



Benefitting from linguistic diversity for promoting sustainable  
development in language education

-A study of bilingual learning for newly arrived minority  
language pupils in Norway

Mallika Manral

VID Specialized University

Stavanger

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*"We don't inherit the earth from our ancestors, we borrow it from our children."*

-Lester Brown

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Table 1: Informant’s Profile

## Abbreviations

BCD	Biocultural Diversity
BT	Bilingual Teachers (here mother tongue teachers)
FG	Focus Group
FGD	Focus Group Discussion
MT	Mother Tongue
SD	Sustainable Development
NO-T	Teachers teaching basic Norwegian
NSD	Norwegian Centre for Research Data ( <i>Norsk Senter for forskningsdata</i> )
UDIR	Norwegian Directorate for Education and Training ( <i>Utdanningsdirektoratet</i> )

# 1 Introduction

## 1.1 Background of the study

Living on earth is a wonderful opportunity bestowed upon us. However, in the pursuit of making our lives more comfortable we have been adversely affecting nature and its resources through our unsustainable ways of living. This has led to various anthropogenic changes such as climate change and loss in biodiversity which if remain unchecked could affect our future generations in a myriad of devastating ways (Sæverot & Torgersen, 2022, p.3). The concept of sustainable development (SD) helps develop knowledge for preserving earth's resources. It is the need of the hour to disseminate knowledge of SD through education, and curricula form fundamental means of assembling knowledge and disseminating it in different ways (pp. 1-2). Principally, the success of academic education depends on pupil's understanding of the concepts which can be greatly facilitated by providing education in their mother tongue (MT) or adequate support for MT.

The study presents the need to include the theme of sustainable development in the MT curriculum for the newly arrived minority language pupils in Norway with the purpose of fostering *biocultural diversity* (BCD) and fighting climate change. It is important in the Norwegian context as immigrants and Norwegian-born to immigrant parents constitute 18.5% of the population (SSB, 2021a) which implies a high linguistic and cultural diversity in society and the society could benefit from this diversity. In Norway, newly arrived minority language pupils<sup>1</sup> (*nyankomne minoritetsspråklige elever*) refer to the pupils who join a Norwegian school soon after they arrive in the country or who have lived in Norway for quite some time before attaining the compulsory school age. The education system should thus ensure that each child gains knowledge about SD considering its role in preserving the environment and this would enable them to shoulder the responsibility for environment as future citizens of Norway.

## 1.2 Personal interest

Anyone who has had to study in a language other than their mother tongue can understand the difficulties one has to face when studying in a language that was not their mother

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<sup>1</sup> [hvem er nyankomne minoritetsspråklige elever \(udir.no\)](https://www.udir.no/nyankomne-minoritetsspraklige-elever) also called immigrant pupils



tongue. Many of us have experienced the feeling of the lack of opportunity to express ourselves in our mother tongue during our schooling.

As I was searching literature to select a topic that would be socially innovative in community development for my master's thesis research, I was fascinated by how languages could contribute when educating young citizens about sustainable development, with skills and knowledge to fight climate change as a spin-off. Especially interesting was the emergent notion of biocultural diversity (Maffi, 2018). This inspired me to take it up as the topic of my master's thesis. Myself as an immigrant to Norway, I wanted to understand the provisions in education system for the newly arrived minority language pupils. Further, while looking at the new Knowledge Promotion curriculum (Kunnskapsløftet, 2020), I observed the difference between the basic Norwegian curriculum<sup>2</sup> and the MT curriculum<sup>3</sup> with respect to SD. As I pondered on my research topic, I constantly reflected on how can language teaching contribute to biocultural diversity? To elaborate, how can mother tongue teachers support the pupils in grasping the concept of SD? Why did SD become a part of Knowledge Promotion 2020? Why was the theme of SD made pluridisciplinary? I planned my research to explore in detail the potential role of languages particularly the mother tongue, in SD education and identifying ways in which it can help combat climate change and foster biocultural diversity.

### **1.3 Research Questions**

In order to achieve the objectives of the research and bridge the literature gap, it is essential for this research to be guided with set of questions on which knowledge can be gathered.

The research questions are outlined as follows:

#### **The main research question is**

How do teachers incorporate the concept of sustainable development when teaching basic Norwegian and mother tongue/bilingual to newly arrived minority pupils?

#### **and the sub questions include,**

- a. What is sustainable development and how it is defined in the Knowledge Promotion curriculum of 2020?
- b. How to define the concept of biocultural diversity?

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<sup>2</sup> Norwegian Curriculum: [Læreplan i grunnleggende norsk for språklige minoriteter \(udir.no\)](https://www.udir.no/undervisningsplaner/2020/2020-01-01-lae-replan-i-grunnleggende-norsk-for-spraklige-minoriteter)

<sup>3</sup> MT curriculum: [Læreplan i morsmål for språklige minoriteter \(udir.no\)](https://www.udir.no/undervisningsplaner/2020/2020-01-01-lae-replan-i-morsmaal-for-spraklige-minoriteter)

By providing robust data about why SD has become pertinent in the Norwegian curriculum and why MT curriculum in Norway should include SD as a theme; this thesis brings to light how mother tongue helps keep connections with nature, fight climate change and foster biocultural diversity.

#### **1.4 Key theoretical perspectives**

As mentioned, the immigrant population of Norway forms a sizeable chunk (18.5%) of its population (SSB, 2021a). While this adds to the cultural diversity in Norway, it also implies an increased number of immigrant pupils in classrooms. Norway has put in a lot of resources and efforts for smooth transition of these pupils into their new school system and the new language of instruction. In Norway, the Education Act<sup>4</sup> (1998, section 2-8) makes a provision to provide adapted instruction in Norwegian to children who have MT other than Norwegian or Sami and they could get mother tongue instruction or/and bilingual subject teaching, if considered necessary. It is important to identify how the benefits from the provisions in the education system can be maximized both for the newly arrived immigrant pupils and for the Norwegian society.

The aim of this study is to gain knowledge about different perspectives on the theme of SD in curriculum and the role of languages particularly the mother tongue in SD education for strengthening the implementation of SD to fight anthropogenic changes like climate change and loss in biodiversity.

The study was conducted in a language school on the west coast of Norway and five teachers comprising of three bilingual teachers (BT) and two basic Norwegian teachers (NO-T) working at the language school were the informants of this study.

Based on perspectives from the literature, the research posits that if the theme of sustainable development is included in the mother tongue curriculum for the newly arrived minority language pupils, it could help combat anthropogenic changes of climate change and loss in biodiversity and at the same time promote *biocultural* diversity.

Thus, this study is a contribution to the sustainable ways of promoting biocultural diversity (BCD). It specifically looks at perspectives of NO-T and BT regarding their experience in teaching SD to newly arrived minority language pupils. Focus is also placed on how the

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<sup>4</sup> [the Education Act \(lovdata.no\)](https://lovdata.no)

pluridisciplinary feature of SD supports BCD and how the teachers incorporate the concept of SD in their teaching.

The research focused on mother tongue as it's a potential promoter of BCD that can effectively equip the students with the knowledge of SD which is important for them as future citizens of Norway.

A limitation of the study is my lack of proficiency in Norwegian thereby only accessing the literature in English and I could recruit only English-speaking informants in the study.

### **1.5 Structure of the thesis**

The thesis is organized into seven chapters. Following the introduction, chapter two presents the theoretical framework comprising review of literature and the theoretical concepts for understanding and analyzing the thesis. These include the key theoretical concepts such as sustainable development, importance of languages particularly mother tongue, climate change and BCD. Chapter 3 describes the methodological issues considered and choices made while conducting this study. Chapter 4 illustrates the findings of this research where the results of focus group discussion (FGD) are collated and categorized under different themes so that the reader can relate them to the research questions. This is followed by chapter 5 on discussion where the findings of the study are discussed against the theoretical framework. The final chapter is on conclusion where inferences from the study are presented along with future research perspectives.

## **2 Theoretical Framework**

This chapter provides a contextual overview of sustainable development, climate change, mother tongue and biocultural diversity. Further, the key explorations in understanding connections between sustainable development, mother tongue, biocultural diversity in general and Norway in particular are presented here while answering the following research sub questions of the study

- a. What is sustainable development and how it is defined in the Knowledge Promotion Curriculum of 2020?
- b. How to define the concept of biocultural diversity?

### **2.1 Defining sustainable development in school discourse**

Sustainable development is a complex and multidimensional concept. Since the study addresses the Norwegian school education system, it's important to understand how it is defined in the school discourse.

#### **2.1.1 A wider focus on sustainable development**

Sustainable development entails the sustenance of our natural resources while generating wealth and fostering wellbeing for an ever-increasing population (Pauw et al., 2015). The United Nations Sustainable Development Goals (UNSDGs) advocate for all learners to have knowledge and skills required to promote sustainable development. Following this, SD was included in the Norwegian core curriculum with the objective to enhance knowledge of pupils so that they can make ethical choices with environmental awareness, and the theme of SD includes issues such as environment and climate, poverty and allocation of resources, conflicts, well-being, fairness, demography and education (UDIR, 2017). Increasing the production of manufactured goods with non-renewable resources boosts economic growth but it comes at the cost of global challenges like climate change and biodiversity loss (Maes & Jacobs, 2015). The world is faced with the challenge of continuous loss in biodiversity associated with rapidly growing human population and unsustainable use of natural resources (Rockström et al., 2009). Therefore, in the present time it's important to educate young citizens about sustainable development so that the environmental threats of climate change and decline in biodiversity are checked and the planet remains habitable for future generations.

### **2.1.2 Highlighting education for sustainable development**

As the planet is going through drastic environmental changes mainly due to human activities affecting the environment –the Anthropocene era, education plays a significant role in the formation of pupil’s positive attitude towards environment (Spiropoulou et al., 2007).

We must educate everybody about the effect of our choices on environment so that we can bring about changes in political and economic system to fight the environmental crisis we are facing today as education about environment can help disseminate knowledge and generate the experience to change beliefs, and behavior (Frantz & Mayer, 2014). Education for SD should foster the development of individual and community awareness to support biological, linguistic, cultural diversity considering the existing connection between them, their importance in resilience of ecosystems (Batista & Andrade, 2021), and should highlight connections with nature (Frantz & Mayer, 2014).

Literacy and language choice are key elements of education for SD (Toppo & Rahman, 2020). The pupils should have the opportunity for maximum comprehension as it develops critical thinking, and suitable choice for language instruction is crucial for this (Chomsky, 2007 in Toppo & Rehman, 2020, p. 91). “The words people use, and the patterns formed when people talk and write about topics, contribute to building shared ways by which people understand themselves and the place where they live” (Bromhead, 2021, p. 11). On a global basis, the UNSDG 2030 agenda was adopted by all 193 member states with the aim for all the member states to engage with sustainable development in order to achieve SDGs and the agenda explicitly states the need for SD to be implemented at national, sector specific and individual levels in order to engage with the SDGs (UN, 2015, pp. 5-6). Although, the SDGs have been adopted at the global level in the UN, its implementation needs to be bottom-up (Bardal et al., 2021).

Education for SD is important for both quality education and lifelong learning that enhances the competencies of individuals to bring about transformations in society in a respectful manner for the present as well as the future generations (UNESCO, 2017, p.7). Education for SD is a critical component of consolidated efforts to accomplish all the 17 SDGs as it equips everyone with skills and knowledge to contribute to SD by fostering cultural, economic, and political transformations as well as their individual behavior (p.8). Studies have reported that environmental education at young age appears to have more sustainable effect on

making connections with nature and possibly also results in responsible adults (Ernst & Theimer, 2011; Liefländer et al., 2013). This implies that everyone should know and understand SD and considering its importance at young age necessitates its implementation through education.

