Researching Multilingualism in Lower Secondary Schools

New Theoretical Perspectives and Methodological Approaches

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UNIVERSITY OF BERGEN

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'To describe, to be attentive to the concrete state of affairs, to find the uniquely

adequate account of a given situation, I myself have always found

this incredibly demanding.' Bruno Latour (2005, p. 144)

Acknowledgements

Writing acknowledgements is always a risky business in the sense that unintentionally failing to mention anyone is a blatant injustice to their contributions to the accomplishment of this research project. I have done my best to include all of you, and if any occasional omissions occur, I kindly ask you to forgive my poor memory.

First and foremost, none of this would have happened without the unconditional support, wise advice and academic expertise of my supervisor, Prof. Åsta Haukås. Mentioning all her contributions to my academic development as a researcher and to the successful conclusion of my PhD would take longer than these pages allow, so I will try to summarise it all in one statement: I wish all PhD candidates had a supervisor like Åsta.

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Abstract

The four articles discussed in this synopsis include my main contributions to the Ungspråk research project, a three-year, mixed-methods study conducted by the Department of Foreign Languages at the University of Bergen. This doctoral thesis focuses on the development of participatory research methodologies, pedagogical tools and visual models to explore multilingualism, multilingual identity and the language practices of Norwegian lower secondary students. The main purpose of the synopsis is to present the integration of the articles in a coherent whole in which the overall mixed-methods design of the study (Article I) is the starting point for the development of the Ungspråk questionnaire (Article II), the main research instrument used in the first phase of the project, which provided data for the subsequent design of digital data visualisations (Article III) and practice-based models of multilingualism (Article IV). In the second phase of the project, the data visualisations were used in interactive sessions with students in one of the participant schools, and they represent an innovative approach to research in which participants interact with research data they helped generate. Such an approach has important ethical, epistemological and pedagogical implications, which are also discussed in the synopsis. Taken together, the Ungspråk questionnaire (Article II), data visualisations, interactive sessions (Article III) and models of multilingualism (Article IV) represent an effort towards a better descriptive understanding of multilingualism in Norwegian lower secondary schools.

Article I discusses the theoretical background that underpins the Ungspråk project and provides an overview of different scholarly approaches to the study of multilingualism, multilingual identity and intercultural competence, highlighting their implications for research on multilingualism in education. The article also introduces our research areas of interest and the main research questions, paying particular attention to how the mixed-methods design of the project innovatively explores the use of different research methods and instruments to investigate our topics of interest and to create opportunities for meaningful interactions between researchers and participants. Therefore, the paper focuses on how quantitative and qualitative components are integrated to address the

research questions, engage participants in the research process and strengthen the overall validity of the findings.

Article II describes the development and validation of the Ungspråk electronic questionnaire, which was designed to explore lower secondary students' multilingualism and multilingual identity in the Norwegian school context. One of the main purposes of the questionnaire is to examine whether having a multilingual identity correlates with several variables such as language practices, languages studied in school, open-mindedness and beliefs about multilingualism. Such findings are analysed in complementary articles that are not discussed in this document. For the purposes of this synopsis, the Ungspråk questionnaire also provided data related to participants' own definitions of what it means to be multilingual, their self-identification as multilingual individuals and the contexts of practice for the languages in their repertoire. Such data are the basis for the development of the digital visualisations that serve both as research instruments and pedagogical tools and that are extensively discussed in Articles III and IV.

Article III introduces our exploratory, participatory approach to research on multilingualism and multilingual identity, in which participants interact with the research data they helped generate. The paper discusses the ethical and epistemological implications that underlie the interactive sessions in which participants engage with research data, researchers and their peers in a dialogical manner. The paper also presents the design of the main pedagogical tools used in the sessions: digital visualisations that represent participants' answers to the questions 'to be multilingual means…' and 'are you multilingual?' taken from the Ungspråk questionnaire. Particular attention is paid to the design of the visuals in promoting participants' engagement with the data and autonomy in interpreting research findings. The paper also includes a discussion of the main findings from the interactive sessions, focusing on how participants' interpretations of the data offered new insights into multilingualism and multilingual identity, thus contributing to the overall quality of the study and to a more nuanced understanding of the phenomena in question.

Article IV presents practice-based visual models of multilingualism based on data taken from one section of the Ungspråk questionnaire. Starting from the assumption that language knowledge, and therefore multilingualism, emanates primarily from practice, the article overviews current models of multilingualism, highlighting their main features, strengths and limitations. The discussions then shift to the need for developing visual descriptive models of multilingualism that account for the complex patterns of language interaction characteristic of contemporary, hypermediated societies. The prototype models presented in the paper allow for the exploration of the data both from the perspective of the whole group of participants and from an individual perspective. They can be used not only for research purposes but also by teachers and educators as pedagogical tools for exploring multilingualism and language learning. In addition, the models represent a step towards the future development of more complex digital modelling tools for multilingual practices.

Sammendrag

De fire artiklene som er drøftet i denne synopsisen inneholder hovedbidragene mine til forskningsprosjektet Ungspråk, en treårig, blandet metodestudie utført av Institutt for fremmedspråk ved Universitetet i Bergen. Denne doktorgradsavhandlingen fokuserer på utvikling av deltakende forskningsmetodikk, pedagogiske verktøy og visuelle modeller for å utforske flerspråklighet, flerspråklig identitet og språkpraksis blant norske ungdomsskoleelever. Hovedformålet med synopsisen er å presentere integreringen av artiklene i en sammenhengende helhet der studiens overordnede blandede metodedesign (Artikkel I) er utgangspunktet for utviklingen av Ungspråk-spørreskjemaet (Artikkel II), hovedforskningsinstrumentet benyttet i den første fasen av prosjektet, som skaffet data til det påfølgende designet av digitale datavisualiseringer (Artikkel III) og praksisbaserte modeller for flerspråklighet (Artikkel IV). I den andre fasen av prosjektet ble datavisualiseringene brukt i interaktive økter med elever på en av deltakerskolene, og representerer en innovativ tilnærming til forskning der deltakerne samhandler med forskningsdata de var med på å generere. En slik tilnærming har viktige etiske, epistemologiske og pedagogiske implikasjoner, som også drøftes i synopsisen. Samlet representerer Ungspråk-spørreskjemaet (Artikkel II) datavisualiseringer, interaktive økter (Artikkel III) og modeller for flerspråklighet (Artikkel IV) en innsats mot en bedre beskrivende forståelse av flerspråklighet i norsk ungdomsskole.

Artikkel I diskuterer den teoretiske bakgrunnen som ligger til grunn for Ungspråk-prosjektet og gir en oversikt over ulike vitenskapelige tilnærminger til studiet av flerspråklighet, flerspråklig identitet og interkulturell kompetanse, og fremhever implikasjoner for å utføre forskning på flerspråklighet i utdanning. Artikkelen presenterer også forskningsområdene våre og de viktigste forskningsspørsmålene, med spesiell oppmerksomhet rettet mot hvordan utformingen av prosjektet med blandede metoder på en innovativ måte undersøker bruken av forskjellige forskningsmetoder og instrumenter for å undersøke interessetemaene våre og skape muligheter for meningsfulle interaksjoner mellom forskere og deltakere. Derfor fokuserer avhandlingen på hvordan kvantitative og kvalitative komponenter integreres for å

behandle forskningsspørsmålene, engasjere deltakerne i forskningsprosessen og styrke den generelle validiteten til funnene.

Artikkel II beskriver utviklingen og valideringen av det elektroniske Ungspråk-spørreskjemaet, som ble utviklet for å utforske ungdomsskoleelevers flerspråklighet og flerspråklige identitet i den norske skolesammenhengen. Et av hovedformålene med spørreskjemaet er å undersøke om det å ha en flerspråklig identitet samsvarer med flere variabler som språkpraksis, språk studert i skolen, et åpent sinn og oppfatninger om flerspråklighet. Slike funn analyseres i utfyllende artikler som ikke er drøftet i dette dokumentet. For formålet med denne synopsisen inneholdt Ungspråk-spørreskjemaet også data relatert til deltakernes egne definisjoner av hva det vil si å være flerspråklig, deres selvidentifisering som flerspråklige personer og praksiskontekstene for språkene i repertoaret deres. Slike data er grunnlaget for utviklingen av de digitale visualiseringene som fungerer både som forskningsinstrumenter og pedagogiske verktøy og som blir omfattende drøftet i Artikkel III og IV.

Artikkel III introduserer vår undersøkende, deltakende tilnærming til forskning på flerspråklighet og flerspråklig identitet, der deltakerne samhandler med forskningsdataene de bidro til å generere. Artikkelen diskuterer de etiske og epistemologiske implikasjonene som ligger til grunn for de interaktive øktene der deltakerne engasjerer seg i forskningsdata, forskere og deres kolleger på en dialogisk måte. Oppgaven presenterer også utformingen av de viktigste pedagogiske verktøyene som brukes i øktene: digitale visualiseringer som representerer deltakernes svar på spørsmålene «å være flerspråklig betyr ...» og «er du flerspråklig?», som er hentet fra Ungspråk-spørreskjemaet. Spesiell oppmerksomhet rettes mot utformingen av det visuelle for å fremme deltakernes engasjement med dataene og autonomi ved tolkningen av forskningsfunnene. Avhandlingen inneholder også en drøfting av hovedfunnene fra de interaktive øktene, med fokus på hvordan deltakernes tolkninger av dataene ga ny innsikt i flerspråklighet og flerspråklig identitet, og dermed bidrar til den generelle kvaliteten på studien og til en mer nyansert forståelse av det aktuelle fenomenet.

Artikkel IV presenterer praksisbaserte visuelle modeller for flerspråklighet basert på

data hentet fra en del av Ungspråk-spørreskjemaet. Med utgangspunkt i antakelsen om at språkkunnskap, og derfor flerspråklighet, først og fremst kommer fra praksis, gir artikkelen en oversikt over gjeldende modeller for flerspråklighet, og fremhever hovedtrekkene, styrkene og begrensningene i disse. Drøftingene skifter deretter til behovet for å utvikle visuelle deskriptive modeller for flerspråklighet som redegjør for de komplekse mønstrene for språkinteraksjon som er karakteristiske for moderne, hypermedierte samfunn. Prototypemodellene som presenteres i avhandlingen gir mulighet for utforskning av dataene både fra hele gruppen av deltakere og fra et individuelt perspektiv. De kan brukes ikke bare til forskningsformål, men også av lærere og pedagoger som pedagogiske verktøy for å utforske flerspråklighet og språklæring. I tillegg representerer modellene et skritt mot fremtidig utvikling av mer komplekse digitale modelleringsverktøy for flerspråklige metoder.

List of Publications Discussed in the Synopsis

Storto, A., Haukås, Å. & Tiurikova, I. (2023). Visualising the language practices of lower secondary students: outlines for practice-based models of multilingualism. Applied Linguistics Review. https://doi.org/10.1515/applirev-2022-0010

Storto, A. (2022). 'To be multilingual means…': Exploring a participatory approach to multilingual identity with schoolchildren. *International Journal of Multilingualism*. https://doi.org/10.1080/14790718.2022.2082441

Haukås, Å.; Storto, A.; Tiurikova, I. (2021). The Ungspråk project: Researching multilingualism and multilingual identity in lower secondary schools. *Globe: A Journal of Language, Culture and Communication*. 12: 83-98 ISSN: 2246-8838 DOI: https://doi.org/10.5278/ojs.globe.v12i.6500

Haukås, Å.; Storto, A.; Tiurikova, I. (2021). Developing and Validating a Questionnaire on Young Learners' Multilingualism and Multilingual Identity. The Language Learning Journal. ISSN:1467-9922. DOI: https://doi.org/10.1080/09571736.2021.1915367

List of Publications Not Included in the Synopsis

Haukås, Å., Storto, A., & Tiurikova, I. (2022). School students' beliefs about the benefits of multilingualism. *Journal of Multilingual and Multicultural Development*. https://doi.org/10.1080/01434632.2022.2075001.

Tiurikova, I, Haukås, Å., & Storto, A. (2021). The link between multilingualism, language learning and open-mindedness in secondary school students in Norway. *Nordic Journal of Language Teaching and Learning*, *9*(2), 1–24. https://doi.org/10.46364/njltl.v9i2.945.

Storto, A. (2021). Fingerprints: Towards a multisensory approach to meaning in digital media. *Nordic Journal of Digital Literacy*, *16*(3–4), 132–143. https://doi.org/10.18261/issn.1891-943x-2021-03-04-04.

Links to the data visualisations and visual models developed in the project:

1. Visuals used in interactive sessions with participants (Article III)

https://org.uib.no/multilingual/Betyr/Betyr.html

https://org.uib.no/multilingual/Engelsk/Betyr.html

https://org.uib.no/multilingual/ErDu/ErDu.html

2. Practice-oriented visual models of multilingualism (Article IV)

     a) Models representing the language practices of the whole group of participants:

https://org.uib.no/multilingual/AllPolarCharts/UIB%20Project%20polar/LangLearnedAtSchool.html

https://org.uib.no/multilingual/AllPolarCharts/UIB%20Project%20polar/5MostFreqNotLearnedSchool.html

https://org.uib.no/multilingual/AllPolarCharts/UIB%20Project%20polar/OtherLangNotLearnedSchool.html

b) Models representing the language practices of individual participants:

https://org.uib.no/multilingual/AllNetworkGraphs%20-%20Copy/ProtoParticipant.html

https://org.uib.no/multilingual/AllNetworkGraphs%20-%20Copy/ParticipantWPolish.html

https://org.uib.no/multilingual/AllNetworkGraphs%20-%20Copy/PartNo3rdLangSchool.html

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Part I – Synopsis

1. Introduction

The historical–political embeddedness of all scientific activity and, by extension, of research endeavours in all its domains has been amply discussed in the philosophy of science (see, for example, Feyerabend, 1993; Foucault, 1966, 1969; Kuhn, 1970). In particular, in our time, the situatedness of scientific knowledge manifests itself in distinct but interconnected time and spatial scales[1], which determine not just how and what kind of research is conducted but also, more importantly, the societal value of the knowledge produced. From a macro perspective, the overarching topics that guide the Ungspråk research project (such as multilingualism, language learning and multilingual identity) are related to what has been called the 'multilingual turn' in applied linguistics (May, 2014), which has produced an impressive amount of research in specialised fields of knowledge and countless books and publications in academic journals.

On a global scale, and particularly in the Global North, such paradigmatic shift in language research is concurrent with the increasing cultural and linguistic diversity of contemporary societies resulting from the intensified fluxes of information, products and people characteristic of the current stages of globalisation. In Europe, the interest in multilingualism was heightened in the last decades by the gradual elimination of economic and political barriers, and the knowledge of languages is frequently portrayed in official discourses and documents as a crucial resource for individual achievement, societal pluralism and continental integration (see, for example, Council of Europe, 2020). Within the borders of nation states, these concerns have prompted the elaboration of educational policies and curricula that place language learning and multilingualism in a pivotal position. For example, in Norway, a country with an inherently rich linguistic and dialectal heritage, both the new foreign language curriculum, FSP01-02 (Norwegian Directorate for Education and Training, 2020), and the new English curriculum, ENG01-04 (Norwegian Directorate for Education and Training, 2020), stress the role of language learning in developing pupils' intercultural competence, building their identities and fostering multilingualism.

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1 The sociolinguistic Blommaert (2010) uses the concept of spatiotemporal scales to account for different 'forms of globalization that contribute to new forms of locality' (p. 954, Kindle edition). According to the author, the metaphor of 'scale' has its origins in history and social geography, and in world-systems analysis (Wallerstein, 2000), it is used to describe how "social events and processes move and develop on a continuum of layered scales, with the strictly local (micro) and the global (macro) as its extremes and several intermediary scales […] in between' (p. 915, Kindle edition).

The global societal changes outlined above have also brought important institutional transformations for universities. Faced with the need for more research collaboration across disciplines to address the challenges posed by an interdependent globalised society, universities resorted to internationalisation and the recruitment of foreign researchers as a means of increasing research cooperation and accruing symbolic and economic capital beyond national borders.

It is amidst this exciting scenario that I, an academic researcher and foreign language teacher from Brasil, came to Norway in 2018 to join the Ungspråk research project, a three-year mixed-methods study investigating multilingualism and language learning in Norwegian lower secondary schools. Interestingly enough, the composition of the Ungspråk research team reflects on a micro scale the socio-cultural transformations discussed above, and its three core members make up a multilingual, multicultural group of researchers who dedicate themselves to the study of multilingualism in education. The head of the group, Prof. Åsta Haukås, is a Norwegian researcher and teacher educator. Her research is greatly inspired by her background as a language teacher of Norwegian, English and German. Experiences in the classroom made her curious of how languages interact in the multilingual minds of both students and teachers and how being multilingual is perceived by them. Irina Tiurikova has a background in social sciences and language education. She speaks Russian, English, French and Norwegian and, to varying degrees, understands some Slavic languages. Her previous experience in language learning and research in intercultural education made her curious to look into the connection between two areas she has always been interested in – multilingualism and intercultural competence in school contexts. Finally, I am an applied linguist whose lifelong experiences as a language teacher and learner made me interested in studying the role of everyday practices in the development of language learning, particularly in digital environments. I am also a multilingual speaker of Portuguese, English, Italian, Spanish, French and Norwegian, with varying levels of proficiency and abilities in all these languages.

The encounter of researchers with such diverse cultural backgrounds, life trajectories and personal and academic experiences has contributed to the equally diverse theoretical and methodological approaches brought to bear in the research processes as well as in the interpretation of the results and findings. From this perspective, participating in the project was an enriching experience that involved a constant (re)negotiation of personal worldviews

and perspectives, with the aim of achieving mutual understanding and enriching the overall quality of the research.

At a personal level, the fact that initially I was a total stranger to Norwegian society and educational system put me in an awkward position: how does one qualify to conduct research on multilingualism and multilingual identity in Norwegian classrooms while being an outsider? How can one talk about being multilingual when one's multilingualism does not include the language with the highest currency in the environment one is researching? Such challenges could not be overcome without the guidance and generosity of my supervisor, research colleagues and peers as well as the supportive academic environment I encountered at the University of Bergen. To a great extent, I believe that the displacement and estrangement entailed by the questions above are not too distant from the feelings that usually accompany learners when trying to speak a new language, and from this perspective, my engagement in the Ungspråk research project can be read as a trajectory in search of a voice. As a consequence, this synopsis is an account of an intellectual journey whose academic merits should be attributed to the efforts and strengths of the research group as a whole, whereas the inevitable flaws and shortcomings are exclusively my own.

1.1 The Ungspråk project, the articles and the synopsis

The four articles discussed in this synopsis represent some of the research outcomes of the Ungspråk[2] project, a four-year mixed-methods study designed to explore different aspects of multilingualism in Norwegian lower secondary schools (Article I). The Ungspråk project combines a number of qualitative, quantitative and exploratory methodologies in a creative way to achieve heightened knowledge about issues related to multilingualism, such as its relationship with foreign language learning, multilingual identity and intercultural competence. This synopsis focuses on my main contributions to the project, especially the development of interactive sessions where participants explored research data they had previously generated (Article III) and the design of digital practice-based models of

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2 The compound noun Ungspråk comprises the words 'ung' (young) and 'språk' (language(s)). In Norwegian, 'språk' is both the singular and plural form of the noun and thus may refer to one or several languages. The choice for a non-transparent word alludes to the linguistic diversity of the learners and the possibility of their self-identification as monolingual or multilingual (explanation taken from Article II).

multilingualism (Article IV).

Article I introduces our main research questions, paying particular attention to how the mixed-methods design of the project innovatively explores the use of different research methods and instruments to investigate our research areas of interest, such as multilingualism in Norwegian lower secondary schools and the role of foreign language learning in developing participants' multilingual identity. The article also discusses the heterogeneous multilingual makeup of Norwegian society and classroom contexts, highlighting the importance of adopting a holistic approach (see subchapter 3.1) to the study of the phenomenon.

Article II describes the development and validation of our main research instrument, the Ungspråk digital questionnaire. Following a holistic approach to the study of multilingualism (Cenoz, 2010), the questionnaire was designed to investigate a wide range of language-related topics among lower secondary school students, such as the languages learned and used in and out of classroom contexts, their attitudes and beliefs about languages and language learning, the relationship between language learning and participants' open mindedness and intercultural competence and their experience living abroad. Data from the questionnaire served as the basis to investigate some of those issues, which fall beyond the scope of this document and are analysed in other publications (see Haukås et al., 2022; Tiurikova et al., 2021). For the purposes of this synopsis, the Ungspråk questionnaire also provided crucial data related to participants' own definitions of what it means to be multilingual, their self-identification as multilingual individuals and the contexts of practice for the languages in their repertoire. Such data are the basis for the development of the interactive digital visualisations and practice-based models of multilingualism extensively discussed in Articles III and IV, respectively.

Article III introduces our exploratory, participatory approach to research on multilingualism and multilingual identity, in which participants interact with research data they helped generate. The paper also discusses the design of the main pedagogical tools used in the interactive sessions, in which participants interact with research data, researchers and their peers: digital visualisations that represent students' answers to the questions 'To be multilingual means…' and 'Are you multilingual?' taken from the Ungspråk questionnaire. The paper includes a discussion of the main findings from the interactive sessions, focusing on how participants' interpretations of the data offered new insights into multilingualism and multilingual identity, thus contributing to the overall quality of the study and to a more

nuanced understanding of the phenomena in question.

Article IV presents practice-based visual models of multilingualism based on data obtained from one section of the Ungspråk questionnaire. Based on the theoretical insights of the 'practice turn' in contemporary theory (Schatzki, 2001) and applied linguistics (Canagarajah, 2013; Hall et al., 2006; Pennycook, 2010) and drawing on the expertise acquired in the design of the interactive data visualisations (Article III), we developed descriptive visual models of multilingualism that focus on the contexts of language practice of the participants (Article IV). The prototype models presented in the paper allow for the exploration of the data from the perspective of both the whole group of participants and individual participants; they can also be used by teachers and educators as pedagogical tools for exploring multilingualism and language learning.

Table I on the next page provides an overview of the articles, research questions and other relevant information related to this synopsis.

Table 1: Research questions, articles and research instruments

		Main Research Questions		
	1. What does it mean to be multilingual for pupils in Norwegian lower secondary schools? 2. To what extent does multilingual identity correlate with intercultural competence and a number of other variables, such as students' multilingualism, language use habits, gender, experience abroad and migration background? 3. How can research on multilingualism and multilingual identity be designed to engage participants with the research processes and findings? How can participants' involvement in research contribute to a deepened understanding of multilingualism and multilingual identity?			
	Article I	**Article II**	**Article III**	**Article IV**
Title	The Ungspråk project: Researching multilingualism and multilingual identity in lower secondary schools	Developing and validating a questionnaire on young learners' multilingualism and multilingual identity	'To be multilingual means…': Exploring a participatory approach to multilingual identity with schoolchildren	Visualising the language practices of lower secondary students: Outlines for a practice-based model of multilingualism
Article Aims and objectives	Discuss the theoretical background and methodological rationale for developing Ungspråk project, a longitudinal, mixed-methods study set in Norwegian lower secondary schools.	Describe the development and validation of the Ungspråk electronic questionnaire, which was designed to explore teenagers' multilingualism and multilingual identity in the Norwegian school context.	1) The design of digital data visualisations to engage participants and provide them with autonomy in interpreting the research data they helped generate. 2) The promotion of meaningful reflections on multilingualism and multilingual identity via interactive sessions in which participants engage with data visualisations, researchers and their peers.	1) Design visual models that describe the contexts of use and participants' attitudes to the languages learned and used in and out of school. 2) Contribute to the development of models of multilingualism that account for the language practices multilingual speakers routinely engage in.
Research Instruments	¤	Ungspråk digital questionnaire	Digital data visualisations and interactive sessions	Digital practice-based models of multilingualism
Participants	¤	593 students from lower secondary schools	114 students from lower secondary schools	593 students from lower secondary schools
Data	¤	¤	1) Participants' written responses to the textual prompts in visuals 1 ('to be multilingual means…') and 2 ('are you multilingual?'). 2) Categorisations done by the students in visual 1. 3) Observation notes taken by researchers during and after the interactive sessions.	Ungspråk Questionnaire: Battery of statements about contexts of practice and attitudes for the languages in participants' repertoire
Publishing Status	Published	Published	Published	Published

This document starts by situating our research in the continental and national scales and discusses multilingualism (and plurilingualism) under the light of the different purposes they are put to in official documents and curricula. After that, I state our main contributions to research in multilingualism in education and address some relevant issues related to researching multilingualism in Norwegian lower secondary schools. Chapters 3 and 4 provide in-depth discussions about two central concepts in my contributions to the Ungspråk project: multilingualism and multilingual identity. The discussions then shift to the research design of the Ungspråk project, the deployment of mixed methods to investigate multilingualism and multilingual identity and my contributions to answer the research questions. Chapter 6 focuses on the ethical, epistemological and pedagogical implications of the sessions in which participants explored issues related to multilingualism and multilingual identity based on data they had previously helped generate via their interaction with data visualisations, researchers and their peers (Article III). Chapter 7 discusses the digital, practice-based models of multilingualism (Article IV), which were developed from data obtained via the Ungspråk questionnaire (Article II). The synopsis ends with a discussion of my contributions to the Ungspråk project, the limitations of the studies and research instruments and the possible trajectories for future research.

2. Situating the Ungspråk Project

To better situate the Ungspråk research project in relation to the study of multilingualism in the context of Norwegian lower secondary schools, a few preliminary remarks about the continental macroscale and the national mesoscale in which these issues are inserted are necessary. The aim of the following discussions is to, by problematising the different connotations of the terms 'multilingualism' and 'plurilingualism' in official documents and curricula, clarify our contributions to the achievement of a broader descriptive understanding of multilingualism and multilingual identity.

2.1 Plurilingualism and multilingualism in the CEFR

The central role played by languages and (foreign) language learning in the purposes of political integration established by the European Union cannot be overstated. In this respect, the Common European Framework of Reference for Languages (henceforth, CEFR) is, in its

own words, 'one of the best-known and most used Council of Europe policy instruments' (Council of Europe, 2020, p.11). In the foreword to its impressive 278 pages, the political purposes of the document are explicitly articulated: 'Language education contributes to Council of Europe's core mission to achieve a greater unity between its members [and] to developing and maintaining a culture of democracy' (p. 11).

One of the central concepts in the language education policies laid down by the CEFR is that of 'plurilingualism', which is contrasted to 'multilingualism' as follows: 'The CEFR distinguishes between multilingualism (the coexistence of different languages at the social or individual level) and plurilingualism (the dynamic and developing linguistic repertoire of an individual user/learner)' (p. 30). Rather than engaging in a discussion on the theoretical implications of such a distinction, for the purposes of our study, I restrict myself to highlighting the educational connotation attributed to the term 'plurilingualism' – the 'developing linguistic repertoire of an individual learner'. Throughout the document, the concept plays a central role in the educational vision put forth by the Council of Europe, for example, in the development of 'plurilingual and pluricultural competence' (p. 30) and in the elaboration of the 'CEFR illustrative descriptor scales' (p. 123). Even though at first sight the tentative distinction between a general term ('multilingualism') from a specific one ('plurilingualism') seems to be beneficial, the term 'plurilingualism' (just like 'multilingualism') is not exempt from inherent ambiguities, which are explicitly mentioned in the following section of the CEFR:

> Plurilingualism can in fact be considered from various perspectives: as a sociological or historical fact, as a personal characteristic or ambition, as an educational philosophy or approach, or – fundamentally – as the sociopolitical aim of preserving linguistic diversity. All these perspectives are increasingly common across Europe. (Council of Europe, 2020, p. 31)

Jaspers and Madsen (2016), in their critique of new terms (such as 'translanguaging' and 'polylanguaging') coined in academia to describe fluid language practices that challenge the notion of discrete, numerable languages, call attention to the conceptual confusion that is created if such terms are used indistinctively for descriptive, ontological, pedagogical and political purposes. For the sake of our discussions, it should be noted that the term 'plurilingualism' (and 'multilingualism') is often subject to the same conceptual overlapping, as evidenced by the excerpt above.

Indeed, both 'pluri' and 'multilingualism' can be used either descriptively to indicate 'a sociological or historical fact' related to the usage and interaction of languages in a given geographical area or social environment or to define an ontological state (for example, in claiming that 'plurilingualism' is an inherent characteristic of most individuals). By the same token, both terms can be used to refer to an educational or pedagogical philosophy aimed at promoting the learning and usage of multiple languages (as in the development of 'plurilingual competencies' among learners in the CEFR) as well as part of sociopolitical agendas of national or continental integration. Even though such distinctions are not usually clear (for example, one could argue, appropriately, that any pedagogy has an intrinsic political dimension to it), it is at the intersection of these different, and often conflicting, perspectives on 'plurilingualism' or 'multilingualism' that academic debates should be articulated.

As a consequence, for the sake of methodological clarity, and to not lose sight of what is at stake when terms such as 'plurilingualism' or 'multilingualism' are employed, one should always be aware of the implications derived from the multiplicity of meanings assigned to them. For example, from a macro-political perspective, the strategic interest in the development of plurilingual and pluricultural competencies among European citizens, professed by documents such as the CEFR, places 'plurilingualism' (and by extension, 'multilingualism') at a politico-pedagogical crossroads that is often translated into national educational policies that paradoxically profess simultaneous interests in 'monolingualism and multilingualism, although this usually implies locating multilingualism in the individual mind or in international relations while zoning off the national territory as a monolingual sanctuary' (Jaspers & Madsen, 2016, p. 246; see also, Hambye & Richards, 2012; Heller & Duchêne, 2007). Such paradoxical positionings point to the inextricable connection between political agendas, language policies and educational pedagogies; a complex, and often problematic, relationship from which 'plurilingualism' (or 'multilingualism') are not excluded. Consequently, schools, which from a historical perspective were one of the primary vehicles for the dissemination of the unifying political ideals of nation states via the teaching of standard national languages (Anderson, 1983; Bauman & Briggs, 2003; Blommaert, 2006), now find themselves at the centre of debates as one of the main promoters of students' plurilingualism.

In the Ungspråk project, we adopt the broader term 'multilingualism' (which subsumes the individual dimension specified by the definition of 'plurilingualism' in the CEFR), for the

following reasons: first because it is the most commonly used term in academia, as well as the term of choice in the new Norwegian language curricula. Second because, as stated above, regardless of the term of choice ('multilingualism' or 'plurilingualism'), what we should bear in mind is that the connotations assigned to either of the terms are always dependent on the purposes they are put to, and therefore, an awareness of the specific discursive nuances of 'multilingualism' (or 'plurilingualism') is a precondition to establish, question and problematise its terminological relevance and implications. Such issues are addressed throughout Chapters 3 and 4.

2.2 Multilingualism in the Norwegian curricula

In Norway, the continental language policies outlined above are reflected, for instance, in the foreign language curriculum, FSP01-02 (Norwegian Directorate of Education and Training, 2020), which includes multilingualism and intercultural competence as two of its four core elements (for a discussion on these issues, see Article I). The new foreign language curriculum also echoes the view put forth by the CEFR, which considers the existing linguistic repertoire of the learners as an integrated set of resources that can be harnessed for the purposes of language learning at school. Under the core element 'Language learning and multilingualism', the document states:

> […] In the encounter with the foreign-languages subject, the pupils are already multilingual and have extensive language-learning experiences from various contexts. By transferring their linguistic knowledge and language learning experiences from other languages they know and are familiar with, learning becomes more effective and meaningful. (Norwegian Directorate of Education and Training, 2020)

In the passage above, the previously mentioned conceptual ambiguity of 'multilingualism' is present in the superposition of an ontological dimension of the term (the assumption that 'students are already multilingual') onto a pedagogical one (the transferring of 'their linguistic knowledge and language learning experiences' to make learning 'more effective and meaningful'), which is worth a more detailed examination to better situate the overall purposes of the Ungspråk project and the articles discussed in this synopsis.

Indeed, previous language learning experience can be a valuable resource in the learning of an additional foreign language, and most Norwegian students in general, particularly those with immigrant backgrounds , have a good level of competence in other languages than Norwegian when they start lower secondary school (i.e. 'they are already multilingual'). However, the transferring of previous language skills and strategies to the learning of new languages is not always a smooth process and can pose serious challenges to the learners themselves, especially if the languages are typologically unrelated (Haukås, 2015; Zeevaert, 2007). Even if this issue is approached from a purely instrumental perspective of developing supposedly universal language learning 'strategies', it leaves out the fact that language learning experience is fundamentally tied to life experiences, cultural values and personal trajectories of individuals (i.e. they have an ontological dimension) and that these are not necessarily pleasurable, successful or free of conflicts (Busch, 2015; Kramsch, 2009a; Norton, 2010, 2013). Furthermore, the increasingly diverse linguistic makeup of student populations, in Norway and elsewhere, poses a challenge to the implementation of multilingual pedagogies that encourage to transfer 'the language skills […] from other languages they know and are familiar with', particularly if language teachers are not actively engaged in their development and implementation.

Needless to say, it is not the role of a foreign language curriculum to problematise the issues raised above, nor should such objections invalidate the pedagogical relevance of the proposals therein. What concerns us here is the importance of differentiating the political, pedagogical, descriptive and ontological dimensions of multilingualism as a means of better understanding its relationship to language learning and teaching in Norwegian educational contexts. From such a perspective, this is probably one of my main contributions to the Ungspråk project: by adopting a variety of theoretical and methodological approaches, we aim to provide more fine-grained descriptive (Articles II, III and IV) perspectives on multilingualism in Norwegian lower secondary schools, which might ultimately contribute to the implementation of more informed multilingual classroom pedagogies.

2.3 Researching multilingualism in lower secondary schools

From a sociolinguistic perspective, the intrinsic linguistic and dialectal diversity in Norway makes it a unique setting for exploring issues related to multilingualism and language diversity, and the topic will be resumed in subchapter 3.2. The knowledge of and proficiency

in different dialects is also one of the key characteristics of the concept of 'plurilingual competence', as defined on page 30 of the CEFR (Council of Europe, 2020). The role of the knowledge of dialects in the self-identification of the participants in our study as multilingual speakers is discussed in Articles I, II and III and in subchapter 3.2 of this synopsis.

In addition to the intrinsic *heteroglossic* (Bakhtin, 1981; Busch, 2015) nature of Norwegian society, the fact that English is taught from year one of regular school and that additional foreign languages are included as optional curricular components in lower secondary school (the focus segment in our study) raises many interesting questions about the role of schooling in developing students' multilingual abilities and their self-perception as multilingual individuals (Council of Europe, 2009), which are discussed in Articles I, II and III.

Another relevant aspect is the previously mentioned cultural and linguistic diversity of the Norwegian student population. Such a phenomenon is directly related to the increased global migration flows characteristic of the on-going processes of globalisation that, to a large extent, have triggered the current academic interest in multilingualism and education. According to the updated figures from the Statistisk Sentralbyrå (Statistics Norway, 2022) for 2022, 18.9% of the Norwegian population is composed of immigrants and Norwegian-born to immigrant parents. These figures give an idea of the rich linguistic repertoire of a typical Norwegian classroom, even though the diversity, type and number of foreign languages spoken by the pupils are highly dependent on the demographics of the area in question. Regardless, it can be assumed that a significant percentage of the school population in Norway has as a mother tongue or family language other than Norwegian, therefore also being likely to identify themselves as multilingual.

However, the word 'flerspråklig' (the Norwegian equivalent term to 'multilingual') is usually used in educational contexts to refer to students with non-Western immigrant background, especially those who struggle to learn Norwegian (Article I, see also Haukås, 2022; Sickinghe, 2016). This descriptive, and often negative, connotation of the term is prone to cause confusion as to who are the 'flerspråklige' students in school, as some teachers, educators and official policy texts are likely to exclusively associate it to that connotative meaning. On the other hand, Sickinghe (2016) argues that students have more nuanced views of what it means to be 'flerspråklig', which challenge the usual connotations assigned to the term. This issue has a central relevance to the investigation of students' multilingual identities (see chapter 4) and is discussed in detail in Articles I, II and III.

As a closing remark, it must be said that problematising the connotation of the term 'flerspråklig' in educational contexts should not be equalled to ignoring the issue of access to standard Norwegian variants of prestige by immigrant student populations or minority language speakers. On the contrary, engaging students in debates about the multiple possibilities of being 'flerspråklig' could be an effective means of bringing to the forefront the often-hidden connotations of the term and its inappropriateness in describing the politico-pedagogical challenges involved in the issue of access to the national standard language.

3. The Multiple Faces of Multilingualism

The next chapters provide a general overview of the main theoretical and methodological approaches to multilingualism and multilingual identity as a means of expanding the discussions in chapter 2 and situating the reader in our own research stance to the study of these phenomena. Such discussions are also relevant for a better comprehension of my contributions to the Ungspråk research project and particularly for an adequate contextualisation of Articles III and IV.

As noted by Cenoz (2013), multilingualism is a complex phenomenon that can be studied from different theoretical perspectives and disciplines. The 'multilingual turn' (May, 2014) has produced an impressive amount of research in diverse fields such as applied linguistics, sociolinguistics, psycholinguistics, foreign language learning and education. The increased academic interest in the phenomenon in the last decades is due in great part to the macro societal transformations mentioned earlier that are typically associated with transnational mobilities, intensified immigration and the widespread use of digital technologies.

