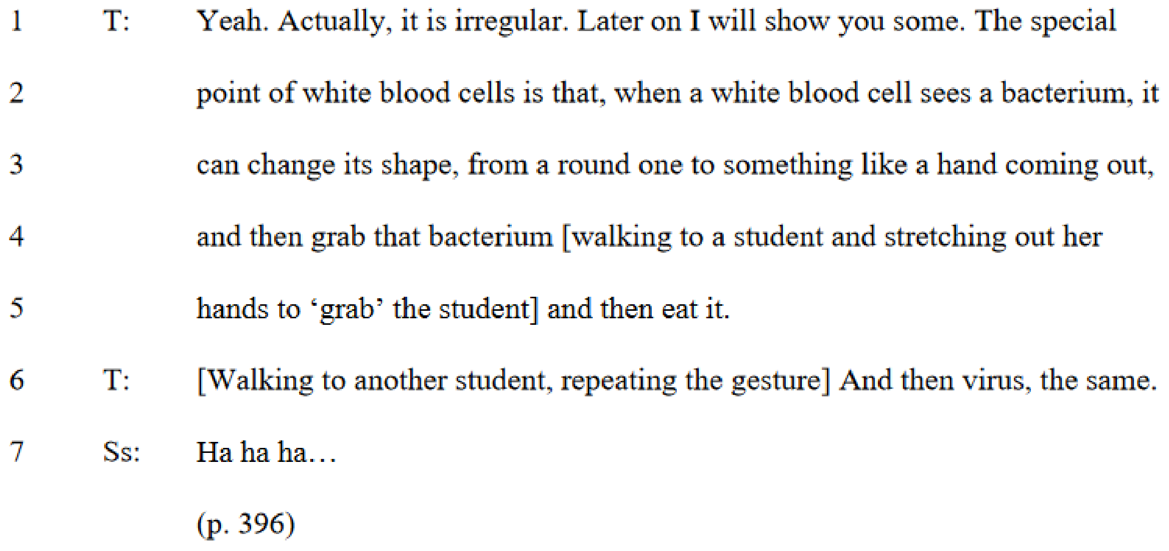
Figure 1

Venn Diagram of Semiotic Repertoires



In a classroom setting, these utterances could, for instance, be discursive practises associated with social media or youth language (e.g., the words “shit” and “period” in the following utterance from a student: “Hitler’s party rising up after the Treaty of Versailles is because the whole country was in shit. Heh heh, period!”). Shifts between L1 and TL likewise belong to this category, where either the L1 or the TL could be marked depending on the context of the interaction. Shifting between personal and community repertoires—spaces 6 and 7—could occur by using subject-specific lexis in sentences. For example, the utterance “like, right now can we describe Russia today as being dictatorial” uses the community diction (viz., dictatorial) within an utterance from the personal repertoire.

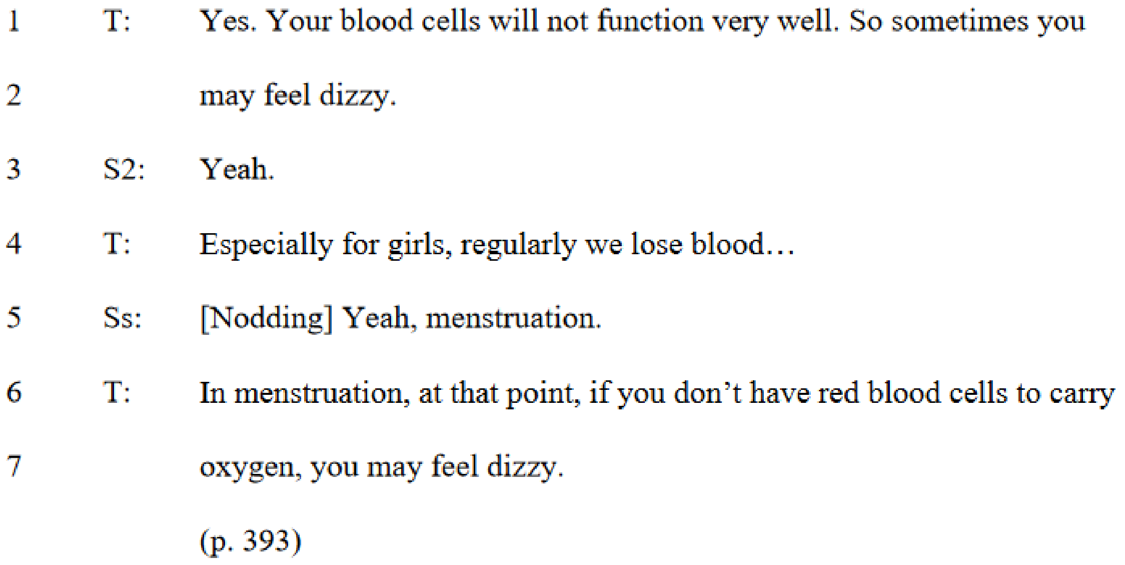
Trans-semiotising could occur in the spaces 4, 5, 6, and 7 of Figure 1. Particularly, trans-semiotising occurs whenever material objects are incorporated with either the personal or community repertoire to communicate (i.e., spaces 4, 5, and 7). Examples of this include the act of verbally recontextualising what is seen on a whiteboard, or using bodily movement to emphasise or explain a concept. The latter can be illustrated using an extract seen in P. He and Lin (2024), who describe a teacher embodying a white blood cell to explain its function (the “T” denotes the teacher, and “Ss” denotes the students):



T: Yeah. Actually, it is irregular. Later on I will show you some. The special point of white blood cells is that, when a white blood cell sees a bacterium, it can change its shape, from a round one to something like a hand coming out, and then grab that bacterium [walking to a student and stretching out her hands to ‘grab’ the student] and then eat it.
T: [Walking to another student, repeating the gesture] And then virus, the same.
Ss: Ha ha ha…

(p. 396)

Through using verbal communication and physical demonstration, the teacher in the extract trans-semiotises meaning. However, as Lemke and Lin (2022) describe, trans-semiotising is not limited to material objects, but utilises the temporal space as well. Hence, trans-semiotising similarly occurs whenever class topics are explained using references to collectively understood previous experiences. After all, meaning can be co-constructed in interactions by forging links between newly acquired knowledge and prior knowledge. In doing so, the temporal space can create "specific meanings and values based on how they are materialised in situated communicative activities" (Canagarajah, 2021, p. 208). Hence, community repertoires can become embedded in personal repertoires through trans-semiotising, see Figure 1 space 6. An example of this is similarly shown in P. He and Lin (2024). In this extract, the teacher associates the function of red blood cells (i.e., community repertoire) with past experiences of blood loss and dizziness (i.e., personal repertoires) (the "S2" denotes an individual student):



T: Yes. Your blood cells will not function very well. So sometimes you may feel dizzy.

S2: Yeah.

T: Especially for girls, regularly we lose blood…

Ss: [Nodding] Yeah, menstruation.

T: In menstruation, at that point, if you don't have red blood cells to carry oxygen, you may feel dizzy.

(p. 393)

It should be noted that within the spaces 2 and 3 of Figure 1 (community and spatial repertoires, respectively) translanguaging or trans-semiotising will not occur. After all, in order for translanguaging and trans-semiotising to happen, negotiations between either different linguistic modes or linguistic and non-linguistic modes are required.