### **2.1.3 Sustainable development in Norwegian curriculum discourse**

According to the Norwegian framework plan for kindergarten, young children should acquire understanding of SD and nature conservation (Melis et al., 2000). The Norwegian Directorate for Education and Training (UDIR) stated in their policy document that knowledge on SD should be incorporated at all levels of the educational system, and SD is one of the main interdisciplinary topics guiding the Norwegian 2020 primary and secondary school curricula renewal (Kunnskapsløftet, 2020).

However, sustainable development is a complex concept and its challenging for the schools to implement education for SD (Olsson et al., 2015). Munkebye et al. (2020) provided an account of development of Norwegian policies to implement UN's education for SD. Norway developed two strategic plans for education for SD, Utdanningsdirektoratet (2006) and Kunnskapsdepartementet (2012) for the periods 2006-10 and 2012-15, respectively. Later, a new core curriculum was formulated to engage in cross-curricular teaching to address the three interdisciplinary themes of sustainable development, democracy and participation, and public health and wellbeing (Kunnskapsdepartementet, 2016). The interdisciplinary feature of SD involves that teachers from different subjects need to collaborate and need to teach beyond their subject boundaries (Munkebye et al., 2020).

Kunnskapsdepartementet (2016) and UNESCO (2017) stated that dialogical competences such as being able to communicate, participate and interact are important for education for SD, and Munkebye et al. (2020) in their research have reported evidence of untapped potential in Norwegian language subject for teaching SD. They explored the contributions of different subjects such as natural sciences, social studies, Norwegian as language, Mathematics, English, physical education, Christianity, religion, philosophies of life and ethics in teaching sustainable development (p. 802) but they did not mention mother tongue teaching. Looking myself at the two curricula for minority pupils (UDIR, 2020a & 2020b), the topic of sustainable development is not mentioned in the curriculum for mother tongue teaching (UDIR, 2020b). A comprehensive understanding of academic concepts can

be achieved when it's taught in a language that a pupil is fluent in and this brings in the role of language and culture.

## **2.2 Languages, cultures, and bio-organisms: A necessary combined focus**

This section will explore the need to link languages, cultures and bio-organisms for maximizing the benefits of sustainable development.

### **2.2.1 A combined loss of languages and biodiversity**

Human activities are disturbing and destroying the world's ecosystem and this is leading to extinction of species coupled with extinction of human cultures and languages (Maffi et al., 2014, p.8). Languages represent cultural identity and are instrumental in transmitting cultures (p. 8). In addition to transmitting cultures, languages reflect knowledge of various life forms and all the elements that form the ecosystem of humans (Upadhyay & Hasnain, 2017).

Majzoob and Rais (2011) stressed on the need to formulate educational and social programs to encourage the use of endangered languages through the curriculum and the co-curriculum as availability of opportunities to use one's own language can go a long way in preserving and developing one's culture. Although, there has been an increase in migration throughout the world in the 21<sup>st</sup> century and this has resulted in increase in multilingual students in schools where the main medium of instruction is the dominant language of the country and not the student's native language and/or bilingual learning (Alisaari et al., 2019). In world, most countries are multilingual, but their linguistic policies promote one (majority language) or two languages (majority languages and English) (Stoop, 2017). The result is that a large number of children entering elementary education receive teaching in their second language when some of these children have not yet gained second language skills to the level needed to cope with academic learning in school (Heller et al., 2019). Since, oral linguistic skills are essential in the learning process, these pupils have to overcome additional obstacle of gaining fluency in the second language (p. 531), and it may cause lower mental health, learning difficulties, lower empowerment and participation in regular classrooms, and socialization with peers (Higgen & Mösko, 2020). As people switch from their mother tongue to the dominant language, it also hinders the transmission of mother tongue to younger generations (Maffi et al., 2014, p. 10).

Moreover, linguistic diversity is the knowledge bank that we have built up over the ages and includes the know-how for maintaining and sustainably using some of the highly endangered and biologically diverse environments in the world (Skutnabb-Kangas, 2003, p. 43). Different languages have developed their own vocabularies to convey the differences that are significant to their speakers (p. 21). Therefore, languages are said to be the “DNA of cultures” as they encode the cultural knowledge that people inherit from their ancestors (p.21). Unasho (2013) in a study to ascertain intergenerational language transmission and the negative impacts of language loss on biodiversity conservation reported that loss of vocabularies adversely affects the biodiversity conservation as life in a specific human environment depends on the people’s ability to express environment using the words of that language. Words are the “cultural genes” of the language (p.13). It has been reported that populations living in interdependence with the environment develop more sustainable ways of living (Harmon & Loh, 2010; Elands et al., 2019). Frainer et al. (2020) presented case studies of how different indigenous communities have been able to protect their ecological systems through the use of their native language.

Linguistic policies play an important role as they steer which languages are promoted by making education available in their language, which can be beneficial in terms of keeping the education system simple to manage but it affects the learning of many pupils for whom the language is new/foreign.

### **2.2.2 Linguistic diversity in world and its development and/or decline**

There is a highly uneven distribution of languages in the world in terms of speakers as only 5% of all languages are spoken by 94% of the world population and the remaining 95% are spoken by 6% of the world population (Grenoble et al., 2011, p. 28). The geographic distribution of languages depicts that one-third of all languages are spoken in Asia, 30% are spoken in Africa, less than 15% are spoken in the Americas and only 3.5% are spoken in Europe (p. 28). In other words, around 350 languages have over one million speakers while eight languages (Mandarin, Spanish, English, Bengali, Hindi, Portuguese, Russian and Japanese) have over 100 million speakers (p. 28); it thus shows the discrepancy of development and the fragility of many languages compared to the power of a few others. Further, the linguistic diversity in Europe is particularly low reflecting the need to promote linguistic diversity.



Language shift is the primary cause for language loss; language shift implies that speakers break off from their native language and switch to a politically and/or economically dominant neighboring culture (Grenoble et al., 2011, p.27). Languages become extinct as mother tongues as they become second language for its speakers due to their usage only in private areas like homes (Loh & Harmon, 2010). As the world became increasingly globalized, the issues of language loss, language endangerment and language extinction were neglected (Upadhyay & Hasnain, 2017). Languages across the world are declining both in their absolute numbers of speakers and the linguistic and cultural diversity they represent (Loh & Harmon, 2010).

The pace of language extinction is so fast that around 95% of the 6000 spoken languages in the world may become extinct in this century and the remaining 5% will be limited to a maximum of twenty language families and more than half of these will belong to only two major language families namely, Indo-European and Niger-Congo (Krauss, 1992). When the number of people shifting to another language increases, a greater number of speakers get concentrated in fewer languages (Loh & Harmon, 2010). Thus, over the past few centuries, hundreds of languages have vanished, and the trend is constantly rising across the world due to the homogenizing pressure on account of national assimilative policies and unequal economic globalization (Skutnabb-Kangas, 2003, p. 30). This causes a combined decline in language and biodiversity. Although, the European principle of freedom of movement has facilitated internal migration movements and brought higher diversity in classrooms (Özerk & Özerk, 2019), immigration measures and socio-economic factors are affecting the development of linguistic diversity and language learning.

Small and sparse distribution of population boost linguistic diversity such as in the deserts of Chad, islands of Vanuatu or sparsely distributed population in Alaska (Harrison, 2008: 10 cited in Upadhyay & Hasnain, 2017, p. 117). Migration of people due to urbanization and industrialization coupled with unequal demographic distribution are the factors that result in linguistic diversity (p. 118). Linguistic politics in favor of or at the detriment of minority languages are also a main cause for the expansion or the hindrance of linguistic diversity. However, it is important to note the destruction of linguistic diversity and culture not only affects the targeted minority groups; it *also* affects the host society by failing to reap the benefits of its multilingual and multicultural resources that could have bolstered its ability to

play an important social and economic role on a global scale (Cummins, 2001). It also neglects the individual identity, and it may have severe consequences of exclusion or marginalization of some sections of the population.

On the contrary, linguistic diversity in the world can be nurtured by creating and maintaining a high level of public awareness (Maffi, 2002). There is a need to create an atmosphere that will stimulate the administrators and their governments to formulate adequate language policies and educational programs as well as simultaneously educating the next generation about the benefits of linguistic diversity for health and vitality of both human societies and ecosystems (p. 391). Diversity makes a difference as it has a significant effect on the productivity and stability of natural ecosystems and their role in it, many of which are significant for key development areas (Roe, 2019). There is a need to foster linguistic diversity so that the languages survive and thereby support the ecosystems to thrive. Therefore, it is important to continue to use mother tongue as native speakers of a language are the ones who can continue to nurture the language but the usage in public sphere will of course be governed by the linguistic policies of a country.

### **2.2.3 The significance of mother tongue teaching in minority pupils education**

In order to maintain linguistic and cultural diversity on our planet, educational linguistic rights are human rights of utmost importance because intergenerational transfer of languages is the most important factor for their maintenance (Skutnabb-Kangas, 1998). Having to study in a language that is not their mother tongue violates children's right to an appropriate education, and it affects the communication between children and their parents (Cummins, 2001). Mother tongue education in school helps to develop not only mother tongue but also nurtures their abilities in the majority school language. When children learn mother tongue, they learn concepts and develop intellectual skills that help them to perform better in the majority language (p. 18). I therefore argue that the school system should provide mother tongue education to minority pupils. The objective of the mother tongue framework is to increase the access to education and to improve the quality of education by providing teaching in the first language prior to transition to other languages (Benson, 2004, p. 17). Mother tongue based multilingual education focusses on using the native language as a medium of instruction with an aim to achieve equitable educational opportunities for the speakers of native languages (Rumenapp, 2014).

It has been reported that teaching in mother tongue can effectively blend indigenous knowledge systems into formal curriculum (Laguarda & Woodward, 2013). Baker (2018) in their qualitative study on dual language learners reported that the bilingual teachers believed that bilingualism should be viewed as an asset and the bilingual families should be considered as resource to the community. Failure to support native language have consequences both on students with migrant background as well as students of the majority population as the latter fail to make use of the linguistic resources of former. Overall, there is an urgent need to raise environmentally conscious individuals as there has been an increased realization of environmental issues since early 2000's and this has affected mother tongue curriculum and educational policies in many countries (Uyar, 2016).

Studying in a foreign language increases early dropout rates and makes learning to read and write more challenging (Skutnabb-Kangas, 2003 p. 43). Also, there is a prevailing misconception that indigenous and minority languages cannot be used for meaningful purposes and cannot be adopted to modern technological information society (p. 43). Bøyesen (2009, p. 44) provided an account of the importance of mother tongue teaching. First, mother tongue is the tool for acquiring knowledge about the world. When a pupil must study in a language that is yet to be mastered, the continuity of concept formation is affected. It is daunting for the child to master language and understand the concepts in second language, simultaneously. When the concepts are understood in mother tongue, it is a smooth to transfer the knowledge gained to the second language. Further, socialization and family relations grow stronger and the parents can support child's learning in multiple ways. Mother tongue teaching also safeguards identity, culture and traditions (p. 44-46). Mother tongue instruction in the initial school stage forms a strong 'bridge' for pupils for the transfer of literacy skills from the already known language/s to a new language and thus support the learning of second/additional language and academic achievement (Thomas & Collier, 2002, p. 8). Since the present study is based on Norway, it's vital to present linguistic diversity in the Norwegian context.