To a certain extent, it can be said that multilingualism is a somewhat misleading term. Behind apparently simple and objective attempts at defining it as, for example, 'the ability to speak many languages', there lies a series of implicit assumptions that, because they are implicit, can lead to a high degree of conceptual ambiguity with important theoretical and practical implications for the understanding of the phenomenon. If we break down the short definition above, some of the questions that might be elicited are: What counts as a language? For example, should the knowledge of dialects or language variants with low prestige in a given social context have a bear on the definition? Who has the power to determine if a person is multilingual? How many languages does someone have to know to

be considered multilingual? How well do they need to know them? How can the teaching and learning of languages at school contribute to developing schoolchildren's multilingualism?

Rather than proposing our own tentative working definition of multilingualism, which ultimately would just be another amongst many, in the following chapters, we will look into some possible answers to the questions above. In doing so, our purpose is to provide an overview of the current approaches and theories to the study of multilingualism as an academic topic with the aim of situating our research in the study of multilingualism in education.

3.1 Holistic versus atomistic approaches to multilingualism

Cenoz (2010) identifies two main strands in the academic study and research on multilingualism – the atomistic and the holistic. The former has its origins in a long tradition in western science, reductionism (Larsen-Freeman, 2017), which postulates that every system (in our case, languages) is composed of a sum of its parts. As a corollary, according to reductionists, if we want to understand the workings of a system, or indeed of any phenomena, the best route is by taking it apart down to the smallest possible components (Larsen-Freeman, 2017, p. 22). The reductionist paradigm has had a strong influence in linguistics and psycholinguistics in the form of 'atomism', which in turn has percolated to theoretical approaches in bilingualism, multilingualism (Cenoz, 2010) and language learning (Larsen-Freeman, 2017; Lewis, 2008). Atomistic approaches to languages tend to lean towards mentalistic models of language acquisition that conceive the human mind as the main locus of language faculty (e.g. Chomsky, 1957), and they are usually associated with the rationalist views of language propagated by philosophers such as Descartes (1596–1650), Locke (1632–1704) and Herder (1744–1803), which ultimately had a decisive influence in the concept of language consolidated in the western world throughout modernity (Blommaert, 2006) and in the political formation of the current nation states (Anderson, 1983; Gellner, 1983; Greenfeld,1992).

In practical terms, approaching multilingualism from an atomistic perspective usually entails 'separating the languages' (Cenoz, 2010, p. 10) and studying the acquisition of, for example, discrete syntactic, lexical and phonological elements. Even though the atomistic paradigm has

predominated in many studies on bilingualism and multilingualism, its main tenets have been contested for many decades (see, for example, Cenoz & Gorter, 2011; Cook, 1992; García, 2009; Grosjean, 2010; Jessner, 2008).

On the other hand, a holistic approach to multilingualism, the one adopted in our study, considers that the use and interaction of different languages, both at individual and societal levels, is influenced by a wide range of (cultural, political, psychological, cognitive and linguistic) factors that cannot be fully apprehended by simply focusing on the study of the acquisition of discrete language items. In the domain of education and language learning, and for the purposes of our study, to achieve a holistic understanding of multilingualism, we must look beyond notions of language as separate, self-standing entities and consider 'the whole linguistic repertoire of the learners as an integrated set of resources that are in constant interaction and development, both in their practices and in their language learning processes' (Article I). In terms of classroom language pedagogies, adopting a holistic view to multilingualism means that the previous language knowledge and learning experiences students bring into the classroom are useful resources that should be mobilised with the aim of achieving an overall, integrated proficiency in all the languages in the students' repertoires (García, 2009; Kramsch, 2009a; Li, 2008). As discussed earlier, such a theoretical stance has a strong influence in official language policy documents (such as the CEFR) and national language curricula (such as the FSP01-02 and ENG01-04 in Norway).

For the research purposes of the Ungspråk project, adopting a holistic approach to multilingualism implies an epistemological stance that goes beyond the study of exclusively linguistic phenomena and calls for an interdisciplinary understanding that has a bearing on the overall design of the research project and research questions (Article I), on its research methods and instruments (Article II) and in the analyses of data and interpretation of the findings (Articles III and IV). In other words, 'holism' in multilingualism is a philosophical stance to the study of the phenomenon that underlies the whole research process. For example, in relation to our main research instrument, the Ungspråk questionnaire, adopting a holistic approach implied the consideration of a multitude of factors involved in the understanding of the phenomenon, such as participants' language use habits, the languages in their repertoires, their beliefs about multilingualism, their future views as multilingual speakers, and the relationship between multilingualism, language learning and open mindedness.

In relation to the exploratory participatory approach to the study of multilingualism and

multilingual identity developed in the Ungspråk project (Article III), adopting a holistic approach also implies the inclusion of participants' own views and voices on the phenomena and the submission of the research findings to their own scrutiny and critical (re)evaluation (Articles I and III).

3.2 Multilingualism and the linguistic repertoire in the Norwegian context

In his book 'The dialogic imagination', Russian literary critic Mikhail Bakhtin (1981) develops the idea that within what is usually considered to be a single language, there is a multitude of distinct variants, registers, discourses and voices (Busch, 2015) that are in constant dialogical interaction across society and challenge the notion of a unitary, totalising entity called 'language'. Bakhtin named this phenomenon, which allows for the existence of multiple 'languages' within a single language, heteroglossia. The rich dialectal diversity, the coexistence of two official written variants – Bokmål and Nynorsk – and the use of Sami in the northern areas of the country are some of the characteristics that qualify Norway as a paradigmatic *heteroglossic* country, even though, for Bakhtin, heteroglossia manifests itself in any language or territory. No wonder that three decades after the publication of Bakhtin's seminal work, Norway served as one of the settings for the ground-breaking studies on linguistic anthropology and code-switching led by John Gumperz (Blom & Gumperz, 1972; Gumperz, 1982) and for the development of his concept of linguistic repertoire (Article IV).

According to Busch (2015), 'linguistic repertoire' is a holistic concept that comprises '[…] those languages, dialects, styles, registers, codes and routines that characterize interaction in everyday life' (p. 344) and that are unevenly available and distributed among speakers in a given social setting. Apart from its conceptual relevance in sociolinguistics and linguistic anthropology, in our study, the notion of linguistic repertoire is crucial in determining the extent to which the distinct dialects, written variants and national languages that compose the repertoire of lower secondary school students have a bearing on their self-perceptions and identification as multilingual individuals. In other words, going beyond the languages they learn and use in and out of school, in the Ungspråk project, we were also interested in investigating the participants' awareness of their full linguistic (and semiotic) repertoires as integral components of their multilingual abilities. Such concerns were reflected in the selection of the participants' schools, the design of the research instruments (Article II) and the subsequent development of pedagogical tools that explored multilingualism and

multilingual identity based on participants' responses (Article III).

In relation to the selection of the participants' schools, one of the seven schools participating in the first phase of the project (Ungspråk online questionnaire) was from a rural area around the city of Bergen with a predominant use of Nynorsk. In relation to the design of the research instruments, the online questionnaire asked participants to indicate their first choice of Norwegian, and out of 593 participants, 81 named Nynorsk as their first choice. In addition, one section of the questionnaire encouraged students to list all other languages they knew (apart from the ones studied at school) via the following prompt (capitals and bold font are from the original text):

> **DO YOU KNOW OTHER LANGUAGES**? Please name **ALL OTHER** languages you know. You can include languages you use with your family, other languages you learn now or have learned at school, and any other languages you know in any way. It does not matter how well you know these languages![3]

One of the purposes underlying the wording of the prompt was to make participants reflect on all the languages in their repertoire, possibly including Norwegian dialects and written variants. However, an awareness of one's full linguistic repertoire does not necessarily entail self-identification as a multilingual speaker, as the concept of multilingualism usually 'suggests the idea of a plurality of individual languages' (Busch, 2017, p. 342) in a more conventional sense of 'national languages'; the knowledge of these enables speakers to communicate with others 'in a way that is different from their own', as stated by one of the respondents in Article III. 'Repertoire', on the other hand, builds on the idea of an integrated set of semiotic and linguistic resources available to individuals or a group of individuals, which are not necessarily perceived by them as 'languages' in their own right. Such distinction is extremely relevant for the implications it might have on the participants' self-identification as multilingual speakers, and this discussion will be resumed in subchapter 4.4.1 of this synopsis.

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3 The prompt in the Norwegian version of the questionnaire is as follows: KAN DU ANDRE SPRÅK? Vi vil nå at du lister opp ALLE ANDRE språk du kan. Her kan du ta med språk du snakker med familien din, andre språk du lærer eller har lært i skolen, og andre språk du kjenner til av ulike grunner. Det spiller ingen rolle hvor godt du kan disse språkene!

3.3 What counts as language?

From the holistic theoretical perspective on multilingualism adopted in our research, the realisation that natural languages are just one kind of the many semiotic systems available to humans in their day-to-day interactions poses the question of what can be considered as 'language' in the general sense of an organised, socio-culturally dependent semiotic system (Halliday, 1978; Kress & Van Leeuwen, 1996). Such a broader conceptualisation of language brings us closer to what Gunther Kress intended by the term 'mode' to refer to socially produced, culturally dependent semiotic 'resources whereby we can make meaning material' (Kress, online interview). Heavily influenced by the work of the British linguist Michael Halliday, the theory of modes, or multimodality, takes a broader semiotic perspective on language by positing that in any society, languages are just some of the multiple resources deployed by individuals to convey meaning, and their use is always concurrent with other modes of communication that play an equally important part on the meaning-making processes. Even though the multimodal aspect of human communication has been a constant throughout history and cultures (Baca, 2009; Canagarajah, 2013; De Souza, 2002), the ubiquity of access to the consumption and production of videos, music, texts, images and messages in digital communication (Iedema, 2003) has brought multimodality to the centre of the stage.

In the domain of language learning and teaching, Rymes (2014) argues for a broadening of the concept of repertoire that includes the multimodal dimension of human communication as a means of raising students' 'awareness of those forms of communicative diversity that, while often below our conscious level, are crucial to successful interaction' (p. 3) in contemporary societies. According to Kress, one of the advantages of the term 'mode' is that it 'allows us to get away from using "language" for everything […] from making "language" too general and maybe therefore too vague a term' (Kress, online interview). Even though most modes of communication can be described in terms of the properties shared with language (such as regularity, syntax and grammar), their semiotic potentials (or, in Kress's terminology, their affordances) are usually quite different from conventional languages, which renders the term problematic when applied to other modes of representation. Interestingly, such a problematisation of what can be considered as 'language' was present in some of the participants' definitions of what it means to be multilingual from the Ungspråk questionnaire and was further explored in the interactive sessions in which participants

interpreted their own research data (for a more detailed discussion, see Article III).

In line with Rymes (2014), we believe that developing an awareness of the inevitable multimodal dimension of human communication (Canagarajah, 2013; Storto & Biondo, 2016) among schoolchildren is crucial not only because it might expand their conceptualisations of what counts as language but also, especially, because the active engagement of learners in multimodal genres, such as gaming, can be a determinant factor in developing the knowledge of languages via meaningful situated practices (Article IV). From such a theoretical perspective, language learning and the development of multilingual abilities are always embedded in the practices individuals routinely engage in and are inextricably connected to the other modes of communication (or 'languages', in a broader sense) associated with them. The relevance of situated practices in developing students' multilingualism is further elaborated in chapter 7.

3.4 Multilingualism and foreign language learning

Adopting a holistic stance to research in multilingualism, which takes into account the relevance of individual linguistic repertoires and the multimodal practices in which all language learning is immersed, does not preclude ignoring the intrinsic power and societal value of the notion of standard national languages and the historical role exerted by educational systems in assessing, controlling and disseminating the access to them (see chapter 2). After all, although fluid practices that challenge traditional views of languages as separable, discrete, nameable entities are usually the norm (Garcia, 2009; Li, 2008), the notion of 'language-with-capital-L' (Jaspers & Madsen, 2006) is still prevalent in many domains of society, including schools, and the proficient mastery of standard national languages is more than ever a determining element in learners' future professional lives. A typical example of a language that requires a high level of domain-specific proficiency from foreign speakers is English, whose status as a global lingua franca creates highly controlled monolingual genres (such as academic writing) and discursive practices (such as international business meetings) in which partial or insufficient knowledge of standard norms of language use as well as practices such as translanguaging (García, 2009) act as determinant factors for exclusion (Jaspers & Madsen, 2016). The ideological dimension involved in what counts as language in a given context will be discussed in subchapter 4.4.

With these caveats in mind, one of the core objectives of the Ungspråk project is to gain a more nuanced understanding of the role of foreign language learning in developing students' multilingual identities. From such a perspective, the fact that majority of students start learning an additional foreign language at the beginning of lower secondary school makes it an ideal segment to investigate the incremental value of learning a second foreign language in expanding students' linguistic repertoire and in their self-perceptions as multilingual individuals (Articles I, II and III). At this point, it is worth remembering the importance of distinguishing between the descriptive, ontological, pedagogical and political dimensions of multilingualism discussed in subchapter 2.1 to avoid the mistake of equating a possible influence of foreign language learning in the self-perception of lower secondary students (ontological dimension) to the effectiveness of multilingual (or 'plurilingual') classroom pedagogies in the lines proposed by documents such as the CEFR and the Norwegian foreign language curricula. In other words, even if learning foreign languages at school might have a positive influence in lower secondary students' self-identification as multilingual speakers, it does not necessarily follow that these languages are taught or that the students' multilingual competences are seen not as a mere 'superposition or juxtaposition of distinct competences but rather as the existence of a complex or even composite competence on which the social actor may draw' (Council of Europe, 2009, p. 11).

The previously alluded superposition of an ontological aspect of multilingualism (often portrayed in documents such as the CEFR as a dynamic, creative process of 'languaging') onto a multilingual pedagogical project that is in tune with and draws on such alleged ontological condition (see subchapter 2.1) often creates a tension with traditional approaches to foreign language teaching employed by most educational systems, including in Norway. The document Plurilingual and Pluricultural Competence – PPC (Council of Europe, 2009) refers to this issue as the 'educational compartmentalization of languages' (last phrase is my addition):

> […] in nearly all education systems, even when they assign an important place to language learning, the juxtaposition of separate bodies of knowledge (language by language) prevails over the creation of integrated plurilingual competence. In nearly all cases […] each language has its own syllabus [and it is taught independently of its relation to the other languages in the students' repertoires]. (Council of Europe, 2009, p. 23)

From an educational systemic perspective, the separation of languages (and language teaching) at school is, to a large extent, just a particular manifestation of the compartmentalisation of all learning into separate subjects – each with their own syllabi, methodological approaches and pedagogical aims – to the detriment of, for example, a transdisciplinary pedagogy that conceives learning and education as going beyond the mere acquisition of apparently disparate bodies of knowledge. On the other hand, it is also true that most methodologies of language learning and teaching 'identify and teach an abstract […] essentially separated learning object to their learners' (Jaspers & Madsen, 2016, p. 12). As stated earlier, in such traditional views, the separation between languages is viewed as beneficial to attaining good levels of proficiency in the target language, and practices such as code mixing, for example, are usually seen as detrimental to the processes of foreign language learning.

Based on what has been discussed so far, the implications of foreign language learning at school for the purposes of the Ungspråk project can be summarised as follows. First, regardless of the pedagogical approach to the teaching and learning of languages at school (integrational, inclusive or 'plurilingual'; more oriented towards the acquisition of separate standard national languages or somewhere in between), it needs to be differentiated from the (inter-)subjective processes of language identity formation and negotiation, which are not necessarily related to, although they can be influenced by, politico-pedagogical projects and policies implemented at different institutional levels (see chapter 2).

Second, given the predominantly exploratory nature of the interactive sessions where participants interacted with real research data (Article III) and the practice-based models of multilingualism based on data from the Ungspråk questionnaire (Article IV), the researchers' own understandings of multilingualism and the factors involved in the composition of multilingual identity are secondary to and conditioned by the participants' own views of the phenomena. In this sense, the term 'flerspråklig' (rather than 'pluri', 'multi' or 'trans' lingual) assumes a central importance in the project owing to all its contingent political, educational, ontological and descriptive connotations. Such issues are resumed in the next chapter.

Finally, the overall holistic approach to multilingualism adopted in the Ungspråk project calls for a more detailed investigation of the contexts of practice in which the foreign languages learned at school, along with other languages in the participants' repertoires, are inserted. Such concerns are rooted in the basic assumption that language learning and development are

inextricably connected to language use in meaningful situated practices (Article IV; see also Canagarajah, 2013; Gee, 2004; Hall et al., 2006; Pennycook, 2010), leading to the consequent need for expanding our knowledge of the relationship between the teaching of foreign languages at school and their actual use beyond its confines. After all, despite the large amount of theoretical and empirical evidence supporting the view that 'learning is a socially distributed activity, influenced by one's history and one's status in varying communities of practice' (Miller, 2010, p. 477), the traditional view of language learners as self-contained, atomistic units of learning is still prevalent in SLA discourse and beyond (Miller, 2010). The role of situated practices in multilingualism is discussed in chapter 7 of this synopsis.

4.   Multilingual Identity

The concept of multilingual identity is of central importance to the Ungspråk project. Besides its relevance to the curricular and pedagogical projects articulated both at national and continental levels (see chapter 2), investigating participants' own understanding of their multilingual identities can help in answering our first main research question: What does it mean to be multilingual for pupils in Norwegian lower secondary schools? To this end, Article III discusses in detail participants' definitions of multilingualism and their reflections and interpretations of data related to the question 'are you multilingual?', taken from the Ungspråk questionnaire, therefore enhancing the complementarity and the diversity of views (Bryman, 2006, as cited in Schoonenboom & Johnson, 2017) necessary to satisfactorily answer the question. Article IV provides extra input to the question by introducing visual models that represent the contexts of use for the languages in the participants' repertoires, thus providing a more fine-grained picture of their role in participants' lives. These models will be discussed in chapter 7.

This chapter provides an overview of the concept of identity in the social sciences, focusing on the relevance of the concept in applied linguistics, specifically in language learning, for situating the contributions of the Ungspråk project to research in the field of multilingual identity.

4.1 Three main theoretical perspectives on identity

Identity has become probably one of the most researched topics in the humanities in the last decades. From its origin as a psychological concept (Erikson, 1968), the question of identity has become of central importance, for example, in gender studies (Butler, 1990), cultural studies (Silva, 2000), applied linguistics (Block, 2006) and language learning (Norton, 2013). Fisher et al. (2018) identify three main theoretical perspectives to the study of identity: psychosocial, sociocultural and poststructural. In brief, the first line of enquiry has its origins in the work of Erikson (1968), which, in general, was pivotal in influencing the study of identity from a psychological perspective and in distinguishing intra-psychic from social aspects of identity. Central to this view is a postulation of a singular core identity that develops over time. Sociocultural approaches (Holland et al., 1998; Vågan, 2011), on the other hand, view identity as socially constructed rather than developed and therefore as 'mediated, relational and situated' (Fisher et al., 2018, p. 4). Poststructuralist approaches (Baxter, 2016; Drzewiecka, 2017) reject the existence of a fixed, core identity 'by emphasizing the impossibility of a fixed self' (Fisher et al., 2018, p. 4). Therefore, both approaches have a stronger focus on the discursive, socio-political aspects of identity construction and negotiation and the crucial role of language in these processes.

In spite of their differences, the three perspectives outlined above share some points of intersection in the conceptualisation of identity (Forbes et al., 2021) that are worth exploring for the purposes of our study. According to Fisher et al. (2018), the three perspectives acknowledge both the individual and social dimensions of identity and conceptualise it as a process (rather than a fixed condition) that, in varying degrees, is open to the agentive transformation of individuals and groups.

More than just taking into account the existence of group identities, acknowledging the social dimension of identity demands a constant awareness of the societal mechanisms of inclusion and exclusion that fall beyond the control of individuals and that are invariably connected to patterns of language use. Such an awareness is particularly relevant to avoid the tendency to conceptualise identity exclusively from the perspective of the possibilities available to individuals[4] while overlooking the ideological processes of othering that are inherent to

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4 An example of such a tendency comes from Norton (2013), who broadly defines identity as 'how a person understands his or her relationship to the world, how that relationship is structured across time and space, and how the person understands possibilities for the future' (p.

situations where identity positions are imposed from the outside.

Directly connected to the points above, issues related to individual agency in identity formation and negotiation also need to be problematised. Even though identities are frequently theorised in non-essentialist terms, especially under the poststructuralist paradigm, 'agency' is often viewed as an essential inherent feature of individuals (Miller, 2014; Norton & De Costa, 2018), without much attention paid to the role of contextual language ideologies and the performative aspects of identity constituted by agency, understood as an unstable, 'discursively mobilized capacity to act' (Miller, 2010). The practical implications of these issues for the Ungspråk project will be discussed in subchapters 4.3 and 4.4.

Over the years, the poststructuralist perspective has become the predominant epistemological stance in the field of second language learning (Block, 2006; Fisher et al., 2018; Norton & Toohey, 2011; Schreiber, 2015), with identities being repeatedly conceptualised by a string of adjectives such as 'fluid, situated, unstable and dynamic'. As mentioned earlier, even though the poststructuralist perspective is important for avoiding 'the trap of "essentialising" identities' (Fisher et al., 2018, p. 7), one should not lose sight of the relatively stable aspects of identity that allow the creation of spaces of belonging individuals and groups can relate to and in which language is also fundamental. The paradoxical status of stability in identities has been aptly synthesised by Silva (2000) in the following statement: 'fixation in identity is both a tendency and an impossibility' (p. 1084, Kindle edition).

4.2 Identity and language learning

Undoubtedly, among the many factors that upset the stability of identities, language learning is one of the most influential. Particularly in the case of adolescent, lower secondary school students, 'who are at a crucial stage of their identity construction' (Forbes et al., 2021, p. 437; see also Norton, 2013), foreign language learning can be a deeply transformative experience with marked effects on their identities and self-perceptions (Kramsch, 2009; see also Article III). No wonder then that there has been a boom in the study of language learning and identity in the last two decades. In their state-of-the-art article on the topic, Norton and Toohey (2011) mention contributions from pragmatics (Lo & Reyes, 2004; Spencer-Oatey & Franklin, 2009),

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45; as cited in Fisher et al., 2018, p. 434).

sociolinguistics (Edwards, 2009; Joseph, 2004; Omoniyi & White, 2007) and discourse analysis (Benwell & Stokoe, 2006; Wodak et al., 2009) as well as from chapters in handbooks on language learning and teaching (McKinney & Norton, 2008; Morgan & Clarke, 2011; Norton, 2010).

More recently, the intensified fluxes of immigration characteristic of the current stages of globalisation, coupled with the widespread use of digital technologies, have increased multilingualism in school and society and engendered new, hybrid ways of belonging, especially among young learners, in a phenomenon dubbed as 'millennium identities' (Higgins, 2015). As a consequence, a number of studies, following a range of theoretical orientations and methodological approaches, have started investigating the relationship between multilingualism, language learning and identity. A noteworthy line of enquiry explores learners' own views of their identities via visual representations (such as drawings and language maps) supplemented by personal narratives and oral accounts (Ibrahim, 2016; Martin, 2012; Melo-Pfeifer, 2015). Some studies focus on the influence of institutional and educational contexts on the enactment of multilingual identities often using interviews (Ceginskas, 2010) and language-based projects (Schweiter, 2013). Important contributions have also come from studies following language ethnography traditions, which deploy, for example, narrative analysis (Baynham & De Fina, 2017) and biographical approaches (Busch, 2017) to understand the formation of multilingual identities in the contexts of contemporary mobilities. In general, the commonalities underlying these studies include the predominant focus on multilingual speakers with immigrant background or from language minorities and the fact that research evidence usually comes from small-scale studies. More recently, research knowledge has been enriched by efforts aiming at the implementation of broader participative programs to multilingual identity involving language teachers (Forbes et al., 2021).

In line with calls to broaden the scope of research on identity in education (Norton & De Costa, 2018), the Ungspråk project as a whole (Article I), the Ungspråk questionnaire (Article II) and particularly the interactive sessions discussed in Article III address the relationship of multilingual identity and language learning by including lower secondary students regardless of their family backgrounds, the languages in their repertoire or whether they learn a second foreign language at school. By adopting such a methodological stance, the project incorporates a wider range of participants' views on the research topics and invites them to

question conventional connotations of the term 'flerspråklig' (see subchapters 2.3 and 3.4) and the consequent preconceived identity positions associated with it (further discussions on this issue, including research findings, can be found in Article III). In addition, considering that schools are key sites for the construction of multilingual identities (Forbes et al., 2021; Kramsch, 2009), the interactive sessions represent an effort towards more structured, systematic pedagogical interventions that might ultimately have a positive influence on participants' language learning trajectories and in their investment in learning new languages (Fisher et al., 2018; Forbes et al., 2021).

4.3 Multilingual identity: Diversity versus multiplicity

Given what has been discussed so far, this section outlines an important theoretical distinction coming from cultural studies operating within and beyond the poststructualist paradigm, which is particularly relevant to the understanding of multilingual identity. In his study 'The social production of identity and difference', Silva (2000) proposes a political approach to identity studies that makes a distinction between 'diversity' and 'multiplicity'. According to the author, the concept of 'diversity' limits itself to that which already exists, to a natural or cultural datum that reaffirms the identical. From such a perspective, 'diversity' presupposes the existence of a number of pre-determined, relatively static (national, ethnic, language) identities that are in opposition to those of the individual or group ('them' as opposed to 'us'), and this somehow facilitates the return to and permanence in the familiar and identical ('I' or 'us', as opposed to 'them'). 'Multiplicity', on the other hand, implies an operation that goes beyond the sum of opposing identities and opens the possibility of their dissemination and proliferation. In this sense, 'multiplicity' stimulates a difference that 'refuses to blend in with the identical' (Silva, 2000, p. 1308, Kindle edition) and that does not simply acknowledge and celebrate the diversity of existing identities but rather questions their formation.

In relation to research on 'multilingual identity', a construct that seems to be more malleable and open to reconfiguration than, for example, national or ethnic identities, one should always bear in mind their inextricable connection to individual life trajectories and histories (Aronin, 2019; Forbes et al., 2021) as well as the socio-political contexts in which they are inserted (Block, 2006; Norton, 2010). Seen from this perspective, the concept of 'multilingual identity', especially when applied collectively, can be considered a contradiction in terms, to the extent that it does not do justice to the multiplicity of life trajectories, language repertoires

and learning experiences it purports to represent; in other words, there is no 'multilingual identity' that is identical to any other.

The inherent complexity of factors that can influence the construction of a multilingual identity is somehow mirrored in the participants' definitions of what it means to be multilingual, taken from the Ungspråk questionnaire (Articles II and III). From an epistemological perspective, their answers reflect the multitude of approaches adopted by researchers in the study of multilingualism (Cenoz, 2013), and when grouped in thematic categories (Article III), they address many of the questions raised in chapter 3, which include, for example, the frequency and different contexts of language use, the varying levels of proficiency in each language, the ability to communicate with people from different cultures and societal aspects of multilingualism (a detailed categorisation of participants' answers can be found in the appendix for Article III).

Taken together, the participants' answers from the questionnaire correspond to their own analytical framework (O'Kane, 2008) to multilingualism, and they were explored in the interactive sessions (Article III) along with their responses to the question 'are you multilingual?' Rather than drawing on pre-determined, scholarly centred conceptualisations, the interactive sessions use this body of knowledge to engage participants in discussions on multilingualism and multilingual identity. The ethical, epistemological and pedagogical implications of such a methodological approach will be discussed in chapter 6.

4.4 Language ideologies and identities

Research on language and identity should always take into account the underlying assumptions, beliefs and attitudes towards language use that shape language practices and influence the construction of individual subjectivities. As noted by Busch (2017), 'language ideologies and discursive categorizations – categorizations of others as well as self – have a decisive impact on linguistic repertoires' (p. 7; see also Busch, 2012) and, consequently, on language identities. Indeed, social categorisations are a fundamental component of identities (Silva, 2000; Woodward, 2000), in the sense that they determine how individuals position themselves (and are positioned) in the socio-political arena, with language being a fundamental component in this relationship. A notable characteristic of social categorisations is that they always create boundaries that set apart those who do not belong, and the term

'multilingualism', in spite of its malleable conceptual scope, is not exempt from such processes of social differentiation and exclusion, as was shown by the case of its equivalent in Norwegian ('flerspråklig') discussed in subchapter 2.3 Besides the ideological overtones of the term 'flerspråklig' in Norwegian educational contexts, there are other more general aspects of the relationship between multilingualism, language ideologies and identity that are worth further exploration.

4.4.1 Multilingualism as an ideological construct

Equally important, and also related to the discussions above, are the ideological implications embedded in the discursive practices that determine what counts as language in a given societal context. Therefore, the social power and currency of traditional conceptualisations of language, which equate the term to standard national variants of prestige, cannot be overstated (Bauman & Briggs, 2003; Blommaert, 2006; Jaspers & Madsen, 2016). In this respect, note that national curricula are 'generally biased towards an "orderly" multilingualism' (Jaspers & Madsen, 2016, p. 250; see also Jørgensen, 2008), which values the proficient acquisition and separate use of national languages of prestige to the detriment of other language variants (such as dialects or different registers), minority languages and language practices (such as code mixing). Such issues have a bearing not only on what and how languages are taught at school but also on students' views of what language is and, consequently, on their self-perceptions as multilingual individuals.

Such observations require a more nuanced methodological approach that differentiates 'multilingualism' from 'linguistic repertoire' to understand how both terms are related. Fisher et al. (2018) define 'multilingual identity' as 'an "umbrella" identity, where one explicitly identifies as multilingual precisely because of an awareness of the linguistic repertoire one has' (p. 4, see also Article III). Even though this might usually be the case, it is important to remember that a given individual's linguistic repertoire might include the knowledge and use of dialects, variants, registers and other less conventional semiotic systems (such as sign language, iconography or coding), which are not always perceived by the individual, or valued in society, as languages per se. Busch (2015) calls attention to this distinction by stating that whereas 'linguistic repertoire' comprises 'those languages, dialects, styles, registers, codes, and routines that characterize interaction in everyday life' (p. 344), 'multilingualism somehow suggests the idea of a plurality of individual languages' (p. 342), more in the sense

of the standard national languages mentioned earlier.

The ideological implications of such observations are particularly relevant to the Norwegian context, a country that hosts rich dialectal diversity and that generally values their use in different domains of society. Despite the fact that virtually all participants in the Ungspråk project are likely to use a dialectal variant in their daily interactions (and a few of them even mentioned the knowledge of dialects in their definitions of what it means to be multilingual in the Ungspråk questionnaire), such knowledge might not have a decisive influence in their self-perceptions as multilingual speakers. This assertion is supported by the findings from the interactive sessions (Article III), in which some participants contested the idea that knowing different dialects makes you a multilingual speaker. In other words, an awareness of one's linguistic repertoire does not necessarily entail self-identification as a multilingual individual.

Beyond language ideologies that privilege the knowledge, use and learning of hegemonic national languages and that, as has been discussed, have an influence on the societal and individual perceptions of multilingualism, there are further ideological implications to the term. In academic and educational discourses, 'multilingualism' tends to be used in opposition to 'monolingualism', thus establishing a pole of dichotomies that usually portray the former as emancipating, prestigious and having a number of cognitive, economic and societal advantages when compared with the latter (Jaspers & Madsen, 2016). The possible validity of such associations is usually accompanied by a series of ideological assumptions – among which one could mention the mandatory high level of proficiency in English (and most likely in another global language of prestige), the acquisition of a 'global citizenship', the cognitive 'superiority' of multilinguals and the implicit equation of financial achievement to individual success and happiness – that are not necessarily shared by all individuals and that therefore might influence their self-identification with the term, especially when their multilingual skills and repertoires do not comply with the assumptions above. Just as historical, political and economic factors favoured the emergence of 'monolingual ideologies' in western societies in the last centuries (Bauman & Briggs, 2003; Blommaert, 2006; Canagarajah, 2013), the same factors are responsible for the current, and sometimes competing, 'multilingual ideologies' circulating at global, national and interpersonal levels.

Finally, from a theoretical perspective that conceives identities as relational, circumstantial and charged with context-dependent ideological values (Silva, 2000), the influence of the educational classroom contexts where our research took place should be taken into account,

particularly in the findings related to students' views on multilingualism and multilingual identity.

For the sake of the discussions above, the interactive sessions (Article III) did not aim to convince students that they were multilingual because of their knowledge of dialects or that divergent views on what can be considered a language are mutually exclusive and that therefore a 'correct' view should prevail. Rather, by confronting students with the plurality of their own voices (Article III), the sessions provided an opportunity to make participants question the multiple possibilities (sometimes contradictory, but nonetheless equally valid) of identification as a multilingual individual as a means of possibly expanding their criteria for the acceptance (or even rejection) of a multilingual identity. After all, 'multilingualism is not an uncontested value' (Fisher et al., 2018, p. 13; see also Blackledge & Creese, 2010).

5. Using Mixed Methods to Investigate Multilingualism and Multilingual Identity

To investigate such multi-faceted phenomena as multilingualism and identity in the rich linguistic environment of Norwegian lower secondary schools, we opted for a mixed-methods design in the Ungspråk project. The strength of mixed methodologies in combining quantitative and qualitative components with the aim of improving the quality and scope of the research findings has been amply documented by research methodologists (Creswell & Clark, 2007; Greene, 2007; Maxwell & Loomis, 2003; Schoonenboom & Johnson, 2017; Tashakkori & Teddlie, 1998). In addition to its epistemological benefits, the mixed-methods framework of the Ungspråk project allowed the researchers in the team to contribute with their own theoretical and methodological inclinations and research interests, therefore increasing the breadth and depth of the approaches to the phenomena researched.

The design of the project, its main research questions and the relevance of the project in the context of Norwegian lower secondary education are discussed in detail in Article I. Because the articles presented in this synopsis are part of a larger project, to situate the reader, I start this chapter by providing an overview of the whole project and its main research questions, followed by a more detailed focus on the articles covered in this synopsis.

5.1 The mixed-methods design of the project

Figure 1 below provides an overview of the mixed-methods design of the Ungspråk project, following the notation and typological terminology proposed by Schoonenboom and Johnson (2017).

UNGSPRÅK Project - Mixed Method Design
(Equal-status, sequential, dependent, emergent)

| Phase 1 2019 | Phase 2 2020 | Phase 3 2021/2022 |

(QUAN+qual)
Ungspråk online questionnaire

(QUAL+quan)
1. Interactive Sessions with participants
2. Interviews with language teachers

Analyses of findings and writing of articles
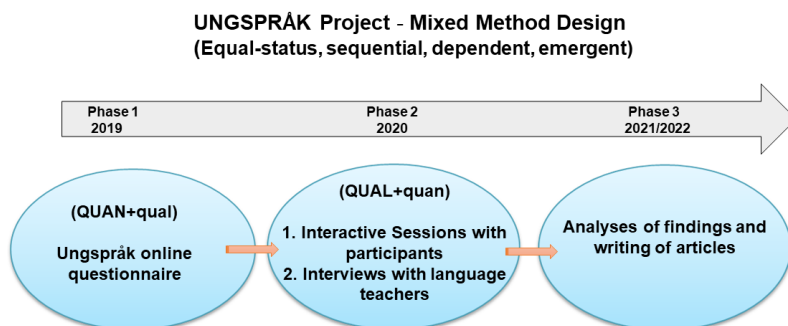
Figure 1 – Overview of the mixed-methods design of the Ungspråk project

In the Ungspråk project, we adopted an epistemological stance that assigns equal status to the quantitative and qualitative components based on the premise that the persistent dichotomy between the two research paradigms is unproductive, and even detrimental, to the overall quality of research (Hammersley, 1992; see also Article I). In practical terms, this means that throughout the project, the qualitative and quantitative components 'take control over the research process in alternation, [they] are in constant interaction, and the outcomes they produce are integrated during and at the end of the research process' (Schoonenboom & Johnson, 2017, p. 123).

In relation to timing, the project has a sequential, dependent design in which the qualitative components (interactive sessions and interviews with teachers) follow and are informed by the results from the quantitative component (Ungspråk questionnaire). In addition, the project has an emergent design, which means that rather than being conceived in advance, its development and implementation were achieved along the research process with the aim of

further exploring the research outcomes. Regarding my contributions to this point, chapter 6 focuses on the ethical, epistemological and pedagogical implications of the sessions in which students from one of the participant schools interacted with the research data they helped generate ('interactive sessions with participants' in Figure 1; see also Article III). Finally, the 'QUAN+qual' and 'QUAL+quan' notation in Figure 1 refers to the concurrent presence of the components in distinct phases of the project, with the predominance of each component marked by upper case.

5.2 Research questions in the Ungspråk project

Research questions can be considered as the core component of academic research (Clark & Badiee, 2010; Krumsvik, 2016), as they determine the aims, theoretical framework and design of the study as well as the most appropriate methodologies deployed to investigate the phenomena being researched (Onwuegbuzie & Leech, 2006). Some research methodologists go as far as declaring the 'dictatorship of the research questions' (Tashakkori & Teddlie, 1998, p. 20), in the sense that methodologies are always their servants and never the masters (Greene, 2007). Even if such categorical assertions are open to contestation (Clark & Badiee, 2010), the centrality of the research questions in academic research cannot be denied. First, even if good research questions are no guarantee of the final quality of the research, poorly conceived or badly constructed ones definitely affect the subsequent stages of the study and the quality of the findings (Agee, 2009). Second, and directly connected to the previous assertion, research questions are traditionally formulated to address gaps in the specialised literature and/or problems that emerge from practice (Clark & Badiee, 2010) with the ultimate purpose of contributing to the advancement of a particular field of knowledge. In the Ungspråk project, issues related to the theoretical status quo of research in multilingualism and multilingual identity and their practical implications for the Norwegian educational context are extensively discussed in Articles I and II and in chapters 3 and 4 of this synopsis. Finally, as stated before, research questions are fundamental in determining the goals and theoretical framework of the study as well as the way it is performed (Krumsvik, 2016).