In sum, applying the adapted semiotic repertoires from Canagarajah (2021) in an educational context aids shedding light on how people communicate while using resources from different repertoires. Table 1 summarises each category with the adapted definitions and examples. Studying communicative acts with these repertoires addresses the criticism of translanguaging by circumventing the use of language categories to analyse bilinguals' utterances. Instead, the semiotic repertoires help maintain the concept of a personal pool of linguistic resources. Hence, the three repertoires can be employed to identify translanguaging and trans-semiotising.

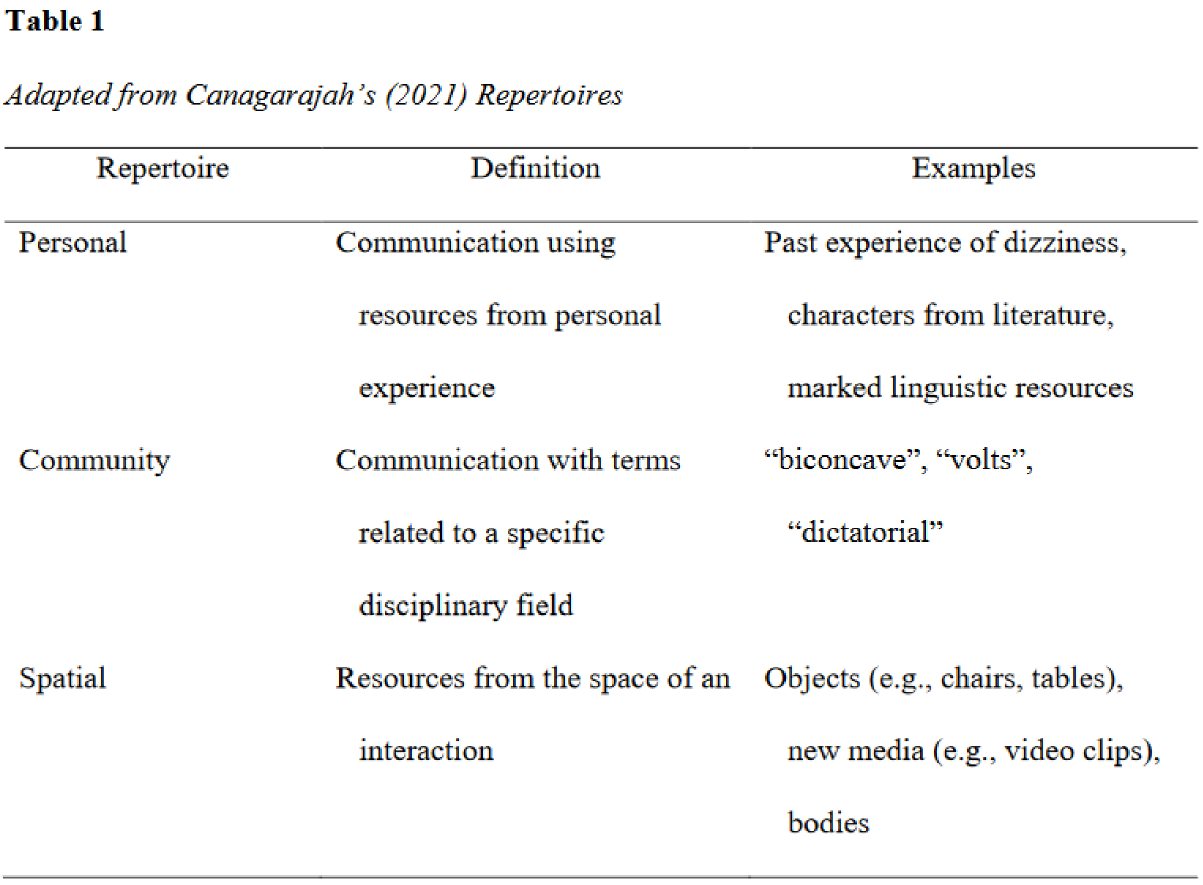


Table 1

Adapted from Canagarajah's (2021) Repertoires

Repertoire	Definition	Examples
Personal	Communication using resources from personal experience	Past experience of dizziness, characters from literature, marked linguistic resources
Community	Communication with terms related to a specific disciplinary field	"biconcave", "volts", "dictatorial"
Spatial	Resources from the space of an interaction	Objects (e.g., chairs, tables), new media (e.g., video clips), bodies

3.3 Research Setting and Participants

The data collection for this study was done at a secondary school located in a suburban area in the middle of the Netherlands. This school was chosen, because it is a certified senior *TTO* (*tweetalig onderwijs*, ‘bilingual education’) school with English as the TL. This certification indicates that, after three years of bilingual education, the students have a B2 level of English proficiency on the Common European Framework of References scale (Nuffic, 2019). Additionally, the teachers use the CLIL pedagogy to teach their subjects. Finally, the school has provided bilingual education for almost 2 decades.

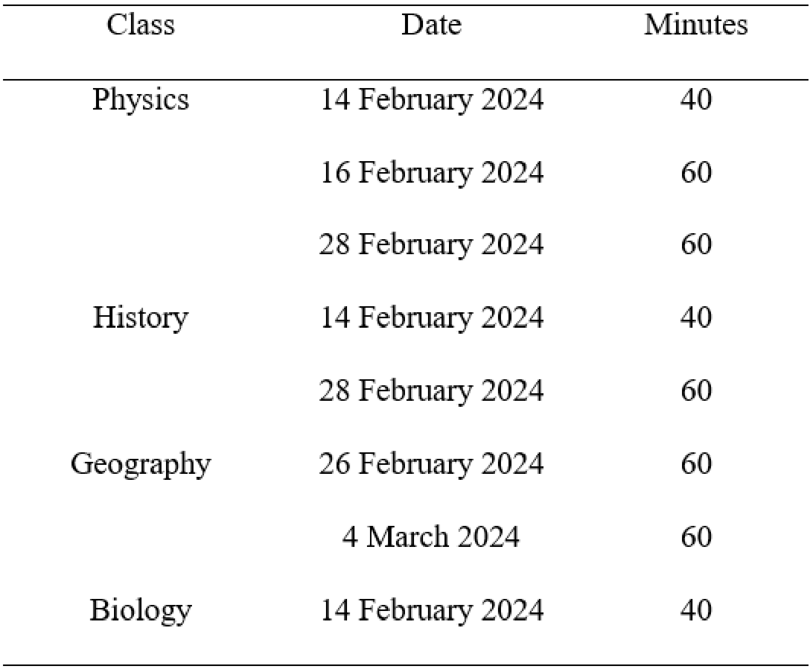
Third-year students of bilingual *VWO* were the primary participants of this study. VWO is a secondary education level in the Netherlands which prepares students to go to university. Hence, the 14- and 15-year-olds have sufficient knowledge of English to use it accordingly in class. Additionally, these twenty-eight students are familiar with the rules of the school, because they have already completed two years of bilingual education. Furthermore, all the students have a Dutch nationality and have parents who are born in the Netherlands, so the L1 of the students is Dutch. Given the limited amount of time available and the intrusiveness of the project, only this group of students acted as the focal point of analysis. Consequently, this study is able to provide a limited view on translanguaging and trans-semiotising within this school and bilingual education nationwide.