#### **2.2.4 Linguistic diversity in Norway and the Norwegian teaching policies**

In the Norwegian school context linguistic majority students are the students with Norwegian as their first language and linguistic minority students are the students with home language other than Norwegian (Vikøy & Haukås, 2021). In the political school

discourse, the immigrants are labelled “linguistic minority pupils” (*minoritetsspråklige elever*) along with Norway’s “national minorities” and “the indigenous people”, the Sami’s (Özerk & Özerk, 2019, p. 350). The linguistic minority students could have lived in Norway and could be competent in Norwegian while the others could be newly arrived immigrants who have just begin to learn Norwegian (Vikøy & Haukås, 2021).

The official languages of Norway are Sami and Norwegian with the latter being the majority language (Özerk & Todal, 2013). Apart from these, the indigenous Sami people of Norway have three different languages, Northern Sami, Lulesami and Southern Sami (Özerk, 2013). Kven, Romani, Romanes and Norwegian sign languages come under the national minority languages (Vikøy & Haukås, 2021). The foreign language subjects are usually, English, French, German, Spanish. Mother tongue teaching for language minorities is a transition subject offered to minority students who are on their path to becoming proficient in Norwegian (p.2). Further, the linguistic minorities in Norway comprise of about 200 languages (Özerk, 2013). In some schools in Oslo, more than 90% students have their registered first language other than Norwegian (Özerk & Kerchner, 2014) and this depicts a wide variety of languages at a particular school.

Equality and equity are the foundation stones of Norwegian public educational policy as the 1997 law of education and national curriculum document of 2006 emphasize the concept of equity, “to provide equal opportunities in education regardless of abilities, aptitudes, age, gender, skin color, sexual orientation, social background, religious or ethnic background, place of residence, family education and family finances” (cited in Øzerk & Kerchner, 2014, p. 443). According to the Norwegian education policy, consideration is given to special needs of language minority pupils in order for them to be equipped to take up higher education and employment. In order to accomplish equity in education, “positive discrimination”, “inclusive education” and “adapted education” are used (p. 443). However, language minority students need to be tested to assess their proficiency in Norwegian but there is no standardized test for it. The additional language services and bilingual support need parental approval (p. 457). Although multilingualism and linguistic diversity are considered as a resource in the curriculum with an aim to improve student’s multicultural awareness, there is absence of guidelines on the interpretation of the competence aims and

this leads to different understandings of multilingualism and how it is valued by the teachers (Vikøy & Haukås, 2021, p. 2).

Mother tongue teaching is no longer offered to the students if the school considers that the student has gained proficiency in Norwegian (p. 4). However, mother tongue teaching and bilingual subject teaching in Norway for minority pupils is marginalized (Loona & Wennerholem, 2017). As per the Education Act (1998, section 2-8) in Norway, primary and secondary school children are entitled to get education according to their ability. Further, the Education Act states that the minority language pupils have a right to special instruction in Norwegian as second language until they are fluent enough to follow regular class teaching in Norwegian. They also have the right to mother tongue instruction, “if necessary” as it is stipulated in the section 2.8 of the Education Act (1998). This expression “if necessary” is ambivalent because who decides upon this type of teaching? There is no doubt when mother tongue teaching is conditioned to the ability in the Norwegian language, that it is the Norwegian dominant side deciding upon the type of teaching for minority students. If they do get mother tongue and/or bilingual learning, this formal disposition can only be applied for up to two years.

Another key principle for the Norwegian school system is adapted education (*tilpasset opplæring*); it means that the education shall be adapted to the educational needs and life situations of pupils (Bøyese, 2009, p.40). Adaptive education comes under the purview of ordinary teaching (Gøranson et al., 2020). The objective of adapted ordinary education is to provide opportunity to every student for best possible learning by adapting the curriculum and teaching methods in the pupil’s classroom (p. 274). In other words, mother tongue teaching and/or bilingual teaching is not considered a right on its own. Instead, it is dependent on the right to adapted language education in Norwegian and the student’s proficiency in Norwegian (Loona & Wennerholem, 2017, p. 318). This thus means that a student with sufficient skills in Norwegian language to follow regular classes in Norwegian denies him/her to have a right to mother tongue/bilingual subject teaching. It is at the discretion of the school administration to decide if the student can be given mother tongue teaching/bilingual teaching (p. 318). As such, the principle of adapted education is not really adapted to the real language needs as mother tongue gets invisible.

Mother tongue instruction varies greatly from place to place in Norway (Loona & Wennerholem, 2017; Norozi, 2019). For instance, there were only four pupils receiving native language training and bilingual education in Oslo and in Rogaland there were 230 such pupils (SSB, 2021b). The number of pupils who received only mother tongue teaching and those who received only bilingual teaching across Norway were 1989 and 6655, respectively (SSB, 2021b). In the municipalities of Bergen and Trondheim 88-89% students attending classes in adapted Norwegian were offered some kind of mother tongue and/or bilingual teaching whereas only 20% of students were offered such teaching in the municipalities of Oslo and Drammen in the year 2013 (Loona & Wennerholem, 2017, p. 318). Many small municipalities in Norway often opt out of providing these services due to the lack of manpower or/and funds (p.318).

The curriculum for [basic Norwegian for linguistic minorities](#) is different from the [mother tongue curriculum](#) as sustainable development is a pluridisciplinary theme in basic Norwegian curriculum. On the other hand, mother tongue curriculum lacks SD as a theme putting the mother tongue pupils at a disadvantage.

Thus, the decline of the use of mother tongue teaching is problematic. Language, literacy and development are interconnected and affect each other in several ways (Toppo & Rahman, 2020). Dominant languages in school settings can create linguistic imbalance as mother tongue and other regional languages get neglected (p. 91). Linguistic diversity is tied with cultural diversity that is explained in the next section.

### **2.2.5 Cultural Diversity**

Collard and Foley (2002, p. 2) defined culture as “a social group that shares some set of traits such as languages, dialects, belief system, political organization, kinship system and so on, and which is distinct, either in its own view or the view of other such units”. Human communities have differentiated through cultural evolution rather than biological evolution since the genesis of the species. The human species have remained biologically and genetically homogenous, but broad social, cultural and linguistic differences have existed between the world’s populations (p. 3). Cultural diversity entails the wide variety of worldviews, lifestyles, knowledge banks, value systems and this makes a complex global web of human cultures, the “ethnosphere” (Maffi et al. 2014, p. 8). Today’s cultural diversity is possibly a fraction of the diversity that has existed since the human civilization came into

existence (Pagel & Mace, 2014, p. 275). Human cultures are analogous to biological species in the sense that the latter carry genetic adaptations to their environments and the former evolved as a response to social life. Further, similar to the species that do not interbreed, human cultures are often resistant to influence from other cultures. Cultures are also vertically transmitted like genetic information (p. 275).

### **2.3 Finding solutions to environmental threats by promoting linguistic diversity**

Sæverot and Torgersen (2022 p.3) identified climate change and decline in biodiversity as two of the top ten existential threats of human life that are largely due to human activities. These threats can be addressed holistically by nurturing linguistic diversity which can promote biocultural diversity and check climate change. Biocultural diversity is a complex that originates from the co-existence and overlap of biological and cultural diversities.

#### **2.3.1 Climate change**

In Norway, although petroleum sector is the largest contributor to the economy; agriculture, forestry, fisheries, aquaculture, and hydropower also form important elements of it and they are all climate sensitive sectors (O'Brien et al., 2006). Further, anthropogenic climate change can result in new, largely unpredictable and challenging issues for the society (Næss, 2005) and Covid-19 is the latest example of it (Loureiro & Allo, 2021).

It is highly important to address the human dimensions of climate change and gain an understanding of the ways in which different groups understand climate change issues which is an area of empirical research still in its infancy (Scoville-Simonds, 2018).

Sociologists, policy makers, corporations and NGO's are striving to find ways to engage their citizens in climate change issues (Scannell & Gifford, 2011), and there is a need to educate students to dynamically construct meaning and get involved in critical thinking in order to find solutions to the climate change problem (Castek & Dwyer, 2018). Gavin et al. (2017) in their study on climatic conditions and demography shaping language diversity reported that climatic conditions are important in shaping language diversity patterns. Fløttum et al. (2017, p.1) stated that climate change is not only a physical phenomenon but it's also "political, social, cultural and communicational".

### **2.3.2 Sustaining biodiversity through strong cultural and linguistic diversity**

Biodiversity refers to the diversity of life and ranges from genes and microbes to the predators at highest level and the whole ecosystem (Roe et al., 2019). Unfortunately, anthropogenic climate changes are destroying biodiversity thousand times faster than the natural changes (p. 4). And it still seems that although climate change is getting wider attention, biodiversity loss has not been able to get as much attention as a global problem yet (Legagneux et al., 2018). However, the situation is changing rapidly as signs of many losses become clear. It comes from that human presence on the earth has impacted the global and local patterns of biodiversity (Kim & Byrne, 2006). There is a risk of up to million species disappearing in few decades as a result of human activities, and such a rapid diversity loss has never happened in history before (Frainer et al., 2020). For example, DePalma et al. (2017) provided an account of the effect of human activities on the phylogenetic diversity of European bees and reported that half of the EU 27 countries had lost more than 10% of their average local species diversity relative to the predicted local diversity in uninhabited semi-natural/natural habitat. Loss of species negatively impacts economy, ethics and aesthetics in society and is a permanent change (Tershy et al., 2015). Human diversity may play a significant role in biodiversity conservation as biodiversity acts as the substrate for the evolutionary processes (Cocks, 2006). Decline in diversity increases the chances of life getting destroyed as there is no resilience for environmental change (p. 187). A rapid decline in biodiversity can jeopardize the survival of human race in future and these have led to discussions on the relationship between sustainable development of biodiversity and future of humankind (Hong, 2011).

### **2.3.3 Connecting languages, cultures, and bio-organisms**

Environmental stress affects both species diversity and cultural diversity (Kassam, 2008). In this thesis, I argue for using the emergent concept of biocultural diversity. While biocultural diversity primarily highlights the intertwining of biological diversity and cultural diversity, it also brings out the multidirectional and dynamic nature of interactions between human beings and nature (Buizer et al., 2016, p. 9).

An explanation to the correlation between cultural and biodiversity is that the factors fostering generation or maintenance of species richness could also be important for generation or maintenance of language richness (Moore et al., 2002). Huisman et al. (2019)



investigated the extent of language diversification following the same patterns as biological diversification and reported that geography influenced the cultural processes-language diversification in similar ways as biological processes-species diversification. Experts also have suggested that the diversity of ideas carried by different languages and cultures is as much needed as diversity of species and ecosystems for sustaining human life on earth as this diversity gives the maximum possible spectrum of solutions to the challenges of survival (Skutnabb-Kangas, 2003, p. 29). International organizations such as UNEP, UNESCO, CBD, the IUCN have highly acknowledged the link between biodiversity and cultural diversity (Hong, 2013).

#### **2.3.4 Looking at biocultural diversity**

Loh and Harmon (2005) worked out the index of biocultural diversity by studying the data of 238 countries and reported Papua New Guinea, Indonesia, Cameroon and Columbia as the most biologically diverse countries. Norway, however, was not found in their top 20 list based on index of biocultural diversity. Furthermore, different scholars have given various definitions of biocultural diversity as mentioned below:

It includes biological diversity at all its levels, from genes to populations to species to ecosystems; cultural diversity in all its manifestations (including linguistic diversity), ranging from individual ideas to entire cultures; and, importantly, the interactions among all of these (Loh & Harmon, 2005, p. 231-32).