The Ungspråk project has three interrelated areas of interest (Article I) that can be briefly summarised as follows:

(i)   To broaden the knowledge on students' multilingualism and multilingual identity in

Norwegian lower secondary schools.

(ii) To investigate the intersection between multilingualism, multilingual identity and intercultural competence.

(iii) To explore novel participatory approaches to research as a means of involving participants in the research process and expanding academic (as well as their own) knowledge of the phenomena being researched.

Each area of interest has corresponding main research questions, which are discussed in detail in Article I:

RQ1 (Area 1): What does it mean to be multilingual for pupils in Norwegian lower secondary schools?

RQ2 (Area 2): To what extent does multilingual identity correlate with intercultural competence and a number of other variables, such as students' multilingualism, language use habits, gender, experience abroad and migration background?

RQ3 (Area 3): How can research on multilingualism and multilingual identity be designed to engage participants with the research processes and findings? How can participants' involvement in research contribute to a deepened understanding of multilingualism and multilingual identity?

The main questions are inspired by the interactive model in mixed-methods research (Maxwell & Loomis, 2003) and include a combination of quantitative-oriented variance questions, qualitative-oriented process questions and general, overarching mixed-methods questions (Clark & Badiee, 2010). The research question for area of interest 1 is an example of the last type of questions, in which a broad research question is formulated to be addressed with both quantitative and qualitative approaches (Clark & Badiee, 2010). The question for area 2 is a typical variance question that requires the use of numerical data and statistical procedures to establish relationships among variables and comparisons among groups (Clark & Badiee, 2010). The questions in area 3 allow for the qualitative, processual exploration of issues related to multilingualism and multilingual identity in addition to providing extra data for answering the question for area 1.

From the epistemological perspective of the theoretical drive of the study (Morse & Niehaus,

2009), the main research questions above represent a combination of deductive and inductive positionings (Krumsvik, 2016; Schooneneboom & Johnson, 2017). Probably one of the most discussed dichotomies for research (Pearce, 2015), deductive and inductive positionings are usually associated with the quantitative and qualitative paradigms, respectively (Schoonenboom & Johnson, 2017). From a deductive perspective, the main aim of research (and its questions) is to test, predict, confirm or question existing theories and build hypotheses based on previous academic literature (Krumsvik, 2016; Schooneneboom & Johnson, 2017). In the Ungspråk project, this is the main theoretical drive adopted to answer the research question 2, which falls beyond the scope of this synopsis and is addressed in other articles (Haukås et al., 2022; Tiurikova et al., 2021) that are not discussed herein.

An inductive positioning, on the other hand, is adopted when the main purpose of the research is to collect data to explore a phenomenon, identify themes and patterns (Pearce, 2015) and possibly contribute to the elaboration of new theories and approaches. Such theoretical drive is more clearly delineated by the research questions 1 and 3 and is explored in my specific contributions to the Ungspråk project (Articles III and IV). The crucial point in mixed-methods research, however, is how these two theoretical stances are integrated with the aim of answering the research questions.

From the perspective of the interpersonal relationship among the researchers, the main research questions reflect, to a great extent, the plurality of personal experiences, professional expertise and preferred research styles of the three members of the research team. As reiterated by several research methodologists (Creswell & Plano Clark, 2007; Maxwell & Loomis, 2003; Tashakkori & Teddlie, 1998), 'researchers generate questions that are consistent with their personal worldview and mental models for conducting research' (Clark & Badiee, 2010, p. 13). This underlying characteristic of all academic research is also inevitably reflected in the theoretical approaches, research methods and instruments used by researchers. In this sense, the multiplicity of personal research stances can be considered one of the main strengths of the Ungspråk project, and the mixed-methods design of the study brings them together into a synergistic combination that is beneficial to the whole research process.

5.3 Research questions and articles discussed in the synopsis

Table 2 below situates the role of the articles discussed in this synopsis in providing input to answer research questions 1 and 3. It also presents the research instruments and pedagogical tools discussed in each article, along with their objective in relation to the main research questions.

Table 2 – Research questions and articles addressed in the synopsis

Main Research Questions	Related Articles	Research Instruments and Pedagogical Tools	Article's General Objectives in Relation to the Main Question
RQ 1: What does it mean to be multilingual for pupils in Norwegian lower secondary schools?	Article I	Mixed-methods design of the whole project	Discuss the theoretical background and mixed-methods design of the Ungspråk research project. Conceptualise multilingualism and multilingual identity and define their central role in the Ungspråk project.
	Article II	Ungspråk questionnaire	Discuss the development, validation and implementation of the Ungspråk questionnaire. Present the questionnaire components that assess participants' multilingualism and self-identification as multilingual individuals.
	Article III	Digital data visualisations and interactive sessions with participants Mini-survey and observation notes from the interactive sessions	Involve schoolchildren in discussions on multilingualism and multilingual identity based on the research data they helped generate. Analyse and contrast the findings from the interactive sessions with those from the questionnaire.
	Article IV	Digital modelling tools describing the contexts of language practice	Use the models to discuss the findings from the Ungspråk questionnaire related to the contexts of practice for the languages in the participants' repertoires.
RQs 3: How can research on multilingualism and multilingual identity be designed to engage participants with the research processes and findings? How can participants' involvement in research contribute to a deepened understanding of multilingualism and multilingual identity?	Article III	Digital data visualisations Interactive sessions with participants	Discuss the ethical, epistemological and pedagogical implications of the interactive sessions. Provide a broader understanding of the phenomena in question by engaging participants in the research process. Present the development of digital data visualisations as the main pedagogical tool used in the sessions.
	Article IV	Digital modelling tools describing the contexts of language practice	Develop visual modelling tools that can be used by participants, teachers and researchers to explore the contexts of practice for the languages in the participants' repertoires.

The inevitable situatedness of the questions posed by the researchers was seen by the pragmatist philosopher Charles Sanders Peirce as the starting point of all scientific enquiry (Johnson et al., 2017), from which the best way 'to proceed is to maximize the various ways in which the question can be approached under the shared assumption that the only thing that matters is that we answer the question' (p. 5) and that by following such a procedure, the most suitable methods should be adopted and/or developed to this end. However, rather than linear and unidirectional, such process should be regarded as cyclical and iterative (Krumsvik, 2016), with the progress of the research design also helping refine the main research questions and define the subsequent sub-questions. In the next chapter, I discuss how such a process was effected, placing particular emphasis on my own contributions to the Ungspråk project.

6.   Ethics, Epistemology and Pedagogy in the Ungspråk Project

In the Ungspråk research project as a whole, and particularly in my contributions to it, three interconnected underlying dimensions permeate all the components of the research process. They are ethics (or the nature and governing principles of human relationships and, particularly in our case, research ethics), epistemology (or the nature, purposes and scope of knowledge production, including academic research) and pedagogy (the fundamentals and objectives of educational praxis). In the project and the articles discussed in this synopsis, these three dimensions form an integrated whole in which none of the components have hierarchical precedence over the others, even if different phases of the project and the academic articles place a varying degree of emphasis on each of them. The following chapters discuss the concatenation of the ethical, epistemological and pedagogical dimensions within the various components and phases of the Ungspråk project.

6.1 Research ethics in the Ungspråk project

It is a common premise in the ethics of science that all kinds of research carry a variable degree of risk. Research involving the voluntary participation of people is particularly sensitive to this issue, as the mishandling of data, deliberately or not, can entail undesirable consequences to the participants. This is partly avoided in a number of ways: the guarantee of anonymity, the participants' right to pull out of the project at any time, the completion of

consent forms and the restriction of access to the data collected are just a few of the procedures known to all investigators that are aimed at protecting the integrity of the participants. In addition, beyond the foreseeable risks inherent to any academic enquiry in the human sciences, there always lay imponderable contingencies, of which the researchers must be aware even if they can never be fully anticipated.

However, one less prominent aspect concerning ethics in the social sciences, particularly in the field of education, is the extent to which participants can profit from the findings and harness the results of academic studies to their own benefit (Haverkamp, 2005; Moita Lopes, 1998). In this respect, the following section 46 of the Norwegian Guidelines for Research Ethics in the Social Sciences, Humanities, Law and Theology (NESH, 2019) lays down some relevant aspects of reporting results to participants that are addressed in our research project (see also Article III):

> Participants in research have a right to receive something in return. This also applies to research where large groups of informants are involved. […] Participants must also have the opportunity to correct misunderstandings where this is possible. Dialogue between researchers and participants in the course of the research project may often strengthen the research. Researchers must present the results so that key findings and insights are communicated in a manner that can be understood by the participants. (NESH, 2019, p. 40)

In this chapter, I shall discuss the various issues raised in the passage above in terms of not only the ethical implications for the Ungspråk project but also how they were addressed and integrated in the production of knowledge (epistemology) and the promotion of learning about multilingualism (pedagogy).

De Costa (2016) places discussions related to ethics in research along two distinct continua: macro/microethics (or procedural/interpersonal ethics, respectively) and ethics under the quantitative/qualitative research paradigms. 'Macroethics' refers to the more general, procedural aspects of ethics in research conducted with humans (De Costa, 2016; Guillemin & Gillam, 2004; Kubanyiova, 2008), which are supervised by, and require the approval of, research committees (such as the Norwegian National Research Ethics Committee in the case of Norway). 'Microethics' refers to more relational, interpersonal aspects of ethics in research and the 'everyday ethical dilemmas that arise from specific roles and responsibilities that

researchers and research participants adopt in specific research contexts' (Kubanyiova, 2008, p. 504). These dilemmas cannot be fully anticipated by the researchers and quite often fall beyond the scope of the general norms and regulations dictated by procedural ethics. Consequently, 'microethics' demands of researchers the attentiveness to detect critical 'ethically important moments' (Guillemin & Gillam, 2004) that emerge from their interactions with participants and colleagues as well as the ability to accordingly act upon them. In addition, they require a constant assessment between achieving scientific and methodological rigour and attending to the needs and expectations of the participants who willingly dedicate their time and effort to providing researchers with useful data (Ortega, 2005).

Regarding the quantitative/qualitative continuum, De Costa (2016) observes that the two research paradigms have distinct approaches to ethics in research, which are influenced by the constituencies the researchers need to be ethical toward. Apart from the compliance with the 'macroethical' procedures outlined above, under the quantitative paradigm, ethical issues usually concern the scientific community and are related to the replication (Porte, 2010), generalisability and validity (Mackey & Gass, 2005; Ortega, 2005; Paltridge, 2016) of the studies. Of course, ethical concerns surrounding the technical quality of quantitative research in education are of crucial importance, given the high level of credibility assigned to this type of research particularly by decision makers (Chapelle, 2005; Ewing, 2011).

In spite of the practical relevance of such distinctions, given the mixed-methods design of the Ungspråk project, it is important to highlight that the two continua mentioned above are overlapping and mutually influence each another. In the first phase of the Ungspråk project, the main research instrument (the Ungspråk questionnaire) had a predominantly quantitative orientation, and issues related to its validity and reliability are extensively discussed in Articles I and II. In addition, all the macroethical, procedural aspects were followed throughout the research process.

In the second phase of the project, one of the strands (interactive sessions in which participants engage with research findings from the questionnaire) had a predominantly qualitative orientation that required a more interpersonal approach to ethics in research. In retrospect, an ethically important moment with decisive implications to my role in the project took place in the first face-to-face meeting I had with my supervisor before the beginning of the project. At the end of the meeting, Prof. Åsta Haukås mentioned that we should start thinking of how to

give something back to the participants as a way of wrapping up our activities at the end of the project. After our first encounter, I kept thinking about my supervisor's suggestion and eventually it turned into an embryonic idea that had her total support and was later developed into an integral component of the research project (Article III).

6.2 Integrating research ethics with epistemology

One crucial aspect of involving participants in the research processes and findings has to do with the quality of the knowledge produced by the research. This issue is approached in an excerpt from the NESH guidelines mentioned earlier: 'Dialogue between researchers and participants in the course of the research project may often strengthen the research' (NESH, 2019, p. 40). Enhancing the quality and robustness of the knowledge produced is also one of the main purposes of adopting a mixed-methods approach to research. According to Schoonenboom and Johnson (2017), 'the overall goal of mixed methods research, of combining qualitative and quantitative research components, is to expand and strengthen a study's conclusions and, therefore, contribute to the published literature' (p. 4).

Of course, strengthening the quality of the research and contributing to the published literature are important reasons for adopting mixed methods and involving participants in the research process. However, an interpersonal stance on ethics in research in education would require us to complement these objectives with the following questions: Whose knowledge is it we are trying to strengthen by adopting such procedures and methodologies? Should the dialogue between researchers and participants be pursued with the sole purpose of advancing academic knowledge? If not, how can the strengths of mixed-methods research be harnessed so that participants have the opportunity to advance their own knowledge of the phenomena being researched?

In the Ungspråk research project, such questions can be viewed both as the driving forces and as the desirable outcomes for developing a participatory approach to multilingualism and multilingual identity with schoolchildren (Article III). By recasting some of the findings from the quantitative component (the Ungspråk questionnaire) into the data visualisations used in the interactive sessions with participants (qualitative components), the adoption of mixed methods allowed participants a second level of reflection on the data with important implications both for the quality of the academic knowledge produced and for their own

understanding of what it means to be multilingual.

The merging of a quantitative research component into a qualitative one (or vice versa) was dubbed by Guest (2013) as the point of interface – referring 'to any point in a study where two or more data sets are mixed or connected in some way' (p. 146). Referring to the same procedure as the point of integration, Schoonenboom and Johnson (2017) say: 'Determining where the point of integration will be, and how the results will be integrated, is an important, if not the most important, decision in the design of mixed methods research' (p. 9). As a means of clarifying the role of the interactive sessions (Article III) and the models of multilingualism (Article IV) in the mixed-methods structuring of the Ungspråk project (Guest, 2013, p. 146), Table 3 below describes the points of integration (Morse & Niehaus, 2009) in relation to the research instruments and timing (Guest, 2013; Schoonenboom & Johnson, 2017) and the participants involved.

Table 3 – Points of integration (adapted from Article III)

	First phase (Apr./Aug. 2019)	Analytical point of integration (2019/2020)	Second phase (Dec. 2020)	Results point of integration (2021/2022)
Research instruments	Ungspråk online questionnaire	Design of digital visualisations based on data from the questionnaire Development of the interactive sessions Piloting of visuals and sessions	Interactive sessions with participants using data visualisations	Writing of Articles III and IV that combine findings from the interactive sessions and the questionnaire
Number of participants	593 students (Year 8 lower sec. school)		114 students (Year 10 lower sec. school)	
Participant schools	7 schools in the Bergen region		1 school from the first phase	

In the Ungspråk project, the analytical point of integration (Morse & Niehaus, 2009) provides a feedback loop in the research process in which some of the data from the questionnaire are presented back to participants as a means of making them 'reflect on their reflections', therefore giving them the opportunity to expand their knowledge of multilingualism and multilingual identity based on data they helped generate. Thus, the ethical compromise of giving something back to participants is integrated with the epistemological premises laid down by the questions posed in the second paragraph of this chapter (see also Article III).

From the perspective of the quality of academic knowledge produced, the interactive sessions were designed to fulfil the following purposes of mixed-methods research originally proposed

by Greene et al. (1989) and discussed by Schoonenboom and Johnson (2017):

> 1. Complementarity: the elaboration, enhancement, illustration and clarification of the results from one method with the results from the other method.
>
> 2. Development: the use of the results from one method to help develop or inform the other method.
>
> 3. Initiation: the discovery of new frameworks and methodologies (adapted from Schoonenboom & Johnson, 2017, p. 4; see also Articles III and IV).

From an epistemological perspective, the data collected during the interactive sessions (via a mini-survey, classroom discussions and observations) were crucial to enhance researchers' answers to the first main research question (Table 1): What does it mean to be multilingual for pupils in Norwegian lower secondary schools? To this end, the interactive sessions, by opening up the research to the participants' critical reading of the findings through their own analytical lenses, also allowed researchers to compare and contrast their own hypotheses and explanations to those of the students, thus enriching the overall quality of the research. The findings from the questionnaire and the interactive sessions were combined at the results point of integration in the writing of Articles III and IV (see Table 3 above).

In addition, the interactive sessions were crucial to help answer the third main research questions (Table 1): How can research on multilingualism and multilingual identity be designed to engage participants with the research processes and findings? How can participants' involvement in research contribute to a deepened understanding of multilingualism and multilingual identity? For a full account of these questions, however, a discussion on the pedagogical dimension of the Ungspråk research project is required.

6.3 The pedagogical dimension: Intrinsic and extrinsic objectives

In order to make participants profit from the interactive sessions, engage in meaningful discussions and expand their knowledge of multilingualism based on the data they helped generate, the interactive sessions and the data visualisations used in them had to be designed with pedagogical concerns in mind (Article III). Such concerns include the challenge posed by the following statement taken from the NESH guidelines mentioned earlier: 'Researchers must present the results so that key findings and insights are communicated in a manner that can be understood by the participants' (NESH, 2019, p. 40). Such remarks are particularly

relevant in the case of findings from quantitative components, where the results of a study are not easily translatable in terms that can be grasped by the contributors, especially when they are schoolchildren. Because the objectives of the interactive sessions were not restricted to communicating the results to the participants and included favouring their autonomy, critical reflection and independent action in interpreting the data (Article III), our pedagogical concerns were expanded to:

1. The design of engaging interactive tools (data visualisations) to explore some of the research data from the questionnaire along with the participants.

2. The planning, piloting and implementation of the activities that were used along with the visuals to promote discussions among participants during the interactive sessions.

The two items above are part of what can be called the 'intrinsic pedagogical objectives' of the interactive sessions, and they are discussed in detail in Article III. Regarding the auxiliary role of the visualisations in helping us answer research questions 1 and 3 (see Table 1), a brief explanation is provided below.

In one of the sections from the Ungspråk questionnaire, respondents were asked to complete the prompt 'to be multilingual means…', followed by the question 'are you multilingual?' They answered this question by marking either 'yes', 'no' or 'I am not sure' (Article III). The answers of 593 lower secondary students from 7 different schools served as the basis for the development of the data visualisations used in the interactive sessions, which involved 114 students from one of the participant schools (see Table 3 above). Figures 2 and 3 below show some aspects of the data visualisations used in the interactive sessions. A detailed description of their mechanics and affordances are provided in Article III. For a better understanding of the interactive features of the actual visuals, it is recommended that the readers access them via the hyperlinks on page ix of this document.
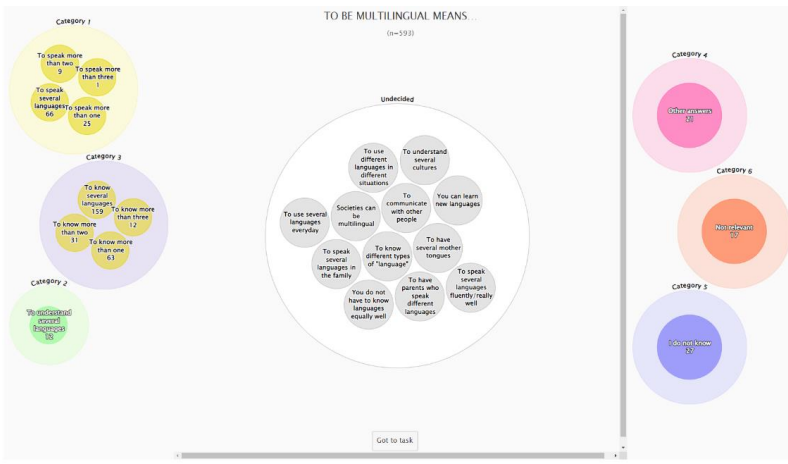
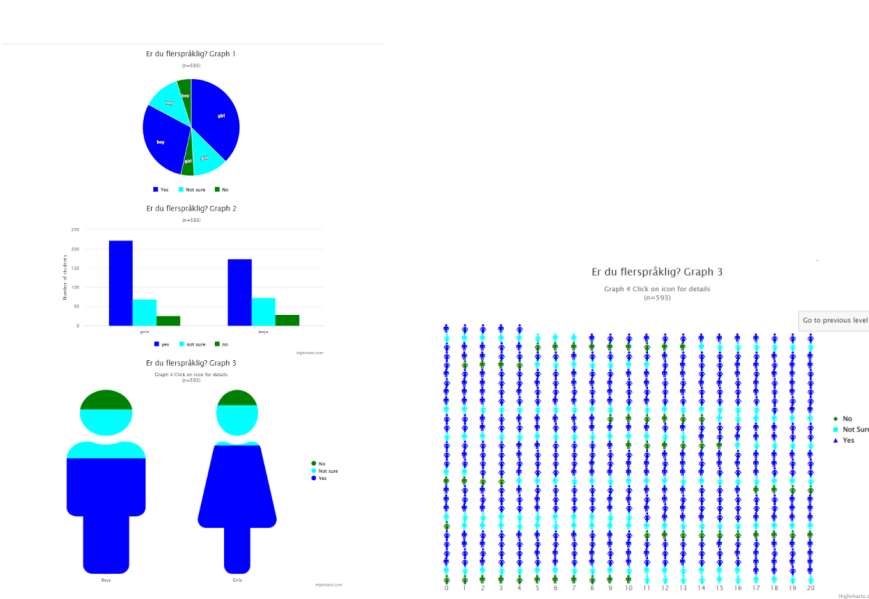Figure 2 – First layer of the visualisation 'To be multilingual means…'

Figure 3 – Different types of visuals representing the data from the question 'Are you multilingual?' from the Ungspråk questionnaire

The choice of these two particular questions from the questionnaire to be represented as visualisations has to do with their central role in expanding both the researcher's and

participants' understanding of the relationship between multilingualism and language learning in the construction of a multilingual identity. More elaborate discussions on these issues can be found in subchapters 3.4 and 4.2. In relation to the discussions in chapter 2 about the need for understanding multilingualism from a descriptive perspective, the visual representing participants' answers to the prompt 'to be multilingual means…' is a powerful descriptive tool that summarises the complexity and scope of participants' answers in one interactive visual ensemble, thus providing a general overview to their conceptualisation of the phenomenon. The choice for the use of interactive data visualisations in the sessions was based on a number of factors. More than just aiding the dissemination of scientific research, the use of data visualisations as a means of representing different aspects of the real world has become increasingly common in different domains of contemporary, data-driven societies (Buzato, 2018; Lankshear, 2003). As a consequence, the ability to critically interpret visually presented data has become a relevant form of literacy in recent years (Bhargava & D'Ignazio, 2015; Tønnessen, 2020). Combining these insights into our intrinsic pedagogical objectives, the visualisations used in the interactive sessions draw on the visual-haptic properties of digital media (Storto, 2021) and are designed to facilitate participants' autonomy, critical reflection and independent action (Little, 1991; Palfreyman & Benson, 2019) in interpreting the data, thus being open to unexpected readings and results (Bhargava & D'Ignazio, 2015).

In the Ungspråk project, the interactive sessions are conceived as 'actions through which researchers and participants in a study can engage with the data and each other in a dialogical manner' (Article I). The sessions represent an effort towards a more collaborative and participatory approach to research that moves beyond doing research solely 'on' multilingualism and seeks to engage participants according to their own interests and concerns (Article I). In this sense, the sessions are not just an occasion where participants are presented with the findings from the project; more importantly, they are an opportunity for participants to question the data, try out different possibilities for analysing the results, formulate their own hypotheses and interpretations and contrast and discuss them with peers and researchers, hence the relevance of the pedagogical dimension in achieving these aims.

Given the age group and the number of participants, the predominantly quantitative nature of the data and the pedagogical tools involved, the sessions represent an innovative endeavour in participatory approaches to research in education (Morrow, 2005; O'Kane, 2008), which tend to be more frequent in qualitative, small-scale studies and usually focus on young

learners (Alderson, 2000; Pinter & Kuchah, 2021). These issues are discussed in further detail in Article III.

Altogether, the digital visualisations used in the sessions, along with the interactive visual models that represent participants' multilingual practices (Article IV), form an ensemble of pedagogical tools that can be adapted and used in different learning contexts to explore issues related to multilingualism, multilingual identity and language learning and practices among various stakeholders (such as language teachers, schoolchildren, educators and language researchers). In this sense, they constitute the 'pedagogical legacy' of the Ungspråk project that can be extended beyond the contexts and purposes to which they were originally conceived.

Finally, the 'extrinsic pedagogical objectives' of the interactive sessions and the data visualisations are related to the extent to which the discussions and reflections engendered by them have an influence on participants' self-perception as multilingual speakers, with the possible outcome of positively affecting their future language learning trajectories. According to Fisher et al. (2018), owing to the early stages of development of research in multilingual identity, to date, consistent attempts have not been made to estimate the impact of language identity–focused activities and objectives, such as the ones discussed above, in current language classroom pedagogies (p. 11). Although the interactive sessions represent an effort towards more structured, systematic pedagogical interventions of this kind, there are limitations to the assessment of their possible future pedagogical benefits (such limitations are discussed in further detail in chapter 8 of this synopsis).

7. Developing Practice-based Models of Multilingualism

This chapter focuses on our practice-based approach to multilingualism and discusses the theoretical and methodological orientations supporting the digital models of multilingualism discussed in Article IV. Just like the data visualisations, the models were developed based on data from the Ungspråk questionnaire (see subchapter 7.2). Besides being useful descriptive-analytical tools that complement our investigations and help us answer our first main research question (see Table 1), the models represent an effort towards the development of practice-based models of multilingualism, thus contributing to research in the field.

The relationship between language, and by extension between multilingualism, and identity

has been conceptualised by many scholars as inextricably bound to linguistic practices (Canagarajah, 2013; De Costa, 2010; Pennycook, 2010; Stroud & Wee, 2012; Xu, 2012). From a broader perspective, such stance is in line with and influenced by poststructuralist feminist theories (Butler, 1990, 1993; Davies, 1991; Weedon, 1999) postulating that concepts such as 'identity', 'subjectivity' and 'agency' 'do not exist prior to their production in linguistic and discursive practices' (Miller, 2010). In relation to multilingual identity, a practice-based approach entails the realisation that it is only by routinely engaging in meaningful, situated practices (Gee, 2004) that learners' (linguistic) identities are performed, enacted, 'taken up, or contested in particular discursive spaces and situations in a moment-by-moment way' (Duff, 2015, p. 62).

The 'practice turn' in contemporary theory (Schatzki et al., 2001) has also promoted significant theoretical shifts in how we understand and research the relationship between language learning and multilingualism by claiming the fundamentally practical, performative dimension of all language activity (Canagarajah, 2013; Hall et al., 2006; Pennycook, 2010). In addition, compelling research evidence and theoretical insights from fields as diverse as psycholinguistics (Bates, 1999, 2003; Bates et al., 1998; Elman, 1999; MacWhinney, 2001), child language development (Snow, 1999; Tomasello, 2003), functional and cognitive linguistics (Bowerman & Levinson, 2001) and sociolinguistics (Coupland & Jaworski, 2006; Fitch & Sanders, 2005; Wardhaugh, 2002[5]) provide ample support for a practice, usage-based view of language learning that sees language knowledge not as a prerequisite to performance but rather as 'an emergent property of it, developing from its locally-situated uses in culturally-framed and discursive-patterned communicative activities' (Hall et al., 2006, p. 228).

Such an abundance of theoretical insights and empirical evidence allows us to conclude that it is no longer theoretically possible, nor methodologically advisable, to try to understand the knowledge of multilingual speakers without considering the real-world contexts in which the languages in their repertoires are used and the everyday practices that shape their identities (Hall et al., 2006; Norton & De Costa, 2018). To this end, in this chapter, I discuss the development of visual, practice-based models that represent the contexts of use for the languages in the multilingual repertoire of the participants in the Ungspråk project (Article IV). Based on the expertise acquired in designing the digital data visualisations for the

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5 For a detailed discussion of all these studies, see Hall et al. (2006).

interactive sessions (Article III), the visual models presented in this chapter were created from data collected via the Ungspråk questionnaire (Article II), and they represent an effort towards the development of models of multilingualism that account for the language practices of multilingual individuals and groups (Article IV). To better situate the contributions of our models, I start with a brief discussion of some current relevant models of multilingualism, highlighting their theoretical orientations, features, commonalities and limitations.

7.1 Current models of multilingualism: A brief overview

Models have widespread use in different domains of scientific enquiry as effective representations of the world that are created to explain, facilitate the understanding and even predict the occurrence of phenomena that are too complex and multi-faceted to directly observe (Aronin & Moccozet, 2021). In linguistics, models have been amply used to describe and explain language-related phenomena – for example, the syntactic structures of natural languages (Chomsky, 1957) or the learning and acquisition of foreign languages (Selinker, 1972).

An invariable structural component of scientific models is visual representations, usually in the form of diagrams, charts, dynamic computer simulations or, in our case, interactive digital visualisations that are used to illustrate, clarify and complement the verbal explanations and the theoretical framework that attempts to describe or explain the phenomena in question (Aronin & Moccozet, 2021).

The multilingual turn in applied linguistics (May, 2014) has produced a number of models, albeit limited (Aronin & Moccozet, 2021), that approach multilingualism from various disciplinary perspectives, such as psycholinguistics (Herdina & Jessner, 2002; Jessner, 2008), sociolinguistics (Aronin, 2019; Aronin & Moccozet, 2021) and foreign language teaching and learning (Meissner, 2004). The following discussion of these models is based on Hufeisen's (2018) paper 'Models of Multilingual Competence'.

In the domain of psycholinguistics, the dynamic model of multilingualism (DMM) (Herdina & Jessner, 2002) postulates a dynamic, non-linear acquisition process in multilingualism, which is influenced by a number of psychological variables, such as motivation, attitude, anxiety and metalinguistic awareness (Hufeisen, 2018). The DMM has a predominant systemic, language-oriented view of language learning and multilingualism, which is

reflected in its later being relabelled as a dynamic system theory of multilingualism (Jessner, 2008).

In the domain of foreign language learning and teaching, the plurilingual didactic monitor model (PDDM) was developed as part of the EuroCom, one of the several projects supported by the European Union, which aimed at the development of intercomprehension among languages belonging to the same family. As a side note, the choice for the term 'plurilingualism' attests to the model's affinity to the concept of 'plurilingual competence' put forward by the Council of Europe (see subchapters 2.3 and 3.4). Based primarily on the development of reading competence among languages of the same family, the PDMM postulates the formulation of a spontaneous grammar hypothesis for the target language by the learner. If the learner's motivation to learn the target language is strong, the repeatedly processed hypothetical grammar is consolidated and stored in the 'multilingual storage area of the long-term memory through careful, deliberate processing of the hypothesis' (Hufeisen, 2018). According to Hufeisen (2018), the two models above have been evaluated and empirically tested in psycholinguistic and foreign language teaching research and used as reference.

A recently developed model in the domain of sociolinguistics is the dominant language constellation (DLC) model (Aronin, 2019; Aronin & Moccozet, 2021). Aronin (2019) defines the DLC as 'a group of one's most expedient languages, functioning as a unit, and enabling an individual to meet all needs in a multilingual environment. Unlike a language repertoire, a DLC comprises the languages, which, together, perform the most vital functions of language' (p. 13). Some prominent theoretical conceptualisations in the DLC model are that (1) from the point of view of the individual, the dominant languages are not conceived in isolation but represent a unified set of resources and (2) what determines what a dominant language is in a given social setting are the contextual practices in which it is used. Another noteworthy feature of the DLC is that the analytical explanatory model can be turned into a tangible object, usually a plasticine network of the dominant languages created by the own stakeholders, thus enhancing their cognition and raising their awareness (Aronin & Moccozet, 2021). In recent years, the model has been adopted by the research community, and its applicability is being evaluated in empirical studies (e.g. Björklund et al., 2020; Vetter, 2021).

Within the domain of applied linguistics, the factor model attempts to compile a bundle of cumulative factors that include the influencing variables in the acquisition of the first language

and the subsequent learning of foreign languages in a linear fashion (Hufeisen, 2018). According to Hufeisen (2018), one of the advantages of the factor model is that it particularly 'illustrates the quantitative and above all the qualitative differences between learning a first foreign language and learning a second or subsequent foreign languages' (p. 182). An important feature of the factor model, and possibly one of its shortcomings, is that the empirical evidence supporting the inclusion of a factor in the model comes exclusively from studies conducted in institutional language learning environments (Hufeisen, 2018).

Among the commonalities of the models above is a holistic approach to multilingualism (Cenoz, 2013; Jessner, 2008) that considers the linguistic repertoire of the multilingual individual as an integrated set of resources that are in constant mutual interaction and development and that have the inherent potential of boosting the speakers' proficiency in the languages they already know or are currently learning. As a consequence, all models acknowledge, in one way or another, the synergistic, emergent surplus in the linguistic abilities of multilingual speakers, in which the whole is always more (and more complex) than the sum of its parts (Aronin & Moccozet, 2021).

For a better understanding of the theoretical rationale underpinning the development of our practice-based models of multilingualism discussed in Article IV, it is worthwhile having a closer look into the distinct theoretical stances of the models above in relation to the role of practices in the development of the linguistic abilities of multilingual speakers. Both the dynamic systems model (Jessner, 2008) and the factor model (Hufeisen, 2018), as the name of the former implies, operate within a language systems paradigm, which, in general, conceives of languages as separable, enumerable entities (Pennycook, 2010), each with their own internal system of syntactic rules and lexical components that need to be acquired by the learners for them to advance in their proficiency. The roles of language practices in these two models are indirectly addressed in the theoretical construct 'multilingual factor' or M-factor (Jessner, 2008), which, according to Hufeisen (2008, p. 182), represents the same concept as the 'factor bundle' in the factor model. Jessner (2008) defines the M-factor as 'all the effects in multilingual systems that distinguish a multilingual from a monolingual system, that is, all those qualities that develop in a multilingual speaker/learner due to the increase in language contact(s)' (p. 275). The importance of language practices in multilingualism is implicitly present in the notion of 'language contacts', and language systems are conceived of as interdependent 'rather than autonomous systems, as they are perceived in mainstream SLA

research' (Jessner, 2008, p. 274). However, the main focus of these models is on how the development of 'each individual language system' is dependent on 'the behavior of previous systems and subsequent systems' (p. 274). In other words, even though multilingualism is approached holistically, the languages that go into their composition tend to still be conceived as individualised entities that are subject to the positive (or even negative) influence of other languages via their constant interaction in a given 'multilingual system'. The PDDM follows the same systemic paradigm, focusing on the formulation of 'grammar of hypotheses, and monitoring as controllers of the learning process when reading' (Hufeisen, 2018, p. 179) in a family-related language.

Such concerns about an individual's systemic knowledge and development of separate languages, often translated as the notion of 'competence', can be attributed in great part to the disciplinary needs and the accompanying theoretical and methodological assumptions that determine the construction of any model (Hufeisen, 2018). A case in point is the factor model, which operates within language learning in institutionalised contexts (Hufeisen, 2018). In such contexts, the common designators 'L1, L2, L3…Ln', which portray language learning and acquisition as a linear, chronological process and which, by a methodological sleight of hand, imply that all learners are monolingual from the outset (we all start from 'L1'), are still the prevalent and often undisputed way of conceiving language learning and teaching. As a consequence, even though the author acknowledges that 'this seemingly unambiguous distinction in a chronological sequence of learning and acquisition is not so well-defined in real life, nor are the languages so easily separable from each other' (Hufeisen, 2018, p. 173), the designators are nonetheless incorporated in the factor model.

Of the models discussed above, the DLC is the one with the strongest explicit tendency towards the importance of language practices in multilingualism. DLC emphasises the 'actual use of languages, language practices and tight connection with societal circumstances and demands' (Aronin, 2019, p. 18) by focusing on the individual's or group's most expedient languages rather than their whole linguistic repertoire. Aronin and Moccozet (2021) argue that in spite of academic efforts to develop models that take into account the relevance of social networks in language learning (e.g. Jarynowski et al., 2019; Sabawi & Yildiz, 2015), 'multilingualism still lacks modelling tools that would describe the current language practices' (p. 3). Under conditions of globalisation, one of the main challenges in developing such models of multilingualism is the inherent complexity of these practices, which usually

take place in culturally diverse, hypermediated environments (Kramsch & Thorne, 2001) that are structured on interconnected time and spatial scales (Blommaert, 2010) and that can 'be arranged sequentially, in parallel, juxtapositionally, or in overlapping form' (Busch, 2015, p. 4). Frequently, it is the engagement in these transnational, multilingual networks and imagined identities (Norton, 2013) that keeps 'learners or users of a language engaged in language practice even when they are not actually required to do so (for work or formal education)' (Duff, 2015, p. 74).

Such observations are in line with academic calls that claim that questions of language knowledge cannot be separated from questions of use, and the consequent need for research goals and tools to incorporate the knowledge of multiple language users in real-world contexts of use (Canagarajah, 2013; Hall et al., 2006; Pennycook, 2010). From such a theoretical-methodological perspective, the practice-based multilingual models presented in the next chapter are an effort to better understand the contexts of use for the languages in the participants' repertoires as a means of building a bridge between multilingualism and language learning in institutional environments and the real-world language practices they routinely engage in.