3.4 Methods

The data of this study consist of audio recordings of teacher-student interaction and observation notes taken during lessons from four different subjects (i.e., history, geography, physics, and biology) between 14 February 2024 and 4 March 2024. Table 2 shows the classes, the dates, and the length of the lessons visited. Prior to attending these lessons, I contacted the mentor of the third-year group to ask for permission to attend lessons of this group. Additionally, an information letter about this study was constructed for the parents of the students, see section 3.5 Ethical Concerns for more information. Furthermore, the teachers of the third-year group were (verbally and through email) asked for their consent to attend their lessons and record short audio fragments of interaction in class. Information about the teachers of each subject can be found in Table 3. The audio fragments were captured using the audio recording function of a smartphone. The observation notes consist of descriptions of the physical space (e.g., the teachers' physical movements, the teachers' written annotations on the whiteboard, and the displayed videos and pictures on the TV screen). Additionally, during the lessons, I considered the explicit use of the three semiotic

Table 2

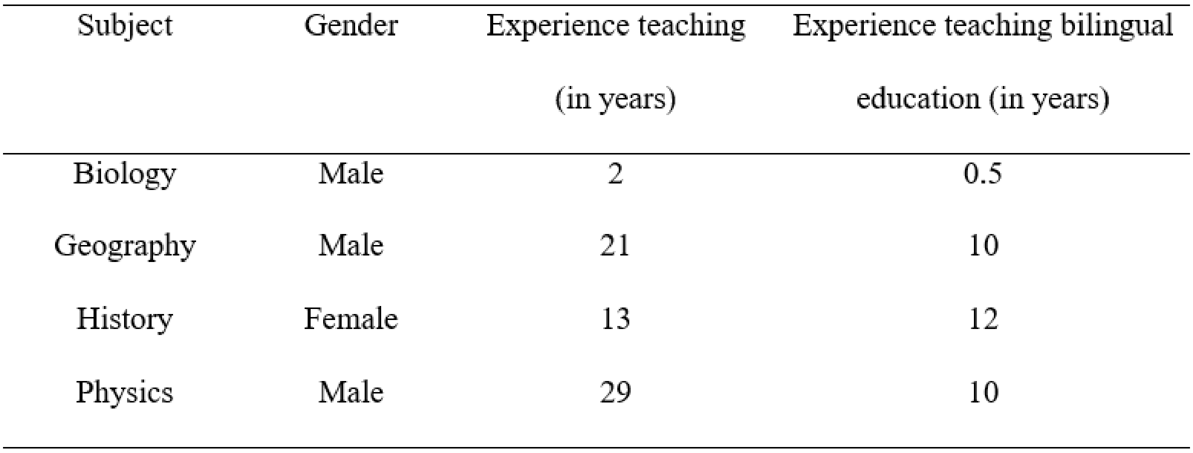
Data Collection



Class	Date	Minutes
Physics	14 February 2024	40
	16 February 2024	60
	28 February 2024	60
History	14 February 2024	40
	28 February 2024	60
Geography	26 February 2024	60
	4 March 2024	60
Biology	14 February 2024	40

Table 3

Teacher Information



Subject	Gender	Experience teaching (in years)	Experience teaching bilingual education (in years)
Biology	Male	2	0.5
Geography	Male	21	10
History	Female	13	12
Physics	Male	29	10

repertoires. The occurrence of these repertoires was similarly written down. Occasionally, after the lesson, the teacher and I were able to discuss the teacher-student interactions that had occurred.

Following the data collection, the audio recordings were revisited along with the notes that were taken during the observation. When at least two of the three repertoires or marked personal utterances appeared in an interaction with at least one student and the teacher, the audio recording of this interaction was manually transcribed using the transcription system from Jefferson (2004), see Appendix A. Using this transcription model would ensure that the prosodic elements of communication (e.g., pauses and intonation) were visualised. Particularly to uncover how meaning is constructed, it is imperative to illustrate the flow of communication. Variety in intonation, for example, could elicit a range of subtle messages, such as sarcasm, humour, or genuine confusion (Nikula & Moore, 2019). In the transcriptions, teachers are denoted with “T”, students with “Ss”, and individual students with “S1”, “S2”, and so forth. Since the interactions occasionally include both the L1 (viz., Dutch) and the TL (viz., English), a second column was added to provide space for the necessary translations of utterances. Additionally, a third column was created to present crucial visual data. After this process, the transcripts were analysed based on the general, overarching themes. Those themes were (1) the person translanguaging and trans-semiotising (i.e., the student, the teacher, or both), (2) which repertoires appeared in the interaction (e.g., only one, or multiple), (3) the context of the interaction (e.g., during theory explanation, or while discussing answers to homework questions), and (4) the purpose of translanguaging and trans-semiotising. After this, the most representative extracts were chosen for an in-depth discourse analysis.

Additionally, to gather background information on the school's policies on bilingual education, I attended a CLIL workshop designed for all the teachers in the bilingual education programme of the school. During this meeting, the teachers also discussed how to promote TL use during the CLIL classes. Particularly, the teachers unanimously agreed that a monolingual policy should be upheld. The school used to have a policy called "Use of English" for which the students would receive marks based on their efforts to use English in lessons. However, during the current academic year (2023–2024), the CLIL educators abolished that system, causing a perceived general lack of TL use by the students.

3.4.1 Limitations

While using this method for studying translanguaging and trans-semiotising offers valuable insights, it is important to acknowledge the limitations. Firstly, it should be noted that the audio recorder was constrained to capture the sounds in the immediate surroundings of my location, which was—most frequently—at the back of the classroom. Thus, it might have been plausible that not all utterances by the teachers or by the students were clearly discernible. Additionally, research analysing the use of space requires visual data. However, I decided to record audio data instead of visual data, due to the intrusive nature of capturing videos. Hence, my observation notes are the only data supporting the analysis of the spatial repertoires. These annotations are limited and, consequently, fail to provide a completely comprehensive view of all the uses of material space in the classroom. Moreover, the discourse analysis is subjective. Therefore, some semiotic messages (e.g., interpersonal meaning or allusions to collectively experienced past events) might have been overlooked. Lastly, the observer’s paradox should not be ignored. The teachers and students were aware that their linguistic utterances were recorded and analysed. Thus, their awareness might have had an impact on how they communicated.

3.5 Ethical Concerns

After a discussion with the tutor of the third-year class, we agreed that asking the parents for implied consent to record audio fragments during the lessons was appropriate for the context of the current study. Specifically, this approach allowed the parents to object to the study if they desired. Simultaneously, it alleviated the administrative burden and eliminated the need for signing consent forms. This aided in enhancing the time efficiency of the study. The parents of the students were sent a letter in English and Dutch containing information about the study, see Appendix B. In case the parents did not consent to the recording of audio fragments, they could sign the letter and hand in a physical copy during the evening of 14 February 2024. During this evening, an information event was scheduled at the school which the parents were recommended to attend. This evening, I was present as well to elaborate on how this study was going to be conducted and to emphasise that, in case the parents wanted to withdraw their consent in the future, they were allowed to do so. Additionally, the parents were made aware that the recordings would be used only for this study and would be permanently deleted after the study’s completion. Lastly, to limit the traceability of the students’ identities, individual students are referred to using the generic third-person singular pronoun “they”.