Further, one may argue for that “biocultural diversity comprises the diversity of life in all of its manifestations – biological, cultural, and linguistic – which are interrelated (and likely co-evolved) within a complex socio-ecological adaptive system” (Maffi, 2010, p. 5). Thus, “biocultural diversity is an evolving perspective for studying the interrelatedness between people and their natural environment, not only in ecoregional hotspots and cultural landscapes, but also in urban green spaces” (Elands et al., 2019, p. 29).

Therefore, diversity of life consists of diversity of plants and animal species, habitats, ecosystems, cultures, and languages; the connections between these diversities have evolved overtime through the accruing effects of mutual adaptations at the global level plausibly of co-evolution of humans and environment at local level (Maffi, 2010, p.6).

Biocultural diversity involves adaptive interactions between the arenas of diversity- biological, cultural and abiotic. (Harmon et al., 2010).

Harmon (1996) reported that 10 out of 12 countries with high biodiversity are also among the top 25 most linguistically diverse countries (Skutnabb Kangas & Harmon, 2017, p. 20). Skutnabb-Kangas et al. (2003, p. 10) also reported both linguistic and cultural diversity increase the likelihood of human adaptation. There is growing evidence that both linguistic/cultural diversity and biodiversity are in great danger (Rapport & Maffi, 2010; Skutnabb-Kangas et al., 2003, p.9). In other words, linguistic homogenization is often accompanied with ecosystem erosion (Stepp et al., 2004). The linguistic, cultural, and biological diversities are under threat from the same forces and the loss of these diversities would have serious consequences for human life and earth (Maffi, 2005). Majzub and Rais (2011) stated that the focus on national languages and national cultures is well intentioned but it greatly affects indigenous languages and cultures. It is estimated that by 2100, up to 90 percent of the languages in the world would cease to exist (Maffi, 2005). This would have grave consequences on the biological diversity and the ecosystems of the world. Majzub and Rais (2011) reported globalization, social changes, and migration from rural to urban areas as the causes for serious decline in number of languages.

Harmon et al. (2010) collated the following significant points from the research by different scholars and disciplines:

- there is a significant overlap of distribution of species and languages
- there are many threats that are common to biological and/or cultural diversity
- it is often thought that indigenous people retain their biological and cultural diversity
- existing disciplines are unable to link diversity in all its life forms necessitating the need for a novel interdisciplinary approach.
- the novel approach needs to articulate practical measures to nurture world's diversity.

There are strong connections between cultural heritage and environmental goals and thereby between world heritage and environmental education (Peters, 2017). In many

world heritage sites this connection and interdependence of biological diversity and local cultures is evident, and these have developed over the years through mutual adaptations between human beings and their environment, interacting with each other in myriad ways, and form the existential elements of the resilience of communities (p. 20). This fact makes it compelling that any policy formulated to achieve sustainable development must consider the interrelationship of biological diversity with the local cultural context (p. 20). Therefore, there is a need for an interdisciplinary approach that can integrate biological, cultural, and linguistic diversity into one frame in order to expedite their growth and address the challenges (Harmon, 1995; Krauss, 1996), an interdisciplinary approach that is also needed to develop in education.

### **2.3.5 Biocultural diversity projects and language teaching**

Humans depend on their surrounding landscape and biological resources and in the course of civilization have developed new species both in plants and animals that has promoted cultural diversity such as food culture, and residence culture (Hong, 2013). Humans have realized the importance of the association of their culture with various bio-organisms that has existed throughout the history of humankind and this has led to the growth of protected areas and sanctuaries as the residents of these areas recognize them as places that represent their identity (p. 103).

For example, the conservation of biological diversity is the key element of programs and missions of botanic gardens and considering the link between the threats to biological and cultural diversity incorporating awareness of cultural diversity as a part of their conservation mission (Dunn, 2017). The Royal Botanic Garden of Jordan exhibits botanical history and diversity of the country along with its geologic and cultural history thereby showcasing the interdependence of biological and cultural conservation. Some other projects that are working on the incorporation of indigenous cultures in the restoration of habitats of declining species and revitalize practices and knowledge are large-scale indigenous-led surveillance of wildlife populations (Luzar et al., 2011 cited in Wilder et al., 2016, p.499), carbon stocks (Butt et al, 2015 cited in Wilder et al. 2016, p. 499).

The link between natural environment and culture exists in the form that the process of culture, behavior, beliefs appear and are encrypted in the landscapes (Hong, 2013).

Throughout the world the regions with high biological diversity tend to be the abodes of ethnic minorities with high density in linguistic diversity and are places of significance in terms of cultural diversity (p. 103). Analysis of three case studies of human ecological relations in the Circumpolar Arctic revealed that conservation of ecological and cultural diversity is intertwined and requires transcending national boundaries (Kassem, 2008). And importantly, in order to promote sustainable biocultural diversity, linguistic diversity and biodiversity should be conserved simultaneously rather than in isolation (Unasho, 2013). Since, areas of high biodiversity tend to have a high number of different languages (Skutnabb-Kangas, 2003 p. 39), there is a need for an integrated biocultural approach to planet's environmental crisis (p. 43).

Humans adapt themselves to their environments when they use resources to sustain themselves in those environments and in this process, they acquire deep knowledge about the different species, their relationships and ecosystem functions (Maffi, 2008). This traditional knowledge of the environment helps them to nurture nature in their environment thereby fostering SD, and language is a crucial tool by which this knowledge is passed from one generation to the next (p. 14). This knowledge remains dynamic in the societies that have a direct link and dependence on their environments such as the indigenous communities that form the largest chunk of cultural diversity (p. 14). The education system also plays a vital role. Unfortunately, the world's ecosystems, cultures, languages are slowly getting destroyed by global economic, political, social, and educational forces making the biocultural world fragile with an uncertain future of all the species including humans (Maffi et al., 2014). Getting disconnected from their ecosystems, humans are destroying conditions for life while suppressing other life ways that could help them learn about sustainable ways of living (p. 8). There is an urgent need to protect, conserve, restore and sustain the diversity of life in nature and culture and this can be done if we make biocultural diversity a societal goal (p. 8). It also must become a key educational purpose. A part of this endeavor must focus on revitalizing mother tongues and indigenous people keeping their traditional livelihoods based on local natural resources (Wilder et al., 2016). It must foster the diverse languages taught in mother tongue and bilingual teaching in Norway and address the decline of this teaching.

In sum, the theory chapter explained the significance of sustainable development and how it is defined in the Norwegian school discourse. The provision in education system regarding mother tongue teaching education has also been described. Existing literature on the themes of sustainable development, mother tongue, linguistic diversity, climate change and biocultural diversity has been presented to provide a background knowledge for the reader to understand the main research question. This chapter is followed by the chapter on methodological issues and choices made while carrying out the study.

### **3 Methodological Issues and Choices**

This chapter describes the qualitative fieldwork I carried out. In order to facilitate the transition of newly arrived minority language pupils to their new language of instruction, there are language schools in Norway. These schools have teachers that teach basic Norwegian (NO-T) and teachers who provide mother tongue/bilingual (BT) support. The objective was to gain a deep insight into the views and opinions of teachers on the concept of SD and the method employed for this was FGD. Empirical data was generated by conducting FGD to bring out the perspectives of the two different groups of teachers, NO-T and BT. In this chapter, I also focus on validity and reliability on the informants' perspectives with least possible researcher's bias. Further, the chapter describes ethical considerations, limitations and benefits of the present study.

#### **3.1 Data collection**

##### **3.1.1 Access and informant recruitment**

In order to answer the research questions of this study, I specifically wanted to meet bilingual teachers and teachers teaching basic Norwegian to newly arrived minority language pupils for the purpose of this study as they were the language teachers for these pupils. A language school on the Norwegian West coast which is an authorized center for providing language and social studies teaching to newly arrived immigrants was selected for the study on the basis of convenience. In order for the study to be in compliance with the competent research authority, approval for carrying out this research was obtained from Norwegian Centre for Research Data (NSD) (see appendix 3) by filing an online application. The rector of the language school was approached by the researcher and the purpose of the study, the significance of the study, and the requirements for selecting the informants were explained. The NSD approval letter was helpful in gaining permission from the language school to carry out the study at this school and for recruiting informants for the study.

##### **3.1.2 Sampling**

The sample selection was both purposive and convenience. It can be said that the sampling was purposive as the two focus groups were formed with the objective to know the views and opinions of the two types of language teachers in order to find answers for my research

questions. The informants were also selected so as to have cultural diversity within groups and those teaching different grade levels. These requirements were explained to the head of the multilingual department (*avdelingsleder, flerspråklig avdeling*) and the recruitments were made by this individual. The limiting factor here was that the researcher was fluent only in English language and this meant that only those teachers could be selected for the study who were fluent in English. At the same time, the sample was a convenient sample as within each group, teachers who agreed to participate in the study and could meet in a group at a specific time/date with the researcher were selected for the study. All the communication between the head and the researcher for recruiting informants and scheduling appointments took place either face-to face, via emails or through phone calls.

### **3.1.3 Challenges with recruitment**

The Covid-19 pandemic was a major challenge with the recruitment of participants for the study. When the first contact was established with the language school in December 2021 to carry out the research, the pandemic had escalated in Norway and the new regulations required moving the teaching from on-campus to virtual teaching. At this point of time, the teachers expressed their inability to participate in the study as they were busy preparing for virtual teaching. The language school was contacted again after the regulations were lifted and teaching was switched from virtual to on-campus teaching in January 2022. At this point of time, the teachers were willing to participate but due to sickness among the teachers, it was challenging to have the group discussion while following the Covid-19 regulations. Therefore, FGD had to be rescheduled a couple of times and were finally conducted in February and March 2022.

### **3.1.4 Sample size**

Ideally, focus group (FG) should have 6 to 8 participants but focus groups can work successfully with as few as three participants and as many participants (Mishra, 2016). In view of the short duration of the master's thesis, the covid-19 challenges, and the number of teachers available to participate in group discussion, it was decided to have two focus groups with three participants in each group. However, at the time of data collection, in one of the focus groups only two participants could be recruited because of the aforesaid challenges.

## **3.2 Methodological choices**

### **3.2.1 Focus group discussion**

Focus groups as a primary method of data collection can be used either to explore new areas or research questions or to evaluate the existing areas from research participants own perspectives (Wilkinson, 1998). FGD unfold the meaning encompassing an issue which includes both, the meanings that people hold for the discussion topic and how they derive those meanings. Further, focus groups create diversity and difference within or between groups (Lunt & Livingstone, 1996). Focus group is characterized by the participant's involvement, similarity among participants in terms of research interest, the generation of qualitative data and discussion targeted on particular research topic (Mishra, 2016). It's not uncommon for two focus groups having same demographic and life-phase characteristics to have different perspectives on the same topic (p. 2).

In the present study the purpose of using FGD as a primary method of data collection was to gain an understanding of teacher's perspective on teaching SD to the pupils.

The focus group method is a form of group interview in which there are several participants (in addition to the moderator/facilitator); there is an emphasis in the questioning on a particularly fairly tightly defined topic; and the accent is upon interaction within the group and the joint construction of meaning (Bryman, 2016, p. 501).

Research employing FGD seeks to stimulate a richer discussion through interaction between the participants (Kitzinger, 1994). It generates experiences and insights that would be less attainable through interviews or participant observation (Farnsworth & Boon, 2010; Boateng, 2012). The primary reason governing my choice of FGD as data collection method is that the FGD would be a platform for the informants to discuss their insights and experiences with one another on the topic and this knowledge generated through discussion cannot be acquired through interviews.