7.2 The Ungspråk practice-based models of multilingualism (UPMM)

As stated earlier, the data that served as the basis for the design of the Ungspråk practice-based models of multilingualism (UPMM) (Article IV) come from the Ungspråk questionnaire (Article II). In one of the sections, participants were asked to name the languages they learned at school (Norwegian and English as default options and either Spanish, German or French if they took any of these languages as an elective subject). After that, respondents were requested to list all the other languages in their repertoire (see Articles II and IV for a more detailed explanation of the data collection procedures). For each language listed, the digital questionnaire generated a battery of nine statements, to which the respondents answered by marking either 'yes' or 'no'. The are the statements the following:

    1. I use this language with my family.

    2. I use this language to speak to (some of) my friends.

    3. I (sometimes) use this language when I go on holidays.

4. I (sometimes) use this language when I am on the Internet.

5. I (sometimes) watch TV/films/listen to music in this language.

6. I am proud that I know this language.

7. I think I know this language well.

8. It is important for me to know this language.

9. I avoid using this language.

Statements 1–5 allow for the mapping of the different contexts in which a given language is practiced, and they play a central role in the UPMM presented in this paper. Our theoretical approach to the concept of 'context of practice' will be addressed in subchapter 7.2.2 below. Statements 6–9 provide input about some of the participants' attitudes and opinions (Dörnyei & Taguchi, 2010) in relation to each reported language, including their perceived knowledge and willingness to use it. Attitudes and beliefs towards languages have been a topic of extensive research in psycholinguistics and language learning (e.g. Baker, 1992; Gardner, 1985; Garrett, 2006), and because they have a bearing on the individual's disposition to use a language and therefore in their self-identification with it, they are important factors in the visual models. In line with my contributions to the Ungspråk project, the UPMM aim to provide a more fine-grained descriptive perspective on the multilingual practices of Norwegian lower secondary students (see chapter 2).

7.2.1 Visual models representing the whole group of participants

The UPMM come in two distinct visual sets, one that allows the visualisation and exploration of the data from the perspective of the contexts of practice and attitudes for the languages listed by the whole group of participants and the other that approaches the language repertoire and attitudes of individual participants. In relation to how information is visually presented, each set of models has two different versions.

The first set of models is designed on a polar chart template representing the answers for the whole data set of the Ungspråk questionnaire (n = 593). These models include five languages at a time along with their respective five contexts of practice taken from the Ungspråk questionnaire, thus allowing a quick comparison among the languages. Figure 4 below shows

the model representing the contexts of practice for the five languages taught at school (for a better understanding of the features, mechanics and affordances of the actual digital models, I recommend that the reader access them via the links provided in the Introduction).
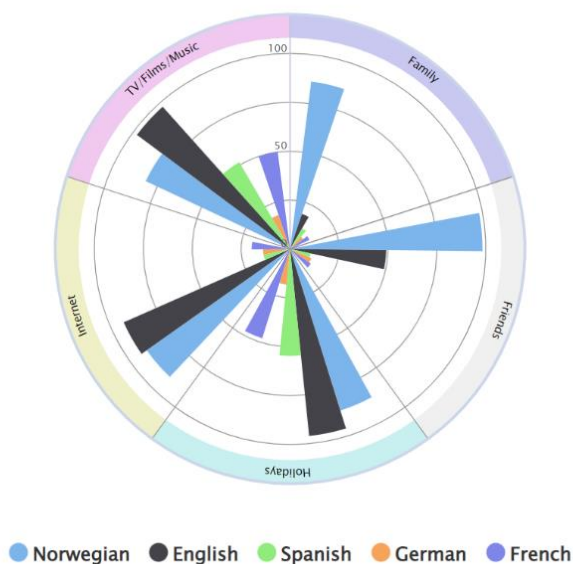
Figure 4 – Model representing the contexts of practice for the five languages learned at school

In the actual digital models, the five contexts of practice for a given language are highlighted when hovering the mouse cursor over the columns, forming a shape resembling a five-pointed star, thus evidencing the scope of a particular language in the five contexts of practice, on a scale from 0% to 100%, according to the percentage of respondents (Figure 5).
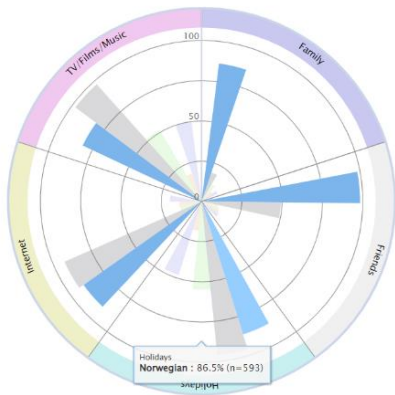
Figure 5 – The scope of Norwegian in the five contexts of practice

A second version of this model inverts the order of the visual representation of the information, showing each language separately in the outer circle and the contexts of practice as radial columns in the inner circle (Figure 6).
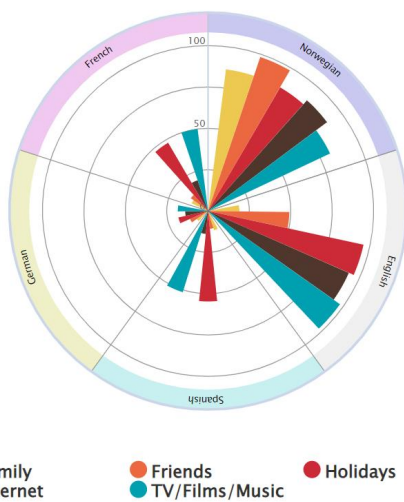
Figure 6 – Contexts of practice for each language

The second version of this model also features the attitudes of participants towards the languages. This function is activated by hovering the mouse cursor over the language in question (Figure 7).

English
n = 593
Proud = 92.4%
Know well = 80.9%
Important = 95.4%
Avoid = 9.8%
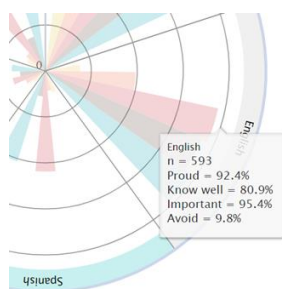
Figure 7 – Details of the visual model showing participants' attitudes towards English

7.2.2 Visual models for the language repertoire of individual participants

The second set of visual models was developed using the concept of a network graph representing the languages in an individual participant's repertoire and their contexts of practice. Figure 8 below shows the visual model for the repertoire of a 'prototypical participant' (for detailed information on the criteria adopted for selecting a prototypical participant, see Article IV).
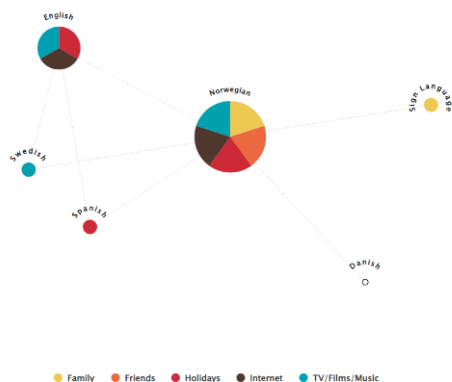
Figure 8 – Repertoire of a prototypical participant

The visual models in this version are composed of three factors: the languages in a participant's repertoire (represented as a circle), the number of contexts where the languages are practiced (represented as slices in circle) and color-coded arrows connecting the languages according to shared contexts of practice, allowing for a quick identification of overlapping contexts (Figure 9). The size of each circle representing a language is determined by the number of contexts in which it is used, on a scale from 0 to 5[6]; it thus represents 'how big' a role a given language plays in the participant's life.

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[6] The value '0' in the model corresponds to a language that was listed by the participant but is not used in any of the contexts available. In the model, the value is represented as a small circle with no colour (for example, 'Danish' in Figure 8).
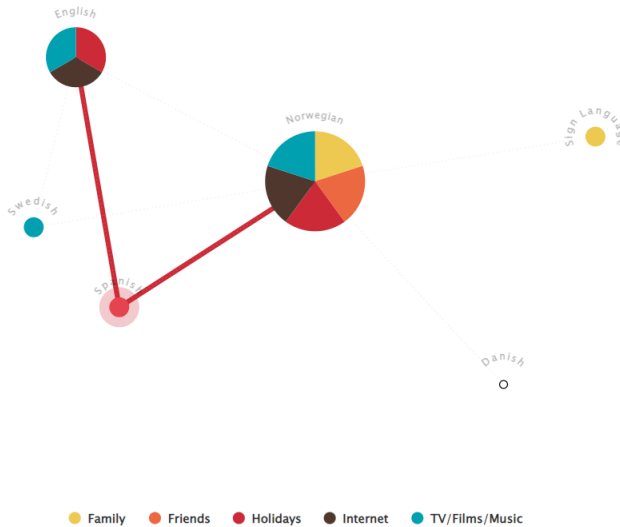
Figure 9 – Overlapping contexts of practice for English, Norwegian and Spanish (Holidays)

From the theoretical perspective on language practice outlined in this chapter, 'contexts of practice' in the model should be conceptualised as more than just 'the sociolinguistic truism that people use languages in particular contexts' (Pennycook, 2010, p. 147, Kindle edition). Rather than just focusing on the idea that language knowledge and use are shaped by the contexts of practice, we are interested in understanding how languages, as 'products of socially located activity' (p. 17, Kindle edition), actually help create the contexts where they are used. As a practical example, the overlapping of languages in the context of 'holidays' in the model above (Figure 9) might be indicative of complex communicative practices in which the participants' knowledge of Spanish, Norwegian and English is deployed simultaneously in real life situations to accomplish tasks while travelling on holidays. Of course, a more thorough assessment of such contexts would require complementary qualitative data as well as more refined methodological tools of collection and analysis.

An important feature of the model above is that it allows the identification of the most

expedient languages in a participant's repertoire – or their DLC (Aronin & Moccozet, 2021) – via a quantitative and qualitative reading of the contexts of practice in which they are present. In the example in Figure 9, Norwegian is used in all the five contexts of practice available in the Ungspråk questionnaire. Such ubiquity is indicative of the importance of the language in the participant's life, and it is most likely the participant's mother tongue. English is used in three contexts of practice, two of which (on the Internet and to watch TV/films/listen to music) require the constant use of the language. Even though sign language occurs only in one context, the fact that it is used in the family, most likely in interactions with one of the family members, is indicative of the frequency and quality of the language contacts, two factors that have been identified as crucial in the development of a language (Bybee, 2003; Hall et al., 2006; Jessner, 2008). Furthermore, the overlapping context of 'family' for both Norwegian and sign language can be taken as evidence of elaborate multimodal practices that fuse oral and gestural modes of communication. Such analysis would allow us to conclude, with due caution, that Norwegian, English and sign language constitute the participant's DLC.

By including all the languages in a participant's repertoire, the model also allows a more nuanced understanding of the language resources available to the individual. In the example above, Danish is not used by the participant in any of the contexts of practice listed in the Ungspråk questionnaire. However, we would argue that because the language was mentioned as part of her/his repertoire, it constitutes a 'dormant' resource that might be activated according to the demands of specific communicative situations or even be developed further, depending on the future life trajectory of the participant. Such interpretation of the nuanced facets of a participant's repertoire is an important feature of the UPMM, which models such as the DLC, by focusing only on the most expedient languages, would fail to capture.

The second version of the model represents the attitudes and beliefs of participants in relation to the languages in their repertoires. Just like the version above, the model is structured on a network graph with nodes representing the languages and arrows representing common attitudes and beliefs shared among the languages (Figure 10).
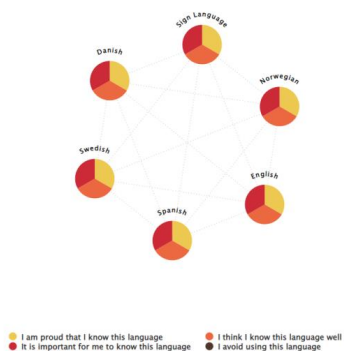
Figure 10 – Model of the attitudes and beliefs of the same prototypical participant

As mentioned earlier, attitudes and beliefs towards languages play an important role in the disposition of an individual to use and learn them and, consequently, are decisive factors influencing the construction of their language and multilingual identities. Therefore, the model above is a useful tool for investigating participants' attitudes and beliefs towards the languages in their repertoire, both in relation to their language practices and in the construction of their multilingual identities. As an example, the model above shows an extremely balanced relationship among the languages, even though their contexts of practice are not evenly distributed (see Figure 8 above). The fact that the participant feels proud and realises the importance of all the languages in his/her repertoire is indicative of a positive attitude towards languages (and language learning) in general. Furthermore, such positive attitude is reflected in the participant's predisposition to use all the languages (reportedly, none of the languages are avoided by the participant). Even though the participant's self-perception of good knowledge in all the languages must be taken with a pinch of salt, we believe it should be interpreted in light of the participants' positive attitudes and beliefs towards languages in general rather than as an accurate description of his/her language abilities in each of the languages in the repertoire. This interpretation is warranted by the fact that the same participant answered 'yes' to the question 'are you multilingual?' in another section of the Ungspråk questionnaire.

In the methodological framework of the Ungspråk project, the practice-based interactive models of multilingualism presented above provided valuable input in analysing and interpreting part of the data from the Ungspråk questionnaire, thus producing useful insights into answering our first main research question (see Table 1). Besides offering a more fine-grained picture of participants' context of practice for the languages in the participants' repertoire, the models are valuable tools for understanding the complex make-up and the multitude of factors involved in the construction of multilingual identities.

From more general theoretical and methodological perspectives, the UPMM are in line with current academic calls in applied linguistics claiming that multilingualism and language learning cannot be separated from questions of practice and use and, consequently, that research goals and tools need to incorporate the knowledge of multiple language users in real-world contexts of use (Canagarajah, 2013; Hall et al., 2006; Pennycook, 2010). With further improvements deriving from empirical evidence and use, the UPMM could be applied in tandem with other modelling tools, such as the ones discussed in subchapter 7.1, to obtain new insights into the problematics of practice and language learning and development among multilingual speakers.

The interactive design of the UPMM also allows for their application in classroom environments as stimulating pedagogical tools for promoting discussions and raising students' awareness on multilingualism, language learning and practice. In addition, the UPMM pave the way for the future development of more sophisticated digital modelling tools that would include other relevant practice-related factors, possibly using more advanced interfaces that would allow research participants and other stakeholders to input their own data in the models.

8. Discussion

In subchapter 2.2 of this synopsis, I stated that one of my main contributions to the Ungspråk project was to provide more fine-grained descriptions on relevant issues related to multilingualism in Norwegian lower secondary schools. In this synopsis, I have shown how these aims were pursued by adopting a research strategy in which the strengths of mixed

methodologies (Article I) were harnessed to produce a robust research instrument (Article II) that ultimately provided us with data to explore multilingualism, language learning and identity with research participants (Article III) and to design digital models that describe the multilingual language practices of lower secondary students (Article IV).

From the broader perspective of the Ungspråk project as a whole, the combination of mixed methods in the study of multilingualism proved to be the most adequate research strategy to approach the phenomenon from different and complementary theoretical orientations. By helping develop and implement the Ungspråk questionnaire (Article II), I have contributed to the creation of a valid and valuable research tool that can be adapted to other educational contexts, therefore contributing to research in the field. Furthermore, all the publications related to the Ungspråk project represent a robust body of academic knowledge on multilingualism, language learning and identity in Norwegian lower secondary schools, and I am proud to have contributed to such an achievement.

Regarding my particular contributions to the Ungspråk project, in subchapter 5.2, it was stated that the main aims of adopting an inductive positioning to research are 'to collect data to explore a phenomenon, identify themes and patterns and possibly contribute to the elaboration of new theories and approaches' . During the interactive sessions (Article III), the themes and patterns related to participants' views on multilingualism and multilingual identity were explored to promote more elaborate discussions on the phenomena. The use of interactive digital data visualisations to achieve such purposes also represents an innovative approach for future avenues of research in the field. As an unfolding, the UPMM (Article IV) represent an effort towards the elaboration of theories of multilingualism that incorporate the practices of individuals and groups as fundamental components.

In addition, this synopsis discussed how the ethical, epistemological and pedagogical dimensions of research in education can be integrated to involve participants in the research process, enhance the quality of the findings and advance knowledge in the field. Regarding ethics in research, an important point to note is the tendency to allow researchers to be portrayed in a patronising attitude of 'sharing their knowledge', a sort of magnanimous *beau geste*, which could ultimately just serve the purpose of putting ourselves in a self-indulging position. A sobering antidote to such tendency is the realisation that prior to our study, the participants already had their own explanations, suppositions and ideas that account for their learning and use of multiple languages in society and how they affect and transform their own

lives. In other words, they already had their own articulated 'theories' of multilingualism and identity, even if they were not explicitly spelled out, and which might have remained unchanged after the end of our study. Such turning of the tables would force us to realise that the students in our study were actually the teachers and we, the researchers, were the ones who learned from them (Latour, 2005).

Like all academic research, our studies and research instruments have limitations and shortcomings that need to be addressed. The Ungspråk questionnaire can be considered as the central research-methodological component of the Ungspråk project (Article II). Its design and implementation are the result of careful discussions with the members of our research team (Prof. Åsta Haukås, PhD candidate Irina Tiurikova and I) as well as the invaluable contributions of several collaborators. Besides being the source of the data that originated the interactive sessions (Article III) and the UPMM (Article IV), it has generated a number of relevant articles for the aims of the Ungspråk project that, for questions of brevity, are not addressed in this synopsis (e.g. Tiurikova et al., 2021; Haukås et al., 2022). However, just like the models of multilingualism discussed above, the Ungspråk questionnaire suffers from limitations inherent to any type of questionnaire used in academic research. Among them, we could mention unmotivated or uninterested respondents, misinterpretation of questions and 'prestige' and 'acquiescence' biases (Dörnyei & Taguchi, 2010).

Regarding the first item, it must be said that not all participants were (nor were they supposed to be) interested, and therefore motivated by the themes proposed by the Ungspråk questionnaire; as a consequence, their level of engagement with the topics and the answers provided was probably low. Participation was voluntary; however, because data collection occurred at schools during class hours, institutional and peer pressures cannot be ruled out as reasons for some of them to have reluctantly joined in.

Regarding misinterpretation, empirical evidence shows that respondents often misread or misinterpret many questions (Low, 1999), thus rendering their answers inaccurate or false (Dörnyei & Taguchi, 2010). The fact that at least one researcher was present during every data collection session and that the participants frequently asked for clarifications while answering the questionnaire are strong mitigating factors in relation to this limitation, even though occasional misinterpretations of the questions cannot be completely ruled out.

Misinterpretation is not restricted to the questions asked; it can also be a result of inattentive

reading of the instructions. A relevant practical example, stemming in part from the large scope of data being collected and the design of the questionnaire, is the following: after answering the battery of statements for each of the languages learned at school (see subchapter 7.2), respondents were asked to list all the other languages they knew via the following prompt:

> Please name **ALL OTHER languages you know**. You can include languages you use with your family, other languages you learn now or have learned at school and any other languages you know in any way. **It does not matter how well you know these languages!**

Regardless of the fact that the text emphasised 'all other' in capitals and bold font, some participants misinterpreted the instructions and ended up listing English and Norwegian again, thus duplicating the statements (and the data) about these languages.

'Prestige' or 'social desirability' bias stems from the natural human tendency to present ourselves in a good or positive light (Dörnyei & Taguchi, 2010), and even simple factual questions are loaded with prestige issues (Oppenheim, 1992): 'people might claim that they read more often than they do, bathe more often than is true' (Dörnyei & Taguchi, 2010, p. 8) or, in our case, know more languages than they actually do. Closely related to prestige bias is what methodologists call 'acquiescence bias' or the general tendency for respondents to either agree or disagree with a statement just because of its implicit good or bad connotations (Robinson et al., 1991). Even though the respondents in our age group are generally taken to be outspoken and sincere about their own views and opinions, the fact that 'acquiescence bias' might have played a role, for example, in the high number of respondents who said they were multilingual (just because speaking many languages is usually perceived to be a 'good thing') should be taken into consideration.

Apart from the issues inherent to questionnaires in general, the Ungspråk questionnaire has limitations that were in great part imposed by the complexity of the phenomena under investigation. Even though the Ungspråk team's diversity of views and approaches to multilingualism strengthened the scope and aims of the questionnaire, they still represent a partial outlook on the phenomena under scrutiny, with direct implications, for example, to the type of questions asked, the choice of specific theoretical constructs (Article II) and the findings obtained from the data (Articles III and IV).

One final point about the limitations of data collection via questionnaires in the classroom and, by extension, of most research conducted by outsiders in the same environment might be controversial but nonetheless worth mentioning. The alien presence of academic researchers in the classroom can be perceived somehow as a disturbing, intimidating (and even unwelcome) presence in a physical and metaphorical space that is usually shared only by students and teachers. The often-unacknowledged fact that 'professional strangers' (Agar, 2008) 'invade' such space and start asking students a series of apparently unwarranted questions about topics of their own choice is something that no amount of introductions, explanations and consent forms might be able to remediate.

Regarding the data visualisations used in the interactive sessions (Article III), the mechanics of the visual representing participants' definitions of multilingualism in a bubble graph (see Figure 2 in subchapter 6.3) proved to be slightly challenging to convey to the students, and the explanations ended taking a fair amount of time of the sessions. This is partly explainable by the complexity of the data represented and by the fact that students were expected to interact with the visuals and not just interpret them as static pieces of information. Regarding this point, the inclusion of some questions related to the interaction of the students with the second set of visuals (see Figure 3 in subchapter 6.3), besides stretching the length of the sessions even further, proved to be too ambitious in terms of the amount of data collected, and maybe even unnecessary. These shortcomings are obviously and exclusively *mea culpa*.

The interactive sessions could have also benefitted from a closer collaboration between the researchers and the language teachers from the participant school. For example, additional activities could have been planned with the teachers to address specific pedagogical goals and needs of their language classes, with the possible extension of the sessions into complementary interventions based on the feedback of teachers and students. Given the busy agendas of teachers and researchers and the larger context of a global pandemic in which the sessions took place, these goals were not achievable.

In addition, the long-term pedagogical benefits of the interactive sessions (for example, in terms of participants' investment in learning additional languages as a result of an increased awareness of multilingualism) cannot be easily assessed. In this respect, the fact that the interactive sessions were a one-off occurrence, with no related activities spread out over a longer period of time, can be considered as an important limitation to their possible pedagogical effectiveness. However, previous studies have shown that even short-term

interventions can have a positive impact, for example, on students' beliefs (Mantle-Bromley, 1995), motivation (Lanvers et al., 2019) and attitudes (Taylor & Marsden, 2019) towards language learning, particularly when involving students of the same age group as the ones in the Ungspråk project (see Haukås et al., 2022). All things considered, given the intrinsic linguistic diversity of Norwegian classrooms, and the findings from the interactive sessions (see Article III), I believe that the reflections enabled by the sessions have good potential for positive learning outcomes. On a brighter note, the limitations above can be seen as valuable 'lessons learned' from the sessions and can be turned into assets for the possible implementation of similar interventions in other classroom contexts and, more generally, for my future career as a researcher.

In general, some of the limitations of the UPMM are related to the intrinsic limitations of any modelling tool. Regardless of the scientific domain where they are applied, all models necessarily imply the use of abstractions, reductions and even simplifications of the phenomena they attempt to represent (Hufeisen, 2018), and in spite of their occasional descriptive or explanatory power, they should always be approached with a good degree of caution (Article IV).

More specifically, the data used in the factoring of the UPMM pose obvious limitations to its descriptive power if we consider the scarcity of data on the frequency and diversity of language contacts, two crucial components in determining individual language knowledge (Hall et al., 2006). Frequency has been identified as a determinant factor in the generalisation of word meanings and the entrenchment of grammatical constructions (Bybee, 2003), and it is directly connected with constant language use and practice. Even though frequency of use can be inferred from some of the contexts in the UPMM (for example, the use of English on the Internet can be generally assumed to be frequent among participants), this is not so clear in other contexts (for example, the reported use of Spanish with friends). Also intimately related to language practice and the development of language knowledge is the diversity of language contacts, in the sense that 'the more different the types of language use speakers are exposed to and participate in, the wider the range of options they are likely to have encountered and stored' (Hall et al., 2006, p. 228; see also Frisch et al., 2001; Thompson & Hopper, 2001). Even though the UPMM provide some evidence for the diversity of contexts in which the languages are used and, equally important, the probable overlapping of language use in the same context, they do not provide any detailed information about the quality of the

language practices. In future versions of the model, this shortcoming should be remedied by both the inclusion of factors that provide more elaborate information about the type and quality of the practices (such as the predominant textual modes and the types and genres involved in them) and by complementary methods of data collection (such as language diaries, logs, mini-surveys and semi-structured interviews). Overall, given their early stage of development and the limitations imposed by the data available, we make no claims about the UPMM as being full-fledged, practice-based models of multilingualism, as they represent incomplete parts of the multilingual lives of individuals and groups (Article IV).

9. Conclusion

The renowned Anglo-American poet T.S. Eliot once wisely remarked that 'to make an end is to make a beginning. The end is where we start from' (Eliot, 1944). These assertions leave me wondering what beginning I should make of this end and where it should lead to. In a sense, it is a bit upsetting that my PhD is coming to an end, and I believe the entertainment of a childish desire to 'do it all over again' to be an excusable feeling at this turning point. One possible way ahead, which somehow would satisfy such desire, would be to implement the same research methods and instruments developed during the Ungspråk project (the questionnaire, digital data visualisations, interactive sessions and models of multilingualism) in new teaching environments with different kinds of participants. This would not only help broaden the scope and strengthen the validity of our findings but also pave the way to new discoveries by repeating what has already been done and learning from the limitations discussed in the previous chapter in new contextual situations. After all, creativity happens, to a large extent, in the recontextualisation and relocalisation of previous expressions and experiences (Pennycook, 2010), and quite often, the promising outcomes of a PhD project are left behind and never touched on again.

Another feasible path for future research would include, along with the refinement of the modelling tools mentioned earlier, a deeper theoretical elaboration and empirical investigation on the concept of performance as a fundamental component in the achievement of language practices and the learning of languages. In our times, I regard such a concept as pivotal in understanding the language practices of younger learners in the ever-increasing public arenas of digital media. Young learners are increasingly engaged in mediatic performances that require an intricate ensemble of technical and performative abilities such

as acting, singing, dubbing, dancing, script writing, editing techniques and the knowledge of foreign languages. Nevertheless, the role of languages, language learning and performative practices in hypermediated environments still remains undertheorised and relatively unexplored empirically. Of course, this would require considerable time and investment. In academia, we hardly have time to enjoy our achievements.

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Part II – The Studies

Article I - The Ungspråk project: Researching multilingualism and multilingual identity in lower secondary schools

The Ungspråk project: Researching multilingualism and multilingual identity in lower secondary schools

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Abstract: The main objective of this article is to discuss the theoretical background and rationale for developing Ungspråk, a longitudinal, mixed methods study set in Norwegian lower secondary schools. The paper starts with an overview of different scholarly approaches to the study of multilingualism and their implications for research on multilingualism in education. After a brief introduction to multilingualism in Norwegian society and educational contexts, we present our research areas of interest and the main research questions. Particular attention is paid to the relevance of the concept of multilingual identity to the study. In addition, we discuss how the project will contribute to furthering the understanding of the relationship between multilingualism and intercultural competence. The mixed methods design of the Ungspråk project innovatively explores how different research methods and instruments can be combined to investigate questions related to multilingualism and multilingual identity and to create opportunities for meaningful interactions between researchers and participants. When discussing the mixed methods design of the project, we focus on how quantitative and qualitative components are integrated to address the research questions, engage participants in the research process and strengthen the overall validity of the findings. Overall, we hope that the Ungspråk project will contribute new insights into how languages can be learned and cultures explored in the 21st century multilingual classroom. Furthermore, the project may impact how researchers and participants interact with and benefit from empirical studies on education.

Keywords: Multilingualism, multilingual identity, intercultural competence, mixed methods research, interactive sessions, visualisations, interviews.

1. Introduction

To be or not to be multilingual remains an important question in applied linguistics and educational research. Even though multilingualism has always been a feature of countless individuals and societies throughout history (Adams et al. 2002; Pahta et al. 2018), the recent increase in transnational mobility associated with globalisation has brought the topic to the forefront of the research agenda. More than ever, educators and scholars feel the need to understand what it means to learn and use different languages, both at school and in other contexts (May 2013).

The objective of this article is to add to this discussion by presenting the design and ongoing implementation of the research project Ungspråk (2018-2022), a longitudinal mixed methods study conducted at the Department of Foreign Languages of the University of Bergen, Norway. The main aim of the project is to investigate young learners' multilingual identity in the Norwegian lower secondary school context. The term Ungspråk consists of the words *ung* (young) and *språk* (language). In Norwegian, *språk* is both singular and plural form and thus may refer to either one or several languages. In coining the term Ungspråk, we wanted to capture the main participants in our research, young learners. Furthermore, the choice of the non-transparent word *språk* alludes to the linguistic diversity of the learners along a continuum and the possibility for them to self-identify as monolingual or multilingual. The paper begins by discussing current definitions of multilingualism, language and multilingual identity and to what extent Norwegian pupils can be called multilinguals. We then go on to present the epistemological rationale underpinning the research project Ungspråk and its bearing on the main research questions and methods for data collection and analysis. Particular

attention is paid to the sequential design of the mixed methods study (Schoonenboom & Johnson 2017) and how the research instrument designed for the first phase of the project (the Ungspråk questionnaire) helped develop the interactive sessions with the learners and language teachers in the second phase. The interactive sessions are attempts to move away from a sole research *on* multilingualism, in which learners and teachers are *research objects*, towards a more participatory and collaborative approach in which participants also explore and contribute to the research process according to their own interests and concerns (Hales 2006; Kubanyiova 2008).

2. Defining the main concepts and theoretical framework

Multilingualism, a buzzword of our times, has been defined in several ways. In her overview of the various definitions of multilingualism, Cenoz (2013) sorted the most common approaches along three dimensions: the individual versus social dimension, the proficiency versus use dimension and the bilingualism versus multilingualism dimension (for further discussions on the concept of multilingualism and related terms, see Kemp 2009; Hammarberg 2010; Butler 2012).

The individual versus social dimension includes definitions that differentiate between a person's knowledge of multiple languages and the presence of multiple languages in a given society or geographical area. Some scholars refer to individual multilingualism as plurilingualism, which is the term used by the Council of Europe (2001).

The proficiency versus use dimension comprises definitions that take into account certain competency levels or frequency of use of a person's languages as criteria. The definitions vary from having an encompassing approach that includes people who are in the process of learning an additional language, irrespective of their proficiency levels (see for example Fisher et al. 2018), to restrictive definitions at the other end of the scale requiring near-native control of the languages in question. Definitions in the latter category, such as Braun's (1937: 115) "active, completely equal mastery of two or more languages" (orig. "aktive vollendete Gleichbeherrschung zweier oder mehrerer Sprachen") are rarely seen in current research studies, but Aronin and Singleton (2012: 2) suggested that this understanding of multilingualism typically represents the "man-in-the-street perspective".

Usage also belongs to this dimension. Do the languages have to be in active use in everyday life (see for example Commission of the European Communities 2007; Grosjean 2010: 4), or is receptive knowledge of a language also included in the researchers' definition of who is multilingual? Receptive multilingualism means that people understand and communicate with each other, normally using closely related languages and not a lingua franca (Zeevaert & ten Thije 2007; Rehbein et al. 2012). This phenomenon is quite common in several regions of the world, for example, in Scandinavia. Furthermore, does the criterion of everyday usage encompass learners in less authentic contexts, such as in the language learning classroom, or are the definitions limited to use in authentic communication?

According to Cenoz (2013), the bilingualism versus multilingualism dimension refers to the number of languages a person needs to know to be regarded as multilingual. Most definitions require either proficiency in more than one language or proficiency in more than two languages. The term *bilingualism* is commonly used to refer to the first category, and research includes, but is not restricted to, the investigation of bilingualism in educational contexts (García 2009; Cummins & Swain 2014). The term is also used in a more general way to include all individuals who are not monolingual. Some scholars argue, however, that bilingualism (knowledge of two languages) and multilingualism (knowledge of three or more languages) should refer to distinct phenomena, as having previously learned a second language, the learning of additional languages is different in multiple ways, including increased metalinguistic awareness and cognitive flexibility (De Angelis 2007; Jessner 2008).

The Ungspråk research team takes a broad, holistic approach to multilingualism (Cenoz 2013), defining it as the dynamic and integrated knowledge and/or use of more than one language or language variety. Briefly, a holistic view on multilingualism considers the whole linguistic repertoire of the learners as an integrated set of resources that are in constant interaction and development, both in their practices and in their language learning processes. Rather than focusing on one language at a

time and looking into the acquisition of discrete syntactic, lexical and phonological items, a holistic approach seeks to relate "the way multilingual students (and multilingual speakers in general) use their communicative resources in spontaneous conversation to the way languages are learned and taught at school" (Cenoz 2013: 11). In order to achieve this, it is crucial that we gain a deeper understanding of the participants' practices, their own beliefs and attitudes towards learning and using different languages and their self-identification as multilingual.

In the context of this project, we need to clarify what is meant by *language*. For example, should only official or national languages be included in studies of multilingualism, or can knowledge of dialects and other semiotic systems such as body language, sign language and iconography also count when deciding who multilinguals are? Many studies on multilingualism still seem to focus on standard languages such as English, French or German without problematising what a language is. More recently, however, several scholars have moved towards a broader understanding of language. Wei (2018: 26), for example, referred to language as "a multilingual, multisemiotic, multisensory, and multimodal resource that human beings use for thinking and for communicating thought".

With this widened view of what constitutes a language, one might claim that, strictly speaking, we are all multilingual, as everybody uses various semiotic resources in communication on a daily basis. Considering different approaches to the understanding of language, in this project, we define language as any semiotic system used for communication purposes, and, as discussed earlier, the languages of an individual are not static, discreet entities. Instead, they are in a constant state of change and interact with each other in the multilingual brain (Herdina & Jessner 2002).

However, no matter which definitions scholars use in their research to determine a language or to classify someone as multilingual, we believe the individuals' own perceptions to be equally relevant in the understanding of multilingualism, especially in educational contexts. Therefore, the concept of *multilingual identity* is of central importance in our study. Multilingual identity refers to a person's explicit self-identification as multilingual because of an awareness of the linguistic repertoire one has (Fisher et al. 2018).

Fisher et al. (2018) suggested that people who explicitly identify themselves as multilinguals may have several advantages. First, to see oneself as multilingual may strengthen one's self-esteem and motivation to learn additional languages. Second, it may foster an increased language awareness in and across the languages one knows and is learning, which again may result in better learning outcomes. In addition, research has suggested that being multilingual is positively correlated with certain personality traits that could allow for more effective intercultural encounters. For example, Dewaele and Oudenhoven (2009) and Dewaele and Wei (2012, 2013) indicated that there is a link between multilingualism and tolerance of ambiguity, cognitive empathy and open-mindedness.

In education and research, these traits are often associated with intercultural competence (Tiurikova fc). According to some recent studies (e.g. Dervin 2010; Dypedahl 2018; Hoff 2014, 2019), intercultural competence is often defined as one's ability to deal (constructively) with diversity and differences, whether these are "within a society (differences due to age, gender, religion, socio-economic status, political affiliation, ethnicity, and so on) or across borders" (Deardorff 2019: i). In comparison to traditional approaches that emphasise ethno-cultural differences between participants during an intercultural encounter, more recent approaches stress the idea that one's identity is always diverse and multidimensional (i.e., it is comprised of various facets, such as gender, class, language repertoire, interests and personal experience) (Dervin 2010; Dypedahl 2018). Therefore, intercultural competence is related to dealing with "diverse diversities" (Dervin 2010: 166), rather than ethno-cultural ones, and to the ability "to navigate conflict, contradiction, complexity and ambiguity" in contemporary societies (Hoff 2019: 444).

Stemming from these recent theoretical views, we suggest that open-mindedness, understood as open and unprejudiced attitudes towards diversity and differences in general, can be an indicator of one's predisposition to develop intercultural competence. Based on previous research, which shows a possible connection between multilingualism and open-mindedness (Dewaele & Oudenhoven 2009), it can be assumed that multilingualism is related to and can be a resource for the development of intercultural competence. However, research that has investigated the connection

between these two elements in the school context is surprisingly scarce, although the fostering of pupils' multilingualism and intercultural competence are central aims in language curricula in Norway and elsewhere. Furthermore, to our knowledge, there have not yet been any studies examining the connection between multilingualism, intercultural competence *and* multilingual identity. Consequently, a main contribution of the Ungspråk project is that it investigates the intersection of these three elements using an innovative mixed methods design.

3. Why the Norwegian context?

To some extent, Norway can be called a multilingual paradise (Røyneland 2009; Haukås fc). The official national languages are Norwegian and Sami, a group of indigenous languages spoken in northern Scandinavia. The use of local dialects and regional varieties are highly valued in Norway, and their use is promoted in all domains of society (Kulbrandstad 2018). At school, all children are taught the two written varieties of Norwegian, Nynorsk and Bokmål. They are usually taught one of the varieties in primary school, but from the first year of lower secondary school (Grade 8), all students learn to use both varieties in written communication. Receptive multilingualism is also quite common in Norway, as most Norwegians can understand standard Swedish and Danish. However, mutual understanding among young people seems to be declining, perhaps due to the increasing influence of English (Delsing & Åkeson 2005).