3.6 Researcher's Reflexivity

Reflexivity is an important step in conducting research (Consoli & Ganassin, 2023). Accordingly, I will take the space of this section to describe how my background adds a certain bias to the current paper. When we focus on the evaluative and transformative aspects in discourse analysis, it becomes clear that research is tied to ideological positions (Jenks, in press). Hence, my beliefs are inherently presented in the manner I framed the narrative throughout this whole paper. Particularly, I am approaching this study with having been a CLIL student myself. This background has caused me to critically read the scholarly literature whenever students' language practises were described. Furthermore, this bias has undoubtedly had an impact on the manner in which I highlighted certain practises of the students which I recognised, due to personal familiarity.

Secondly, I have taught English as a second language in secondary education for a limited amount of time. Although this experience has guided me to examine teachers' behaviours, these observation skills are far from perfected to recognise every pedagogical practise.

In light of this, I hope to have created some clarity regarding how my background has framed the narrative of this study. I would like to encourage you to remember this while you read the current paper. After all, "the research outcome is ultimately the outcome of the researcher's subjective interpretation" (Dörnyei, 2007, p. 38).

Chapter 4 Results and Discussion

4.1 Introduction

As described in Chapter 2, translanguaging and trans-semiotising can be approached from a top-down or bottom-up perspective. This chapter presents the findings from both perspectives, by first focussing on the teachers' communicative acts and subsequently on the students' discursive practises. Within these sections, both acts of translanguaging and trans-semiotising are analysed according to the adapted semiotic repertoires from Canagarajah (2021). As seen in Figure 1, these meaning-making categories are inherently intertwined. Hence, they are considered holistically, which is similarly done in P. He and Lin (2024).

4.2 Teacher-initiated Acts

Previous studies show that translanguaging and trans-semiotising can be used for scaffolding new information (Günther-van der Meij & Duarte, 2020; Lu et al., 2023). The findings of this study similarly suggest that both communicative acts function to support students in understanding class-related topics. However, different subjects require different forms of scaffolding, similarly suggested by Llinares et al. (2012). To illustrate this, the first section describes how the physics teacher explains electrodynamic processes through translanguaging and trans-semiotising. The subsequent section depicts the history teacher engaging in translanguaging and trans-semiotising to exemplify subject-specific lexis.

4.2.1 Physics: Volts, Joules, and Six Million Million Million Oompa-Loompas

The topic of the physics lesson on 28 February 2024 was the relationship between electrons, ampere, and volts. Preceding the transcribed interaction in extract 1, the physics teacher described these terms in relation to charging a phone battery; however, this explanation proved to be insufficient for the students to fully understand the subject matter. Instead, the teacher opts for illustrating the relationship in a different manner, employing both personal and spatial repertoires.

Extract 1

Line	**Person**	**Utterance**	**Translation**	**Visual**
1	T	But if it's if let's say we got a		
2		battery from er with six million		
3		million electrons and if all the		
4		electrons have one joule of		
5		energy, then it's coming out of		
6		one volt. (2.3) Oh shall I explain		
7		it another way? (0.5)		
8		Okay er:m let's say er: do you		
9		know (1.0) Charlie's Chocolate		
10		Factory?		
11	Ss	Yes?		
12	S1	*Ja*	Yes	
13	T	Okay erm (0.5) do you know		
14		what is it, squirrels or the		
15		Oompa-Loompas, or what is it?		
16	Ss	Oompa-Loompas		
17	T	The Oompa-Loompas? (0.5)		
18	S2	*Bro jij bent echt een Oompa-*	Bro, you really are an	
19		*Loompa, ouwe.*	Oompa-Loompa, dude	
20	T	Okay (1.1) squirrels well then,		
21		shall I take squirrels or Oompa-		
22		Loompas?		
23	Ss	Oompa-Loompas.		
24	T	Okay, we've got six million		
25		million million Oompa-Loompas		
26		and you're you're here in a chair		
27		right? You're you're sitting on		
28		this chair. (1.0) you're *ja*, sort of	yes	Grabs a chair
29		you're sitting here in a chair and		
30		there's six million million		
31		Oompa-Loompas (.) Every,		
32		every has total one joule		
33		and then they push the chair in		Pushes the chair

34		the corridor right?	
35	Ss	Yeah	
36	S3	In the corridor?	
37	T	Okay and they need one joule of	
38		energy to push through the	
39		corridor. Okay. So they,	
40		then they are coming out of a	
41		sort of a McDonald's (.) with	
42		one joule (.) out of a battery with	
43		one volt (.) okay. (.) Let's say the	
44		six million million (0.7) Oompa-	
45		Loompas ha:s two joules. (2.5)	
46		Where do they come from?	
47		From which battery do they	
48		come from?	
49	S4	Two volts	
50	T	Two volts.	
51	S4	£*Ja*£=	Yes
52	T	=£Wow£	
53	S4	£Woow£	

This extract begins with the teacher inquiring whether the students are familiar with Roald Dahl's work *Charlie and the Chocolate Factory*. He then proceeds to ask the students to choose a character from this work. The Oompa-Loompas are favoured, and student 2 humorously ascribes this name to their neighbour in lines 18 and 19. Student 2's use of Dutch underscores the informal nature of this utterance (Moore & Nikula, 2016).

The teacher follows this by embedding the character in an imaginary situation where "you're" sitting on a chair which is pushed by Oompa-Loompas (lines 26–34). The created event enables a space for trans-semiotising in which there is a shared understanding of an imaginary scenario "across multiple material media and multiple time scales" (Lemke & Lin, 2022, p. 136).

Firstly, the material media are constituted by combining the physical (i.e., non-verbal and verbal) space and the mental representations. The visual demonstration of the teacher pushing the chair is added with the verbal explanation. This oral interpretation includes the direct emphasis on evoking the imagination (i.e., the use of "you're here in a chair right?" in lines 26 and 27) and deictic utterances (e.g., "here" in line 26 and "this" in line 28). From an ethnographic perspective, the physical demonstration and the verbal explanation appealed to the creative mind to construct a cognitive representation. The incentive for producing a cognitive representation is furthermore reflected in student 3's echoing of the word "corridor" in line 36. Particularly, this utterance illustrates the marked occurrence of this word; after all, the teacher pushes the chair in the classroom, not the corridor. Using "corridor", thus, requires the students to picture the current image in a different, imaginary situation. Without combining the verbal and non-verbal acts in this event, the mental image would not have been constructed (Canagarajah, 2021). For example, the chair alone, as a single, static entity—without the verbal communication and spatial dynamic movement—would not have had the power to create a dynamic event in which meaning transcends the boundaries of material media (Lemke & Lin, 2022). In this manner, the teacher metaphorically represents scientific processes, which is similar to the findings of Q. He and Forey (2018) and P. He and Lin (2024).