FGD allows to get insight into how people "make sense of a phenomenon and construct meanings around it" (Bryman, 2016, p. 502). The aim of the present study is to collect data relevant to the topic while trying to understand what the participants think based on their



experience of teaching the newly arrived minority language pupils. As the participants engaged in discussion, the teachers discussed the theme of SD and the challenges that they face during their interaction with the pupils.

The aim of FGD is not to achieve consensus among the participants but to acquire knowledge about their perspectives and experiences (Hennink, 2014 p.1). Focus groups can be used to get information about a range of ideas and feelings that individuals have about certain topics and for highlighting the differences in perspectives between groups (Rabiee, 2004). Two FG were formed for this study with the notion that there could be possible differences in the way the two groups of teachers think about teaching SD and also about fostering diversity through teaching languages. The first FG comprised of three bilingual teachers who provided mother tongue support to the pupils and the second focus group consisted of two teachers who taught basic Norwegian to the newly arrived minority language pupils.

In an FGD, questions are designed so as to stimulate discussion in order for the group participants to reveal a wide range of views (Hennink, 2014, p. 2). Each question in the present study was broad in the sense that there could be many different answers for it; for instance, the question on the meaning and understanding of SD would be answered in a different way by each person and the different answers would encourage discussion among the participants as they agree, disagree, supplement, complement or contradict each other's answers. FGD is designed to support a congenial atmosphere where members of the group can discuss the area of research with one another (Boateng, 2012). It was decided to have the FGD in the school itself as it was the informant's regular workplace and it would be a comfortable setting for the teachers to participate in the FGD and discussion that takes place would be more natural.

As the participants interact with each other, they discuss the topic, argue with one another, try convince each other of their point of view, tend to agree or disagree, ask each other questions resulting in a discussion that is in-depth as well as broad in range (Boateng, 2012). According to Lunt and Livingstone (1996) instead of considering group context of FGD as a convenient source of opinions, the group context could be significant to the theoretical framework of research. For instance, in the present study, the two focus groups were BT and NO-T teachers and the curriculum for both the groups differs in terms of the theme of

sustainable development. In the curriculum for the basic Norwegian teachers SD is a theme that they have to teach starting from primary school through high school (UDIR, 2020a). However, the curriculum for BT teachers does not have the theme of SD (UDIR, 2020b). Further, in focus groups, there were teachers from various grade levels and this ensured that the research topic was discussed from various perspectives.

### 3.2.2 Rapport building

There was no prior personal contact with the administrators and the teachers of the language school ahead of the research project. The consent letter was explained well to the participants in order to make them comfortable and open to sharing their thoughts and views on the research topic. More specifically, I explained why I chose this topic for my master’s thesis, the purpose of my study and the significance of language teachers in the community and this help me build rapport with them. The questions on background information such as grade levels taught, number of years of teaching acted as the ice breakers.

The following table illustrates the profile of the informants who participated in the study.

Table 1: Informants Profile

Pseudonym	Sex	Type of language teacher	Grade levels taught	Teaching experience (years)
Audrey	Female	BT	primary and lower secondary	<10
Kylie	Female	BT	primary	<10
Chloe	Female	BT	lower secondary	>10
Hazel	Female	NO-T	primary	<10
Molly	Female	NO-T	primary	>10

I have used pseudonyms to ensure the confidentiality and privacy of the informants. All the teachers who took part in the study were females and there were three BT and two NO-T. The particular grade levels taught by the informants have been presented as broad categories of the Norwegian school system<sup>5</sup>- primary school, lower secondary school, and higher secondary school in order to de-identify data. Among the BT teachers, there were two teachers who had a teaching experience of less than 10 years and one teacher had an experience of more than 10 years. In the NO-T group one teacher had teaching experience of more than 10 years and the other one had teaching experience of less than 10 years. In the BT group, there was one teacher who was teaching primary grades, one teacher who was teaching lower secondary grades, and one teacher was teaching both primary and lower secondary grades. The two NO-T teachers were teaching different grade levels in primary school. Thus, the groups were heterogenous in terms of grade levels taught and the teaching experience.

### **3.2.3 Group dynamics**

The teachers were educated professionals. They did not have any obligation to share their information with me. However, being teachers, they were very much willing and cooperative to share their thoughts with me on the study topic. The way they interacted with me was like a colleague and I believe this was advantageous for my study as they felt free to share information with me. So, in terms of researcher-informant group dynamics, it was a well-balanced discussion.

Further, in each FG, the teachers were colleagues at the same level and they were not in a hierarchy, there was no significant power relation between the participants of a group discussion and I did not observe any one of them dominating the other. Rather, they being colleagues were friendly with each other and the discussions were very open as they would sometimes laugh when sharing some of their experiences and would relate to each other on their teaching experiences. For instance, "Oh well, I have experienced the same with my pupils". There were no major differences on the thoughts shared within a group. However, as expected the views and thoughts of the two groups were differently articulated on the same topic.

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<sup>5</sup> [General information about education in Norway \(nokut.no\)](http://nokut.no)

### **3.2.4 The researcher's role**

I was a complete stranger to the informants, and I think it made them more comfortable to share their thoughts and views on the study topic. I was allocated 75 minutes for each FGD by the language school and this really helped me to keep the discussion on track as I needed to get maximum information from my informants on the study topic during this time duration. My role was to be an active listener as my informants shared their information. The informants were allocated to the study by the head of the department and I had no control over it, this ensured neutrality in the research.

## **3.3 Data analysis**

### **3.3.1 The transcription process**

The FGD were recorded on an encrypted voice recorder and each discussion lasted 45 to 60 minutes. Both the group discussions were transcribed within two days of their recording. It took around 5 hours for each transcription as I went through the recordings several times so that I could reconstruct the voice recording as a text as close to the discussion as possible. The transcriptions were done with pseudonyms so that the informants could not be identified. The voice recordings were deleted from the voice recorder immediately after the transcription. Spoken language derived from discussion is the primary source of data but reflections about the interview, the settings and recording the non-verbal communication expressed by group members can add value to the construction of data (Rabbie, 2004). The notes taken during the FGD were used to supplement the transcription from the voice recording.

Inconsistent sentences and minor grammatical errors which are natural in oral speech were edited in order to make the excerpts presentable with the goal of keeping the scripts as realistic as possible and reflect what was discussed during FGD. This was done with due care so as to not change the meaning of personal statements.

All personally identifiable data materials were stored securely during the study period as per the guidelines for data storage for Norwegian Centre for Data Research.

### **3.3.2 Coding**

Thematic analysis was used to analyze the data by employing step-by-step approach described by Braun and Clarke (2006). In the initial steps, I read the transcript several times

while making initial notes. Codes were created across the data throughout the process of reading and these codes were then either merged or discarded. The repetitions, similarities, keywords and concepts were identified and eventually grouped under the following seven themes:

1. sustainable development
2. importance of languages in teaching sustainable development
3. importance of mother tongue
4. climate change
5. diversity
6. connection with nature
7. biocultural diversity

Thematic analysis is a flexible approach that is not bound with any theory and provides core skills in analyzing qualitative data especially for novice qualitative researchers (Braun & Clarke, 2006)

### **3.4 Ethical Considerations**

The Norwegian National Research Ethics Committee (NESH, 2016)<sup>6</sup> guidelines for research ethics were followed for the ethical considerations of the present study. According to concepts of sustainability and prudence in research ethics (NENT,1997 as cited in NESH, 2016), researchers must ensure that their research does not breach any laws and regulations or pose a risk to people, society or nature. This was accomplished by obtaining approval from NSD. Further, consent was taken from the administration of the language school regarding conducting the study with their teachers as informants of the study. Moreover, the scope of this research was limited to collecting the views and opinions of informants on the research topic. In the present study, data was collected from individuals therefore the aspects of human dignity, privacy, informed consent, confidentiality, storage of personal data, responsibility for avoiding harm and respect for third parties described in NESH (2016) guidelines were of high significance.

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<sup>6</sup> NESH (2021) could not be used as its English version is not available yet

### **3.4.1 Human dignity**

Human dignity in data collection was ensured by not putting undue pressure on any informant to discuss a topic which they did not want to discuss. Further, before beginning the FGD, they were also made aware of their right to withdraw from the research at any time.

### **3.4.2 Privacy**

The personal data of the informants was processed strictly as described in the consent form (Appendix 1). In the present study, the informants could be identified directly or indirectly as part of their communities therefore, both the informants and the language school were anonymized in the thesis to prevent their traceability.

### **3.4.3 Informed consent**

Nygaard (2017, p. 39) states that informed consent means that the “informants know what they are getting themselves into”. According to Ryen (2016), obtaining informed consent from the research participants implies that they know that they are participating in research work, and they can withdraw from the research anytime as per their will. Each of the study participant received a letter of informed consent in English (all the participating teachers had the ability to read, speak and understand English). This letter contained a brief of the study with a short description of the nature of research tools, information about storing and processing personal data, consent for voluntary participation with an explanation of the informants right to withdraw. The letter was distributed among the participants before the FGD and they were collected from the participants at the time of FGD. I also read the consent letter out loud at the start of actual face-to-face group discussion. Therefore, the participants were well aware of their anonymity, confidentiality and voluntary participation.

The informed consent ensured that they realize it was their individual choice to participate in the research. The awareness of their right to withdrawal meant that they did not feel pressurized to reveal information and if they faced a situation like that, they could simply withdraw from the research. I believe that obtaining informed consent from the FGD participants added quality to the data as the informants were able to contribute towards FGD more freely as they knew the nature of research and were aware of their rights.

#### **3.4.4 Confidentiality**

Confidentiality implies that the research is obliged to protect the identity of informants so that any bits of information cannot be related to the informant's identity, place, and location of research (Ryen, 2016).

The anonymity and confidentiality regarding the participant's identity and information shared was clearly laid out in the consent letter. Nygaard (2017, p.46) stated that usually in interviews people give out more information than necessary and this may make them vulnerable for identification. I thus presented my findings in a way that background information of the informants and place of research is totally anonymized and *who said what* in FGD cannot be traced back to a person or place of research. The aspect of confidentiality was important in my research as in FGD there could have been sudden outbursts of information that could have revealed more of their personal information. Further, any personal information revealed during the discussion was omitted from the findings. Myself as a researcher was aware of my boundaries for getting information on the research topic from the informants. I very well understood that protecting the identity of the informants came first when collecting data from them.

Another important aspect is trust which is the faith that the informants build up in the researcher. Trust helps to build good relations with the informants (Ryen, 2016). Trust of the informants in the researcher can improve the quality of data as they would not have inhibitions in sharing their thoughts (Nygaard, 2017, p. 47). Core principles of ethics such as doing the research honestly, having regard for the informants, having respect for own profession and choosing the degree of transparency in research by keeping the informants protection on priority helped to build trust with the informants. The aspect of trust in ethical standards acted as a reminder to me that I have to carry out the work sincerely and honestly then only I can gain the trust of my informants and this would also ensure the quality of my collected data. The initial conversation with the informants explaining the aim and significance of the study, the NSD approval of the study and the distribution of consent form prior to data collection laid the foundation of trust here.

#### **3.4.5 Storage of personal data**

Encrypted voice recorders were used to record the FGD and informed consent was taken on paper. The voice recorders and the informed consent forms were kept under lock until the

data was transcribed. After the data was transcribed, the voice recordings were permanently deleted from the voice recorders and the consent forms were immediately destroyed after the data was anonymized.

#### **3.4.6 Responsibility of avoiding harm**

The present study did not entail any physical injury to the participants. The questionnaire used for carrying out FGD was also put up in the application for NSD assessment of the study. In the FGD, no strain was put on the informants to answer any of the questions and this ensured that there was no mental pressure on them.