When children start school and begin learning Norwegian or Sami, they simultaneously start learning English, which is a compulsory subject during the 10 years of mandatory education. English is also mandatory in the first year of upper secondary school (Grade 11) and can also be studied in more depth if pupils decide to take English as a programme subject. Norwegians are well known for their excellent English-language skills, which are ranked among the best in Europe (Education First 2019), likely because of the omnipresence of English in the Scandinavian context. Recent research has suggested that many young Scandinavians' extensive use of the Internet (for gaming, social media, etc.) has positively impacted their English communicative skills (Sundqvist 2009; Sundqvist & Wikström 2015; Brevik 2016). Moreover, a growing number of pupils in Norwegian schools know and/or speak a host of other languages due to increased immigration in the last decades. According to Statistics Norway (2020), 18.2% of the total Norwegian population are immigrants or Norwegian-born children of immigrant parents. However, this number varies across demographic settings, as more immigrants and, consequently, more linguistic diversity can be found in urban centres.

When pupils start lower secondary school (Grade 8), they are offered the choice of learning an additional foreign language besides English. The most commonly taught languages are Spanish, German and French. Some schools also offer other languages such as Italian, Chinese and Norwegian sign language. In the 2018/2019 school year, around 77% of the pupils opted to take a second foreign language class, whereas the remaining group chose between extra classes in English, Norwegian, maths or the more vocationally oriented subject *arbeidslivsfag* (work experience), depending on the availability of the subject in each particular school (Foreign Language Centre 2018). In light of this linguistic diversity, Norwegian schools offer a rich groundwork for studying multilingualism and multilingual identity.

Lower secondary schools are a particularly interesting setting because starting in their eighth year, learners have the choice to expand their linguistic repertoires and begin learning a second foreign language in a formal educational context. This was the foundation for this longitudinal study investigating the development of pupils' beliefs and attitudes in relation to multilingualism and

language learning throughout lower secondary school.

Furthermore, investigating lower secondary school teachers' beliefs about multilingualism and related topics, as well as their preparedness for implementing a multilingual and intercultural pedagogical approach in their classrooms, provides a broader understanding of multilingualism in an educational context, as teachers play a key role in fostering pupils' multilingual awareness and identity (Haukås 2016; Fisher et al. 2018). In the following section, we present the Ungspråk project in more detail, focusing on the areas of interest, research questions and their relationship to the mixed methods design of the project.

4. Areas of interest and research questions

The Ungspråk project is comprised of three main areas of research interest. The first concerns students' multilingualism and multilingual identity in Norwegian lower secondary schools. Despite the recent focus on multilingualism in the field of language education, many researchers and practitioners tend to assume that multilingual speakers are primarily students originating from ethnic minorities or who have migration backgrounds (Haukås fc). The example of Norway, however, illustrates that this view has never been adequate in this society with its rich linguistic diversity.

Hence, in our research, we shift away from the academic and educational discourses that reproduce this bias. Instead of following certain criteria to identify students as mono/multilingual, we focus on students' own perceptions of multilingualism, their language habits and repertoires as well as whether or not they see themselves as multilingual. For this purpose, we address the concept of multilingual identity as central to our project, viewing identity as dynamic, contextual, hybrid, unstable and changing over time (Block 2009, 2010, 2013; Norton 2010; Fisher et al. 2018). Consequently, we also aim to investigate how students' views of their multilingualism change over time, and specifically what role language learning plays in these views.

The second area of interest relates to the intersection between multilingualism, multilingual identity and intercultural competence. Both internationally and locally, there is an increasing emphasis on the interconnection between multilingualism and intercultural competence, which is reflected in key official documents. For instance, the Common European Framework of Reference for Languages (Council of Europe 2001, 2018) considers individual multilingualism and intercultural competence as two facets of the same skill: plurilingual and pluricultural competence. In Norway, school subject curricula have recently been revised by the Norwegian Directorate of Education and Training (2017). Of particular interest to the Ungspråk project is the new emphasis on multilingualism, language awareness, intercultural competence and global citizenship in the core curricula as well as in the language subjects:

> The teaching and training shall ensure that the pupils are confident in their language proficiency, that they develop their language identity and that they are able to use language to think, create meaning, communicate and connect with others. Language gives us a sense of belonging and cultural awareness … knowledge about the linguistic diversity in society provides all pupils with valuable insights into different forms of expression, ideas and traditions. All pupils shall experience that being proficient in a number of languages is a resource, both in school and in society at large (Norwegian Directorate of Education and Training 2017: 7).

The emphasis on these issues is particularly strong in the foreign language curriculum (Norwegian Directorate of Education and Training 2019), which includes multilingualism and intercultural competence as two of its four core elements. This tendency towards connecting and emphasising the role of intercultural competence and multilingualism in education indicates a clear

need for empirical research that can shed light on the intersection between these phenomena. In order to gain a deeper understanding of the link between students' multilingualism, multilingual identity and intercultural competence, we also examined their relationship with other variables, such as gender, experience living or travelling abroad, migration background and number of languages learned in and out of school.

The third area of interest is grounded in an approach to research ethics that seeks to go beyond the general principles of procedural ethics (Christians 2005). Kubanyiova (2008) stated that the three core principles that serve as a standard for studies conducted with humans (respect for persons, justice and beneficence) should be followed in any research field, including language education and applied linguistics. However, the author argued that these principles are "by no means sufficient (and unambiguous) guides in making ethical choices in the actual practice of conducting research" (Kubanyiova 2008: 506). Therefore, there is a need for an interpersonal approach to ethics in research that sees ethical challenges as intrinsic and integral components of the whole research process (Guillemin & Gillam 2004; Haverkamp 2005).

In our view, such an approach to ethics entails expanding the scope from mainly doing research *on* to doing research *with/for* the participants. In our project, we seek to respond to the need for an increased interpersonal approach to ethics by sharing the research results with participants and establishing a dialogue with them. Through interactive sessions with students and teachers, we seek to investigate how research can be meaningfully presented to participants and in which ways a collaborative exploration of research can create new insights for all involved and for the research field in general.

With respect to these three areas of interest, the Ungspråk project raises the following main research questions:

> Area 1: What does it mean to be multilingual for pupils in Norwegian lower secondary schools? Do their views on what it means to be multilingual change throughout lower secondary school?
> Area 2: To what extent does multilingual identity correlate with intercultural competence and a number of other variables, such as students' multilingualism, language use habits, gender, experience abroad and migration background?
> Area 3: How can research on multilingualism and multilingual identity be designed to engage participants with the research processes and findings? How can participants' involvement in research contribute to a deepened understanding of multilingualism and multilingual identity?

5. Methodology: using a mixed methods design to research multilingualism

In order to integrate the three areas of interest, we opted for a mixed methods research design for our project. Figure 1 provides an overview of the Ungspråk project. It shows the timeline for data collection (2019-2021) in three different phases, the type of data to be collected in each year and the participants in each phase. Capitalisation of either QUAN or QUAL in the figure signals the predominance of either quantitative or qualitative methods, respectively, in the phases.

Figure 1: Overview of the Ungspråk project and its mixed methods design
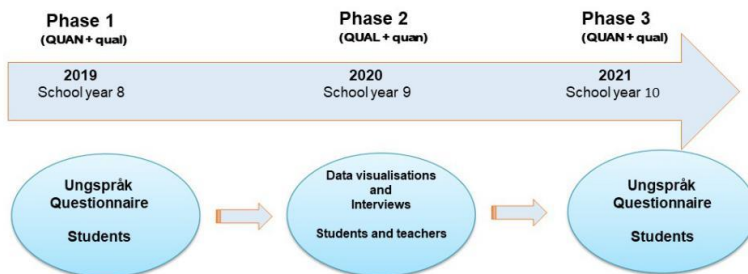
The Ungspråk project assigns equal status to both its quantitative and qualitative components. This is based on an epistemological stance that sees the persistent dichotomy between qualitative and quantitative paradigms as unproductive, and sometimes even detrimental, to the overall quality of research (Hammersley 1992: 159). In practical terms, this means that in the Ungspråk research project, the qualitative and the quantitative components "take control over the research process in alternation, are in constant interaction, and the outcomes they produce are integrated during and at the end of the research process" (Schoonenboom & Johnson 2017: 123).

The research questions address multilingualism and the development of multilingual identity from a processual, longitudinal perspective and call for a sequential design in which the later phases of the research project are dependent on and emerge from the insights and findings gathered in previous phases. In other words, the broader scope of the design allows for the triangulation of data collected at different phases and the use of results from previous research components to develop and inform the subsequent components of the project (Greene et al. 1989; Schoonenboom & Johnson 2017: 4). Since the Ungspråk project is currently ongoing, our discussions are focused mainly on the first and second phases of the project.

5.1 Phase 1 – the Ungspråk questionnaire: the first round of quantitative data collection

To tap into learners' multilingual identity and related variables and thus gather data to help answer the questions of the first two areas of research interest, we developed an online instrument, the Ungspråk questionnaire. The starting point for developing the questionnaire was a paper-based survey used in the Multilingualism: Empowering Individuals, Transforming Societies (MEITS) project at the University of Cambridge[1]. However, a number of changes were made to adapt the Ungspråk questionnaire to the Norwegian educational context and our research needs. For example, whereas the MEITS questionnaire takes a special interest in pupils' use of metaphors to describe language

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[1] The cross-disciplinary project MEITS (2016-2020) has six strands and aims at fostering awareness of multilingualism and multilingual identity in a variety of ways. Our collaborators at strand 4 (with strand leader Dr Linda Fisher, Faculty of Education) take a somewhat similar approach to multilingualism as in the Ungspråk project; they are researching learners' multilingual identity development in lower secondary schools in England.

learning, the Ungspråk questionnaire included statements on pupils' beliefs about multilingualism, their views as future multilingual speakers and their intercultural competence. Nevertheless, the two questionnaires are similar in several respects, which make them a solid foundation for comparing the results across countries.

In order to facilitate the data collection and analysis, we decided to develop an electronic questionnaire. The survey tool SurveyXact was used to design the layout and administer the questionnaire. It is available in two languages, Norwegian and English, and respondents were able to switch between languages during completion. English was chosen as an additional language for the questionnaire because all pupils in Norway study it from Grade 1 and usually have a good knowledge of the language. Besides, given the status of English as a lingua franca, we aimed to provide an opportunity for students who are not native speakers of Norwegian to use a language that can contribute to their better understanding of the questionnaire. We recognise that some of our respondents could benefit even more from the translation of the questionnaire into other (e.g., minority) languages. However, considering that the translation of a questionnaire into several languages is a time-consuming process and that the collection of the data in different languages would have complicated the analysis, especially in relation to open-ended questions, we decided to opt for these two languages.

When recruiting the schools, we aimed for a combination of different socioeconomic areas with varying linguistic diversity, including schools from rural areas where pupils have Nynorsk as their first priority language. In total, 593 pupils from seven schools responded to the questionnaire in the first phase of the project during spring and summer of 2019. Of all respondents, 86% listed Bokmål as their first choice form of Norwegian, while 14% indicated Nynorsk. These numbers correspond to the proportions of Bokmål and Nynorsk users in Norwegian schools at the national level (Norwegian Directorate of Education and Training n.d.). By adding this dimension of linguistic diversity (i.e., being a user of Nynorsk may be viewed as belonging to a minority), we sought to investigate to what extent students' different language constellations in and out of school (Aronin & Singleton 2012) influenced their language practices and multilingual identity.

The Ungspråk questionnaire includes a mix of multiple choice and open-ended questions as well as Likert scale questions to assess students' attitudes and beliefs (Dörnyei & Taguchi 2010: 5). The research instrument and the predominant type of data collected determined the primarily quantitative aspect of the first phase of the project. However, the textual responses generated by the open-ended questions added a secondary qualitative element.

The Ungspråk questionnaire is divided into four main sections. Section 1 was designed to examine pupils' language habits and contexts of language use. It contains six statements which provide an overview of what languages the participants study in school; what other languages they know; and how often, with whom and in which situations they use their various languages. In addition, four statements investigate learners' views related to each of the languages they know. In sum, Section 1 provides a general mapping of all the languages known and used by pupils in and out of school as well as an overview of the contexts in which these languages are used.

Section 2 is concerned with different aspects related to having a multilingual identity. In total, there are 25 statements in this section comprising three different constructs: beliefs about multilingualism, future multilingual self and open-mindedness. The answers to the statements use a five-point Likert scale ranging from strongly agree to strongly disagree.

Section 3 has one open-ended statement in which pupils are asked to define what it means to be multilingual. After that, they are asked if they identify themselves as multilingual (by choosing yes, no or not sure in response to the question "Er du flerspråklig?/Are you multilingual?") and to provide an explanation for their answer. The first open-ended statement "To be multilingual means…" was designed to investigate a practical problem that is only partially addressed in the research literature about multilingualism in Norway: in institutional discourses, the word *flerspråklig*

(multilingual) is frequently used to refer to students with immigrant backgrounds who struggle to learn Norwegian (Sickinghe 2016; Haukås fc), thus portraying multilingualism as problematic. By understanding what it means to be multilingual according to the students themselves, this statement calls for "the voices of individuals who have not been heard" (Clark & Baddie 2010: 10).

The following question ("Are you multilingual?") constitutes our main dependent variable to assess what factors influence self-identification as multilingual. After marking either yes, no or not sure, students are asked to provide a brief written explanation for their answer. It is important to highlight that, apart from these two cases, the word *flerspråklig* does not appear in any other statements in the questionnaire to avoid that participants' answers being influenced by what they read. However, by asking questions related to their language habits in the first section, we cannot entirely exclude that this has influenced their perceptions of what it means to be multilingual. Section 4 of the questionnaire asks for background information that can shed more light on students' experiences with certain languages (for example, their experiences living in a different country, travel habits, languages that their parents or carers know and self-reported grades in each of the languages studied in school).

The questionnaire was piloted twice in two lower secondary schools in the same area during spring 2019. The validation process suggests that the final version of Ungspråk is a reliable and valid instrument for examining pupils' multilingual practices, multilingual identity and related variables. An article discussing the validation processes adopted for the Ungspråk questionnaire is discussed in detail in an upcoming issue of *Language Learning Journal* (Haukås et al. fc).

5.2 Phase 2 – interactive sessions: qualitative data collection

Interactive sessions are actions through which researchers and participants in a study can engage with the data and each other in a dialogical manner. The interactive sessions correspond to the qualitative components of the mixed methods design of the study and are built on the findings from Phase 1 of the project. They will be implemented in two forms. First, we will conduct facilitated discussions with students based on data visualisations that present the research results from the Ungspråk questionnaire. Second, we will interview the teachers regarding their perceptions of multilingualism and the potential benefits and outcomes of the study for participating schools and teaching practice. Below we discuss the interactive sessions in detail, focusing on their ethical, epistemological and pedagogical implications for the project as a whole.

5.2.1   Interactive data visualisation sessions with students

In order to integrate the quantitative and qualitative components of the study and to promote participants' engagement with the research findings, the Ungspråk team developed data visualisations for use in the interactive sessions in the autumn of 2020. Figure 2 on the next page presents the development of the sessions and their timing (Guest 2013: 148).

Figure 2: Development and timing of the interactive sessions with students
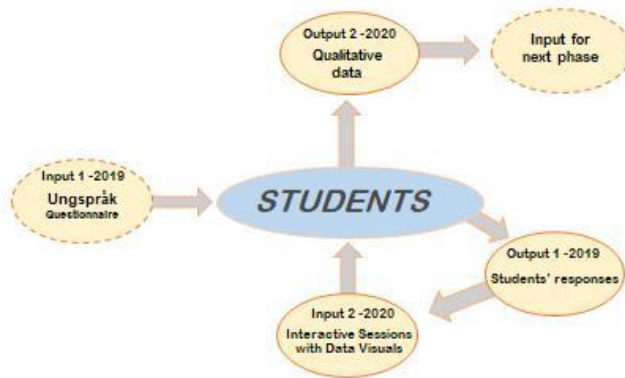
As shown in the image, some of the responses to the Ungspråk questionnaire (Output 1) were converted into data visualisations for future use in classroom discussions during the interactive sessions (Input 2) with the participating schools. The procedure will create a feedback effect whereby qualitative data (Output 2) will be obtained based on the participants' interactions with the quantitative data they helped generate via the Ungspråk questionnaire. The interactive sessions are designed to offer participants the opportunity to reflect on their reflections by giving them tasks that are open to their own explorations and interests. Thus, the sessions address ethical concerns that are usually overlooked in research in education: the fact that, more often than not, participants do not get much feedback from researchers once data is collected and are rarely invited to interact with and give feedback on the data themselves.

The purpose of the sessions follows the epistemological rationale of mixed methods research. The sessions are the result of a point of integration (Guest 2013: 146) that combines qualitative and quantitative approaches with the aim of achieving "heightened knowledge and validity" (Schoonenboom & Johnson 2017: 4). First, one dataset (quantitative answers to the Ungspråk questionnaire) will provide input for the design of subsequent research instruments, data collection and analysis procedures (Guest 2013: 148; Schoonenboom & Johnson 2017: 8). Second, the sessions will provide valuable complementary data to answer the research questions related to the first area of research interest, and the second dataset (qualitative data from the interactive sessions) will enhance the results from the first dataset.

The Ungspråk research team opted for data visualisations for two interrelated reasons. The first reason was determined by a practical challenge that can be summarised in the following question: How can we present and make students interact with quantitative data in a way that is both accessible and engaging to participants? The second reason introduces a current pedagogical concern related to the development of visual-numeric literacy among schoolchildren as a consequence of the widespread and increasing use of data visualisations in contemporary societies (Lankshear 2003; Shield 2004; Bhargava & D'Ignazio 2015; Tønnessen 2020).

The data visualisations designed for the Ungspråk project include three graphs (a pie chart, a bar graph and a multi-layered icon crowd) representing participants' responses to the question "Are you

multilingual?". Each graph explores different affordances of data visualisations (Kress & Van Leuwen 2002). A fourth visualisation groups the participants' responses to the open-ended comment "To be multilingual means…" into different categories. Participants will create visual data using a sorting task and later compare their categorisations to those of the researchers. In addition, each category contains a brief comment and a set of questions to be answered by the participants. Here, the pupils will be free to choose the categories that interest them the most, thus giving them more autonomy to explore their own questions and interests. Their written answers and visual data will be used as qualitative data for the analysis. Altogether, the interactive sessions have the overt aim of promoting further discussions on multilingualism among students and the covert aim of practicing visual-numeric literacy, thus partially addressing the pedagogical need outlined before.

5.2.2   Interviews with teachers

The second type of interactive sessions that will be implemented in the Ungspråk project are interviews with teachers. In order to provide consistency between the two phases of the project, the language teachers will be recruited from the same schools that participated in the first phase of the project. Interviews will be conducted with foreign language teachers (i.e., teachers of Spanish, German and French) in the autumn term of 2020. We chose to introduce this method into our research design primarily to expand our knowledge in relation to the second area of interest in our project, which concerns the intersection between students' multilingualism and intercultural competence. Foreign language teachers' views are of special interest given the particularly strong emphasis on multilingualism and intercultural competence in the new curriculum for foreign languages that will be implemented beginning in August 2020 (Norwegian Directorate of Education and Training 2019).

The choice to interview foreign language teachers was selected as one of the main research methods for the second phase of the project for several reasons. First, we aim to enrich the research findings by introducing the perspective of teachers, who are central actors in the implementation of the new foreign language curriculum. We want to investigate how teachers conceptualise multilingualism, multilingual identity and intercultural competence and determine if they see an interconnection between these phenomena in their students' development. By gaining a better understanding of teachers' perspectives, we hope to contribute to the implementation of the new curriculum.

In addition, the interviews with teachers will also address the third area of interest, which concerns the meaningful presentation of research results to participants and stakeholders. As a research method, interviews engage participants in a meaningful discussion with researchers and can serve as a platform for collaborative exploration of research findings.

In order to provide a meaningful discussion on the research results, the teachers will have the opportunity to explore and discuss the same visualisations on multilingualism and multilingual identity that were presented to the students. In addition, they will explore the questionnaire data obtained on the construct of open-mindedness, which is used in the study as the main indicator of students' intercultural competence development, and its interrelation with multilingualism and multilingual identity. By inviting teachers' perspectives and views on the intersection between students' multilingualism, multilingual identity and intercultural competence, we aim to provide a diversity of views (Bryman 2006; Schoonenboom & Johnson 2017) that will contribute to a deeper understanding of the research results. Moreover, discussing and exploring the findings with language teachers will help us to assess the usefulness and potential benefits of the study outcomes for teachers and language education in general.

5.3 Phase 3 – the Ungspråk questionnaire: the second round of quantitative data collection

The main purpose of the third and last phase of the Ungspråk project is to provide data for a longitudinal assessment of pupils' opinions and beliefs about multilingualism and their multilingual

identity. In order to do so, the research instrument envisaged for this phase is similar to the one used in Phase 1 (the Ungspråk questionnaire). However, the design of the Ungspråk project leaves room for the final questionnaire to be adapted to explore unexpected outcomes that emerge from and are dependent on previous phases of data collection and analysis. Therefore, at the current stage of the project, the final design of this research instrument is yet to be determined.

6. Conclusion

The main objectives of this article were to discuss the theoretical background and rationale for developing the Ungspråk research project, to present the research questions and to explain how they will be answered using a mixed methods design. Prior to designing the study, several gaps in the existing research on multilingualism and multilingual identity were identified, resulting in three areas of interest. First, research on learners' own definitions of multilingualism, their multilingual habits and self-identification as multilingual in a lower secondary school context is limited both in Norway and internationally. Findings from this part of the project will contribute to scholarly discussions in several ways. Understanding how multilingualism is perceived and practised by young people may add new ideas on how multilingualism can be conceptualised and used as a resource in the classroom. Moreover, the longitudinal design of the project will provide new insights into young learners' multilingual identities as dynamic and emergent phenomena. These contributions may impact how languages are taught and how learners' multilingualism is explored in education.

Second, research on the correlation of young learners' multilingual identity with other variables is limited. Among these variables, exploring learners' open-mindedness has received particular attention given the increased emphasis on intercultural competence in the school curricula and the need for educating flexible, empathic, global citizens in a rapidly changing world. With insight into the correlation between learners' multilingual identity and open-mindedness, the study aims to contribute to research on the intersection between multilingualism and intercultural competence in the field of education.

Third, although ethical principles of research recommend that findings are shared with participants and should ideally be of benefit to them, the number of studies in applied linguistics that have reported doing so is minimal. In particular, studies that share the results from quantitative research with young participants are largely missing. In response to this gap, the Ungspråk project aims to examine how the research results can be shared with pupils and collaboratively explored. In addition, the project will pay attention to the key role of teachers in deciding how languages are taught and how topics related to multilingualism, multilingual identity and intercultural competence are approached in the classroom. For this reason, the sharing and exploration of research results will also include interviews with lower secondary school language teachers. An increased understanding of their beliefs and practices, as well as a collaborative exploration of data, may lead to new and innovative research-based teaching approaches. Moreover, our goal to meet fundamental ethical principles by presenting and exploring our research with the participants will create new questions regarding how research can be meaningfully shared.

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Article II - Developing and validating a questionnaire on young learners' multilingualism and multilingual identity

Developing and validating a questionnaire on young learners' multilingualism and multilingual identity

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Developing and validating a questionnaire on young learners' multilingualism and multilingual identity

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ABSTRACT

Validation of data collection instruments is a necessary step in all research and should be regarded as an integral component in every stage of the research process; however, the validation process is often not accounted for in detail in published studies. The purpose of this paper is to describe the development and validation of the Ungspråk electronic questionnaire, which was designed to explore teenagers' multilingualism and multilingual identity in the Norwegian school context. It aims to examine whether having a multilingual identity correlates with several variables such as language practices, languages

studied in school, open-mindedness, and beliefs about multilingualism. To our knowledge, the Ungspråk questionnaire is one of the first validated tools for quantitatively investigating learners' multilingual identity in school settings. Different qualitative and quantitative procedures were adopted for validating Ungspråk, including piloting sessions with students from two lower secondary schools. The results of the validation processes suggest that the Ungspråk questionnaire is a robust instrument for investigating young learners' multilingual identity.

It is easy to use, acceptable to learners, and fulfils stringent criteria of reliability and validity.

Introduction

Validity is at the same time one of the most important and contentious concepts in academic research, a fact supported by the multitude of theoretical and methodological approaches dedicated to it. The Merriam-Webster Dictionary (2020) defines the word valid as denoting something that is 'well-grounded or justifiable […] at once relevant and meaningful', 'logically correct' and 'appropriate to the end in view'. The aptness of these attributes to define high-quality academic research attest to why validity is something to be strived for. What seems open to dispute are the means used to validate a research study or, in other words, how one justifies the appropriateness of the research methods and instruments and how they lead to meaningful and well-grounded results.

The authors of this article consider validity as an integral component of all stages of a research process. Therefore, it should be accounted for in the purposes of a study, in the design of the research instruments and methods for collecting data and answering research questions, and in the ethical principles guiding the relationship between researchers, participants, collaborators and the research community.

In this article, we provide an account of the quantitative and qualitative procedures adopted in the validation of the questionnaire Ungspråk.[1] The questionnaire is the main quantitative component of the Ungspråk project (2018–2022), a longitudinal mixed methods study that uses a combination of instruments for data collection and methodologies of analysis to investigate multilingualism and multilingual identity in Norwegian secondary schools (Haukås et al. 2021). Due to the prevalence of socio-constructivist views in language and identity research (Block 2013), qualitative methodologies have become more common in research on multilingualism and multilingual identity (see, e.g. Duff [2015] for an overview of relevant studies). However, we see it beneficial to collect and analyse both qualitative and quantitative data on the phenomena under focus. Combining results from quantitative and qualitative research on multilingual identity may provide valuable and complementary insights to the research field (Monrad 2013; Kroger 2007).

By offering a narrative of the development of a questionnaire aimed at investigating young learners' multilingualism and multilingual identity, we aspire to show how validity can be best understood as an iterative and cumulative process in which specific methodological procedures (such as face, content and construct validity) are not just isolated, one-time measures but relate and contribute to the overall quality of the study. From this perspective, even the writing of an academic paper is seen as part of the validation process, since it is not a neutral account of events but a 'literary technology designed to persuade readers of the merits of a study' (Sandelowski and Barroso 2002). Furthermore, research papers are usually the only means audiences have to 'understand the ground on which a study was undertaken, the means and methods adopted to realize the findings' (Lincoln 2001: 25) and, therefore, to assess its validity and relevance for future research.

To our knowledge, the Ungspråk questionnaire is one of the first validated quantitative research instruments designed specifically for studying multilingual identity in an educational context. The paper starts with an introduction to multilingualism and multilingual identity in the Norwegian educational context, followed by an overview of the theoretical framework that supports our research. After presenting our international partners in the project, the text focuses on the development of the electronic version of our research instrument and the challenges involved in designing a questionnaire to young learners. Particular attention is paid to specific procedures aimed at strengthening the overall validity of the questionnaire, such as expert reviews, translation and piloting. Next, we provide a detailed description of each section of the questionnaire, placing particular emphasis on how relevant theoretical concepts were operationalised.

Setting up the context and the theoretical framework for the development of the Ungspråk questionnaire

The increasingly diverse makeup of contemporary societies, and consequently of classroom environments, have promoted a dramatic shift in language learning and teaching. More and more, the knowledge of foreign languages, coupled with the ability to understand different cultures, are seen as crucial resources in preparing citizens for the global challenges of the twenty-first century. These demands are reflected, for instance, in institutional discourses and documents (Council of Europe 2001, 2018; Norwegian Directorate for Education and Training [NDET] 2017) and in the need for pedagogies that harness the potentials of linguistic and cultural diversity in the language classroom (Cenoz 2017; Hu 2018).

These societal shifts have engendered an impressive amount of research focusing on multilingualism in education. One aspect that remains under-researched, however, is the relationship between having a multilingual identity and its implications for language learning and teaching. The Ungspråk project seeks to address this gap by investigating multilingualism and multilingual identity in Norwegian secondary schools (see Haukås et al. [2021] for a detailed discussion of the whole research project). In the next sections, we provide an overview of multilingualism in the Norwegian educational context and explain the importance of the concept of multilingual identity to our research.

Multilingualism in Norway

Norway can be considered a multilingual country for several reasons. It has two official languages, Norwegian and Sami. Sami is a group of indigenous languages spoken and taught in northern Scandinavia. The two written variants of Norwegian, Nynorsk and Bokmål, are both taught as compulsory school subjects. Bokmål is currently the most frequently preferred language, with 85% of first graders learning it (NDET 2018). Nynorsk is mainly chosen by school children living primarily in western rural areas (Vangsnes 2018). However, all pupils learn both variants starting in school year 8. Furthermore, dialects are highly valued, and schoolchildren are encouraged to speak their local dialects in and out of class (Kulbrandstad 2018). Norwegians are also able to understand their neighbouring languages, Danish and Swedish, a common phenomenon in Scandinavia known as receptive multilingualism (Cenoz 2013; Zeevaert 2007).

English as a foreign language is taught from year 1 of regular schooling and when students start lower-secondary school (school year 8), about 75–80% opt for taking another foreign language; predominantly Spanish, German or French (Norwegian National Centre for Foreign Languages in Edu-cation 2020). In the past decades, this unique linguistic scenario has been enriched even further by a host of immigrant languages such as Polish, Lithuanian, Somali and Arabic (Statistics Norway 2020). The value of Norway's rich linguistic diversity for its citizens is emphasised in several white papers, such as in the Core curriculum – values and principles for primary and secondary education and training (NDET 2017):

> Knowledge about the linguistic diversity in society provides all pupils with valuable insight into different forms of expression, ideas and traditions. All pupils shall experience that being proficient in a number of languages is a resource, both in school and society at large.

Researching multilingualism in Norwegian lower secondary schools is particularly relevant for two interconnected reasons. The first one is specific to the age group in our study, since it is in the first year of lower secondary school when learners have the opportunity to choose to learn a third language in a formal context and, therefore, expand their linguistic repertoires. Of particular interest in our research project is the role played by learning a third language at school in the pupils' self-identification as multilingual individuals.

The second reason is more general and relates to the ambivalent meaning of the term 'multilingual' (flerspråklig) in Norwegian educational contexts. Haukås (Forthcoming) suggests that the word flerspråklig is often exclusively employed to refer to children and adults with immigrant backgrounds who struggle to learn Norwegian, therefore having a negative connotation. However, Sickinghe (2016) found that teenagers in upper-secondary school in Norway have a much more nuanced and flexible understanding of the concept. This finding is of particular relevance to our study in lower secondary school, an age range which has so far been neglected in this kind of research.

The concept of multilingual identity as a defining element of the Ungspråk project

Even though all schoolchildren in Norway can be considered multilingual (Haukås Forthcoming), this does not necessarily mean that their language knowledge, practices and beliefs correspond to their self-perceptions as multilinguals. Following Fisher et al. (2018), we distinguish between linguistic identity and multilingual identity in the context of this study. According to Fisher et al. (2018), the former refers to 'the way one identifies (or is identified by others) in each of the languages in one's linguistic repertoire' (1). So, for instance, the fact that an individual deliberately stresses (or hides) distinctive phonological features of her local variant or dialect in an interaction might be revealing of that person's negotiation of her linguistic identity. In this sense, linguistic identity is interpreted in poststructuralist terms as situated, contextual, fluid and

dynamic.

Multilingual identity, on the other hand, refers to one's explicit self-identification as multilingual 'precisely because of an awareness of the linguistic repertoire one has' (Fisher et al. 2018: 2). In addition to poststructuralist attributes of linguistic identity, this notion reflects a psychological theoretical perspective on identity and relates to a core identity, that is, a 'temporary fixed' sense of what one is (Block 2013: 18). As emphasised by Fisher et al. (2018: 3), this core identity develops over time and connects one's past, present and future (possible) images of oneself, thus providing guidance for actions and interpretations of experience. This understanding of multilingual identity as a temporary fixed phenomenon that can be connected with other factors has a direct bearing on the longitudinal, mixed methods design of the Ungspråk project and particularly on the construction of the Ungspråk questionnaire.

Several researchers (Fisher et al. 2018; Henry 2017; Henry and Thorsen 2018; Ushioda 2017) point out that the awareness and self-identification as a multilingual individual can be a potentially significant factor in the maintenance and development of the languages an individual already knows and in the effort and investment placed in learning new languages. In addition, some scholars consider multilingual identity as a holistic phenomenon, which can be related to and have an influence on other dimensions of identity, such as beliefs, attitudes, and personal life scenarios (Aronin 2016; Busse 2017). Fisher et al. (2018) and Pavlenko (2006) also suggest that a positive self-identification as multilingual can be empowering.

Multilingual identity and its connection to other factors

The researchers in the Ungspråk team adopt a holistic approach to multilingualism and are interested both in the language-learning implications of having a multilingual identity and in its relationship to other 'cognitive, societal and personal aspects' (Aronin 2019b: 9). Consequently, the Ungspråk questionnaire explores several aspects that can contribute to a better understanding of pupils' multilingualism and multilingual identity. In what follows, we present some of these aspects and discuss the theoretical orientations that support them.

1. Language use habits. As mentioned earlier, the language habits of a multilingual individual do not necessarily correspond to her self-identification as multilingual. In order to enquire into the relationship between multilingual identity and language learning, it is crucial to have a mapping of the languages known and used by participants, both at school and beyond. Knowing the purposes and contexts in which a language is used and the speaker's attitudes towards that particular language provide researchers with valuable information not just about that individual language per se. More importantly, they offer a broad picture of the interplay among the language resources an individual has and the communicative, cognitive and identity purposes they serve (Aronin 2019b). In the section that presents the final version of the questionnaire, we describe in detail how a mapping of participants' language habits was obtained.

2. Student's beliefs about multilingualism. Our interest in looking into possible correlations between having a multilingual identity and students' beliefs about multilingualism is due to the general scarcity of research that takes into account the participants' beliefs on the latter topic. Scholars have repeatedly pointed to several advantages of multilingualism, for example, higher cognitive flexibility, creativity, and better episodic and semantic memory compared with monolinguals (for an overview of general cognitive advantages see Antoniou 2019; Bialystok 2011; Leivada et al. 2020). Positive effects of multilingualism on additional language learning have also been documented in several studies. Above all, multilinguals seem to have an increased metalinguistic awareness, and they show better developed metacognitive skills related to using language learning strategies (Jessner 2008; Kemp 2007). In addition to

cognitive effects, scholars emphasise positive economic effects of multilingualism and increased empathy/intercultural competence (Bel Habib 2011; Dewaele and Wei 2012). It should be noted, however, that scholars have also failed to demonstrate cognitive advantages in multilinguals in several studies and the debate is still ongoing (Antoniou 2019; Bialystok 2011; Leivada et al. 2020).Yet, the abundance of research on the benefits of multilingualism stands in contrast with the rare studies on pupils' beliefs about multilingualism, especially considering the direct implications they may have for language learning outcomes. For example, whereas positive beliefs about multilingualism may spark interest in investing time and effort in the learning process, negative beliefs may hinder students seeing the relevance of being multilingual, resulting in decreased motivation.

3. Future multilingual self. The third focus derives from recent research in the field of language learning motivation (Busse 2017; Henry 2017; Henry and Thorsen 2018; Ushioda 2017). Research in this field uses the concept of the future/ideal multilingual self to refer to a particular aspect of multilingual identity, i.e. learners' future-oriented self-conception as speakers or users of multiple languages, and investigates the effects this image can have on students' motivation in language learning. Scholars argue that in the contemporary world where English language has a dominant status as a global language and significantly shapes learners' language choices, the ideal multilingual self may have a powerful effect on students' motivation in learning languages other than English. However, even though researchers believe that a future oriented image of oneself as a multilingual speaker can have a significant potential for research, empirical studies that explore this aspect of identity are still rare.

4. Open-mindedness. Our interest in the correlation between a multilingual identity and open-mindedness is sparked by the growing emphasis on the role of intercultural competence in foreign language education. This trend is reflected, for example, in the new Norwegian curriculum for foreign languages which highlights fostering intercultural competence as one of the most important aims of the subject (NDET 2019). In research and assessment instruments, intercultural competence is often associated with learners' open, unprejudiced and positive attitudes towards diversity, which can be unified under the term open-mindedness. A number of studies indicate that open-mindedness can be positively connected to one's multilingualism (Dewaele and Van Oudenhoven 2009; Dewaele and Wei 2012). Other scholars (e.g. Mellizo 2017; Ruokonen and Kairavuori 2012) also show that pupils' positive attitudes and emotions towards cultural differences, among other factors, can be correlated to their language repertoires and language learning. Stemming from the above research, the Ungspråk questionnaire investigates whether and to what extent a multilingual identity is connected to learners' open-mindedness as a significant indicator of intercultural competence development.

5. Other significant variables. In order to broaden the scope of analysis and strengthen our findings, the Ungspråk questionnaire collects data on a number of other variables that might be associated with self-identification as multilingual, such as attitudes towards the languages pupils know, gender, immigration background, school grades, travel experience, experience of living abroad, friends' language repertoires, and parents/carers' education. In addition, we are interested in investigating if being a user of the written variety of Norwegian used by most Norwegians (Bokmål) or a user of Nynorsk, which is only chosen by a minority (12%) (Vangsnes 2018) correlates differently with pupils' multilingual identity.

Figure 1 provides a visual representation of the centrality of the concept of multilingual identity in the Ungspråk questionnaire and how it is investigated in relation to other variables. It also shows how other variables might be interrelated.