Secondly, multiple time scales are employed to support trans-semiotising. This event is constructed by embedding the past in the present (P. He & Lin, 2024). Specifically, the collective understanding of Oompa-Loompas from past experience—from personal repertoires—allows for the cognitive representation, and ultimately for facilitating the understanding of the correlation between electrons, ampere, and voltage. Thus, past knowledge—expressed through personal repertoires—is linked with the terms from the physics community repertoire which is demonstrated in the present (Lin & He, 2017). Simultaneously, it could be argued that the present in this extract is a basis for future references. See extract 2, taken from the history lesson that occurred later that same day, in which the history teacher attempts to write a hundred thousand on the whiteboard. Thus, through utilising multiple time scales and multiple material media, the teacher successfully trans-semiotises meaning, enabling the students to understand the physics process on a deeper level (Book & Tandberg, 2024; Weliweriya et al., 2019).

Extract 2

Line	Person	Utterance	Visual
1	T	Am I forgetting a zero?	Writes down '1000000' on the whiteboard
2 3	S1	No you're you're you er: a zero too much	
4	T	Oh yeah.	
5	S2	A hundred million million million	
6	Ss	[heh heh]	
7 8	S3	[A hundred] thousand soldiers that's one and [five zeros]	
9 10	S4	[Yeah that's] er: Coulomb	
11	S5	Six million million million	

After establishing the metaphoric representation of electrons and ampere, the physics teacher scaffolds the relationship with voltage through asking questions in lines 46–48 of extract 1. Student 4 understands the correlation and answers the question correctly, which is paired with the elated exclamation "ja!" in line 51. This emotionally charged L1 use is consistent with the findings of Moore and Nikula (2016) and Pavón Vázquez and Ramos Ordóñez (2019).

Findings from previous studies suggest that using translanguaging and marked personal repertoires can introduce humour (Dávila, 2019; Nikula & Moore, 2019) and creativity (Lin & He, 2017; Ollerhead, 2019; Poza, 2019b) in a learning environment. Similarly, in extract 1, the teacher creates a translanguaging and trans-semiotising space in which electrodynamic relationships are playfully scaffolded. The teacher approaches the students at their linguistic and cognitive level and moves along a continuum of colloquial (e.g., "Oompa-Loompas" and "sort of a McDonald's") and academic registers (e.g., "joules" and "volts"). Translanguaging by moving between these registers is similarly seen in other studies (e.g., Q. He & Forey, 2018; P. He & Lin, 2024; Infante & Licona, 2021). Moreover, the physics teacher spontaneously creates a semiotic process in which content meaning dynamically and dialogically flows, which is consistent with the findings of Lin (2019).

4.2.2 History: Situating "Dictatorial" in Contemporary Russia

The previous extract demonstrates how topics in the natural sciences can be scaffolded through translanguaging and trans-semiotising. The findings of this study suggest that teachers from subjects in the social sciences, and in particular history, scaffold in a different manner while maintaining the dynamic and dialogic flow of creating meaning.

The following interaction in extract 3, taken from a history lesson on 14 February 2024, shows translanguaging and trans-semiotising practises preceded by a student's request for clarification of the word "dictatorial"—a term from the history community repertoire. This particular lesson was designed to give the students a summary of the topics they were required to review in preparation for an upcoming test later that week. These topics included Hitler's rise to power and the Soviet Union, specifically during Stalin's reign. Throughout the explanation, the history teacher illustrates the term "dictatorial" using contemporary sociopolitical circumstances. In doing so, this interaction underscores how teachers could draw from the embedded spatiotemporal space to trans-semiotise.

Extract 3

Line	Person	Utterance	Translation	Visual
1	S1	What is the definition of		
2		dictatorial?		
3	T	Dictatorial is when (1.5)		
4		everything is in control of the		
5		government? (1.4) or almost		
6		everything (.)And everything er:		
7		and opinions against it? (1.0)		
8	S1	[Oh]		
9	T	[Are] completely censored away.		
10	S1	Yeah.		
11	T	Yeah?		
12	S1	Censorship.=		
13	T	=Usually by violence. (.) yeah.		
14		(.) either censorship or violence.		
15		(1.0) yeah? (0.8)		
16		Like, right now can we describe		
17		Russia today as being		
18		dictatorial? (1.0) Yes and no? (.)		
19		because we already know what		
20		the election results will b(h)e		
21		(1.5) surprisingly enough I		
22		th:::ink Vladimir will be (.)		
23		reas↑signed as the next president		
24		a↑gain of erm Russia erm: but		
25		technically (0.6) it is a		
26		democracy (0.4) because there		
27		are political opponents (0.8) that		
28		will not be elected. (0.8) And		
29		any viable (0.7) opponents of		
30		Vladimir Putin are (1.1) put out		
31		of the election. (1.1) either sent		

32		to prison (.) Navalny (1.2) or erm		
33		that the election committee not		
34		approve their candidacy because		
35		they cheated (1.3) with their erm		Hand makes a writing
36		what is it called. (1.3)		motion on other hand
37	S2	Sign		
38	T	Y:es:::		
39	S3	(solking) paper		
40	T	N:o::		
41	S4	*Handtekening*?=	Autograph?	
42	T	=AUTOGRAPHS. That're they		
43		(.) cheated with the autographs(.)		
44		there we go, autographs.		

This transcription starts with the explicit identification of the student's problem in failing to understand the academic term "dictatorial". The teacher consequently provides a definition, which is followed by the confirmation of the student's understanding. Subsequently, the teacher illustrates the term by referring to the current geopolitical scene. This extract provides an example of how teachers in history class use translanguaging (i.e., by engaging in their full linguistic repertoire) and trans-semiotising (i.e., maintaining the dialogical flow of creating meaning through media and time scales) as scaffolding to promote understanding of class topics.

Teacher-initiated translanguaging can be identified at the lexical and pragmatic level. Firstly, the teacher meets the students at their lexical level (Infante & Licona, 2021). Particularly, the teacher uses the word "censored" in line 9, which student 1 adopts and transforms, by transitioning from colloquial to academic register through their utterance of "censorship" in line 12. This act of nominalisation is similarly seen in the findings of Q. He and Forey (2018), who emphasise that repacking non-academic verbs into academic nouns is an important phase in the process of acquiring knowledge. Despite student 1's understanding, the teacher further exemplifies the term "dictatorial", so that all the students follow the thought process. Further on in her explanation, the teacher emphasises important diction (i.e., "opponents" in line 27 and "viable" in line 29). The flexibility in her communicative practises enables the students to focus on these subject-specific lexis (Zhou & Mann, 2021). Thus, by moving along the continuum of colloquial and academic register, the teacher is translanguaging to facilitate students' disciplinary TL development (Q. He & Forey, 2018; Infante & Licona, 2021).

The second manner of translanguaging concerns the pragmatic use of the language in lines 21–24. The history teacher uses her personal repertoire to express irony in her utterances. The prolonged "think" in line 22 and the rising intonation in the words "again" and "reassigned", in lines 23 and 24 respectively, allow her to playfully construct her argument. This adds to the findings of Nikula and Moore (2019) who suggest that translanguaging introduces linguistic creativity.