#### **3.4.7 Respect for third parties**

It is stated in NESH (2016) guidelines to protect the privacy of not only the informants but also of any third parties affected by research. Here, the teachers of the language school were the informants and their pupils were the possible third party. The transcription was done with due care so that if there was a mention of a pupil's language, race, ethnicity or country, the information was either anonymized or completely omitted.

### **3.5 Reliability and validity in the research project**

#### **3.5.1 Reliability**

Reliability refers to the degree of accuracy of a measurement or calculation and is a significant marker for data quality (Wagemaker, 2020 p.11).

Data collected in this study was reliable as it was free of biases and judgements as I was a stranger for my informants. I believe that the informants felt totally free to express their thoughts and views as they had willingly volunteered to participate in the study and had no pressure from their employer or the researcher. I had no experience of being a teacher colleague and this worked in favor of my study as I could not personally relate to the information that they shared with me thereby, eliminating the scope of any kind of judgement from me. The information they shared with me was absolutely new to me and I was intrigued by their discussion on the research topic limiting my role in the discussion to ensuring that it did not drift away from the research topic. Further, being teachers of the same subject, they were very active in discussion on the research topic and small groups ensured that each of the informants had the opportunity to freely express themselves.



The sample size of the study is small (five informants only) and the data are the views and opinions of these five informants. If the data is collected from another group of teachers in another municipality or county, it will be different from the present data as views and opinions of different people cannot be the same. Further, the informants were the teachers at the language school. The BT were teaching/had taught at both the language school and the regular school and their perspectives were a mix of their experiences at the two kinds of schools. On the other hand, NO-T were teaching only at the language school which as described by the teachers are more focused on making the pupils gain fluency in Norwegian. It is a likely that the teachers teaching Norwegian in regular schools will have different opinions.

### **3.5.2 Validity**

Validity refers to the extent to which an account is representative of a social phenomenon that is being studied (Mullings, 1999). In the initial phase of my research, I selected purposive sampling to discuss the research topic with the two categories of teachers in the language school (BT and NO-T) so that data sets from both the categories had equal representation in the data.

While preparing the interview guide, I made sure that my questions were targeting my topic of interest. Thus, I elaborated the interview guide after reading the theories related to SD and relating to the field of research focusing on bilingual learning in Norway and the revised objectives of the curriculum of 2020.

“An interview guide is prepared to ensure that the same basic lines of inquiry are pursued with each person interviewed (Patton, 2002, p. 343). The same interview guide was used in both FGD, this ensured that data was collected on same lines from both the groups and with the researcher moderating the discussion, it was made sure that each participant had ample opportunity to express their views on each question of the interview guide. This guarantees both the validity and the reliability of the fieldwork process.

### **3.6 Limitations of the study**

I do not know Norwegian language and this posed as a limitation as all the literature studied during the master’s thesis study was limited to the literature available in English. Since, the

study was conducted in Norway, it would have been beneficial for the study if the literature in Norwegian was also reviewed.

The study had aimed to recruit three teachers for each of the two focus group discussions. However, owing to factors such as a smaller number of Norwegian teachers in school compared to mother tongue teachers, inability of some teachers to express themselves on matters such as sustainable development in English, the challenges posed by the pandemic, and the short span of master's research period; there were two participants in the Norwegian teacher's group instead of three as previously planned. In the bilingual teachers group as mentioned before, it was possible to recruit three teachers for the focus group discussion.

The limitation of FGDs is that it needs to consider "possible problems of group effects" (Bryman, 2016, p. 522). This was accomplished by offering everyone in the group, the opportunity to talk in the discussion on various aspects of the research topic. According to Lunt and Livingstone (1996) generalizations cannot be made from FGD data as the sample sizes are small. The results of the present study cannot be generalized owing to its small sample size.

### **3.7 Benefits of the study**

The present study provides a social innovation that can be implemented in the community by promoting mother tongue education and this can foster biocultural diversity in society. This could also address environmental issues such as climate change which are generally limited to the field of science and technology. The important point is that while the scientists and technologists tackle this issue through their ways, if there are means in social science to mitigate climate change and foster biodiversity, humanity must exploit them. Further, first time in the history, humankind has witnessed such a widespread mobility of various racial, cultural, ethnic, religious and linguistic groups and across nation states or posed such challenging issues concerning citizenship, human rights, democracy and education (Banks, 2008). Thus, the study offers another academic approach on the topic from the humanities angle. As such, the present study also could potentially promote academic freedom and democracy in social institutions such as schools. Research is defined as "Any creative systematic activity undertaken in order to increase the stock of knowledge,

including knowledge of man, culture and society, and the use of this knowledge to devise new applications” (OECD, 2003). Conducting this empirical study will definitely add to the existing knowledge of man, culture and society and can particularly be employed to foster academic freedom and democracy in social institutions such as schools as it may induce policy changes in curriculum for the newly arrived minority language pupils so that they are at par with their peers without the pressure to switch to a new language and have a smooth transition from mother tongue to their new language without any subtractive learning.

In summary, I have described the informant recruitment process based on purposive and convenience sampling and the profile of the informants. I have described FGD method that was used for collecting data as this method is known to bring out the perspectives of participants in depth and it also widened the horizon of data as two separate groups of data could be collected on the same research topic from the two categories of the target population (basic Norwegian teachers and the bilingual teachers). I have portrayed my role as the researcher and the challenges I faced during the study particularly due to the Covid-19 pandemic. I have specified the transcription process and the coding system that I used in analyzing the data and the reliability and validity of the collected data. I also have illustrated the ethical considerations of the present study in light of the NESH (2016) guidelines. I have highlighted the limitations of the study particularly that I do not know Norwegian well enough to conduct FGD in Norwegian or read literature in Norwegian. The next chapter is on research findings in which personal statements and individual opinions of the informants about the research topic are presented with an aim to analyze the same in order to answer the main research question of this study.

## **4 Research Findings from Focus Group Discussion**

This chapter focuses on the perspectives of bilingual teachers and teachers teaching basic Norwegian on the topics of sustainable development and biocultural diversity. The coding process involved a thorough engagement with the founding theoretical concepts and the empirical data in order to categorize and identify the final themes under which all the data will be interpreted. Seven themes derived from the theoretical framework are presented as follows:

1. Sustainable development
2. Importance of language in teaching sustainable development
3. Importance of mother tongue
4. Climate change
5. Diversity, language and culture
6. Connection with nature
7. Biocultural diversity

### **4.1 Sustainable development**

Sustainable development is a theme that has been included in the Knowledge Promotion curriculum (Kunnskapsløftet, 2020) as a pluridisciplinary theme reflecting the significance accorded to it by the curriculum makers. The effective implementation of this theme through curriculum can potentially bring changes in society to fight environmental threats such as climate change and decline in biodiversity. The FGD was designed in order to gather data on the significance of SD, its inclusion in Knowledge Promotion curriculum and how it is incorporated in lessons by the Norwegian teachers and the bilingual teachers.

#### **4.1.1 Significance of sustainable development**

The findings in this section of the study explored and discussed the informant's meaning of sustainable development and their thoughts on significance of teaching SD. It was agreed in both the groups that SD theme was of high significance.

All the informants had a clear understanding of SD and each one of them articulated it in their own unique way but there were some similarities in their expressions. In explaining their understanding of SD, informants in both the BT and the NO-T groups expressed their

concern for future generations. They discussed how our unsustainable lifestyle choices could impact the quality of life of our children and it was our responsibility to keep the planet in a livable condition. In the BT group, Audrey said “So just not to think about this generation but about future generations”. Likewise, Molly in the NO-T group responded “It’s about the choices that will affect our future generations”.

All the BT teachers elaborated on how our indiscriminate use of resources could deteriorate the quality of life in future. Furthermore, they emphasized on the significance of judicious use of renewable resources. Kylie shared “If we continue to do what we are doing, then the planet’s resources are not going to be able to sustain”. “The resources that we use, they should be sustainable, they should be renewable,” said Audrey.

In the course of FGD, BT emphasized on keeping the planet safe. This was reflected from their remarks “It’s like keeping a planet and the entire ecosystem in a condition that is usable” said (Chloe). “We should not reach development at the expense of ruining the planet” stated Audrey.

Discussions about SD in both the focus groups was much intriguing but it’s important to point out that the informants in the NO-T group quoted “UDIR” while talking about SD. On the contrary, “UDIR” was not mentioned in the BT group.

I think to me, from a private perspective I have thought mostly about environmental changes but when it comes to UDIR, sustainable development is not only about nature and environmental changes but also about economic changes and development, culture and preserving our cultures and languages ....I think there is a lot of things that you can dive into. (Hazel)

“As per UDIR, as a teacher, you have to integrate this theme into all subjects” added Molly. This leads to the next point; how sustainable development is dealt with in the curriculum from the informants’ points of view.

#### **4.1.2 Sustainable development in the curriculum**

The informants in both the NO-T and the BT group acknowledged the fact that SD is not a topic in mother tongue curriculum, but it is a topic in the basic Norwegian curriculum.

The informants in the BT group discussed that they were primarily meant to offer MT support to the pupils. The lack of SD in their curriculum and the inclusion of SD in the basic Norwegian curriculum came up many times during FGD. For instance, Kylie shared “But we don’t necessarily have sustainable development a subject as such” and Audrey stated: “We do not have it as a topic”.

When discussing the role of language in SD teaching, both Kylie and Chloe in the BT group felt that it was quite likely that the Norwegian pupils were more aware of the SD concepts than their newly arrived immigrant counterparts. Some responses reflecting this were, “It’s possible that the Norwegian pupils know more about it as they have this topic on *bærekraft utvikling* (SD)” (Kylie), “So, maybe in Norwegian its emphasized more” (Chloe).

It was interesting to see that although SD was not in the BT curriculum, BT reported that they had discussed SD some times while providing MT support to pupils in the regular school. This was evident as they cited many examples (presented in 4.1.3) from their MT support teaching experience.

The discussion in the NO-T group highlighted the importance of inclusion of SD in the curriculum. Hazel shared “It’s important that you have this politically included in the curriculum here”.

On the other hand, the informants in the NO-T group emphasized that the theme SD in the Norwegian curriculum required BT support. NO-T stressed with certitude that BT support was essential in teaching about SD as it was a theme that needs rich vocabulary in order to grasp the *big* words of SD. This was reflected from their responses “Because it’s a such a difficult subject to discuss, it should be in BT curriculum because you would need the bilingual teachers to actually help students understand the words” said Hazel and “It would be a big help,” said Molly. The NO-T group also reflected on the possible reasons for the lack of SD in BT curriculum. Molly said “Their (BT) focus is on the mother tongue and helping them (pupils) to understand concepts in Norwegian, maybe that’s why” (Molly). Another perspective to lack of SD in MT curriculum was stated by Hazel: “I think the curriculum should be same for all the pupils”.

The similarity in NO-T and BT groups was that the informants in both the groups emphasized on the importance of having a rich vocabulary for learning about SD. The BT teachers shared

that having SD in the Norwegian curriculum was good but for it to be effectively taught, the power of having a rich vocabulary could not be ignored irrespective of the language whether it was Norwegian or mother tongue. Some of the responses that were generated here were, “It will be interesting to know how many pupils are aware of the term *bærekraft utvikling*” (Kylie). Likewise, an informant in the NO-T group responded: “The students in grade 7 are not aware of “sustainable development” not in Norwegian” (Hazel). The NO-T teachers explained that in the language school, the focus was foremost on learning Norwegian. “When I look at the topics, I would say that sustainable development is not the first thing that we teach here at the language school” (Hazel).