Developing and validating the Ungspråk questionnaire: describing the process

Our starting point

The Ungspråk research project is made up of a team of multilingual researchers with a broad range of language learning and teaching experiences in different contexts across the world. For successful innovation as a team, it was deemed vital that enough time was spent for all members to develop a strong sense of ownership of the research project. To achieve this and to transform heterogeneity into common understanding and innovation, we adopted frequent meetings with open,
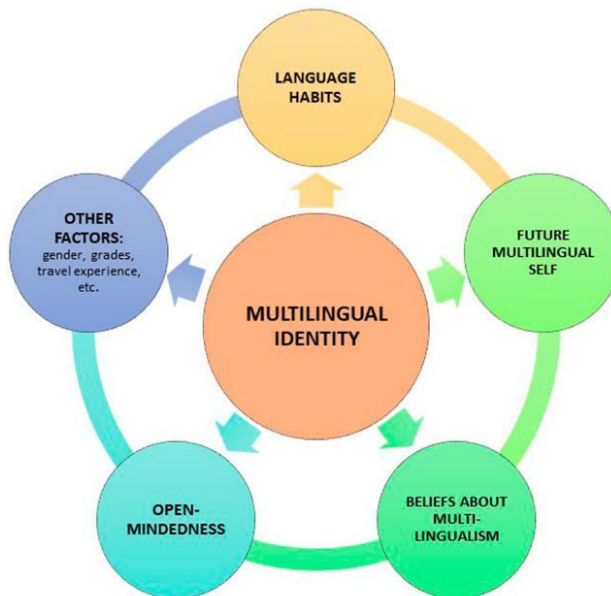

Figure 1. Multilingual identity in the Ungspråk questionnaire and its relationship to other variables.

inclusive and reflective discussions (Drach-Zahavy and Somech 2001; El Ayoubi 2001). Consequently, the Ungspråk questionnaire had a long maturational period and was developed over a period of eight months (August 2018 – April 2019).

Our international partners in the project belong to the MEITS group at the University of Cambridge. MEITS (Empowering Individuals, Transforming Societies) is an interdisciplinary research project funded under the AHRC Open World Research Initiative. Strand 4 of the project, which sought to answer the question 'What is the relationship between multilingual identity and language learning?', developed a questionnaire to be used for collecting data among lower secondary school pupils in England about their multilingual identity and several other variables such as language habits, motivation, and achievement. In order to compare pupils' multilingual identity and related variables across contexts (England and Norway), the MEITS paper-and-pencil survey was used as a starting point for developing the Ungspråk questionnaire (see also Forbes et al. 2021).

However, for theoretical and practical reasons, it soon became clear that the Ungspråk

questionnaire needed to depart from the MEITS questionnaire in multiple ways. The most obvious practical reason had to do with the adaptation of the general content to the context of Norwegian lower secondary schools. The main theoretical reasons involved developing a questionnaire that suited our specific research interests and was appropriate to provide answers to our research questions. For example, whereas MEITS takes a special interest in pupils' use of metaphors when describing their language learning, the Ungspråk questionnaire places a stronger emphasis on pupils' beliefs about multilingualism, their future multilingual selves and open-mindedness. Nevertheless, several similarities remain, providing valuable possibilities for comparisons across contexts.

As mentioned earlier, creating a valid questionnaire is a cumulative process that requires various developmental steps and considerations. In our case, several theoretical discussions over an extended period resulted in an agreement on the main research objectives for the project and which theories to draw on, as presented in the first section of the paper. Based on our theoretical framework, we thereafter created a full draft of the questionnaire. Subsequently, we invited a number of experts from the field (MEITS collaborators, local experts in multilingualism and research design, and language teachers) to critically examine the appropriateness of the questionnaire for examining pupils' multilingual identity and related variables. More specifically, the experts were asked to consider its conciseness, clarity and adequacy. The feedback from the experts cannot be underrated, as it in multiple ways challenged the research team to clarify their objectives and to improve the contents of the questionnaire. Visits from researchers of the MEITS team (August and November 2018) were especially relevant, as they could share their experiences and provide our team with useful insights and comments. Summing up, the final version of the questionnaire is the result of several rounds of theory-driven discussions both in the Ungspråk team as well as with experts from various fields and professions. In what follows, we discuss some of our considerations during the process. These are related to developing questionnaires for young people and to the design and use of an electronic version.

Considerations when designing a questionnaire for young people

When designing a questionnaire, one should never lose sight of the audience it is intended for and strive not only 'for a psychometrically reliable and valid instrument but also for an intrinsically involving one' (Dörnyei and Taguchi 2010, 77). Consequently, creating a questionnaire that looks relevant and is engaging to the participants is a crucial step in validation, since 'questionnaires tend to fail because participants don't understand them, can't complete them, get bored or offended by them, or dislike how they look' (Boynton 2004: 1372).

Several steps were taken to ensure that the Ungspråk questionnaire was engaging, clear and meaningful to the participants. First, once the first draft of the questionnaire was ready, four language teachers with many years of experience working with our target age group were asked to review its contents. They carefully read through the questionnaire, keeping the clarity of the instructions in mind and considering if all formulations were understandable and would feel relevant for lower secondary school pupils. Overall, the language teachers approved of the questionnaire's structure and content for the target group.

In addition, one lower secondary school pupil was recruited to complete the questionnaire while being recorded. The think-aloud protocol took place in November 2018 and the volunteer was asked to explain how he understood the instructions and statements and to provide reasons for his responses when answering the questionnaire. The analysis of the think-aloud protocol proved helpful in spotting ambiguous formulations resulting in the rewording of one instruction, two questions and one statement.

Since the Ungspråk questionnaire is available in two languages (Norwegian and English[2]), translation, an often-neglected aspect of questionnaire development (Dörnyei and Taguchi

2010: 48), was a crucial component in the questionnaire. English was the language used in the research group meetings and in the subsequent development of the questionnaire. After the review of the first final draft of the questionnaire in English, four collaborators were recruited to work individually on the translation of the Ungspråk questionnaire into Norwegian. All of them had previous teaching experience, two were currently doing a Ph.D. in a similar field at the time and one had expertise in developing questionnaires. Three of them were speakers of Norwegian as a first language and highly proficient in English. One was a native speaker of English and highly proficient in Norwegian. The four versions were compared with the translation by the research team and, in each case, the most frequently suggested version was chosen. The team of experts were also asked to look for ambiguities and to estimate if learners would understand and answer the questions appropriately.

One final comment should be made about the perceived appropriateness of the questionnaire to participants. Taking into consideration the context of administration (i.e. classrooms) and the usual association questionnaires have with testing in educational environments, it was essential that we made it clear to the students that the Ungspråk questionnaire was not a test. This was mentioned explicitly in the information letter read to the participants in class and implicitly in the opening instructions to the questionnaire. Thus, one of the threats to validity, evaluation apprehension, was minimized (Rosenberg et al. 1969).

The rationale for using an e-questionnaire

Besides favouring participants' engagement with the questionnaire, given the appeal digital technologies usually have among teenagers, the decision to use a digital format also had several additional advantages. First, all pupils in Norway have laptops for use in the classroom, thus making the data collection process faster, although technical problems are always a potential risk. The digital format also facilitated the logistics of administration, since data were collected in the classrooms via group administration, which allows for large amounts of data to be collected in a single session with a guaranteed high-response rate (Dörnyei and Taguchi 2010: 68).

The Ungspråk questionnaire was developed on SurveyXact, the leading survey tool in Scandinavia. Technical support and occasional meetings with SurveyXact staff were important to improve the questionnaire in terms of clarity of instructions, readability, consistency of style and formatting.

Some features of the online version of the questionnaire include an image related to teenage life and a completion bar at the top of the pages, to make the visual layout more appealing and to encourage participants to continue to answer (Figure 2).

Thank you for participating in the Ungspråk Project from the University of Bergen!

This questionnaire is about your language practices, your language learning and your views and ideas about languages in general. By sharing what you think, you can help us develop methods for teaching languages in new ways in the future.

Please read the instructions carefully at the beginning of each section of the questionnaire before you start answering. If you have any doubts about how to complete any question, you can ask for assistance. **Remember that there are no right or wrong answers**. We just want to know **your** opinions. Only the researchers will have access to your answers.

Have fun!

> Next

Norsk English

Figure 2. Initial page of the Ungspråk online questionnaire (English version).

Piloting and data collection: practical procedures

In November 2018 the research project, including the questionnaire and information letters in Norwegian and English, was submitted for ethical assessment to the Norwegian Center for Research Data (NSD). In early February 2019, the research team started contacting prospective schools for carrying out the piloting of the questionnaire. If the school accepted the invitation, a copy of the information letter with details about the project was forwarded to parents. Two schools of the same size and from similar socio-economic areas agreed to take part in the first and the second piloting of the questionnaire. School 1 had 118 participants and school 2 had 116 participants.

Data collection for all sessions, including piloting, took place at the participant schools during class hours. In every session, at least one researcher was present to guide and aid participants in the completion of the questionnaire. Researchers also took notes in loco and immediately after the sessions, to register factual information and practical problems arising during data collection and to have a systematic record of observations to triangulate with the data from the questionnaire.

In class, each student was handed a copy of the letter (in English or Norwegian, according to their language choice) and the class teacher was asked to read the version in Norwegian to the whole class. Even though parents had been sent the invitation letter well in advance, we wanted to make sure that all students were duly informed about the project. Particular emphasis was placed on voluntary participation in the research and if a student opted for not answering the questionnaire, they were assigned another activity by the class teacher. Refusal rate remained at 1.7%.

To ensure anonymity and to increase participants' willingness to answer potentially sensitive questions (Schnell et al. 2010), we asked the pupils to generate their own identification code based on the first two letters of the month in which they were born and the four last digits of their mobile phone numbers, assuming that all lower secondary school students own a mobile phone. In this way, the code was known to the pupils and could be used in a second round of data collection in school year ten.

Experts generally agree that the time of completion for a questionnaire should not exceed thirty minutes (Dörnyei and Taguchi 2010: 12). Taking into consideration our respondents' age group (13– 14 years) and the length of one teaching unit (60 min), the questionnaire was designed to have an estimated response time of 20 min. However, depending on the number of languages listed by the participants and the length of their responses to some open-ended statements, the response time varied between 15 and 35 min.

The final version of the questionnaire

In the following discussion, our focus is on how the theoretical constructs related to multilingualism and multilingual identity were operationalised in the questionnaire. Where appropriate, the results of statistical tests, such as exploratory and confirmatory factor analysis (EFA and CFA), are provided. These statistical procedures were run to test how well the measured variables represent the suggested theoretical constructs, or in other words, 'the extent to which an instrument measures what it is intended to measure' (Tavakol and Dennick 2011: 53).

The final version of the questionnaire consists of four main sections. Having pupils' self-identification as multilingual at the centre of inquiry in section 3, the other sections provide important insights into which variables correlate with pupils' multilingual identity. It is important to emphasise that the words 'multilingual' and 'multilingualism' (respectively, 'flerspråklig' and 'flerspråklighet' in Norwegian) are not mentioned in any part of the questionnaire until respondents get to section 3, where they are asked to complete the prompt 'to be multilingual

means … '. The reason for this is that previous references to the terms might have influenced the pupils' own definitions and their following explanations to why they consider themselves multilingual or not. However, this consideration does not guarantee that the students' awareness of their multilingual identity may not have been influenced by the first sections of the questionnaire. In what follows, we present the contents of each section and discuss how they connect to and are informed by relevant theory.

Section 1: multilingual habits

As Norwegian classrooms become increasingly linguistically and culturally diverse, there is a growing need to find out more about the linguistic repertoires, the contexts and the purposes of language use and the roles played by languages in pupils' lives. Drawing on theories of learners' dominant language constellations (Aronin 2019a), the first section of the questionnaire consists of statements related to pupils' language use habits. Participants are first asked to tick the languages they have as school subjects. For each of these languages the digital questionnaire generates a total of eleven statements. The first statement asks participants how many years they have known the language in question. The remaining statements are answered by ticking 'yes' or 'no.

The second statement in the series is 'this is my first/native language'. Besides providing indirect information about the students' family background, the statement allowed students to say which and how many language(s) they regard as their first ones. The next five statements refer to the contexts the language is used and include sentences like 'I use this language to speak to (some of) my friends' and 'I (sometimes) use this language when I go on holiday'. The last four are attitudinal statements for each reported language: 'I am proud that I know this language', 'I avoid using this language', 'I think I know this language well', and 'It is important for me to know this language' (see Supplemental data). In this way, we not only map the patterns of use, but also examine how learners' language practices relate to emotions, self-efficacy, and perceived importance.

Taking pupils' own perceptions of what it means to know a language as a starting point, they are nex encouraged to include all other languages they feel they know. Each of these self-reported languages generates the same eleven statements described in the previous paragraph. As pupils' multilingual identity may be correlated with parents/caretakers' and friends' multilingualism, the last part of section 1 asks the participants to list languages their parents/caretakers and friends know. The mapping of pupils', parents' and friends' languages also allows the research team to study whether knowing certain languages (i.e. European or Norway's most common immigrant languages) is more closely correlated with a multilingual identity than others.

Section 2: beliefs about multilingualism, future multilingual self and open-mindedness

The second section of the Ungspråk questionnaire aims to examine to what extent students' self-identification as multilingual correlates with their beliefs about multilingualism, future multilingual self and open-mindedness. It consists of 25 attitudinal statements that were designed and adapted based on the theoretical approaches and empirical studies presented in the first part of this article. After the two piloting sessions, statistical analysis, performed with EFA and CFA as interconnected procedures (Gerbing and Hamilton 1996), helped us group the statements into the three main constructs discussed below (see Supplemental data) and to verify a goodness of fit of the suggested model.

Each statement is followed by a five-point Likert scale ranging from 'strongly agree' to 'strongly disagree'. We decided to use 'not sure' as the middle option rather than 'neither agree

nor disagree' to avoid the common problem of how to interpret the midpoint (Nadler et al. 2015). Although analysing the midpoint is often challenging, we decided against a four-point, forced choice Likert scale since pupils may never have reflected on some of the statements before and, consequently, may genuinely be unsure of what to answer.

The construct Beliefs About Multilingualism (BAM) has eight statements. Three statements are related to cognitive advantages associated with multilingualism found in previous research, such as higher intelligence (statement 2), creativity (statement 3) and flexibility (statement 8) (Antoniou 2019; Bialystok 2011). Two of the statements are related to increased language awareness, stating that being multilingual facilitates further language learning (statement 1), and increases one's cross-linguistic awareness (statement 5) (Jessner 2008; Kemp 2007). Two statements are concerned with economic (statement 4) and general academic (statement 6) benefits, whereas statement 7 derives from research suggesting multilinguals show signs of being more empathetic than others (Bel Habib 2011; Dewaele and Wei 2012).

The construct Future Multilingual Self (FMS) is composed of seven statements. Four of them were designed based on Henry & Thorsen's questionnaire (2018) and reflect one's self-image as a multilingual person in the future (statements 9–13). The other two statements (14 and 15) are related to one's attitudes towards the knowledge of multiple languages. It is worth mentioning that the statements allow differentiating students' future self-images as users of multiple languages versus users of only Norwegian and English. We consider this distinction important due to the specifics of the Norwegian context, where Norwegian and English are compulsory school subjects, whereas learning additional languages is not.

The third construct, Open-mindedness (OPM), consists of ten statements, which were developed based on an overview of several questionnaires, including the Multicultural Personality Questionnaire (Van der Zee et al. 2013) and the Intercultural Development Inventory (Hammer et al. 2003). The statements are designed to measure how open and unprejudiced respondents are when encountering people who may have different worldviews, opinions and lifestyles.

After the first pilot an exploratory factor analysis (EFA) based on the varimax rotation method was applied to clarify whether the statements represent the corresponding constructs. EFA was performed in SPSS version 25. The rotated factor matrix showed that the statements comprise three main factors, which correspond to the initial constructs FMS, BAM, and OPM. Cronbach's alpha correlation coefficient was used to measure the internal consistency, i.e. the reliability, of each construct (Drost 2011). Cronbach's Alpha of the constructs was 0.65 for FMS, 0.73 for BAM, and 0.65 for OPM.

Before a second piloting of the questionnaire items that showed a poor correlation and, thus, did not load well on these three constructs, were reformulated or replaced. This was the case for 13 statements from the first pilot. The CFA performed with the data from the second pilot confirmed that the items now had stronger factor loadings compared with the first version of the questionnaire. Cronbach's Alpha for the components after the second pilot was 0.75 for FMS, 0.72 for BAM and 0.75 for OPM. These values suggest that the three constructs are reliable measures of pupils' beliefs about multilingualism, future multilingual self and open-mindedness. However, the Cronbach's alpha reliability test showed a poor correlation of some statements to the other items in a construct. In these cases, we considered each statement separately and decided on whether it should be included into the final version of the questionnaire or not. Overall, we had four problematic statements: 'The more languages you know, the easier it is to learn a new language' (0.46) and 'The person I would like to be in the future speaks English very well' (0.38), related to the constructs BAM and FMS respectively; and 'There are different ways of being Norwegian' (0.38) and 'It would be better if all people in Norway shared the same opinions' (0.49), related to OPM. The values of these statements were lower than the selection

criterion (<0.5). However, due to their moderate divergence, which is sometimes found in questionnaires containing subjective assessments (Prudon 2015), we kept these statements in the questionnaire as we were interested in studying the particular aspects of students' beliefs about multilingualism, future multilingual self and open-mindedness that they help examine. Furthermore, the results of Cronbach alpha analysis showed that the exclusion of these statements would not improve the overall validity of the constructs. More details about this section and to what extent the constructs correlate with other variables can be found in forthcoming publications.

Section 3: Pupils' definitions of multilingualism and their multilingual identity

Whereas the first two sections do not mention the term 'multilingualism' or 'being multilingual', Section 3 asks the pupils to define being multilingual by completing the sentence 'Being multilingual means … '. In this way, the pupils' own definitions of multilingualism are taken as starting points and not the various scholarly definitions existing in the field. After having completed the sentence, the participants are asked the following question: 'Are YOU multilingual?' and given the alternatives yes/ no/not sure. Thereafter, they are asked to explain their choice.

This section can be regarded as the heart of the questionnaire since it provides data for the main dependent variable and collects rich textual data to complement the quantitative findings. First results from analysing the data from this section can be found in Haukås (Forthcoming). In addition, the answers to this section will be used as input to develop one of the research components in the next phase of the Ungspråk project, namely interactive sessions with participants. In these sessions, students will be presented with their answers from Section 3 of the questionnaire and have the opportunity to discuss and reflect on them. Besides improving the overall quality and validity of the findings, the interactive sessions will address an important ethical issue in research in education: the fact that participant students are not usually invited to interact with and give feedback on the data they help generate (Pinter 2014). Another benefit of this approach is that all participants involved (students, teachers and researchers) might gain a more nuanced and elaborate understanding of what it means to be multilingual. A detailed discussion on the design and implementation of the interactive sessions and their ethical, epistemological and pedagogical implications can be found in Haukås et al. (2021).

Section 4: biographic information

In addition to investigating variables directly related to language learning, our research questions also look into whether having a multilingual identity can be correlated to other factors such as gender, school grades and time spent abroad. Consequently, the final part of the questionnaire consists of factual questions about these topics. This also includes asking for information about pupil's first-choice form of Norwegian (Bokmål or Nynorsk), in order to examine possible differences between these two groups, where Nynorsk users may be regarded as a minority group in the Norwegian multilingual context. In addition, the pupils are invited to add any comments on the questionnaire or on language learning in general before submitting the questionnaire.

Discussion

Creating a valid questionnaire cannot and should not be reduced to the statistical components concerned with construct validity or reliability. Instead, the validity process starts as soon as researchers decide on the need for investigating a given phenomenon. The two main objectives of this article were to present a new questionnaire, Ungspråk, aimed at exploring secondary school students' multilingualism and multilingual identity, and to describe the several validation procedures adopted during the process of its development.

During the initial process, it is vital that the researchers involved reach a mutual understanding of which questions to be asked and which theoretical framework to base the contents of the questionnaire on given the multitude of theories of and approaches to multilingualism and multilingual identity in our field. This admittedly time-consuming process is perhaps particularly important when researchers from different countries, and with different linguistic repertoires, experiences and belief systems get together to create a new project, as was the case in the Ungspråk project. At the same time, this diversity is extremely valuable for critically examining own beliefs and practice shifts of perspectives, which we believe ultimately leads to higher quality research outcomes (El Ayoubi 2001). For example, our various conceptualisations of multilingualism needed to be clarified and also how 'multilingual identity' could be defined and meaningfully explored in a questionnaire study with young participants.

Just as important as reaching a mutual understanding within the research group is to actively seek feedback from experts outside of the group. When developing our questionnaire, we relied on the expertise of other researchers in the field, language teachers, professional questionnaire developers, a think aloud protocol with a pupil, translators, and ultimately the analysis of collected data from two pilots. All these steps helped us in creating a valid tool for examining pupils' multilingual identity, multilingual habits and other related variables.

In this paper, we wanted to provide readers with details of the developmental process that can be useful when adapting the questionnaire to other contexts. However, when using a research tool, it is vital to always consider its validity in each particular context, as no language learning takes place in a vacuum (Hofstadler et al. 2020). Language learning in school, for example, is part of an education system and is dependent on a range of factors at national and institutional levels that may influence how and how often languages are taught, how languages are valued, who decides to study multiple languages and the expectations of the participants. Likewise, language learning and use outside of school are influenced by factors such as language status, the degree of multilingualism in a given society and who is referred to as being multilingual. As mentioned earlier, two main objectives of the Ungspråk study are to collect students' own definitions of what it means to be multilingual and, based on students' own definitions, ask them if they identify as multilingual. Given that the word 'flerspråklig' (multilingual) is frequently employed in public debates in Norway to refer exclusively to people with immigrant backgrounds (Haukås Forthcoming), we wanted to avoid any use of the term until those questions were asked in the third section of the questionnaire. Consequently, we needed to take the Norwegian context into consideration when structuring the questionnaire, something which may not be necessary in other contexts.

Conclusion

The results of the validation processes suggest that the questionnaire Ungspråk is an appropriate instrument for investigating young learners' multilingual identity and related factors such as their language habits, beliefs about multilingualism, open-mindedness and future multilingual selves. Based on our observations during data collection in piloting schools, the questionnaire is easy to use and acceptable to learners. Furthermore, it fulfils stringent criteria of reliability and validity. However, the Ungspråk questionnaire can also be applied as an

awareness-raising tool for teachers and students in the language classroom across contexts. By exploring and discussing the answers to the questionnaire, both teachers and students may broaden their perspectives on how multilingualism is perceived and practiced by young people and who may identify as being multilingual. They may also get new ideas on how multilingualism can be conceptualised and used as a valuable resource in the classroom.

Notes

& The compound noun Ungspråk consists of the words 'ung' (young), and 'språk' (language(s)). In Norwegian, 'språk' is both the singular and plural form of the noun and thus may refer to one or several languages. The choice for a non-transparent word alludes to the linguistic diversity of the learners and the possibility of their self-identification as monolingual or multilingual. The questionnaire is available as Additional Material.

& Considering that English is taught since year 1 of regular schools in Norway, we decided to include it as an option for answering the questionnaire for students who wanted to challenge themselves by answering in English. Furthermore, for some newly arrived students and depending on their language backgrounds, English could be easier for them to understand. Nevertheless, most students decided to answer in Norwegian.

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Article III - 'To be multilingual means … ': Exploring a participatory approach to multilingual identity with schoolchildren

'To be multilingual means … ': exploring a participatory approach to multilingual identity with schoolchildren[†]

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'To be multilingual means … ': exploring a participatory approach to multilingual identity with schoolchildren[†]

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ABSTRACT

This article presents an innovative way to engage schoolchildren in discussions on multilingualism and multilingual identity using research data they helped generate. Adopting an exploratory, participatory approach to research, our study uses digital data visualisations in interactive sessions aimed at engaging lower secondary students in identity formation and negotiation. The paper starts with a contextualisation of multilingualism and language learning in Norwegian education and the contributions of our study to relevant research in the field. Next, we discuss the epistemological and pedagogical implications of our participatory approach and its integration within the general mixed methods framework of the Ungspråk project, a three-year study that investigates different aspects of multilingualism in Norwegian lower secondary schools. The paper then focuses on the development of the main pedagogical tools used in the interactive sessions: digital visualisations based on data from an online questionnaire previously answered by participants. Particular attention is paid to the design of the visuals in promoting students' engagement with the data and autonomy in interpreting research findings. The paper concludes with a discussion of the main findings from interactive sessions in which participants engaged in reflections on multilingualism and multilingual identity via interaction with the visuals, researchers and their peers.

1. Introduction

This article presents an innovative approach to research on multilingualism and multilingual identity with lower secondary students using research data they helped generate. Our approach includes interactive sessions in which students explored digital visualisations representing data from an online questionnaire they had previously answered. Both the questionnaire and the interactive sessions are part of the Ungspråk[1] research project (Haukås et al., 2021b), a three-year mixed methods study that investigates

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different aspects of multilingualism, multilingual identity and language learning in lower secondary schools in the city of Bergen, Norway.

The paper starts with a brief account of multilingualism in Norwegian society and education and of some of the relevant issues posed to the Ungspråk project (Section 2). Next, we provide an overview of relevant research in the field of multilingual identity and language learning, with the aim of situating the contributions of our study (Section 3). After that, we focus on the processual development of our approach and how the present study is integrated in the broader mixed methods framework of the Ungspråk project. Particular attention is paid to the epistemological and pedagogical implications of the interactive sessions and data visualisations, which are addressed simultaneously in the two main objectives discussed in this paper (Section 4). The discussions then shift to the development of the main pedagogical tools used in the interactive sessions with participants: digital visualisations designed to foster participants' engagement (Mercer, 2019; Ryan & Deci, 2000) and autonomy (Palfreyman & Benson, 2019) in interpreting real research data (Section 4.1). The paper concludes with a discussion of the main findings from the interactive sessions in which participants engaged in reflections on multilingualism, multilingual identity and language learning via the interaction with the visuals, researchers and their peers (Section 5).

& Background to the study: multilingualism in Norwegian society and education

To a large extent, linguistic diversity and multilingualism are inherent features of Norwegian society and, consequently, of its classroom environments. Norway has two official national languages, Norwegian and Sami, a group of indigenous languages spoken in northern Scandinavia and parts of Russia. From school, year 1 students learn one of the two written varieties of Norwegian (Bokmål or Nynorsk) and from year 8 they start studying both. The use of local dialects is also highly valued and promoted in all domains of society, including schools (Haukås et al., 2021b; Kulbrandstad, 2018). Receptive multilingualism (Zeevaert & Thije, 2007) is also quite common and most Norwegians can understand standard Swedish and Danish.

English is taught as a compulsory subject from year 1 of regular school and, even though there are studies that look into the role of schooling in developing students' abilities in the language (for example, Jakobsson, 2018; Nordhus, 2021), the current study brings in a new perspective by looking at the interplay between English and other foreign languages learned at school in the makeup of students' multilingual identities. In lower secondary school (years 8–10), the focus of our study, students can opt for learning an additional foreign language (most commonly Spanish, German or French), which makes it a particularly interesting segment for research on multilingualism and multilingual identity, since it is when students have the opportunity to expand their linguistic repertoires in a formal educational context. In relation to this topic, both the new English and foreign language curricula highlight the importance of language learning in raising students' awareness of multilingualism as 'an asset, both in school and in society at large' (NDET, 2019) and in helping them see 'their own and others' identities in a multilingual and multicultural context' (NDET, 2021). Finally, due to increased immigration in the last decades, a growing number of students in Norwegian schools know or speak a host of other languages, especially in urban areas (Haukås et al., 2021b).

The rich linguistic scenario in Norwegian schools makes them a fertile ground for exploring different aspects of multilingualism and identities in education. For example, besides the possible influence exerted by foreign language learning in the makeup of students' multilingual identities, the presence of different dialects and variants in the repertoire of most Norwegian students is also a relevant aspect that deserves further investigation. These issues, among others, will be further elaborated in the final sections of the paper, where we discuss the results from the interactive sessions in which participants interpreted and explored the research data they helped generate.

& Previous research on multilingualism and multilingual identity in education and the contributions of our study

As noted by Cenoz, 'multilingualism is a complex phenomenon that can be studied from different perspectives in disciplines such as linguistics, psycholinguistics, sociolinguistics, and education' (Cenoz, 2013, p. 4). In the field of education, research investigating the relationship between multilingualism, multilingual identity and language learning follows a range of theoretical orientations and methodological approaches. For example, a number of studies explore learner's own views of their identities via visual representations (such as drawings and language maps), supplemented by personal narratives and oral accounts (Ibrahim, 2016; Martin, 2012; Melo-Pfeifer, 2015). Another relevant line of inquiry looks into the influence of institutional and educational contexts on the enactment of multilingual identities, often using interviews (Ceginskas, 2010) and language-based projects (Schweiter, 2013). Important contributions have also come from studies following language ethnography traditions, which deploy, for example, narrative analysis (Baynham & De Fina, 2017) and biographical approaches (Busch, 2017a) to understand the formation of multilingual identities in the contexts of contemporary mobilities and widespread use of digital technologies. In general lines, the commonalities underlying these studies are the predominant focus on multilingual speakers with immigrant background or from language minorities, and the fact that research evidence usually comes from small-scale studies. Therefore, our study makes a new contribution, in the sense that it broadens the scope and the number of participants on research on multilingualism and multilingual identity.

More recently, research in the field has been enriched by efforts aiming at the implementation of broader participative programs to multilingual identity involving language teachers (Forbes et al., 2021). In line with calls for more structured identity-based interventions related to language learning at school (Fisher et al., 2018; Forbes et al., 2021; Norton & Toohey, 2011) our study presents an innovative participatory approach in which students interact with real research data they previously helped generate. The epistemological, pedagogical and ethical implications of such an approach are elaborated in detail in Section 4.

Different from, but associated with 'linguistic identity', which 'refers to the way one identifies (or is identified by others) in each of the languages in one's linguistic repertoire' (Fisher et al., 2018, p. 1), we consider 'multilingual identity' as an 'umbrella' identity, which encompasses the former and leads individuals to explicitly identify 'as multilingual precisely because of an awareness of the linguistic repertoire one has' (op. cit., p. 2). Such an awareness is viewed by scholars as having a powerful, liberating effect on individuals (Dewaele, 2011; Henry, 2011), which in turn might positively influence their future language learning trajectories (Henry & Thorsen, 2018). In addition, foreign language learning is quite often an enriching experience which can take adolescents beyond the confines of their own cultures and realities, therefore having a transformative effect on

their identities and self-perceptions (Kramsch, 2009). However, in educational contexts, there seems to be a general assumption that students' awareness of the role of languages and language learning in identity formation is something that occurs tacitly, without much explicit reflection or intervention from teachers, educators or researchers (Fisher et al., 2018). Along with Fisher et al. (2018), we challenge such an assumption and believe that before students can possibly benefit from an awareness of their multilingual identities, it is necessary to understand how these identities are produced and to question the multiple factors involved in their formation.

From the theoretical perspective adopted in our study, multilingualism and especially multilingual identity, are approached primarily as socio-political constructs (Silva, 2000) that is, constructs that are discursively produced and whose meanings are constantly open to dispute and reconfiguration. Consequently, schools are an important arena where multilingual identities are constructed, challenged and negotiated (Forbes et al., 2021; Kramsch, 2006) and students are seen as major actors whose voices play a fundamental role in debates about what it means to be multilingual. Following these insights, our exploratory, participatory approach to research on multilingualism, multilingual identity and language learning seeks to actively engage lower secondary students in identity formation and negotiation (Norton & Toohey, 2011). In the next section, we discuss how our theoretical stance in the study of multilingualism and multilingual identity was incorporated into the methodological framework of our research project, paying particular attention to the epistemological and pedagogical dimensions of our participatory approach, which are explored in further detail in the last sections of the paper.

4. Methodological framework for the interactive sessions and data visualisations

The broader mixed methods framework of the Ungspråk project presupposes a point in which data from the quantitative component (Ungspråk questionnaire) were integrated into the development of the qualitative component (interactive sessions with partici-pants). According to Guest (2013), the point of integration refers to any stage in a mixed methods study 'where two or more data sets are mixed or connected in some way' (Guest, 2013, p. 146). Table 1 below illustrates the sequential mixed methods

Table 1. Mixed methods design of the Ungspråk project.

	First phase (Apr./Aug. 2019)	Point of integration (2019/2020)	Second phase (Dec. 2020)
Research instruments	Ungspråk online questionnaire	Design of digital visualisations based on data from the questionnaire Development of the Interactive sessions	Interactive sessions with participants using data visualisations
Number of participants	593 students (Year 8 lower sec. school)	Piloting of visuals and sessions	114 students (Year 10 lower sec. school)
Participant schools	Seven schools in the city of Bergen		One school from the first phase

design (Schoonenboom & Johnson, 2017) of the Ungspråk project along with the point of integration that generated the interactive sessions.

The point of integration is considered one of the most important stages in the design of mixed methods research (Schoonenboom & Johnson, 2017) since it determines the purposes for combining the quantitative and qualitative components (Greene et al., 1989). In the Ungspråk project, the interactive sessions (and the data visualisations that accompany them) were developed with the purposes of complementing and enhancing the results from the quantitative component and of initiating new perspectives and methodologies for research (Greene et al., 1989; Schoonenboom & Johnson, 2017).

In the first phase of the Ungspråk project (2018/2019), 593 students answered an online questionnaire designed to look into their habits, beliefs and attitudes towards the languages in their repertoires, including languages learned at school (Haukås et al., 2021a). The questionnaire was available both in Norwegian and English. In one of the sections, students were asked to complete the prompt 'to be multilingual means … ', followed by the question 'are you multilingual?', which they answered by marking either 'yes', 'no' or 'I am not sure'. Participants' answers to these two questions served as the basis for the development of the digital data visualisations used in the interactive sessions (see Table 1). To the best of our knowledge, no study so far has attempted to harness the strengths of mixed methodologies to explore issues related to multilingualism and multilingual identity by inviting research participants to reflect on data they had previously generated.

Within our participatory framework to research, the interactive sessions are conceived as 'actions through which researchers and participants in a study can engage with research data and each other in a dialogical manner' (Haukås et al., 2021b, p. 91), and they have important epistemological, ethical and pedagogical implications. From an epistemological perspective, the research data that served as the basis for the interactive sessions represent participants' own analytical framework (O'Kane, 2008) to multilingualism and multilingual identity, i.e. they form a body of knowledge that corresponds to the participants' own interpretations of the phenomena in question. By inviting participants to 'reflect on their reflections', the interactive sessions create a feedback loop in the research process, since research knowledge is produced not just by researchers, but is also submitted to participants' reassessment and evaluation, therefore improving the overall quality of the research (NESH guidelines, 2021; Schoonenboom & Johnson, 2017).

From a pedagogical perspective, the interactive sessions and the data visualisations discussed in this paper represent an effort towards more structured, systematic interventions aimed at raising students' awareness of their multilingual identities, which in turn might have a positive influence on students' future language learning trajectories (Fisher et al., 2018). Rather than starting from pre-determined, scholarly centred conceptualisations, the sessions use the students' own definitions and categories to engage them in discussions on multilingualism and multilingual identity. This provides participants with an increased sense of authorship (and authority) over the data and the subsequent interpretations and discussions based on them (Mercer, 2019). Consequently, participants are more likely to explicitly 'relate the new knowledge to themselves and their lives' (Fisher et al., 2018, p. 14).

The interactive sessions also address a recurrent gap in research ethics. As noted by Pinter and Zandian (2015), in spite of the fact that most ethical guidelines for research

highlight the importance of involving participants at the data analysis and dissemination stages, not many studies actually do so. Especially in the case in quantitative studies, they tend to focus on the macro, procedural aspects of ethics in research (Christians, 2000; De Costa, 2016) while overlooking the more interpersonal, situated ethical challenges (Guillemin & Gillam, 2004; Kubanyiova, 2013) inherent to research in education. As a consequence, participatory approaches (Morrow, 2005; O'Kane, 2008) are more frequent in qualitative, small-scale studies and tend to focus on young learners (Alderson, 2000; Pinter & Kuchah, 2021). From an ethical-participatory perspective, our study is innovative because it uses data from a quantitative component of the study (online questionnaire) as input to engage students in discussions about the research findings, therefore seeking to reconcile research and methodological rigour with the needs and expectations of participants (Haukås et al., 2021a; Ortega, 2005). In the Ungspråk project, such ethical implications are extremely relevant, since they support and justify the epistemological and pedagogical aspects of our participatory approach, which are addressed in tandem within the two following objectives discussed in the next sections of this paper:

1. The design of pedagogical tools (digital data visualisations) to engage participants and provide them with autonomy in interpreting research data they helped generate.
2. The promotion of meaningful reflections on multilingualism and multilingual identity via interactive sessions in which participants engage with data visualisations, researchers and their peers.

The first objective is presented in detail in the section 'Data visualisations: developing pedagogical tools to engage participants with research data'. In order to better situate the reader, this section explains the mechanics of the digital visualisations designed to make participants engage with research data, as a means of facilitating the achievement of the second objective, which is discussed in the section 'Results: main findings from the interactive sessions'. Given the predominant exploratory nature of our study, the focus of this paper is on the processual development of a participatory approach and how it helped broaden both participants' and researchers' understanding of multilingualism and multilingual identity in Norwegian lower secondary schools.

4.1. Data visualisations: developing pedagogical tools to engage participants with research data

The data visualisations used in the interactive sessions (see Table 1) play a central role in our participatory approach, and the choice for their use was based on a number of factors. In addition to the dissemination of scientific research, the use of data visualisations has become increasingly common in different domains of contemporary societies (Buzato, 2019; Lankshear, 2003). As a consequence, the ability to critically interpret data presented visually has become a relevant form of literacy in the recent years (Bhargava & D'Ignazio, 2015; Tønnessen, 2020). Coupling these insights with our pedagogical objectives, we strived to design visualisations that favoured participants' autonomy, critical reflection and independent action (Little, 1991; Palfreyman & Benson, 2019) in interpreting the data, being therefore open to unexpected readings and results (Bhargava & D'Ignazio, 2015).

