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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.

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Multilingualism; multilingual identity; data visualisations; language learning; participatory research; research ethics

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).

2. 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.

3. 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 participants). 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 visualisation³ 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.

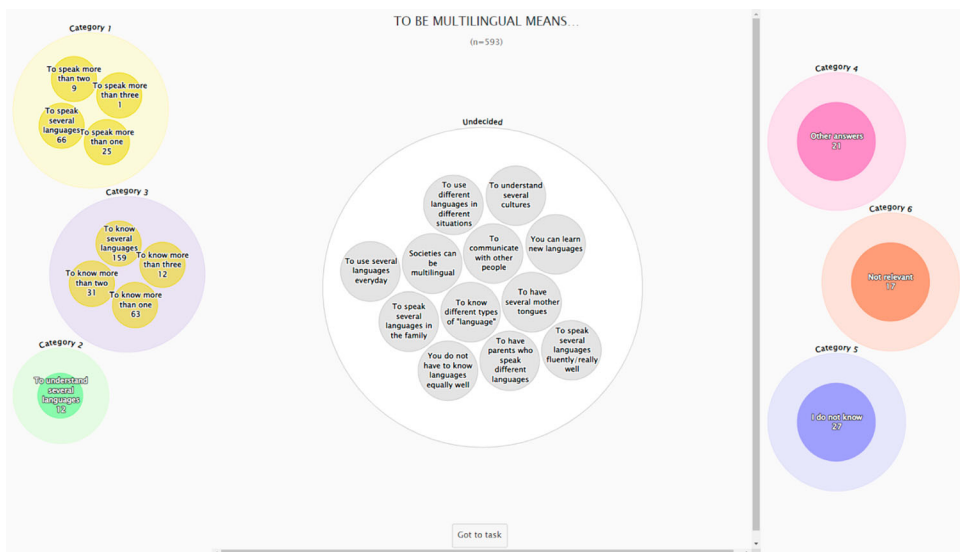


Figure 1. First layer of the visualisation ‘To be multilingual means ...’.

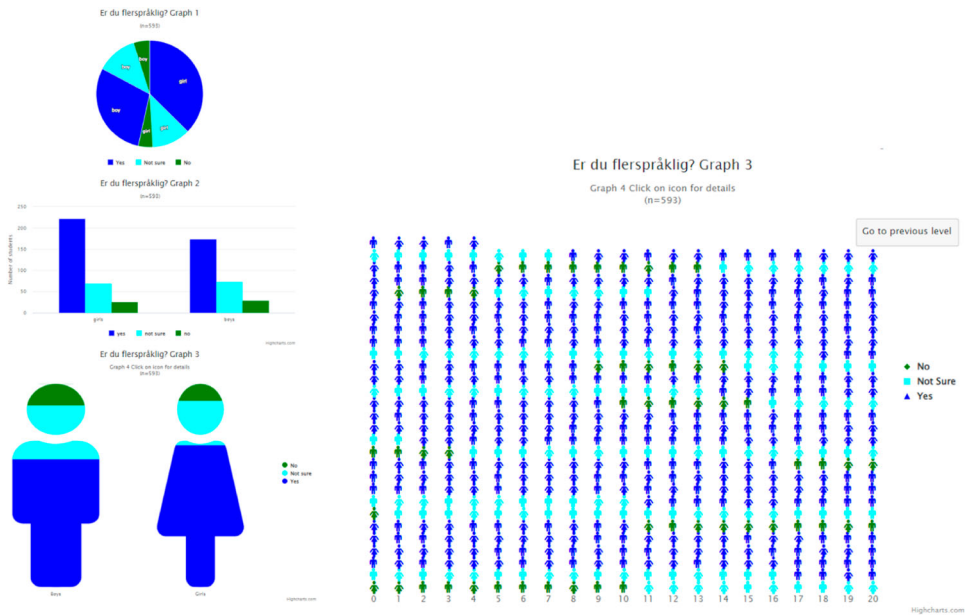


Figure 2. Different types of visuals representing data from the question ‘are you multilingual’ from the questionnaire.

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,

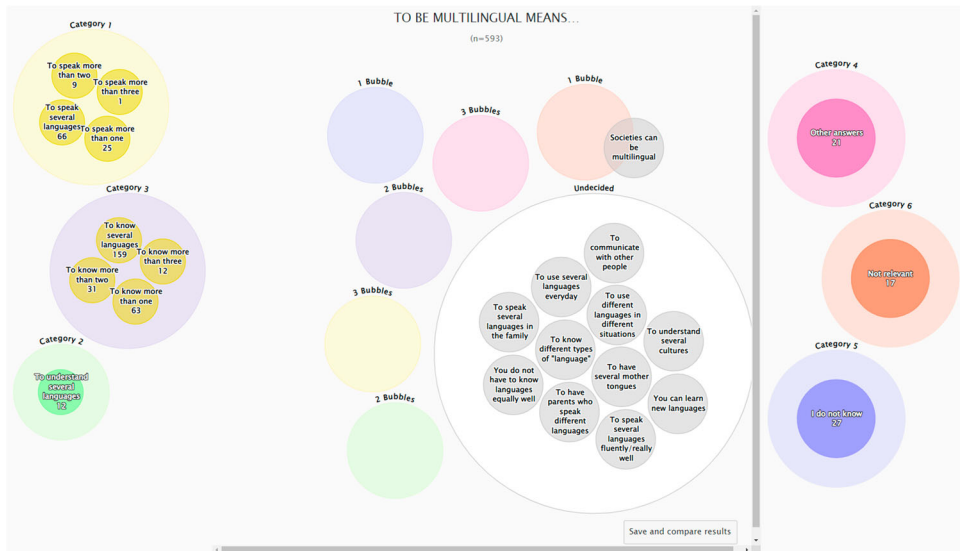


Figure 3. Second layer of the visualisation showing a bubble being categorised.