The teacher does not resort to her L1 directly, which is contrary to the findings of Moore and Nikula (2016) and Bieri (2018), who both describe teachers referring to L1 to explain TL lexis. It could be argued that the teacher's language choice is based on her ideologies and/or adhering to the school's policies regarding language use in the classroom. The teacher's utterance in line 42 supports this idea. In this line, she translates the Dutch word to the TL, instead of repeating the Dutch equivalent to maintain the flow of her argument. This finding would contradict the suggestions of Bieri (2018) and Karabassova and San Isidro (2023), who argue that teaches use their L1 despite their ideologies. However, this conclusion should be approached with caution, because the current study did not include an analysis on the teacher's ideologies.

The teacher trans-semiotises using the temporal and physical space. To scaffold the class content, she connects Stalin's leadership during the first half of the twentieth century to the current political environment in Russia. Time scales coalesce in chronological time (i.e., past and present Russian politics) and individually experienced time (i.e., prior knowledge on contemporary Russian presidency election and the current class topic). In this way, time scales dynamically interact with each other, allowing space for trans-semiotising (Lemke & Lin, 2022). Furthermore, the teacher trans-semiotises by engaging her full body to maintain the flow of her explanation. In lines 35 and 36, she uses her hands to index the act of signing documents. This physical movement becomes part of the spatial repertoire as students try to guess the meaning of the gesture in lines 37–41. The teacher's facial expression and the verbal explanation in lines 35 and 36 demonstrate that the word "autograph" had eluded her. In this instance, student 4 effectively uses the full extent of their linguistic repertoire to recontextualise the image with the verbal message. This example of using one's body to cooperatively create meaning is similarly found in P. He and Lin (2024) and Williams et al. (2019).

4.3 Student-initiated Acts

The previous section emphasised teacher-initiated translanguaging and trans-semiotising as a method for scaffolding content and language. Within the presented extracts, students have also engaged in translanguaging and trans-semiotising. Particularly, these extracts show students translanguaging when speaking to their peers (see lines 18 and 19 in extract 1) and expressing heightened emotions (see line 51 in extract 1). Trans-semiotising appeared when referring to collectively understood prior knowledge (see extract 2). The following section of this chapter further suggests how students engage in translanguaging and trans-semiotising to present identities and roles, and foster solidarity through collectively recognised references.

4.3.1 "Errant" Linguistic Behaviour

An example of how students use translanguaging and trans-semiotising practises is shown in extract 4, which was recorded during a physics lesson on 14 February 2024. This lesson started with a small news clip from the BBC that aired the previous day. As part of the CLIL pedagogy at the school, the students in bilingual education are required to create a personal idiom file in which they define and use recently acquired words. The news clip presented in this lesson showed Donald Trump using the word "delinquent". After the occurrence of this word, the physics teacher demonstrated how the students can search for the definition of the word on Google. The teacher's computer screen was projected on a TV screen.

Extract 4

Line	**Person**	**Utterance**	**Translation**	**Visual**
1 2 3 4 5 6	T	Let's see what is delinquent (8.6) Delinquent meaning (1.2) What is that? Lawless (1.2) Lawbreaking, criminal, criminal (1.7) offending, errant (.) Do you know errant?		Types "delinquent meaning" on the computer. Computer shows results.
7	S1			Nods
8 9 10	T	S1 has heard about errant (1.8) Badly behaved, badly behaved (.) delinquent (.)		
11 12	S2	*Waar staat* errant *ofzo*? (2.0)	Where does it say errant or something?	
13 14	S3	Er, *bovenste, zeg maar bij één, dus* [*dan* ( )]	Er, upper most one, so at one, so then	Points to the screen
15	T	[And then, er, he is a ( )]		
16	S3	Errant		
17	S2	Oh, errant		

18	T	Errant (.) Errant (1.0) Errant (.)	
19		Have you heard about errant?	
20	S4	(1.3) Aaron Warner	
21	T	Er *ja*, you know?	Er yes
22	S4	Aaron Warner?	
23	T	Errant Warner?	
24	S4	Aaron Warner (1.0)	
25	S3	Errand like running an errand	

This extract begins with the physics teacher showing synonyms of the word "delinquent" on the TV screen. He subsequently focusses on one of the synonyms, namely "errant". The illustrated situation highlights how students translanguage and trans-semiotise.

Firstly, student 3's translanguaging and trans-semiotising practises during the presented interaction demonstrate how adopting roles within a specific context could induce different communicative practises. In lines 11–14, student 2 and student 3 use their L1, despite the monolingual policy. Student 3, moreover, employs multimodal resources—the spatial repertoire—by pointing to the TV screen, while simultaneously verbally recontextualising what they see using the linguistic resources most readily available—the personal repertoire. In line 25, however, student 3 explains the word "errant" in the TL. In both instances, student 3 dons a teacher-like role; they communicate for clarifying purposes. When combining Nikula and Moore's (2016) idea of alignment and Chan and Chou's (2022) concept of linguistic behaviour indexing a social role, this interaction would suggest that despite adopting a similar persona, the social environment (e.g., active participants in the conversation) requires different language approaches. The utterances in lines 13 and 14 might show student 3's alignment to student 2's language choice. When student 3 turns to the conversation between student 4 and the teacher, they change their language adhering to the linguistic behaviour of the teacher. These findings thus go beyond Pavón Vázquez and

Ramos Ordóñez (2019), who describe that students use L1 for clarification purposes when speaking with classmates. Student 3's utterances suggest that, when adopting a specific role, the linguistic behaviour associated with that role might change depending on the social context of the interaction. Alternatively phrased, the social context influences the markedness of a specific utterance (Bucholtz & Hall, 2004).

Furthermore, extract 4 demonstrates that translanguaging could occur through association based on the phonetic resemblance of an utterance. For example, student 3, in line 25, connects the word "errant" to an idiom in their repertoire which is formed with a phonetically similar word, but this specific word has a different semantic meaning. Student 4 similarly relates the word "errant" to a phonetically similar word, but compared to student 3, student 4 employs a marked repertoire. Namely, student 4 associates "errant" to the word "Aaron" from Aaron Warner, who is a character from Tahereh Mafi's Shatter Me book series, see lines 20–24. The prompted repertoire is student 4's marked, personal repertoire—a repertoire that they have acquired by reading and engaging in content from Mafi's book series. However, since the physics teacher does not share the same repertoire, he misunderstands the name of the character and thus fails to create a link between the two words. Through using their personal repertoire, student 4 positions themselves belonging to a community they engage in outside the classroom. So, by presenting the language associated with this community in the uncommon environment of the classroom, the student asserts their identity (Chan & Chou, 2022) and creates distance between themselves and the rest of the class (Poza, 2019a).

Moreover, previous studies have shown that newly acquired knowledge is always embedded in previously acquired knowledge (e.g., Q. He & Forey, 2018; Lin, 2019; Lin & He, 2017). Similarly, the interaction in extract 4 demonstrates how, in a learning environment, students can relate new concepts to past knowledge through translanguaging.

Specifically, linguistic resources from a personal repertoire might verbally emerge due to a recognised phonetic similarity between those resources and the newly encountered linguistic resources from a community repertoire. Furthermore, instead of considering these communicative acts as a result of cognitive connections between concepts, it could be argued that deliberate utterances of marked personal repertoires enable the discursive practise of presenting an identity (Bucholtz & Hall, 2004). Simultaneously, trans-semiotising—the use of spatial repertoires while presenting the role of a 'little teacher'—enables the portrayal of this persona within the context of the conversation (Chan & Chou 2022; Lin & He, 2017).