In what follows, we present the digital data visualisations used in the sessions and provide images that illustrate their main features. However, in order to facilitate the comprehension of their mechanics and interactive features, we strongly recommend that the readers access the actual visualisations via the links provided in the footnote below.[2]

The first visualisation[3] is an interactive, multi-layered bubble graph that represents the textual answers of the participants to the prompt 'to be multilingual means … ', taken from the Ungspråk questionnaire. The first layer of the visual is shown in Figure 1.

The second set of visualisations represents numerical data related to the participants' responses to the question 'are you multilingual?' from the Ungspråk questionnaire. It is composed of an ensemble of more conventional forms of visual representations, such as a pie chart, a bar graph and an icon crowd (Figure 2). The reason for using different types of visual representations during the interactive sessions was to encourage participants to explore different aspects of the same dataset based on the specific affordances of each visual.

Given its major role in the interactive sessions, the complexity of the data it represents and the different levels of interaction with the data it allows, in the next section, we explain the dynamics of the first visualisation. However, the section 'Results: main findings from the interactive sessions' also includes participants' reflections based on their interactions with the visuals in the second set.

4.1.1. 'To be multilingual means … ': the dynamics of the main visualisation used in the interactive sessions

The first visualisation is a multi-layered, interactive bubble chart that represents the textual answers of respondents to the prompt 'to be multilingual means … ', taken from the Ungspråk questionnaire. It is structured in four sequential layers, so that cognitive engagement and knowledge construction are facilitated through the integration of manual, oral and written activities which favour different paths of interpretation.

Figure 1. First layer of the visualisation 'To be multilingual means … '.
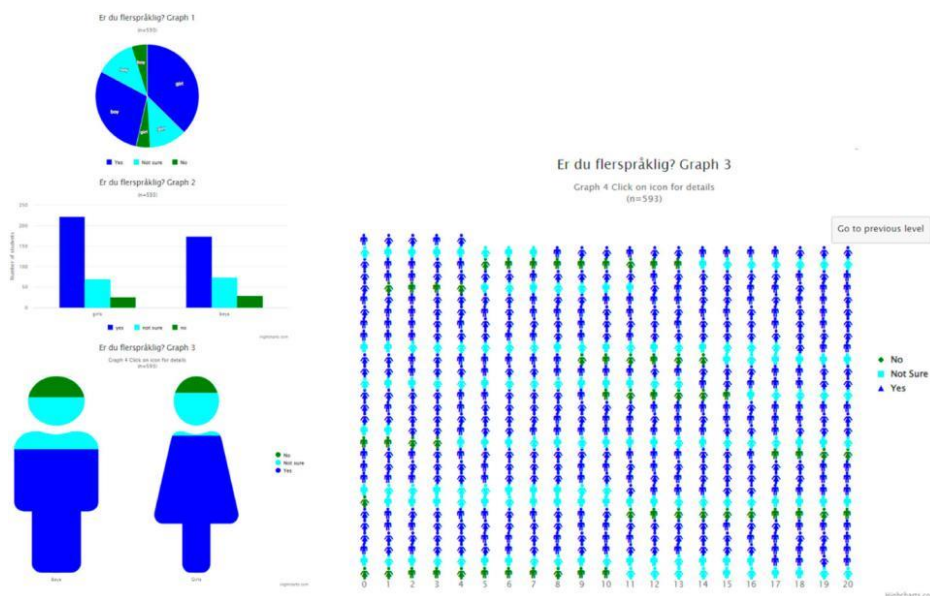
Figure 2. Different types of visuals representing data from the question 'are you multilingual' from the questionnaire.

The first layer of the visual (see Figure 1 above) presents an overview of all the participants' answers from the questionnaire and introduces the concept of subcategories within categories (small bubbles within bigger bubbles). The bubbles on the left of the visual represent participants' short answers from the questionnaire (average length of approximately nine words). The three main categories were created according to the verb used in the participants' answers: 'to know', 'to speak' or 'to understand' several languages, as each verb emphasises a different aspect of multilingualism: general knowledge of languages,[4] oral proficiency and general comprehension, respectively. The figures in each bubble represent the number of participants who provided an answer for each category. The three categories on the right of the visual refer to answers that could not be categorised (n = 21), were not relevant (n = 17) and to participants who answered 'I do not know' (n = 27).

The 12 bubbles in the middle represent longer, more elaborate answers from the questionnaire (average length of approximately 22 words). These 12 subcategories were created by the researchers using inductive thematic analysis (Braun & Clarke, 2006), based on the recurrence of either a lexical item or a theme. In the visualisation, these subcategories are dynamic and can be dragged and dropped to form six larger categories. The six larger categories were created by researchers based on the thematic similarity of the twelve subcategories (e.g. 'languages in the family', 'frequency and contexts of language use', 'societal multilingualism', etc.). The grouping of the subcategories into main categories is explained in Table A1 in the Appendix.

The second layer is activated by pressing the button 'go to task', at the bottom of the visual (see Figure 1). In this layer of the visual (Figure 3), participants were asked to sort the twelve subcategories into six larger categories according to what they had in common,
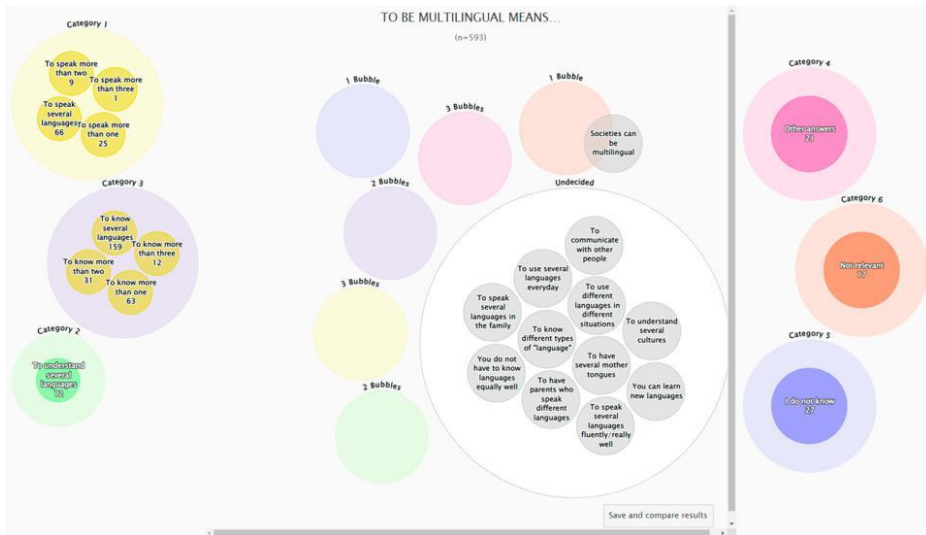
Figure 3. Second layer of the visualisation showing a bubble being categorised.

following the examples on the left and right of the visual. The activity was structured to allow participants a high level of autonomy in creating their own categories while at the same time providing them with guidance in the accomplishment of the task (Palfreyman & Benson, 2019).
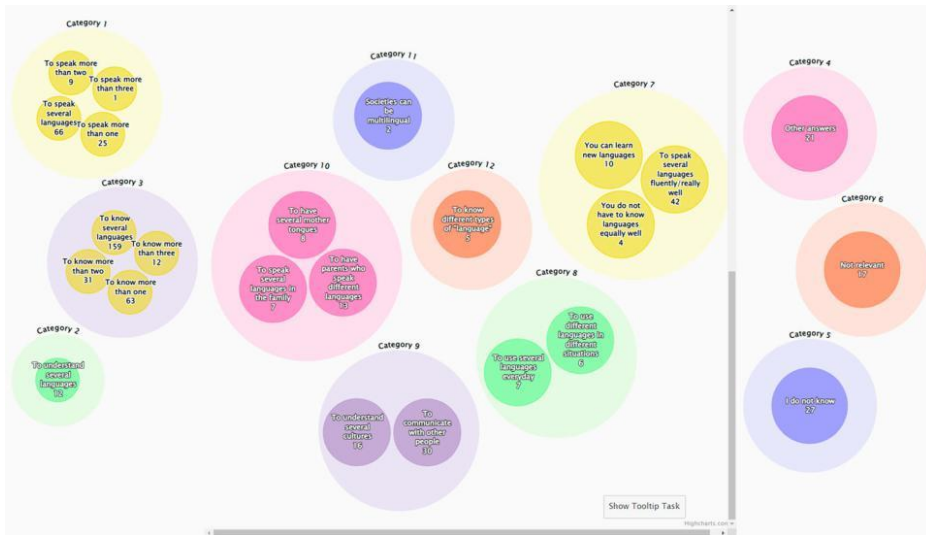
The third layer of the visualisation allows students to compare their categorisations with those done by the researchers (Figure 4) and it is activated by pressing the button 'save and compare results' at the bottom of the visual (see Figure 3). The purpose of this task was to give participants some feedback to their own categorisations and to explain how the researchers had made sense of their responses. Curiously enough, when grouped together, the participants' responses to what it means to be multilingual cover the most relevant dimensions of multilingualism that correspond to the different approaches adopted by researchers in the study of the phenomenon (Cenoz, 2013).

The fourth layer of the visualisation consists of textual prompts designed to make participants discuss particular aspects of multilingualism implied by each of the categories (Figure 5). It is activated by pressing 'show tooltip task' at the bottom of the visual (see Figure 4). During the interactive sessions, students were given some time to read the prompts and choose one that they would like to discuss. After that, they were asked to write down their reflections in an online mini survey created on the platform SurveyXact®.

4.1.2. Implementation of the interactive sessions

Before the interactive sessions took place, two piloting sessions were conducted online in October, 2020. Each session had two volunteer students from the same age group as the participants. The piloting sessions were useful to test the dynamics of the interactions with the visuals, clarify the explanations and instructions, assess the relevance of the activities proposed, etc. The interactive sessions happened on two consecutive days in December,

Figure 4. Third layer of the visualisation showing the categorisation done by researchers. The themes for each main category are explained in Table A1 in the Appendix.

in the first phase of the Ungspråk project. The sessions took place during regular school hours and lasted for about one hour each. Two researchers were present in every session: the same researcher conducted all the activities and interactions with the participants, while a second researcher observed and took notes. During the sessions, both Norwegian and English were used in the oral interactions between researchers and students. Students were also free to use either Norwegian or English while answering the mini survey. Since the main objective of the sessions was to stimulate meaningful reflections based on real research data, students were encouraged to work in pairs. Participation in the activities conducted during the sessions was voluntary and the abstention rate was below 10%.

5. Results: discussion on the main findings from the interactive sessions

This section presents the main findings from the interactive sessions, which are guided by the second main objective of our participatory approach outlined in Section 3. Although the discussions are not exhaustive, they provide an overview of how research knowledge on multilingualism and multilingual identity was improved via the interaction of participants with the data visualisations, researchers and their peers. The discussions are organised sequentially, following the order of the activities in the interactive sessions and they are supported by the following data:

(1) Participants' written responses to the textual prompts in visual 1 ('to be multilingual means … ') and a textual prompt designed to make participants draw inferences from the data represented in the second set of visuals ('are you multilingual?').
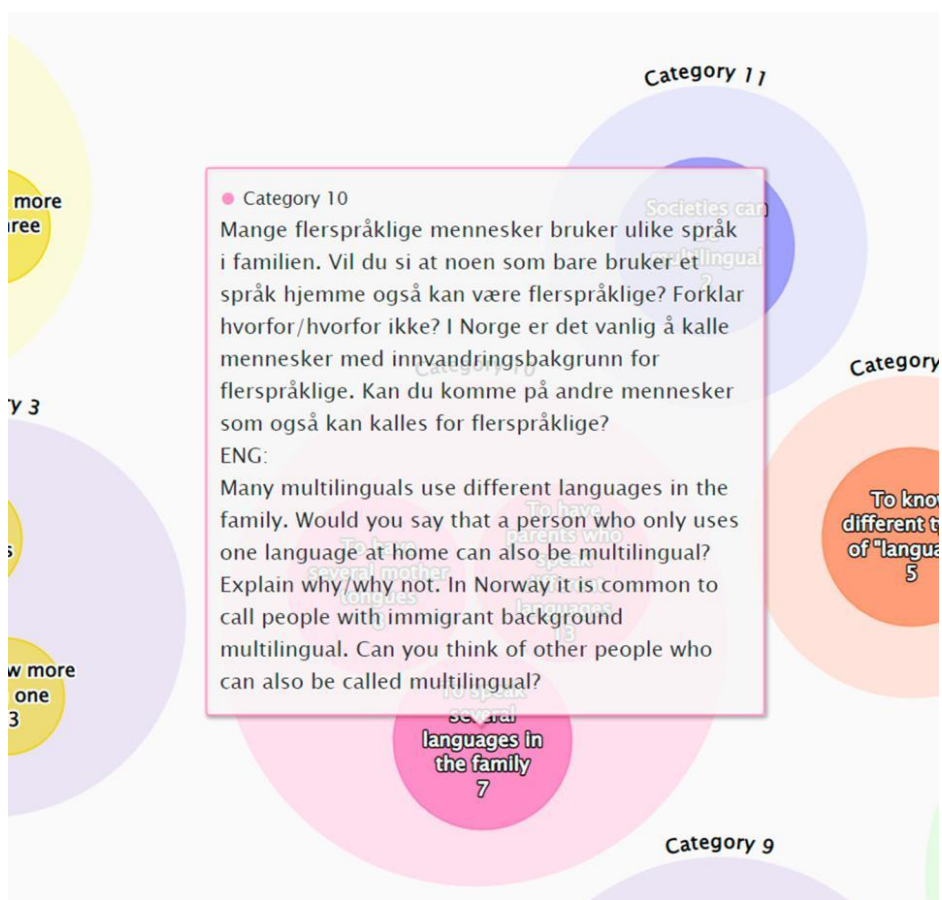(2) Observation notes taken by researchers during and after the interactive sessions.

Figure 5. Detail from the fourth layer showing a textual prompt for the category 'Languages in the Family' (see Table A1 in the Appendix).

5.1. Making sense of multilingualism: categorising the bubbles in the visualisation 'to be multilingual means … '

During the sorting task, participants were actively engaged in discussing in pairs and trying out different possibilities for categorising the bubbles in the visualisation 'To be multilingual means … '. After the completion of the task, students were invited to share some of the results with the whole class. The oral explanations demanded of participants the reelaboration of the semiotic content from one mode (the visual) into another (the oral), in a process similar to what Kress called transduction (Kress, 2003). Such a process facilitated the emergence of novel, alternative readings of the data which differed from those proposed by the researchers. For example, one of the participants explained why they had grouped together the subcategories 'to use several languages every day' and 'to speak several languages really well'. The oral explanation established a causal relationship between the subcategories ('multilinguals speak languages really well because they use them on a daily basis') that is divergent from the logics of thematic

categorisation roposed by the researchers (see Table A1 in the Appendix) but, nonetheless, just as relevant and valid.

The dialogical interaction between researchers and participants also revealed nuanced interpretations of the data based on semantic similarities. One instance occurred when a participant explained that the subcategories 'to understand several cultures' and 'to communicate with other people' should go together because communication in a foreign language gives multilingual individuals access to other cultures and worldviews. In this case, the semantic approximation of the verb 'to communicate' to the verb 'to understand' done by the participant was similar to the interpretation of the researchers (based on more detailed data from the textual answers).

The subcategory 'to have several mother tongues' proved to be particularly intriguing to some participants. During one of the sessions, a participant realised that sometimes people define multilingual speakers by the fact that they speak two languages at home, a categorisation that applied to her/his case, even though the participant was not previously aware of that.[5] This is an example of how such reflections can provide participants with new insights on multilingualism and their possible status as multilingual individuals.

It can be argued that, by presenting participants with their own multiple definitions of multilingualism, the visualisation 'To be multilingual means … ' was inherently useful for raising their awareness about the diversity of possibilities for self-identification as a multilingual speaker. However, there is another important aspect of identity construction and negotiation that lies beyond the mere acknowledgment of diversity and that is related to the creation of categories. Categorisations and classifications are always done from the point of view of identity (Silva, 2000) and are strongly influenced by social and individual experiences and related to the power of hierarchising and attributing social values to groups (Silva, 2000). In this sense, the explanations provided by the participants for their categorisations represent, to a large extent, their own criteria for identifying (and self-identifying as) multilingual speakers. This important aspect of identity formation and negotiation is also present in the following discussions.

5.2. Students' responses to the textual prompts in the visual 'to be multilingual means … '

In total, the visual 'To be multilingual means … ' had 10 textual prompts addressing aspects of multilingualism related to each of the main categories (fourth layer of the visual). In what follows, we focus on participants' answers to the prompts for the categories 'languages in the family' and 'to know different types of 'language'' (see Table A1 in the Appendix), for two reasons. First, these are the two categories which most par-ticipants chose to respond to, based on the textual prompts in the visual. Second because both categories address aspects of multilingualism that are of particular relevance to the Norwegian context.

The prompt with the highest number of answers (19 in total) refers to the category 'languages in the family'. This category is related to a particularly relevant aspect of multilingualism in the Norwegian educational context. The term 'flerspråklig' (the Norwegian equivalent to 'multilingual') is typically used in educational discourses to refer only to students with immigrant background, and not to other individuals with knowledge of multiple languages (Haukås, 2022; Sickinghe, 2016). The prompt for this category encouraged students to implicitly think about different dimensions of multilingualism that go beyond (but do not exclude) the use of different

languages in the family. The textual prompt in the visual was the following (see also Figure 5):

Many multilinguals use different languages in the family. Would you say that a person who only uses one language at home can also be multilingual? Explain why/why not. In Norway, it is common to call people with immigrant background multilingual. Can you think of other people who can also be called multilingual?

Several participants considered that multilingual speakers do not necessarily need to use different languages at home, therefore indirectly challenging the notion of the multilingual speaker as applying exclusively to someone with an immigrant background. One such example is the following[6]:

1. Yes, even if you only speak one language at home, you can be multilingual because you learn languages elsewhere than at home. Others who can be called multilingual are, for example, people who have studied a language and learned one or more languages in addition to their mother tongue.

The answer above not just challenges the usual connotation of the term 'flerspråklig' (multilingual) but also implicitly qualifies most Norwegian students as potentially multilingual, since all of them learn a foreign language at school. Some other participants explicitly challenged the definition of a multilingual speaker as exclusively someone with an immigrant background:

2. You do not have to be an immigrant to be defined as multilingual. For example, you may have a Norwegian mother and an Indian father. You are from Norway, so you are not an immigrant, but you can also speak Indian (sic). Most people who have parents from two different countries tend to learn both languages.

The answer shows a nuanced understanding of patterns of language use and belonging by pointing to the fact that Norwegian-born children can have additional languages in their repertoires that are a result of language use and development in the home environment. The conceptualisation of multilingualism as a complex phenomenon that is dependent on social and family environments as well as on individual life trajectories is also present in the answer below:

3. You can speak a language at home with your parents and perhaps another at school, or in everyday life in general. Other people who can also be called multilingual are people who have learned another language regardless of their cultural background.

The fact that people can become multilingual 'regardless of their cultural background' shows a broader conceptualisation of multilingualism that includes not just circumstantial factors (such as the country where you were born or the languages spoken by your parents), but more importantly, point to a future-oriented view of multilingualism (Henry & Thorsen, 2018) that considers the role of foreign language learning and the individuals' agency and desires in forging their multilingual identities (Kramsch, 2009).

As mentioned earlier, one of the advantages of using real research data generated by participants is that they are more likely to relate different aspects of multilingualism to their own life. In the following example, the participant reflects about her/his own language habits at home and concludes that the frequency of language use is what actually defines someone as multilingual ('flerspråklig'):

4. I myself sometimes talk a fillipino language with my mother at home. I believe that if someone doesn't speak more than one language at home, then they aren't classified as "flerspråklig" because they don't usually use it. But of course, it depends on how much they use another language outside home too.[7]

The second category from the visual with the highest number of responses was 'to know different types of "language"'. This category was created based on answers from the questionnaire which mentioned the knowledge of dialects and other less conventional conceptualisations of language, such as sign language and body language, as a characteristic of multilingual speakers (category 'Semiotic Multilingualism' in Table A1 in the Appendix).

As previously mentioned, the rich dialectal diversity of Norwegian society can be considered a potential factor in influencing students' self-perceptions as multilingual speakers, and participants' answers offered some valuable insights into this issue. The textual prompt in the visual for this category was the following:

Some students mentioned the knowledge of different dialects and other "languages" (for example, sign language and body language) as a characteristic of multilinguals. Do you think that understanding different dialects also makes people multilingual? Why or why not? Would you consider images, comics, computer programming, mathematics, etc. as languages?

Interestingly, none of the statements that mentioned the word 'dialect' agreed with the question 'do you think that understanding different dialects also makes people multilingual?' The following examples elaborated on the possible reasons:

5. I do not think that knowing several dialects is to be multilingual. There are many dialects in Norway, and everyone understands most, so I think it is not to be multilingual.

6. I do not think that understanding different dialects is to be multilingual. In Norway there are many different dialects, but still most southerners understand northerners without problem. To be multilingual, I would say, is to be able to communicate with others in a way that is different from your own […].

Even though the statements above show an awareness of dialects as part of Norwegians' linguistic repertoire ('there are many dialects in Norway, and everyone understands most'), because most dialects are mutually intelligible, the respondents conclude they should not be considered as a criterion for defining someone as multilingual. In this sense, the statements above imply that multilingualism requires of individuals an effort to go beyond what is known and familiar, and to understand and 'communicate with others in a way that is different from your own'. These answers seem to support the view that the term multilingualism usually 'suggests the idea of a plurality of individual languages' (Busch, 2017b, p. 342), in a more conventional sense of 'national languages', whereas 'linguistic repertoire' implies the idea of an integrated set of linguistic and semiotic resources (e.g. dialects), which are not necessarily perceived by individuals as 'languages' in their own right.

5.3. Students' reflections on the second set of visuals: 'are you multilingual?'

During the interactive sessions, students were also encouraged to make inferences and formulate hypotheses about the data. Once the activities related to the first visual (Figure 1) were completed, students were asked to guess how many respondents answered 'yes', 'no' of 'not sure' to the question 'are you multilingual?', taken from the questionnaire.8 After that, they were asked to check their guesses based on the information displayed in the second set of visuals (Figure 2). After exploring the visuals and discussing the results with peers and researchers, students were asked to respond

to the following textual prompt in the mini survey:

In total, 55 students (9,3%) said they were not multilingual. Does that number surprise you?

Were you expecting it to be higher or lower? Why?

The discussions that follow are based on participants' responses to the prompt above.

5.3.1. 'Are you multilingual?': students' interpretations related to the role of English in multilingual identity

In most of the answers to the prompt above, students interpreted the percentage as low and said they were not surprised that only 9.3% of the respondents in the questionnaire did not identify as multilingual and explained the low percentage by arguing that English is taught from an early age in Norwegian schools (Such an argument was also recurrent in the oral interactions between researchers and students). Two examples are the following:

1. […] I expected that most would call themselves multilingual because almost everyone knows both English and Norwegian.

2. I was not surprised by this number. Everyone at school learns English and probably knows Norwegian from before. Most students consider people who speak two or more languages to be multilingual. I thought maybe the number would be a little lower.

Both interpretations of the data infer that most students consider the knowledge of two languages (Norwegian and English) as enough for self-identification as a multilingual speaker. Interestingly, the participant's interpretation in statement 2 above ('Most students consider people who speak two or more languages to be multilingual') can be supported by data provided in the first visualisation (see Figure 1). Whether or not the participant used the first visualisation to draw the conclusion, her/his reasoning shows a high level of inferential thinking that is consistent with the data available.

Even though the knowledge of only two languages (Norwegian and English) seems to be a determinant factor for many students' self-identification as multilingual individuals, such a conceptualisation of multilingualism, which implies more flexible, 'low threshold' criteria, was challenged by some participants. In relation to this point, the statement below provides an interesting reflection:

3. Honestly, I was expecting the number to be a bit higher. I was surprised. Personally, I'm not sure whether speaking two languages qualify as being multilingual. Therefore, my answer was 'not sure'. After seeing the results, I believe students generally think speaking two or more languages is enough to be called multilingual.[9]

Just like in the previous examples, the statement above interprets the figures based on the assumption that most students consider speaking two languages as enough for self-identification as multilingual. However, in this case, the participant is not sure if such a criterion is adequate and applies to her/himself. The participant's surprise and the

uncertainty about her/his status as a multilingual individual, points to the multiple, often contradictory, aspects of identity formation and negotiation (Silva, 2000).

5.3.2. 'Are you multilingual?': the role of learning a second foreign language at school and beyond

As mentioned earlier, lower secondary schools in Norway are an interesting segment to investigate the role of learning a second language at school in the construction students' multilingual identities. Second foreign language learning at school was mentioned eight times as an explanation for the low percentage of 'no' answers to the question 'are you multilingual?'. Below are two examples:

1. I thought it [the percentage] was really ok. Because we learn both Norwegian and English at school. Some also learn another foreign language.

2. Yes, that surprised us, because most people learn two languages at school.

Statement 1 seems to conform with the view, discussed in the previous section, that most respondents considered two languages as enough for identification as multilingual ('Because we learn both Norwegian and English at school'), and the learning of a second language at school is offered as a complementary, secondary explanation ('Some also learn another foreign language'). Statement 2, on the other hand, places more emphasis on the learning of a second foreign language at school ('[…] most people learn two languages at school') as an explanation for the low percentage of 'no' answers.

Some students had a broader interpretation of the data and included not just the languages learned at school, but also receptive knowledge of Danish and Swedish. Below is an example:

3. It really wasn't that surprising. We in Norway learn three languages at school and we understand most of Danish and Swedish. So, I understand why there were not so many who were not multilingual.

The statement above shows a nuanced interpretation of the data by mentioning 'bonus' languages (Danish and Swedish) which are not learned at school but, because of their typological proximity to Norwegian, are part of the receptive repertoire of most Norwegian students. The same acute awareness of the multiplicity of factors involved in the composition of a multilingual identity is shown in the reflection below, which also serves as an apt summary of the rich linguistic makeup of Norwegian society:

4. […] Most students know English and Norwegian and most of them know another one from school. Norwegians are also able to understand both Swedish and Danish. Some students also have a native language that is not Norwegian or English. I think the percentage could be lower.[10]

Even though learning a second language at school and proficiency in English were frequent explanations to the low number of 'no' responses, there was an interesting divergent response that is revealing in terms of categorisations and identity formation:

5. I do not think someone is multilingual by having learned another language at school, so I was surprised when I saw [how] many said they were multilingual.

The participant hypothesises that many respondents said they were multilingual because of language learning at school, an assumption that is reproduced in the statements from other participants discussed above. However, the respondent's own conceptualisation of a multilingual speaker does not conform to such criteria and is not influenced by them, hence the surprise. The answer shows a high degree of inferential, independent thinking, even though the respondent's own relevant criteria to consider someone multilingual are not mentioned.

6. Conclusion

This article presented an exploratory, participatory approach to multilingualism and multilingual identity in which students interpreted and discussed research data they helped generate. In relation to the first main objective of our participatory approach, the digital data visualisations proved to be an effective tool in engaging participants with research data, while at the same time enabling their autonomy in interpreting the findings and producing novel readings of the data. Altogether, the visuals constitute effective pedagogical tools which have been piloted and tested in classroom contexts. Because of their modular, interactive design, the visuals and accompanying activities can be adapted to specific pedagogical objectives and used in other teaching contexts as a stimulating tool for exploring multilingualism and multilingual identity with schoolchildren.

The participatory approach to research adopted in this study also had a bearing on the quality of the knowledge produced. By confronting students with the plurality of their own voices, the interactive sessions and data visualisations offered participants the opportunity to reassess their thoughts and reflections (Pinter & Zandian, 2015, p. 237) on multilingualism and question the criteria for their acceptance (or rejection) of a multilingual identity. From the perspective of the researchers, the sessions produced valuable complementary insights to the data collected via the Ungspråk questionnaire, thus contributing to a more refined understanding of the phenomena being researched.
However, the sessions could have benefited from a closer collaboration between researchers and language teachers from the participant schools. For example, the sessions could have been shorter and geared towards the specific pedagogical aims of the language classes. Given the busy agendas of teachers and researchers and the larger context of a global pandemic in which the sessions took place, those goals were not achievable. In addition, the need for more continuous interventions of the same kind is another pertinent limitation of the present study and the possible long-term benefits of the sessions cannot be easily assessed.

From the perspective of research ethics in education, as more and more schools open their doors to quantitative and experimental research (Kubanyiova, 2013), the interactive sessions and data visualisations represent a timely effort to bridge a gap and reconcile the achievement of scientific and methodological rigour with the needs and expectations of participants who dedicate their time and effort to provide researchers with valuable data.

Notes

1. The coined term 'Ungspråk' consists of the Norwegian words 'ung' (young) and 'språk', which can be used both as the singular or plural form of the word 'language'.

2. 'To be multilingual means': https://org.uib.no/multilingual/Engelsk/Betyr.html.
   'Are you multilingual?': https://org.uib.no/multilingual/ErDu/ErDu.html.

3. In the visual used in the sessions, the textual information was in Norwegian. A version of the visual in English is presented here to facilitate comprehension.

4. Even though the participants' answers do not specify what is meant by 'knowing' a language, complementary analyses of data from the questionnaire show that many participants have a flexible, 'low threshold' understanding of what it takes to know a language, which includes, for example, receptive knowledge of Danish and Swedish.

5. This observation was recorded in the notes taken during the sessions by one of the researchers.

6. Unless otherwise stated, all statements are translated from Norwegian by the author.

7. This statement was written originally in English.

8. The figures from the questionnaire are the following: 'Are you multilingual?' (n = 593): Yes = 396/Not sure = 142/No = 55.

9. This response was written originally in English.

10. This response was written originally in English.

Disclosure statement

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Appendix

Table A1. Summary of the 6 categories (upper case) and 12 subcategories (lower case) in the sorting task.

Prompt from questionnaire: 'To be multilingual means … '	
Six categories and 12 Subcategories (Based on longer answers from the questionnaire)	Number of occurrences in the questionnaire
1. ABILITY TO USE AND LEARN LANGUAGES	–
1a. To speak several languages fluently/really well	42
1b. You do not have to know the languages equally well	4
1c. You can learn new languages	10
2. LANGUAGES IN THE FAMILY	–
2a. To speak several languages in the family	7
2b. To have parents who speak different languages	13
2c. To have several mother-tongues	8
3. FREQUENCY AND CONTEXTS OF LANGUAGE USE	–
3a. To use several languages everyday	7
3b. To use different languages in different situations	6
4. KNOWLEDGE OF OTHER PEOPLE AND CULTURES	–
4a. To understand several cultures	16
4b. To communicate with other people	30
5. SOCIETAL MULTILINGUALISM	–
5a. Societies can be multilingual	2
6. SEMIOTIC MULTILINGUALISM*	–
6a. To know different types of 'language'	5
Total	150

The 12 subcategories are worded as they appear in the visualisation. The six main categories are not named in the visualisation since they correspond to the researchers' own interpretation of the data.

*This category refers to a broader conceptualisation of what constitutes a language, which includes, for example, sign language, body language and dialects.

Article IV- Visualising the language practices of lower secondary students: Outlines for practice-based models of multilingualism

Visualising the language practices of lower secondary students: Outlines for practice-based models of multilingualism

ABSTRACT

The multilingual turn in applied linguistics has produced a number of models that approach multilingualism from a variety of disciplinary and theoretical perspectives. However, fully developed models of multilingualism that focus on the language practices of individuals and groups are still lacking. This paper contributes to address this gap by introducing visual models that represent the contexts of practice and attitudes to the languages in the repertoire of lower secondary pupils in Norway. The paper starts by introducing the rich linguistic scenario in Norway and the role of language learning in developing students' multilingual abilities. After a brief discussion on the role of practice in language learning, we provide an outline of current models of multilingualism, situating our visual models The Ungspråk Practice-Based Models of Multilingualism (UPMM) in the field. The paper then focuses on the properties of the UPMM, which represent data collected from an online questionnaire answered by 593 students in lower secondary school and allow for the exploration of data both from the perspective of the whole group of participants and from an individual perspective. Particular attention is paid to the interactive features of the models, which can be used by teachers and educators as pedagogical tools for exploring multilingualism and language learning. The paper concludes with discussion of the contexts of practice for the languages in the participants' repertoires based on the visual models.

Keywords: multilingualism, foreign language learning, visual language models, exploratory research.

1. Situating our study: Multilingualism in Norwegian society and education

Norway is a heteroglossic (Bakhtin 1982; Busch 2017) country whose

intrinsic linguistic and dialectal diversity has inspired pioneering studies in linguistic anthropology and code-switching (Blom and Gumperz 1972; Gumperz 1982). The country has two official languages, Norwegian and Sami, an indigenous group of language used in northern Scandinavia and parts of Russia, as well as four minority languages, Kven, Romani, Romanes and Norwegian Sign Language. Norwegian has two official written variants, Bokmål and Nynorsk, which are taught simultaneously at public schools from year 8 of lower secondary school. As of 2022, both variants have the official status of separate languages (Ministry of Culture 2021). Sami is taught from school year 1 in the parts of the country where it is spoken. In addition, Norway boasts a wide variety of regional and local dialects, and their use is encouraged and common in many domains of society.

English is taught as a foreign language also from year 1 and, when students start lower secondary school in year 8 (the focus of our study) they can opt for taking a second foreign language (predominantly, Spanish, French or German) or other elective subjects. According to official figures from The Foreign Language Centre (2020), around 75% of students choose a second foreign language when starting lower secondary school. Most Norwegians are also able to understand standard Swedish and Danish, due to the typological proximity between the languages (Olerud and Dybvik 2014). In the last decades, the linguistic scenario was enriched even further by a host of immigrant languages. According to official figures (Statistics Norway, 2021), at the start of 2020 around 18% of the Norwegian population were either immigrants or Norwegian-born with immigrant parents. Such figures imply that a significant percentage of the school population has a family language other than Norwegian. The most commonly spoken immigrant languages include Polish, Lithuanian and Somali (Statistics Norway 2021). From the brief outline above, it can be stated that virtually all schoolchildren in Norway can be considered multilingual and such rich linguistic diversity

has prompted an increased interest in language learning and multilingualism both in academia and in education and language planning. For example, the recently published new curriculum for foreign languages explicitly acknowledges the role of language learning in raising students' awareness of multilingualism as "an asset, both in school and in society at large" (NDET 2019).

Even though some studies in Norway have looked into learners' practices related to single foreign languages learned at school (Jakobsson 2018; Nordhus 2021; Christiansen and Grønn 2017; Grønn and Christiansen 2019), no study so far has attempted to map the out-of-school contexts of language practices for all the languages in the learners' repertoire, including languages learned at lower secondary school and those learned elsewhere. From a general methodological perspective, this research gap is also reflected in studies on multilingualism internationally, which still lack "modelling tools that would describe the current language practices" (Aronin and Moccozet 2021: 3) of multilingual speakers.

Therefore, the aims of this paper are twofold. First, it addresses a research gap by providing a more fine-grained picture of the role of languages in the lives of lower secondary students in Norway. Second, by introducing different visual models representing contexts of language practices and participants' attitudes in relation to the languages, this article aims to contribute to the future development of models of multilingualism that have as a central component the language practices students (or any other social group) routinely engage in. In order to do so, we introduce and discuss visual models that represent the contexts of language practice of students in lower secondary school, based on data from an online questionnaire (Haukås et al. 2021b) answered by 593 participants. Both the questionnaire and the visual models are part of the *Ungspråk* research project, a mixed methods study that explores different aspects of multilingualism and multilingual identity in

Norwegian schools (Haukås et al. 2021a).

2. Defining language practices

In foreign language learning, the word 'practice' commonly refers to the regular, conscious exercising of a particular skill with the aim of improving overall proficiency in a language (for example, classroom activities designed to improve pronunciation, or 'pronunciation practice'). In this sense, the goals of practice, and the pedagogical activities designed to promote it, are explicitly oriented towards language learning.

However, if schoolchildren are to develop in the languages they learn at school, such languages need to be used beyond the confines of the classroom in meaningful, situated practices (Gee 2004). In this broader sense of the word, 'practice' has the meaning of habitual, independently performed actions oriented towards the accomplishment of tasks in the real world[7]. With this connotation, the word 'practice' invariably reflects an individuals' natural interests and inclinations (hence, 'meaningful' practices), which define the social domains and interactional[8] patterns in which a given practice occurs (hence, 'situated' practices). A few examples of regular practices young learners commonly engage in are the practice of

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[7] An alternative formulation for the meaning of 'practice' we are trying to convey comes from philosophy. Peter Sloterdijk (2013: 4) defines practice as: "[…] any operation that provides or improves the actor's qualification for the next performance of the same operation, whether it is declared as practice or not".