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, 2020 and included five classes in one of the schools that had participated

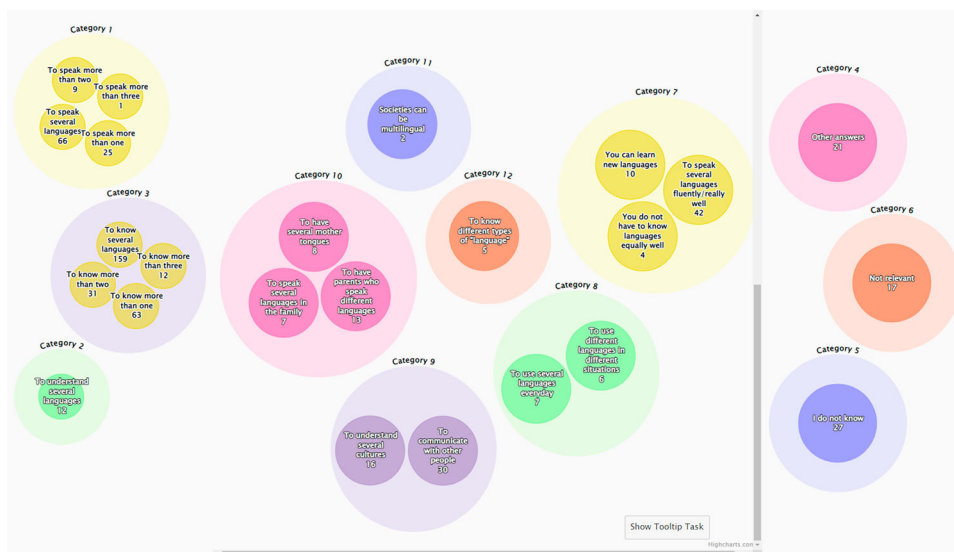


Figure 4. Third layer of the visualisation showing the categorisation done by researchers. The themes for each main category are explained in Table A1 in the Appendix.

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.

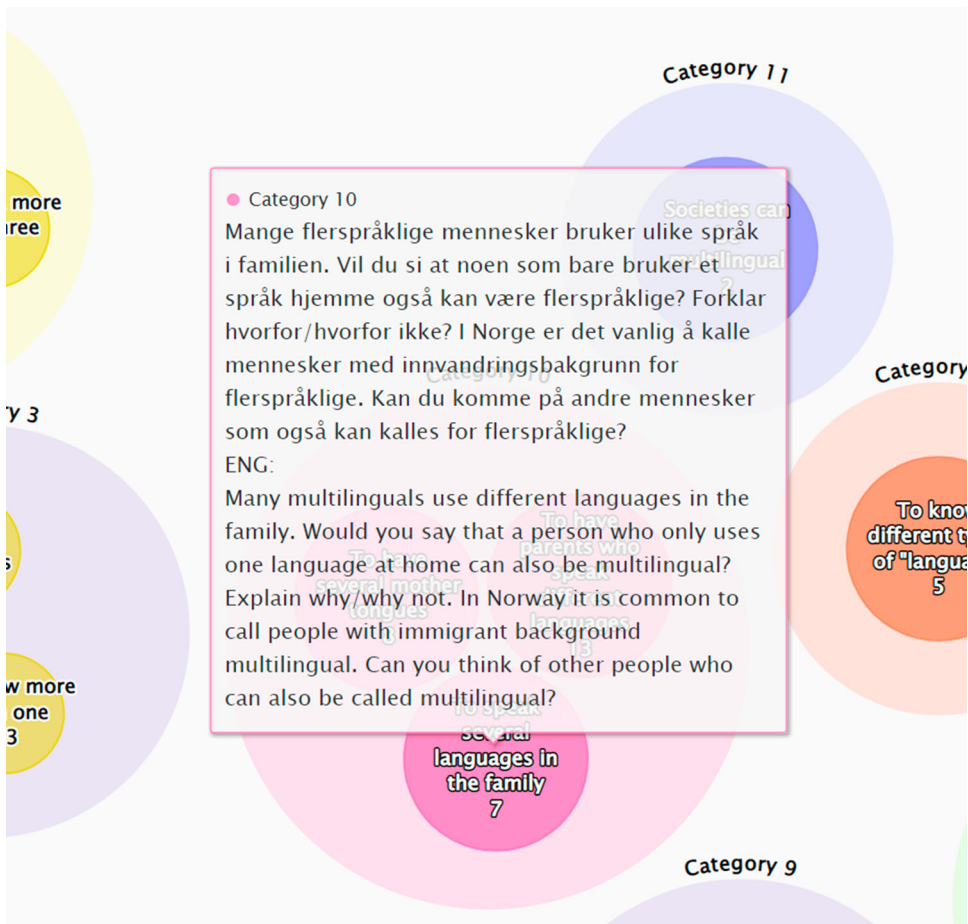


Figure 5. Detail from the fourth layer showing a textual prompt for the category ‘Languages in the Family’ (see Table A1 in the Appendix).

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 re-elaboration 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

proposed 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 participants 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 following⁶:

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' or '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 make-up 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.

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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.