4.3.2 The Meme-ification of Charles Darwin

Where the previous extract presented students' translanguaging and trans-semiotising practises through phonetic association, the following extract demonstrates how students translanguage and trans-semiotise through association based on the general context of a situation. The interaction in extract 5 occurred during the biology lesson on 14 February 2024, which focussed on the evolution theory. Preceding the transcribed interaction, the teacher provided the class with a "fun fact" about Charles Dawin, which left the students perplexed.

Extract 5

Line	**Person**	**Utterance**	**Translation**
1	S1	Who was fifteen years older? I don't	
2		know	
3	T	Darwin, when he married his cousin.	
4	S2	°He was *hij was vijftien jaar ouder dan*°	He was fifteen years older than
5		°*zijn*° [( )]	his
6	S1	Uh [keep it in the family] heh heh	
7	S3	*Vijftig*	Fifty
8	S4	*Vijftig*	Fifty

9	S5	Fifty or fifteen?
10	T	Fifteen. [(2.5)]
11	Ss	[( )]
12	T	Shhh
13	S6	If you go low I go low(.)er::
14	Ss	Hah hah

The extract starts with student 1's question regarding a statement of the teacher prior to the transcribed part. Subsequently, the teacher answers student 1's genuine question. As the interaction unfolds, the students use their personal repertoire and spatial repertoires to translanguage and trans-semiotise.

As similarly shown in the previous section, students use their L1, see lines 4, 5, 7, and 8. In line 4, student 2 switches from TL to L1. Approaching student 2's behaviour from a translanguaging perspective—whereby all linguistic utterances flow from an entire repertoire—reveals that the student (un)consciously decided to switch languages. This false start may have been caused by a mismatch between the role of the student and the linguistic behaviour attached to the fronted role. After all, the student turns to their classmates with the intention of explaining the situation. The initial linguistic behaviour associated with this teacher-like role would be the TL. However, since the student is facing their classmates, they decide that using their L1 is the most effective and efficient way to explain the situation. Thus, student 2's act of translanguaging can be seen as fluidly navigating an entire pool of linguistic resources that they can employ to convey their intended meaning in the specific context. After student 2's utterance, the surrounding peers (i.e., student 3, 4, and 5) amend the statement. The discrepancy between their beliefs about the age difference causes student 5 to inquire about the correct age in line 9 whilst adhering to the monolingual policy. Similar to the results of the previous section, these findings show how the students can negotiate between various linguistic choices in their personal repertoire depending on the intended meaning of the utterance and the social context. Hence, these findings are contrary to the suggestions of Pavón Vázquez and Ramos Ordóñez (2019), who emphasised of that students' linguistic choices are "determined" by the context (p. 44). Instead, students—as empowered emerging bilinguals—intentionally engage in translanguaging by showing their alignment with other individuals in the immediate surroundings (Nikula & Moore, 2016).

Additionally, students can utilise colloquial idioms in their personal repertoire to express humour, see student 1's utterance in line 6. This idiom typically refers to an activity restricted to family members (Oxford English Dictionary, n.d.). However, in this instance the student alludes to the slang definition of the utterance, denoting incestuous relationships. By engaging in translanguaging, the student thus aims to create humour in the classroom (Dávila, 2019; Poza, 2019b). Similarly, student 6 playfully translanguages and trans-semiotises. Their utterance in line 13 is a reference to a statement from the American politician Eric Mays: "When they go low, I go lower" (Destinyrenee, 2023, 00:02–00:05). This quote became a meme on TikTok from March 2023 onwards (Rhodes, 2023). The sound is often paired with sardonic comments on relationship issues. Here, student 6 associates the inappropriate relationship of Charles Darwin and his cousin to the sound, incorporating out-of-school discursive practises within the classroom. Thus, knowledge that was once gained through engaging in spatial repertoires (i.e., using TikTok) is now verbally recontextualised and trans-semiotised by connecting it to class material within the space of the classroom. Compared to the instance of "Aaron Warner" in extract 4, using a marked repertoire in this utterance in extract 5 creates solidarity through recognition, which is demonstrated by their peers' reaction to the utterance in line 14.

Scholarly literature has suggested that combining humour with marked linguistic behaviour could create solidarity within a classroom (e.g., Chan & Chou, 2022; Dávila, 2019;

Nikula & Moore, 2019). Similarly, the interaction in extract 5 demonstrates how translanguaging and trans-semiotising practises enable students to playfully engage in class topics through the collective understanding of discursive practises typically used outside of the classroom.

4.4 Summary

The findings suggest that Canagarajah's (2021) categories of semiotic repertoires interweave within interactions. This dynamic use of repertoires allows for translanguaging and trans-semiotising to occur. Teachers use translanguaging and trans-semiotising practises as tools in facilitating their students to gain a deeper understanding of subject-specific topics (Karabassova & San Isidro, 2023; Weliweriya et al., 2019). Whereas teachers of subjects in the natural sciences can rely on material entities, teachers of subjects in the social sciences more often scaffold using the temporal space. The findings furthermore highlight that humoristic interaction could occur by engaging in marked, personal repertoires (Nikula & Moore, 2019). This is similarly seen for student-initiated translanguaging and trans-semiotising (Dávila, 2019). By moving within their personal repertoires, students can present an identity or social role within the classroom (Chan and Chou, 2022). Finally, students relate past experiences with the new topics they learn in class by translanguaging and trans-semiotising (Book & Tandberg, 2024; Lin & He, 2017; Williams et al., 2019).

Chapter 5 Conclusion

The present study has approached teacher-student interaction in Dutch CLIL classes from the lens of translanguaging and trans-semiotising. Teachers scaffold their subjects and academic language through translanguaging and trans-semiotising (e.g., by presenting relationships between the class topic and past knowledge). It is noteworthy that different subjects require different types of scaffolding. In this manner, adding these findings to the broader understanding of scaffolding could offer practical examples beneficial for (CLIL) teacher training.

The empirical findings provide a more nuanced view on language use within classrooms. This understanding could aid Dutch policy-makers in designing their bilingual education to foster an environment in which both content and language is learnt effectively and efficiently. However, the demographic of the student body in the present study is not representative of the demographic in other places of the Netherlands (e.g., cities with rich multiculturality). Hence, conducting a similar study in diverse contexts would facilitate a deeper insight in how students with different linguistic backgrounds engage in translanguaging and trans-semiotising.

Moreover, the results have shown how students communicate their identities and roles in relation to the theory discussed within the classroom. And, although not presented in the main findings of the current paper, there were occurrences in the data where students—without the presence of the teacher—engaged in translanguaging by using their personal repertoires to explain class topics to their peers. These insights could be used as a basis for designing student-focussed pedagogical tools to encourage students to connect theory with their own repertoires and identity (see Cole et al., 2021, who have done so in tertiary education). Engaging students in this manner could enhance their understanding of subject matter (Book & Tandberg, 2024). In this light, further studies could analyse the link between performing identities/roles and acquiring knowledge through experiment-based research.