[8] The term 'interactional' is used here in a broader sense that includes not just interactions among people (interpersonal interactions) but also interaction with the material and technological resources that mediate a given practice (for example, the interaction with a digital platform used to produce a video).

playing video games, the practice of reading comics, the production of videos in digital platforms (such as TikTok) or conversational practices. In this broader sense of the term, the use and knowledge of languages are fundamental components, even though the practice in question might not have any explicit pedagogical, language-learning purpose. From a general theoretical perspective, the approach to language practice adopted in this paper reflects the need "to investigate the doing of language as social activity" (Pennycook, 2010: 34), and is grounded on philosophical accounts of practice that conceive "meaning and language [as] arising from and tied to continuous activity" (Schatzki 2001: 21).

Therefore, we define 'language practice' as any regular, goal-oriented activity that involves the use of a given language or languages, whether the activity is performed with the intentional aim of improving the knowledge of those languages or not. In line with the holistic approach to multilingualism (Cenoz 2013; Jessner 2008) adopted in this paper, 'practice' is considered as any situation in which a language in an individual's repertoire is deployed for communication purposes, for example in listening or reading, but not necessarily implying the active production of language, as for example in writing or speaking.

From the perspective of foreign language learning, out-of-school practices allow not only for the maintenance and development of the languages in an individual's repertoire (Hufeisen 2018), including languages learned at school; equally important, they are the ultimate locus where learners' linguistic and semiotic resources are deployed to act in the world, get

things done and interact with other people in real-life situations. Under the current conditions of globalization, language practices usually take place in culturally diverse, hypermediated environments (Kramsch and Thorne 2001), which are structured on interconnected time and spatial scales (Blommaert 2010) and can "be arranged sequentially, in parallel, juxtapositionally, or in overlapping form" (Busch 2015: 4).

Such multiplicity and complexity of patterns of language use (Aronin 2019) pose a series of theoretical and methodological challenges, which partially explain the scarcity of models that attempt to describe the language practices of multilingual individuals and groups (Aronin & Moccozet 2021). In this respect, the current study aims to contribute by developing modelling tools that map the languages learned and used by lower secondary students, along with their respective contexts of practice.

3. Models of Multilingualism: a general overview

Scientific models can be defined as forms of representation of the world created to explain and facilitate the understanding of phenomena that are usually too complex and multi-faceted to observe directly (Aronin and Moccozet 2021). In the natural and biological sciences, computer-assisted mathematical modelling has a widespread use also as a predictive tool for a wide range of quantifiable phenomena. In linguistics, models have been amply used to describe and explain language-related phenomena, for example, the syntactic structures of natural languages (Chomsky 1957) or the learning and acquisition of foreign languages (Selinker 1972).

However, regardless of the scientific domain where they are applied, all models are necessarily "abstractions, abbreviations […] occasionally even simplifications" (Hufeisen 2018: 174) that, in spite of their potential descriptive or explanatory power, should never be taken as a faithful substitute for the phenomena they purportedly represent.

The multilingual turn in applied linguistics (May 2014) has produced a number of models, albeit limited (Aronin & Moccozet 2021), that approach multilingualism from various theoretical perspectives and that are influenced by a range of research disciplines, such as psycholinguistics, sociolinguistics and foreign language teaching and learning (Hufeisen 2018). Some of them include the Factor Model (Hufeisen 2010, 2018), the Dynamic Systems Theory (DST) model of multilingualism (Herdina & Jessner 2002; Jessner, 2008), the Plurilingual Didactic Monitor Model or PDMM (Meissner, 2004), and the Dominant Language Constellation or DLC (Aronin 2019; Aronin and Moccozet 2021). It is not the intent of this paper to provide a detailed discussion of each of these models, which can be found, for example, in Hufeisen (2010, 2018) and Hufeisen & Jessner (2019). Instead, in what follows we outline the commonalities that permeate them, as a means of establishing the grounds for the practice-based model of multilingualism proposed in this paper.

All the current models of multilingualism feature a holistic approach (Cenoz 2013; Jessner 2008) that consider the linguistic repertoire of the multilingual individual as an integrated set of resources that are in constant mutual interaction and development, and that have the inherent potential of

boosting the speakers' proficiency in the languages they already know or are currently learning. In line with a holistic approach, all current models of multilingualism acknowledge that multilingual individuals "have a language proficiency that is not simply the sum of their skills in the several languages they have mastered or are mastering" (Aronin and Moccozet 2021, p. 4). Such a synergistic effect, which implies that the whole proficiency of multilingual speakers is always more than the sum of its parts, is reflected in the concept of the multilingual factor or M-factor (Jessner, 2008). According to the author, the M-factor "refers to all the effects in multilingual systems that distinguish a multilingual from a monolingual system, that is, all those qualities that develop in a multilingual speaker/learner due to the increase in language contact(s)" (Jessner 2008: 275). What this formulation implies is that the "language contacts" (i.e. the language practices) ultimately determine the qualities and abilities developed by multilingual speakers and learners.

In spite of their commonalities, what distinguishes each of the models above and determines their specific features and components, is the disciplinary perspective adopted in their construction (e.g., psycholinguistics, sociolinguistics, Dynamic Systems theory, foreign language learning pedagogy). In this respect, Hufeisen (2018) highlights the need for developing models that are guided by the specific needs of the discipline (in our case, multilingualism and foreign language learning) and that are designed to serve as the basis for further research.

To the best of our knowledge, the only model of multilingualism that has

an explicit practice-based orientation is the DLC (Aronin 2019; Aronin and Moccozet 2021). The DLC focuses on the subset of languages deemed to be of prime importance in the repertoire of an individual (or group) and it is currently being developed in a digital version containing three factors: the dominant languages in a participant's subset, the participant's self-reported proficiency in each of the languages, and the perceived topological distance from a language in question to other languages in the individual's dominant constellation (Aronin and Moccozet 2021). By considering these dimensions, the DLC model distinguishes a person's most expedient languages which enable him/her to function in multilingual environments (Aronin 2019).

In spite of its advantages for research, the DLC model focuses only on the most prominent languages, thus leaving aside all other languages in a multilingual person's language repertoire. When investigating multilingualism and foreign language learning, this might pose a limitation, since it fails to account for emerging practices in a foreign language that are restricted to specific contexts and situations, but that have the potential of developing the individual's future competence in that language. In addition, although the DLC is stated to be a practice-based model, the important dimension of the contexts of practice for each language remains lacking. The model is based on the evaluation of how each language is important for an individual, however, it does not account for the contexts where these languages are practiced.

Addressing these gaps, the visual models introduced in this paper

contribute to the field by presenting the whole linguistic repertoire (Busch, 2015, 2017) of multilingual schoolchildren in contextualisation. Moreover, they also take into account an attitudinal dimension towards a language, which can significantly influence an individual's disposition for using it in a particular context or not (Garrett, 2010; Baker, 1992).

Furthermore, the models presented in this paper approach multilingualism both from the perspective of individual participants and groups of learners; thus, it allows exploring multilingualism both as an individual and a societal phenomenon.

4. The data used in the development of the Ungspråk Practice-Based Models of Multilingualism (UPMM)

The empirical data that served as the basis for the development of our visual models come from the Ungspråk digital questionnaire (Haukås et al., 2021b). The questionnaire was specifically designed to investigate multilingualism and multilingual identity among schoolchildren, and it was answered by 593 pupils in their first year of lower secondary school (i.e., school year 8). Data collection took place between April and August, 2019 in seven different schools in and around the city of Bergen.

In one of the sections of the questionnaire, participants answered a series of 9 statements related to the languages they learned at school (Norwegian, English and either Spanish, German or French, if they took a second foreign language as an elective subject). After that, respondents were requested to list all the other languages in their repertoire. The textual

prompt[9] in this subsection encouraged students to name all the languages they felt they knew, regardless of the level of proficiency. In line with a holistic approach to multilingualism, the rationale underlying the prompt was to make participants reflect on all the languages in their repertoire, including languages with expected receptive skills (such as Danish and Swedish), family languages, dialects, sign language and possibly languages structured on other semiotic systems, such as body language or coding.

For each language listed by the participants, the questionnaire generated the same battery of 9 statements. The statements that served as data input for creating the UPMM models are the following:

1. I use this language with my family.

2. I use this language to speak to (some of) my friends.

3. I (sometimes) use this language when I go on holidays.

4. I (sometimes) use this language when I am on the Internet.

5. I (sometimes) watch TV/films/listen to music in this language.

6. I am proud that I know this language.

7. I think I know this language well.

8. It is important for me to know this language.

9. I avoid using this language.

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[9] The original prompt from the questionnaire is the following (bold font in the original): "*Please name **ALL OTHER languages you know.** You can include languages you use with your family, other languages you learn now or have learned at school, and any other languages you know in any way. **It does not matter how well you know these languages!**"

Statements 1 to 5 allow for the mapping of the different contexts in which a given language is practiced and they play a central role in the UPMM visual models presented in this paper. In this respect, it is important to point to the limitations of the available data since they do not provide any information about the type and quality of the language practices in each given context. However, the statements are important indicators for the presence of a language in particular contexts of practice, as well as the overlapping presence of different languages in the same contextual environment, for example, languages in the family. When transposed into the visual models presented below, the data provide an overview of the role of different languages in the participants' lives and facilitate the visualisation of overlapping patterns and contexts of practice, both from an individual and a group perspective. The visual design of the UPMM models also facilitate the comparison between the contexts of practice among languages learned and used at school or elsewhere.

Statements 6 to 9 provide extra information about some of the participants' attitudes and opinions (Dörnyei and Taguchi 2010) in relation to each reported language, including their perceived knowledge and willingness to use it. Attitudes and opinions towards languages have been a topic of extensive research in psycholinguistics and language learning (for example, Garrett 2010; Baker 1992; Gardner 1985) and, since they have a bearing on the individual's disposition to use and practice a language, they serve as valuable complementary data in the models.

5. UPMM: Modelling the contexts of language practice with data visualisations

An important structural component of scientific models in general, and language models in particular, is that they invariably include a visual component that is "used to illustrate and clarify the verbal explanations" (Aronin & Moccozet 2021) needed to explain the model. Several authors have highlighted the relevance of visual representations, for example, in boosting cognition of abstract concepts and phenomena (Kirsh 2009, 2010; Scaife and Rogers 1996), as a crucial type of literacy in contemporary, data-driven societies (Tønnessen 2020), and in representing multilingual subjects' identities (Kalaja and Melo-Pfeifer 2019). In the development of the visual models discussed in this section we drew on previous expertise acquired in designing interactive digital data visualisations that explore multilingualism with research participants based on data they generated (Storto, in press).

The visualisation models presented below incorporate the visual-haptic properties of digital media (Storto 2021) and invite users to explore and interact with the data both visually and manually. They are divided in two main sets which are explained below. However, for a better understanding of their mechanics and affordances, we strongly recommend that the readers access the visual models via the hyperlinks provided in the appendix.

5.1 UPMM Model 1: representing the language practices for the whole
group of participants.

The first set of visual models represents the answers for the whole data set
of the Ungspråk questionnaire (n= 593) and they focus on the languages
learned and used in and out of school and their contexts of practice. Each
model was designed to include five frequently reported languages at a time
and their respective contexts of practice, and they are available in two
versions which provide different perspectives on the same data. The first
version highlights the contexts of practice for the languages (Figure 1). The
contexts are presented in the outer circle of the visual, while the languages
are represented as columns inside the chart. The design of the models in
this version allows for the simultaneous display of five different languages
and contexts of practice in one single visual ensemble, thus facilitating the
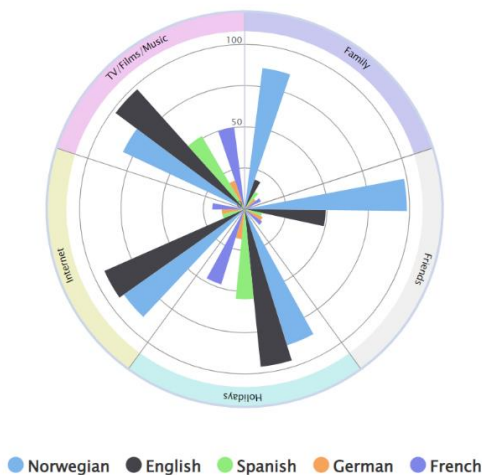comparison among languages.

Figure 1: Model representing the contexts of practice for the five languages

learned at school

When hovering the mouse over the columns, the contexts of practice for a given language are highlighted, forming a shape resembling a five-pointed star, thus highlighting the scope of a particular language in the five contexts, in a scale from 0 to 100% (Figure 2).
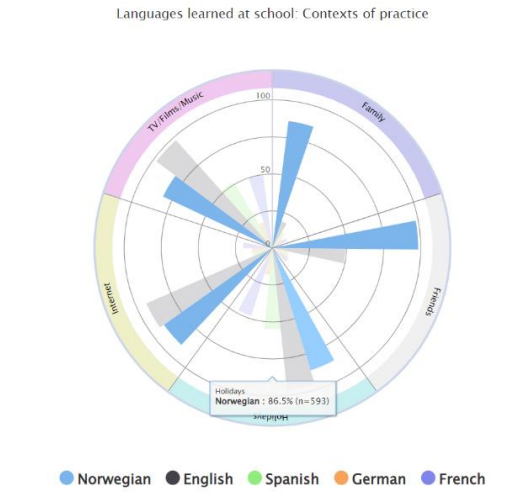

Figure 2: The scope of Norwegian in five contexts of practice

The second version inverts the way the data is visualized, and presents each language separately in the outer circle while the contexts of practice for each language are represented as radial columns in the inner circle (Figure 3).

Languages learned at school: Contexts of practice
and students' language attitudes

Family   Friends   Holidays
Internet   TV/Films/Music
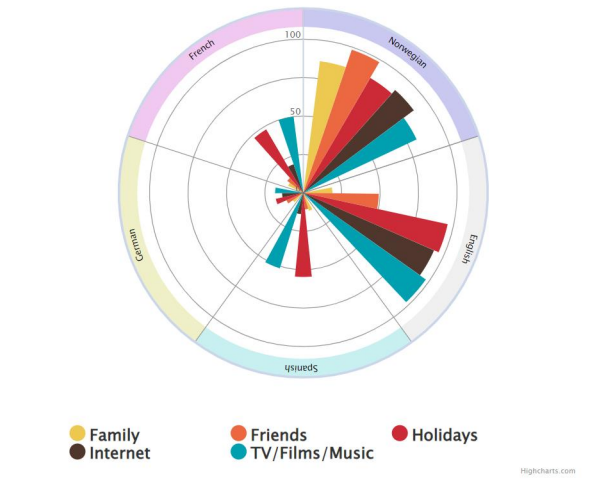
Highcharts.com

Figure 3

The second version also features the attitudes of participants for the

languages. This function is activated by hovering the mouse over the
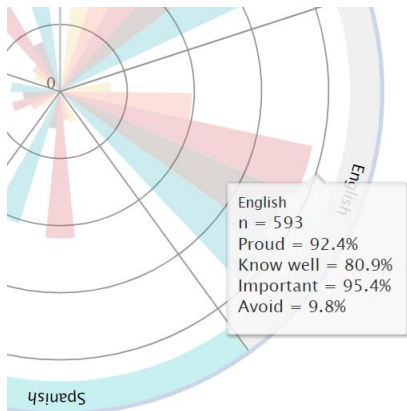
language in question (Figure 4)

English
n = 593
Proud = 92.4%
Know well = 80.9%
Important = 95.4%
Avoid = 9.8%

Figure 4: Detail of the visual model showing participants' attitudes to

English

5.2 UPMM Model 2: representing the language practices of individual participants.

The second set of visual models are composed of network graphs that approach the languages from the perspective of an individual participant. They also come in two versions. The first version represents the participants' whole linguistic repertoire along with the contexts of language practice (Figure 5).
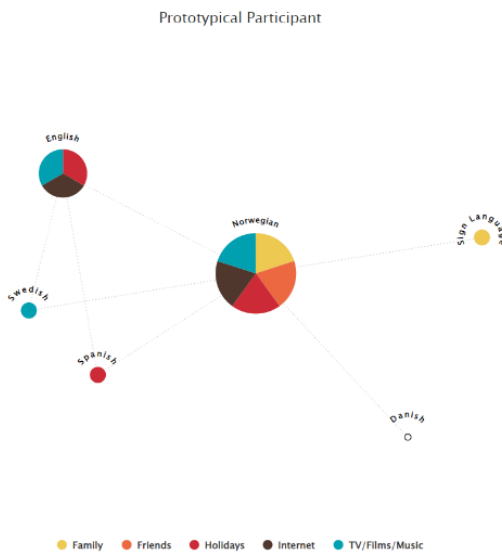
Figure 5: Network graph representing the linguistic repertoire of one of the prototypical participants

The visual models in this version are composed of three factors: the languages in a participant's repertoire (represented as a circle), the number of contexts where the languages are practiced (represented as slices in circle) and color-coded arrows connecting the languages according to shared contexts of practice, thus allowing for a quick identification of overlapping contexts (Figure 6). The size of the circles representing each language are in scale to the number of contexts of practice (from 1 to 5), thus providing a visual representation of "how big" a role a given language plays in the participant's life. If a language was listed by the participant but had no reported practice in any of the contexts, it is represented as a tiny white dot with no connections (for example, Danish in figure 5).
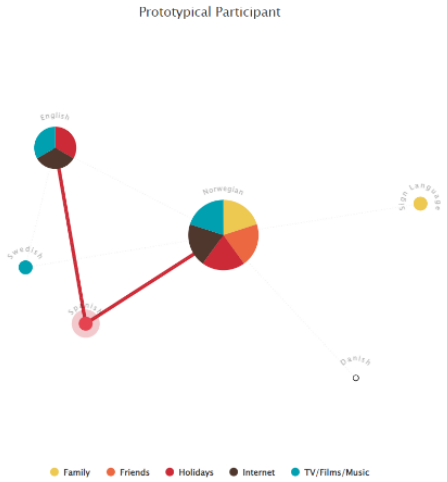

Figure 6: Arrows showing overlapping contexts of practice for English, Norwegian and Spanish (holidays)

The second version of the model represents the attitudes of the participant

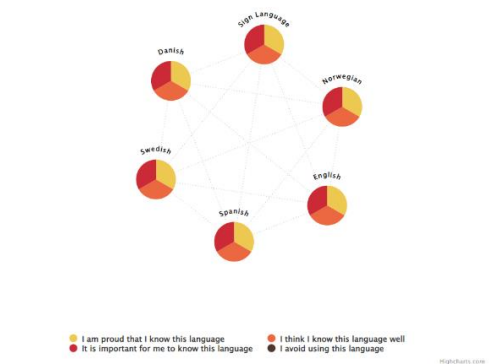to the languages in their repertoire and its mechanics is similar to the first version (Figure 7).

Figure 7

6. Exploring contexts of language practice based on the visual models

In this section, we present and discuss the contexts of language practice and corresponding language attitudes based on the models described above. We start with the models representing the whole group of participants (Model 1). Under this category, we discuss the findings related to the five languages learned at school, (Norwegian, English, Spanish, German and French), followed by the five most frequent languages in the dataset which are not learned at school. We conclude the section with an analysis of the linguistic repertoire of two individual participants: a prototypical participant and a participant with the most common immigrant language in Norway in their repertoire (Model 2). As stated earlier, for a complete

visualisation of the data in the real models, we recommend accessing them via the links provided in appendix I.

6.1 UPMM Model 1: Languages learned at school

The most outstanding general feature in the group of languages learned at school is that no language is used by all students in any context (see Figure 1). The highest percentage is the use of Norwegian in the family (98,3%), followed by English to watch TV/films and listen to music (97,6%) and on holidays (96,1%). Since both languages are learned from school year 1 and all participants (n=593) were currently studying them at the time of data collection, some interesting comparisons can be drawn between the contexts of practice for Norwegian and English.

Even though the use of Norwegian is highly significant in all five contexts, English is the predominant language on the Internet (92,9% of the participants), on holidays (96,1%) and on TV/films and music (97,6%), followed closely by Norwegian (89,7%, 86,5% and 81,5%, respectively). The status of English as a global lingua franca (Ricento 2016; Mauranen 2015; Gardner 2012) and the cultural clout exerted by English-speaking countries, especially the United States, are possible explanations for the higher frequency of English than Norwegian in these three contexts. A more revealing finding, however, is the marked bilingual (Norwegian/English) character of Norwegian students, an inference that is strengthened by the fact that 49,1% of the participants mention the use of English in their interactions with friends. In this respect, the knowledge of

English seems to be a relevant factor in the self-identification as multilingual individuals among the participants (Storto, in press).

In relation to the second foreign languages learned at school, our data set follows both national and regional trends (Foreign Language Centre 2020), with Spanish being the first choice among students (n=296), followed by German (n=109) and French (n=92). The status of these languages differs from Norwegian and English in two important aspects. First, at the time of data collection (year 8 of lower secondary school), participants had just started learning these languages, so their presence in out-of-school contexts should expectedly be lower than Norwegian and English. Second, generally speaking, Spanish, French and German have a weaker cultural influence in Norwegian social contexts than English (a global lingua franca) and Norwegian (a national language). Coupled together, these factors contribute to the lower occurrence of Spanish, French and German in the contexts of practice represented in the model.

However, the relatively high number of participants who reported the occurrence of Spanish and French in the contexts of "TV/films and music" (51,4% and 50%, respectively) and "holidays" (54,7% and 47,8%, respectively) can be considered as relevant indicators of meaningful practices that involve the use of these languages. Even though it can be argued that the sporadic use of a language on holidays is not enough for a learner to become proficient, the experiences usually associated with it have the potential for making the learner establish affective connections with the people and places where the language is used, which ultimately

might have a positive influence in their language learning. This does not seem to be the case of German which, in spite of being the second foreign language of choice among students, is the least used language outside school, with all five indicators below the mark of 20%.
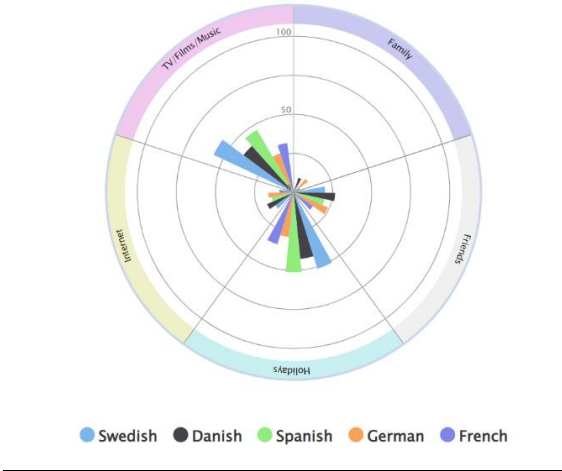
Some noteworthy aspect of the participants' attitudes in relation to the languages is their higher confidence in using Norwegian and English. Only 3,7% and 9,8% respectively said they avoid using these languages, compared to Spanish (28,7%), German (30,3%) and French (27,2%). Even though these figures are not surprising, given that participants had been learning Norwegian and English since school year 1 or longer, the percentages of students who reportedly avoid using Spanish, German and French is quite high considering the stated goal of the curriculum for foreign languages (2019) that the foreign "language shall be practised from the very beginning, both with and without the use of various media and tools". If nearly one third of the students in the subject avoids using the language, this poses challenges for the teachers responsible for implementing the curriculum. However, the perceived importance of learning these languages is relatively high (Spanish = 57,1%, French = 55,4% and German = 51,4%) and can be interpreted as an indicator of participants' awareness of the relevance of learning languages other than Norwegian and English. A further interesting finding related to foreign language learning in school is that almost all learners of French (93,8%) are proud of knowing the language. The percentage of students being proud of knowing Spanish (81,8%) and German (73,4) is markedly lower. The findings call for further research to explain the causes of these differences

and also how taking pride in learning Spanish and German can be increased.

6.2 UPMM Model 1: Languages not learned at school

The models for languages not learned at school are represented in Figure 8 below.

5 most frequent languages not learned at school: Contexts of practice

● Swedish ● Danish ● Spanish ● German ● French

5 most frequent languages not learned at school: Contexts of practice and students' language attitudes

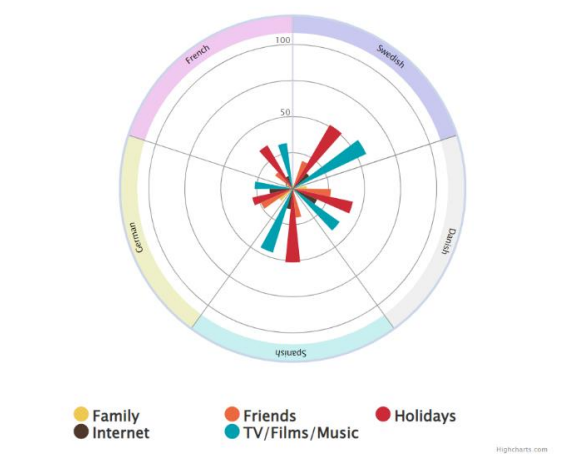Family — Friends — Holidays
Internet — TV/Films/Music

Figure 8

The most listed languages in this category are Swedish (n=214) and Danish (n=173). Another interesting finding in the category is the number of participants who listed Spanish (n=84), German (n=87) and French (n=66) as languages they know, even though they do not learn it at school.

In relation to Swedish and Danish, apart from the typological similarities between these languages and Norwegian, which facilitates intercomprehension, the cultural commonalities and geographical proximity can be considered as relevant factors for the high occurrence of these languages among the participants' repertoires. In relation to the contexts, both languages have high figures for use on holidays (51,2% for Swedish and 42,8% for Danish) while Swedish has a higher occurrence in the category "TV/films and music" than Danish (56,5% and 39,9%, respectively). The strong influence of Swedish cultural productions, such as TV series, in the Norwegian context is a possible determining factor for the

figures.

In relation to Spanish, French and German, a noteworthy feature in this group is the consistently higher percentage of students who reportedly use these languages with friends, when compared to the participants who learn the same languages at school (Spanish 20,2% and 10,8%; German 24,1% and 11,9%; French 15,2% and 13%, respectively). However, the participants' perceived proficiency in these languages is significantly lower when compared to the students who learn the same languages at school (Spanish 8,3% and 21,6%; German 2,3% and 26,6%; French 7,6% and 21,7%, respectively). Nevertheless, the fact that so many students confidently report having these languages in their repertoire, shows a flexible, 'low threshold' understanding of what it takes to know a language. Furthermore, the very frequent reports of knowing Swedish and Danish suggest that many students in the Ungspråk project do not require productive proficiency in a language to feel that they know them. (see Haukås [in press] for a discussion of students' understanding of multilingualism compared with the scholarly debate).

6.3 UPMM Model 2: Languages from the perspective of individual participants

This section presents and discusses the visual models for the languages in the repertoire of two individual participants. Since there were 593 participants in the original dataset from the questionnaire, some criteria of representativeness had to be adopted in their selection. The first participant

(referred to as "prototypical participant") was selected by adopting the following criteria sequentially:

1) The participant had to take a second foreign language at school (505 participants took a second foreign language as opposed to 88 participants who took another elective subject).

2) The second foreign language had to be Spanish, which had the highest number of participants in the dataset (n=296), as opposed to German (n=109), French (n=92).

3) The participant had to list both Swedish and Danish in their repertoire, which are the languages not learned at school with the highest number of occurrences in the dataset (n=214 and n=173, respectively).

4) Finally, the participant had to be a girl rather than a boy, since there was a higher number of the former (n=317) than the latter (n=276) in the dataset.

5) After the criteria above were applied, a participant was chosen randomly from within the group.

The main criterion for selecting the second participant was that they included one of the most common immigrant languages in their repertoire. According to figures from Statistics Norway for 2021[10], Poland is the country with the highest number of immigrants or Norwegian-born to immigrant parents. Therefore, Polish was considered one of the main immigrant languages in our dataset. The participant was selected first by

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[10] https://www.ssb.no/en/statbank/table/05183/

following steps 1 and 2 above. After that, only participants who listed Polish (the most common immigrant language in Norway) in their repertoire were selected. Finally, a participant was chosen randomly from within the group. Figure 9 below represents the models for the language repertoire of the two participants.
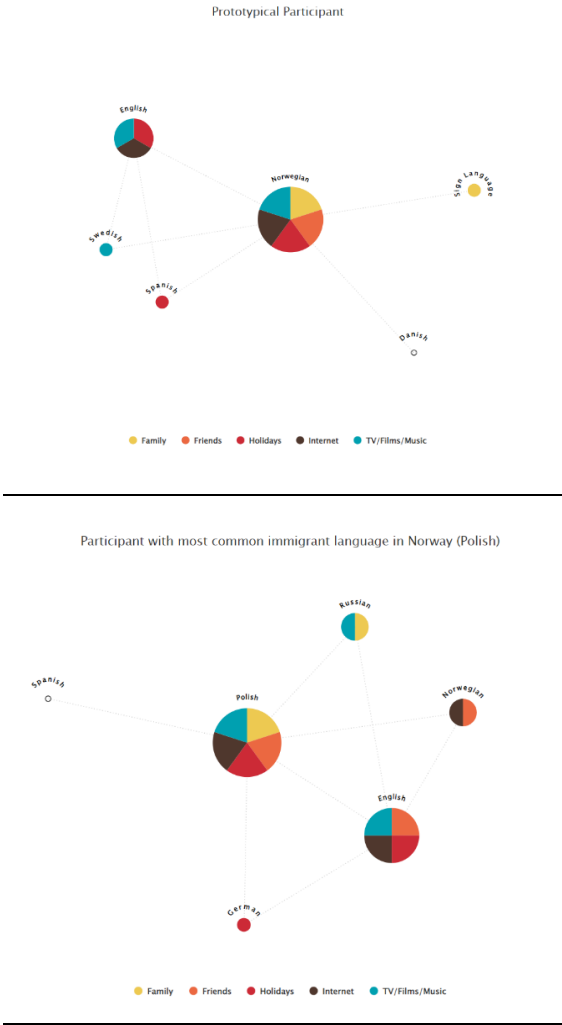

Figure 9

The most noteworthy distinction between the two participants is the central role of Norwegian and Polish, respectively, in the five contexts of practice. In both cases, English is the second language used in most contexts. Both participants report using English on the Internet, on holidays and to watch films and/or listen to music, which is, coincidentally, the three contexts of practice for the language with the highest number of respondents from the whole dataset (see Figure 1). In relation to languages in the family, both participants report the use of two languages: Norwegian/sign language and Polish/Russian. Such a finding can be an indicator of fluid language practices in which two (or more) languages are used simultaneously by multilingual family members in everyday interactions and which have been amply documented (Lanza & Lomeu Gomes, 2020; Lomeu Gomes, 2020).

Even though both participants take Spanish at school, its role in their practices is peripheral. However, the reported use of Spanish on holidays by the first participant implies that the language has a role in the participant's life that goes beyond the confines of the school, which is not yet the case with the second participant.

In relation to Norwegian, the dominant national language, the second participant reports using it only in two contexts, on the Internet and with friends. This finding might be indicative of a relatively peripheral role of Norwegian in the participants' repertoire. Such an assumption is also supported by the fact that the participant reports avoiding using Norwegian as shown in the model for attitudes below (Figure 10), even though she/he

also claims to know the language well. A complementary analysis of the language profile of the participant based on data from the questionnaire showed that Norwegian is not her/his native language and that the participant had started using the language less than three years before. This may explain the hesitancy to use the language.

Participant with most common immigrant language in Norway (Polish)–
Language attitudes

German   Russian

Norwegian

English

Polish

Spanish

● I am proud that I know this language   ● I think I know this language well
● It is important for me to know this language   ● I avoid using this language
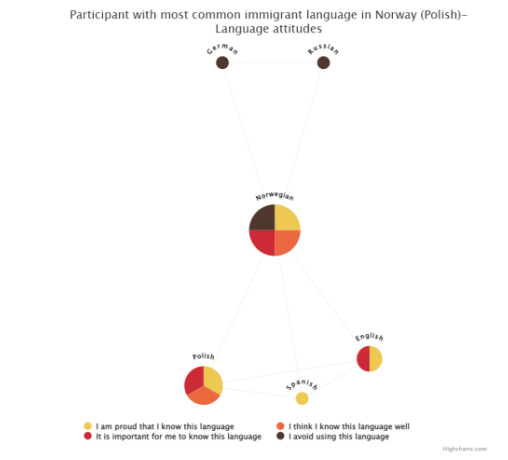
Highcharts.com

Figure 10

7. Conclusion and the way forward

This article presented and discussed visual models for the contexts of practice and language attitudes in the linguistic repertoire of lower secondary students, in an attempt to outline the potentials of developing practice-based, learner-oriented models of multilingualism. Although a number of models of multilingualism exist in the field, they mainly explore/explain the language learning processes in the multilingual mind (e.g., Herdina and Jessner 2002; Jessner 2008; Hufeisen 2010, 2018) or

suggest how multilingual approaches can be implemented in education (Meissner 2004). As discussed earlier, in spite of its practice orientation, the DLC model (Aronin 2019; Aronin and Moccozet 2021) does not include the representation of the language practices multilingual individuals routinely engage in and is restricted to the most expedient languages. The main contribution of the practice-based models presented in this article is the added contextualisation of language practices and an attitudinal dimension related to learners' multilingualism. A further contribution is the attempt to design interactive digital models that can be used by researchers as descriptive-analytical instruments and by language teachers as exploratory pedagogical tools for raising awareness and promoting discussions about language learning, language practices and multilingualism. In addition, the UPMM models can serve as a basis for the future development of open, participant-centred modelling tools which would allow students and other stakeholders to input their own data.

Nevertheless, given their early stage of development, we make no claims about the UPMM models as implying a fully developed, practice-based models of multilingualism. It also needs to be stated that models like the UPMM can only represent incomplete parts of the multilingual lives of multilingual individual and groups. Thus, for a more detailed, in-depth view of the participants' practices (and the languages associated with them), complementary methods of data collection are required. These would include, for example, questionnaires, language diaries, logs and semi-structured interviews. In addition, better data visualization techniques need to be designed to facilitate the interaction of participants with the data

and the interpretation of the language use patterns by the researchers, educators and other stakeholders.

Language learning never happens in a vacuum. It is always embedded in larger ecologies of practice which shape and determine the patterns of language use and the competences developed by individuals and groups, which in turn end up shaping and transforming the practices themselves. To a large extent, it can be said that (language) learning occurs in this recursive, mutually influencing process. Building models of multilingualism that bring to the fore the interplay between language development and practice can be a fruitful way to understand the role of languages in the lives of individuals in contemporary societies, which are marked by increased mobility, intensified migration and engagement in digital networks of communication (Busch 2017). We hope that the UPMM models represent a step in this direction.

Appendix I
Links to the visual models:
1. Models representing the language practices of the whole group of participants:
file://radisson7.uib.no/multilingual/AllPolarCharts/UIB%20Project%20polar/LangLearnedAtSchool.html
file://radisson7.uib.no/multilingual/AllPolarCharts/UIB%20Project%20polar/5MostFreqNotLearnedSchool.html
file://radisson7.uib.no/multilingual/AllPolarCharts/UIB%20Project%20polar/OtherLangNotLearnedSchool.html

2. Models representing the language practices of individual participants:
file://radisson7.uib.no/multilingual/AllNetworkGraphs/ProtoParticipant.html
file://radisson7.uib.no/multilingual/AllNetworkGraphs/ParticipantWPolish.html
file://radisson7.uib.no/multilingual/AllNetworkGraphs/PartNo3rdLangSchool.html

Appendix II
Ten most frequently mentioned languages in the dataset that are not learned

at school.

Ten most frequently mentioned languages in the dataset that are not learned at school	
LANGUAGE	Number of occurrences
Swedish	214
Danish	173
German	87*
Spanish	84*
French	66*
Russian	26
Polish	22
Nynorsk	19
Chinese	19
Italian	18

*These occurrences refer to participants who do not learn these languages as elective subjects at school.

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Errata for
"Researching Multilingualism in Lower Secondary Schools"

"New Theoretical Perspectives and Methodological Approaches"

André Coutinho Storto

Thesis for the degree philosophiae doctor (PhD)

at the University of Bergen

André Storto 19/01/2023   _____

(date and sign. of candidate)   (date and sign. of faculty)

Errata

Page iv Punctuation: "to help and listen – a great encouragement." - corrected to "to help and listen, a great encouragement."

Page v Preposition: "which are also discussed with the synopsis." – corrected to "which are also discussed in the synopsis."

Page viii Updated information: "Storto, A.; Haukås, Å.; Tiurikova, I. (under review)." - corrected to "Storto, A., Haukås, Å. & Tiurikova, I. (2023). Visualising the language practices of lower secondary students: outlines for practice-based models of multilingualism. Applied Linguistics Review. https://doi.org/10.1515/applirev-2022-0010"

Page ix Malfunctioning hyperlinks: The three hyperlinks under the heading "a) Models representing the language practices of the whole group of participants" should be substituted for the hyperlinks below:

1. https://org.uib.no/multilingual/AllPolarCharts/UIB%20Project%20polar/LangLearnedAtSchool.html

2. https://org.uib.no/multilingual/AllPolarCharts/UIB%20Project%20polar/5MostFreqNotLearnedSchool.html

3. https://org.uib.no/multilingual/AllPolarCharts/UIB%20Project%20polar/OtherLangNotLearnedSchool.html

Page 7 Updated information: In the table, under the column "Article IV" substitute "under review" for "published".

Page 17 Typo: "even though, t for Bakhtin" – corrected to "even though, for Bakhtin".

Page 24 Formatting: footnote 4 extends unnecessarily to page 25 – corrected to just page 24.

Page 32 Formatting: "Figure 1 on the next page provides" – corrected to "Figure 1 below provides".

Page 45 Preposition: "The choice of the use of interactive data" – "The choice for the use of interactive data".

Page 49 Typo: "in the domain of sociolinguistic" – corrected for "in the domain of sociolinguistics".

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