When the informants were asked about their views on the pluridisciplinary characteristic of SD, informants of both the groups discussed that this contributed significantly towards gaining a holistic understanding of SD. It is important to note again that the NO-T group had acknowledged that they were not teaching about SD explicitly and the BT did not have SD as a theme in their curriculum. More specifically, in the BT group it was discussed that although SD was not a theme in their curriculum, they were still contributing to it when providing MT support in the regular schools. Reflecting on the pluridisciplinarity of SD, Audrey shared, “It’s a theme that runs across many subjects .... it keeps popping up all the time”. In the NO-T group it was discussed that the pluridisciplinary nature of SD ensured that every teacher irrespective of their subject was involved in teaching SD and the teachers had the liberty to teach it in their own way. Hazel stated, “It’s more up to each teacher how much they want to do, and I think it’s up to each teacher how much knowledge they put into it.... when it’s in the curricula its every teacher’s responsibility to teach about it”.

One of the informants in BT shared that the pluridisciplinarity of SD ensured a comprehensive understanding of SD. “This way you get a thorough understanding of what sustainable development is and why it’s important,” stated Audrey. This was underlined also by another informant in this group,

Students are able to understand better this way when it comes up in different subjects in different ways...you can see it from different point of views, from the point of view of historical development, from the point of view of technological development, point of view of ecological development... what an impact it makes on the planet and on us all. (Chloe).

One of the NO-T informants also highlighted that the importance of SD lays in its pluridisciplinary feature: “I think this is why you have sustainable development as a major topic ....and to include it in every subject, not just for social science or science subjects” (Hazel).

#### **4.1.3 Incorporating the concept of sustainable development in teaching**

During the BT discussions, the teachers shared their experiences of teaching SD. It is important to note here that these examples were cited from when they were providing MT support to pupils in the regular schools “I remember while discussing sources of energy in science class we discussed switching from coal to more sustainable ways” cited Audrey. Another informant from the BT group shared the story of a girl who when calculating her carbon footprint was astonished to see the result. “I mean she was really, really taken aback to know that if everybody lived like she did then we would need 3.6 planets to support” (Chloe).

Another BT informant showed that there were ways to teach SD even in the themes for the younger pupils as she cited an example of when she was doing an activity on transport that involved identifying the means of transport from Norway to Beijing to see Olympics and that one could take a flight to save time “But I made them understand that train is a better option.” (Kylie). Regarding examples from the daily life, Audrey stated “Explaining to them about the significance of *søppel sortering*, sorting garbage we can actually show them what happens when we don’t do that, for example, I have shown my students pictures of those islands of rubbish in the ocean”.

The informants in the NO-T group on the other hand stated that they were not teaching SD in a direct way due to the limitations of time. However, Hazel cited two examples of incorporating SD in regular teaching,

We had made paper once, where we actually learned about recycling but that’s few years ago, when we had more time ..... A few years ago, we had a group of students who had developed fluency in Norwegian and we did read articles from the UN about the environmental changes with them (Hazel).



It is important to note here that these examples from the NO-T were from *few years ago* when the pupils could be in the language school for a longer period.

It thus is interesting to observe that in the BT focus group the informants cited many examples regarding teaching SD concepts. The paradox here is that SD is not a part of BT curriculum. On the other hand, while it's in the NO-T curriculum the limitation of time posed as a challenge as the NO-T group shared a couple of examples from prior years when they had more time with the newly arrived minority pupils.

## **4.2 Importance of language in teaching sustainable development**

In both, NO-T and BT groups, the teachers emphasized on attaining competency in language as an essential skill for understanding SD. In the BT group the teachers discussed that language was critical to gain an understanding of the concept being taught as both teaching and learning relied on language. They emphasized that a rich vocabulary was essential to gain a thorough understanding of SD.

Language is critical in learning concepts especially the ones like sustainable development where you have so many new words and those words are big words for the pupils... so you need words to understand the concepts and to express yourself...unless you have a sound knowledge of language, it's not easy. (Chloe)

NO-T shared that at the language school the pupils are beginning to learn a new language which was foreign to them and expressed how the lack of language skills posed as a challenge in teaching. Molly said, "Very difficult for us to discuss with our students because of their little vocabulary". "We never really go to get deeply into any discussions" added Hazel. They then discussed that teaching SD was possible at an advance stage of language learning. NO-T discussed that sometimes absence of a common language between the pupils (and teachers) and the lack of words in Norwegian (since they are learning) acted as an obstacle towards discussing the concept of SD. Hazel stated, "We can't teach SD because then they don't have a common language, they will have to try to do it in Norwegian and then say it in simple words that everyone could understand".

Molly confirmed that: "It comes back to the point that you need to be strong in language then you learn fast, express better".

Fluency in Norwegian was another factor that was discussed in both groups

“I do see it as a challenge..... as they are beginners in Norwegian” (Hazel). Similar view was expressed in BT “Not many of them speak Norwegian well enough to understand sustainability in Norwegian” (Chloe). In the NO-T group, Hazel explained how the lack of fluency in language affected their expression in talking about such topics as climate change. For instance, with Hazel:

So, they may not have this school understanding of it or reading about it, but they know about it because they know from before. They just don't know the Norwegian words so when you speak to them, you can see that they are like a light bulb going on... ok, I understand what you are talking about, I just don't know the words yet.

It can be said that both NO-T and BT highlighted the importance of strong linguistic skills to understand the concept of SD and this applied to both Norwegian as well as the mother tongue.

### **4.3 Significance of mother tongue**

The significance of mother tongue was emphasized in both BT as well as in the NO-T group. Furthermore, discussion in both the groups was on similar lines of thoughts. During the FGD, the teachers reiterated that their objective was to support the pupils in learning Norwegian but all of them explained how important it was to have a mother tongue, be fluent in it and how the lack of it holds back the pupils in learning new language at school. Kylie shared “It's important to keep the mother tongue going as well”.

The BT discussed at length about their role of being mother tongue support to pupils in gaining understanding of complex topics such as SD. Kylie stated, “If they have a new topic coming up, then we always do brain storming in the mother tongue to activate background knowledge”. Chloe shared, “We have to come in and help them with the words and expressions in the texts”. Audrey said, “With the mother tongue support ... they understand the topic”.

Another similarity in both the FG regarding MT was that the informants said that BT acted as a platform where the pupils could express themselves freely. Audrey shared, “Sometimes, they cannot express in Norwegian, what they can say in their mother tongue”. Molly stated,

“To be able to express in your mother language is important...they express better”. One of the informants in the BT group elaborated on this,

It is also very important to give them a chance to express their thoughts to think freely without thinking of, well, I don't have enough words to explain that. So, to push the thought process in the direction of the topic being taught we need mother tongue.

(Audrey)

The two focus groups were also similar in discussing the importance of English perhaps it was a common language. The NO-T discussed how sometimes they would use English to supplement Norwegian in class. Hazel shared, “You could use English as help to bridge if there were words they didn't understand”. The BT expressed the role of English in a different way as they clarified that the English group had pupils not just from English native speaking countries but from other countries as well. Chloe said, “For example the English group is a special group”. They discussed that this group was particularly challenging as the pupils were at different levels of English on account of English not being the mother tongue of everyone in that group.

Likewise, a NO-T shared

And for those students who have different languages, imagine the difference when they have to express something in English to make it easy for us to understand, it's not the same thing, it does not have the same meaning even. So, to be able to express in your mother language is important. (Molly)

The BT discussed that it was not necessary that pupil's mother tongue had all the words, “There are certain things, certain vocabulary they don't have in their mother tongue, then maybe” (Kylie). She further added, “Because, it's not the vocabulary they talk around the dinner table, they might not talk about sustainability”.

Another aspect of mother tongue that was highlighted only in BT was that sometimes the lack of fluency in any one language could hold them back in learning. Chloe shared, “We actually have kids who don't have a mother tongue”. “When you don't have a mother tongue, you don't have enough vocabulary in any language, we see this quite often” added Audrey.

#### 4.4 The topic of climate change

There was a striking contrast between the two FG with regard to the topic of climate change. The term climate change was quoted many times by NO-T during the discussion. For instance, “That’s climate change” (Hazel), “affecting climate” (Molly), “They come from war or they come from climate changes” (Hazel).

On the other hand, although the discussions in the BT group in general were highly intriguing as the informants passionately talked about the various aspects of SD and cited many examples of it, but surprisingly climate change was not mentioned anywhere during the discussion.

More specifically, in the NO-T, the notion of climate change kept appearing while the informants were talking about other aspects of the present study such as SD and mother tongue. Furthermore, the informants in the NO-T focus group expressed concern regarding lack of fluency in Norwegian language being a factor in limiting their discussion about climate change with their pupils. For instance, “If we work on articles about climate change, it’s very seldom that we would have the chance to really discuss something that they would understand” (Molly). Hazel said, “Some of them very conscious about climate change discussed for instance, climate change is a politics, but then it was not easy for every single student in class to understand”. The example from Hazel was from prior years when pupils could be in language school for a longer period and a group of pupils in class had developed fluency in Norwegian. As the discussion in the NO-T progressed, it was discussed that policy changes with respect to the time pupils spent in the language school had affected discussions on SD topic like climate change. “A few years ago, we discussed the effects of climate change for instance, how all the bees are disappearing” (Hazel). “We do have weather as a topic, but we don’t have enough time to explain about climate change which is a very relevant topic from the perspective of sustainable development” (Molly).

It was expressed by the informants in the NO-T group that demonstrations against climate change in various parts of the world have shown that young people could learn, participate and take action against climate change. They emphasized that the potential role of students in tackling issues such as climate change could not be underestimated. Molly stated, “It matters and to have a voice and to have a say in this”. Hazel added “It shows that a lot of

students are interested in this topic and they are interested in being heard". This discussion revealed that the potential role of students in climate change can be nurtured by educating them about these issues and supporting them in expressing themselves by empowering them with language skills. Molly shared, "But you need language to express and talk about these issues".

#### **4.5 Diversity, languages, and cultures**

The concept of diversity was spread throughout the FGD in both the BT and NO-T groups. The notion of diversity was expressed in relation to both diversity in nature as well as in school and in society at large. The informants discussed the diversity in nature in terms of geography, flora and fauna. In the NO-T focus group both the informants talked about the diversity in the language school. Hazel stated, "What the language school is good at is that we are a very diverse group of teachers". "The pupils come from different school backgrounds, different mother tongues" added Molly.

In the BT group they shared similar points of view on diversity. The teachers also brought up the notion of diversity from a wider perspective; "If you think about multiculturalism, there are lot of minorities in Norway," said Chloe. Kylie added, "The pupils come from so many different backgrounds".

The informants in both the FG thus appreciated the linguistic and cultural diversity in classrooms. They explained how the pupils had the opportunity to learn about different cultures through their day today interactions with their fellow pupils.

More specifically, the NO-T group shared how they try to bring together pupils from different cultures. They shared that they connected pupils with each other by giving them opportunities during the lessons to share knowledge about their culture, language and country.

We try to do a lot of activities where the students can show their own language and culture as long as they can express in Norwegian and that they can also share something from their own language and that the other students can also see what their language looks like, their alphabet, talk about their country, they can show an object from their own country, that's a way of getting to know different cultures as well. (Hazel)

In the BT focus group one of the informants discussed the effects of migration on developing diverse linguistic skills as the children had parents that spoke different languages and the children learnt more languages when they migrated. The informants discussed the vastness of linguistic diversity they witness in their work life and how this was adding to the diversity in society. “So, I think it’s amazing how they contribute to diversity in the society”, Chloe concluded.