Lastly, the present study has suggested that the acts of translanguaging and trans-semiotising could facilitate solidarity through humour. Introducing humour and solidarity in this manner could be beneficial for cultivating a safe educational milieu. After all, safety in a classroom should be considered the basis for fostering an engaging learning environment. Hence, it would be worth investigating how translanguaging and trans-semiotising aid in developing an inclusive learning space, in which every student and teacher feels validated.

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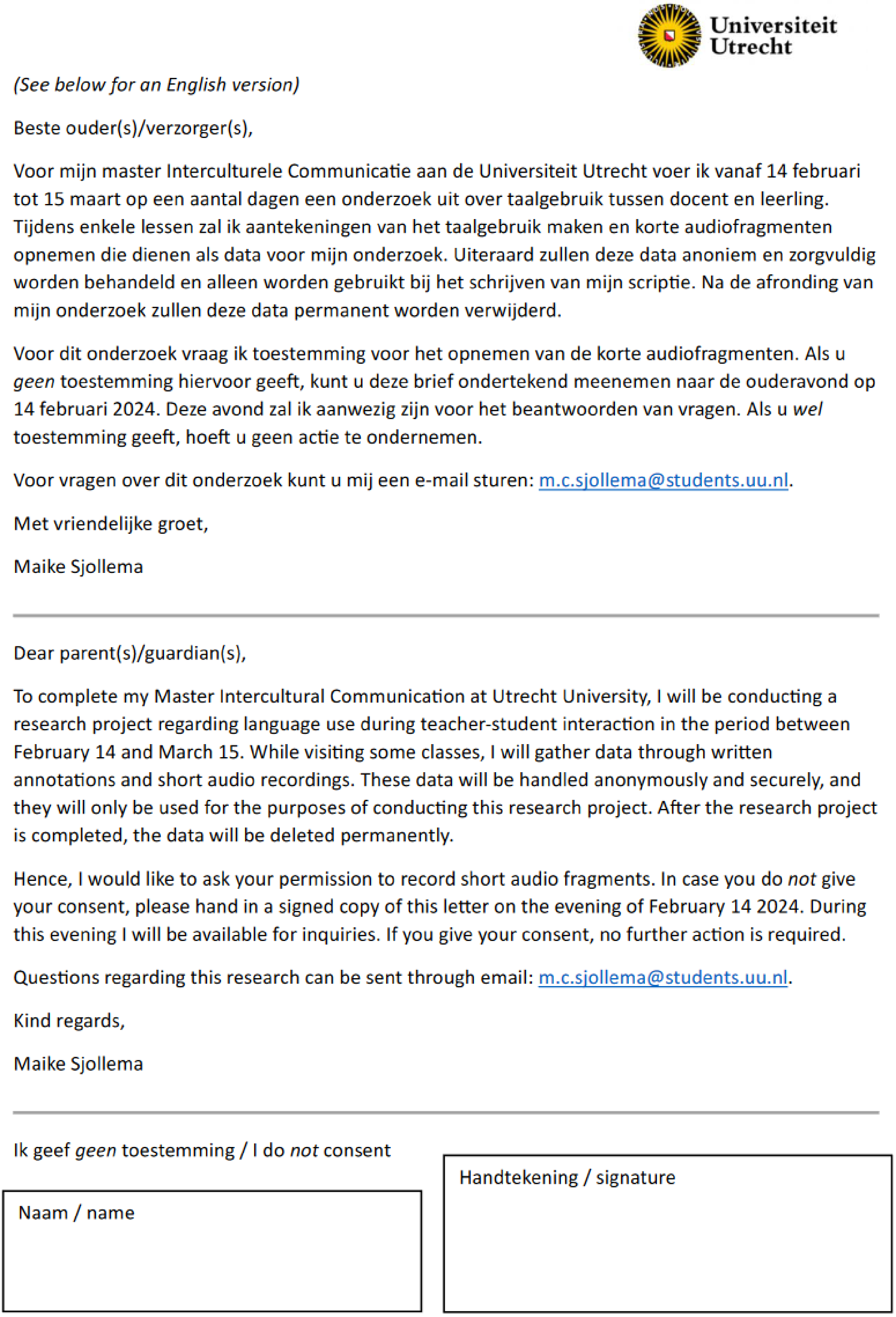
Appendix A

Transcription Model Adapted from Jefferson (2004)

Symbol	Definition and use
[]	Overlapping utterances; the left bracket indicates the beginning and the right bracket indicates the end
=	Utterances following continuously
(0.0)	The tenths of a second between utterances
(.)	Brief pause about tenth of a second
:	Elongation of the preceding sound, more colons represent increased elongation
↑↓	Marked shifts in pitch; upward arrows indicate higher pitch, downward arrows indicate lower pitch
?	Rising pitch at the end of an utterance
.	Falling pitch at the end of an utterance
WORD	Loud speech
Word	Capitalisation of proper nouns and the initial letter of a word at the start of a naturally occurring sentence
word	Emphasis
◦word◦	Low volume speech
w(h)ord	Laughter within a word
£word£	Smiling voice
Heh heh or hah hah	Laughter
(word)	Approximation of utterance, including nonsense syllables
( )	Unintelligible, in case the duration is longer than 1 second, it is accompanied with the duration in the line above
word	Utterance in Dutch

Appendix B

Consent Letter for Parents



Universiteit Utrecht

(See below for an English version)

Beste ouder(s)/verzorger(s),

Voor mijn master Interculturele Communicatie aan de Universiteit Utrecht voer ik vanaf 14 februari tot 15 maart op een aantal dagen een onderzoek uit over taalgebruik tussen docent en leerling. Tijdens enkele lessen zal ik aantekeningen van het taalgebruik maken en korte audiofragmenten opnemen die dienen als data voor mijn onderzoek. Uiteraard zullen deze data anoniem en zorgvuldig worden behandeld en alleen worden gebruikt bij het schrijven van mijn scriptie. Na de afronding van mijn onderzoek zullen deze data permanent worden verwijderd.

Voor dit onderzoek vraag ik toestemming voor het opnemen van de korte audiofragmenten. Als u *geen* toestemming hiervoor geeft, kunt u deze brief ondertekend meenemen naar de ouderavond op 14 februari 2024. Deze avond zal ik aanwezig zijn voor het beantwoorden van vragen. Als u *wel* toestemming geeft, hoeft u geen actie te ondernemen.

Voor vragen over dit onderzoek kunt u mij een e-mail sturen: m.c.sjollema@students.uu.nl.

Met vriendelijke groet,

Maike Sjollema

Dear parent(s)/guardian(s),

To complete my Master Intercultural Communication at Utrecht University, I will be conducting a research project regarding language use during teacher-student interaction in the period between February 14 and March 15. While visiting some classes, I will gather data through written annotations and short audio recordings. These data will be handled anonymously and securely, and they will only be used for the purposes of conducting this research project. After the research project is completed, the data will be deleted permanently.

Hence, I would like to ask your permission to record short audio fragments. In case you do *not* give your consent, please hand in a signed copy of this letter on the evening of February 14 2024. During this evening I will be available for inquiries. If you give your consent, no further action is required.

Questions regarding this research can be sent through email: m.c.sjollema@students.uu.nl.

Kind regards,

Maike Sjollema

Ik geef *geen* toestemming / I do *not* consent

Naam / name

Handtekening / signature