The NO-T group made similar remarks on the aspect of diversity. “If we are talking about language and culture that’s something, we work on to preserve, that’s something that we work on every day” (Hazel). Highlighting the link between language and culture Hazel elaborated, “Language helps you to learn about the surrounding environment, especially when its new and you are coming from a different culture. I would say, learning language also means you are learning and absorbing culture.”

Molly added that “Well, you can say, they learn *dugnad* as a new word but it is not just a word, it’s a culture to keep the environment clean ... for everyone to enjoy nature”.

The teachers appreciated the diversity in classrooms, the importance of linguistic and cultural diversity and what they as teachers were doing to foster it.

#### **4.6 Connection with nature**

When the informants were asked about the words related to nature that come up in their interactions with pupils when teaching SD, the teachers in both the FG came up with a wide spectrum of words such as fjords, landscapes, rivers, forest, snow, water, farm animals, pet animals, flowers, herbs, endangered species, migratory birds (in the local and national context), seasons etc.

However, in the NO-T group one informant reiterated that in the language school they did not teach about SD explicitly and both the informants shared that the 11 themes they teach in basic Norwegian does add to the vocabulary of the pupils. Hazel said, “I do think that we do teach them a lot of words, we don’t really use the words sustainable development”. The informants also discussed that the pupils that they teach in the language school were mostly at the beginner level of learning Norwegian and as soon as they acquire enough skills to

follow regular teaching, they move to the regular schools. “When they are ready in basic Norwegian, they leave the language school”, shared Molly.

The teachers in both the FG pointed out that connection with nature was an important characteristic of the Norwegian culture e.g., “This sort of pride in the local environment,” said Kylie. The groups resonated with the notion that taking care of nature is taught at a young age in Norway and this could enable children to shoulder the responsibility for environment. Audrey shared, “In Norway they make it a point to educate children at a very early age on how to treat nature”. “Here the children are educated from a young age to clean up the litter for example”, added Kylie.

In both the FG, there were utterances of *dugnad* and the informants discussed the significance and impact of *dugnad*. They discussed how *dugnad* was a culture in Norway and everyone in the school participated in *dugnad* but it’s a new concept for the newly arrived pupils.

The informants in the NO-T group discussed how everyone should shoulder the responsibility of taking care of nature from a young age “Appreciate nature.... you can find a forest nearby and take a walk and if everyone picks the garbage treats it that way....in order to be able to enjoy nature, you have to be responsible too”, shared Molly.

The discussions with teachers revealed that teaching SD to the newly arrived pupils was limited because of their limited linguistic skills but language could be powerful tool in connecting with nature.

#### **4.7 Biocultural diversity**

When the informants were asked if they knew about the concept of biocultural diversity, informants of both the FG acknowledged that they were hearing the term ‘biocultural diversity’ for the first time. Some of the responses that were generated on hearing BCD were, “I don’t know what that means,” said Audrey. Molly stated, “I am hearing it for the first time, I think”.

I observed that informants in both the groups were curious to know about it as Kylie asked, “what does it mean actually”. Likewise, Hazel asked, “So, what is it about”

After I explained the definition and concept of BCD, they were pleasantly surprised. Some of the responses were “Wow” (Kylie), “That’s amazing” (Audrey), “It’s a very new thing for me” (Chloe), “It’s so interesting” (Molly).

Further discussion on BCD revealed that the informants were familiar with the founding notions of BCD such as diversity, biodiversity, and cultural diversity. Chloe responded, “It’s more biodiversity that I have heard of, the diversity in nature”. “And cultural diversity but not together” added Audrey. Furthermore, they asked me questions about it to confirm their understanding of this term reflecting their interest in this concept. “Is it the linguistic, biological, economical too?” asked Molly. “But it is also about human cultures, languages, not just animals, birds and other species?”, clarified Hazel. As the discussion on BCD progressed, the teachers reflected on if they had been doing something regarding BCD. Kylie said that BT through mother tongue teaching, were perhaps taking a step forward in preserving BCD. She further stated how *morsmålsdagen*, mother tongue day was celebrated throughout the schools at local level to raise awareness about the minority languages.

We are already trying to keep their mother tongues alive and if that contributes to the environment then we are multiplying the benefits of mother tongue.... then obviously, we are helping the environment. I am glad that we are contributing to the environment.  
(Kylie)

The informants were then asked if they would want to include BCD in the curriculum. The NO-T explained that it was important for pupils to have awareness of the novel concept of BCD and expressed their willingness to have it in the curriculum especially when it could help with the global issues like climate change. “If we as teachers can help with that, that’s great,” said Hazel.

It will not only protect environment but also cultures and languages and I think that for us the language teachers, we are very interested in that side of it and I am not saying that we shouldn’t teach about environmental changes and the nature but I think we should focus just as much as language preservation. (Molly)

However, they inferred from the discussion that in order for it to be really effective it should be thoughtfully included in the curriculum so that it does not become a burden to teach



BCD. Hazel said, “So, it doesn’t feel like a workload on others, but it is more integrated.”

(Hazel)

To sum up, the findings reflect the meanings ascribed to SD along with the significance accorded to it in the curriculum and the ways in which the teachers incorporate the concept of SD in their lessons. Similarities and differences in the perspectives of NO-T and BT on the research topic are elucidated. The findings suggest that language especially strengthening of mother tongue can play a significant role in protecting environment. The findings reflect the overlaps in language and culture and the chapter also depicts the link between language, culture, nature that can be invoked through SD teaching and could be used for educating pupils about global environmental issues like climate change. The findings further demonstrate how the intertwined concepts of language, culture and SD can be used for promoting BCD. The next chapter on discussion draws inferences on the aforementioned research findings in the light of research questions, theory and related literature.

## **5 Discussion – Benefitting from linguistic diversity**

The core research question of the thesis will be answered here: *How do teachers incorporate the concept of sustainable development when teaching basic Norwegian and mother tongue/bilingual to newly arrived minority pupils?*

This chapter will comprise of interpretation and discussion on bilingual teachers and Norwegian teachers' perspectives about the potential role of languages especially the mother tongue in teaching SD to newly arrived minority language pupils thereby fostering biocultural diversity and fighting climate change. The interpretation process as a whole will be done such that I will discuss my dialectical findings against the theoretical framework (Chapter 2). The seven themes presented in Chapter 4 will be my goal to delve as deeply as possible into comparing NO-T and BT experiences of teaching SD to newly arrived minority language pupils in Norway.

### **5.1 Sustainable Development- A crucial focus in *all* curricula for minority pupils**

The purpose of generating knowledge about sustainable development was to discover the role of languages particularly mother tongue in teaching the theme of SD which is very important from environmental perspective.

#### **5.1.1 Significance of sustainable development education**

The empirical findings reveal the adverse effects of the difference in the basic Norwegian curriculum and the mother tongue curriculum with respect to inclusion of SD and how SD teaching can be made more effective by providing MT support to the pupils. The concerns expressed by both NO-T and BT regarding future generations, keeping the planet habitable and judicious use of resources while defining SD reflect its high significance and the urgent need to take action against the anthropogenic changes that are threatening human life. From the theory chapter, we became aware that increased production using non-renewable resources can boost economic growth but it results in severe consequences such as climate change (Maes & Jacobs, 2015) and biodiversity loss (Maes & Jacobs, 2015; Rockström et al., 2009). It is therefore important to find sustainable ways of living and create awareness regarding the same among the masses. Frantz and Mayer (2014) thus advocated educating people about the consequences of their choices and lifestyle on the environment to bring about necessary changes in political and economic systems to fight the present

environmental crisis. Furthermore, children can be competent social actors and can play a crucial role in advocating SD and its implementation (Eriksen, 2013). Education about SD thus provides opportunities to young people to participate in solving ecological issues in their communities (Scheie & Stromholt, 2019).

SD in curriculum was discussed in the FG from various angles such as its inclusion in the basic Norwegian curriculum but not in the MT curriculum, its effectiveness depending on linguistic skills of pupils, and pluridisciplinary characteristic of SD in curriculum.

### **5.1.2 Sustainable development in the curriculum**

There were significant differences between the NO-T and BT discussions regarding inclusion of SD as a theme in the Knowledge Promotion curriculum 2020. An important observation here was of NO-T mentioning 'UDIR' while the BT not mentioning 'UDIR' during discussion on various aspects of SD. Findings clearly indicate that the difference between the two curricula was spoken at length in the NO-T group but it *came up* during the discussion in the BT group. This could be attributed to the fact, while SD has become an integral part of the basic Norwegian curriculum (UDIR, 2020a) it was not included in mother tongue curriculum (UDIR, 2020b). Further, the NO-T emphasized that SD being an important theme should be included in the MT curriculum as well.

Moreover, in Norway as per UDIR (2020a), sustainable development is to be covered in all the subjects making it pluridisciplinary. The NO-T and BT groups had similar views on the pluridisciplinary characteristic of SD and that it could have a strong positive influence on facilitating education about SD as it then becomes a part of every subject and thereby the responsibility of every teacher. However, in the light of the findings it can be argued that the pluridisciplinary feature of SD has not been implemented in a holistic way as mother tongue has been left out of it. Notably and very unfortunately, MT curriculum is the only exception to the subjects that are supposed to cover SD. As SD is considered to be a key perspective in all the subjects, why is it not included in MT curriculum? Does it have to do with its weakened position as a whole?

Interestingly, two teachers in the BT group stated the possibility of Norwegian pupils having more knowledge about SD than the newly arrived pupils. This seems true as SD is taught from primary through high school in Norway and the pupils following Norwegian curriculum

would have accumulated wealth of knowledge regarding SD by the time, they graduate high school. However, this would not be the case with the minority pupils as they come from places of school system different from the Norwegian system in terms of curriculum, languages, and cultures. So, it's likely that they might not have studied about sustainable development before coming to Norway and the lack of SD in MT curriculum implies that they might not acquire enough knowledge about SD when studying in Norway.

It was important, however, to observe that although the BT did not have SD in curriculum, they cited many examples of teaching SD which was because BT provided MT support in regular schools in addition to the language school. This highlights SD teaching being accomplished in a holistic manner in the Norwegian curriculum but learning of SD for the newly arrived minority language pupils is largely limited by its lack in curriculum and the limited MT support they get. Further, as one of the teachers (Hazel) mentioned in the FGD that some of the pupils who are studying at the language school sometimes have not been to school before or might have had a large gap in the knowledge due to irregular schooling on account of situations like war, forced migrations etc. The wide difference in academic competence of newly arrived minority language pupils studying in same grade levels has been reported by Norozi (2019). Therefore, SD education for these pupils is highly important to fill the gaps in knowledge and bringing them at par with their Norwegian peers.

The various examples cited by the BT during FGD underpin the pluridisciplinary feature of SD. My question here is that when bilingual teachers are expected to provide mother tongue support to minority pupils in order to follow the standard curriculum when attending regular school, would it not be beneficial that they have this theme included in their curriculum so that MT pupils do not lag behind in gaining knowledge about SD? This reflects a lacuna in the system as SD is not included in the MT curriculum depriving the newly arrived minority language pupils of the opportunities to learn about SD. Further, these pupils need mother tongue teaching to support their learning. Özerk (2013) reported that the lack of suitable multilingual educational policies and teaching programs that meet the need of diverse linguistic groups could lead to a gap in the achievement level of native Norwegian speakers and language minority speakers.

One teacher in the NO-T group (Hazel) also advocated for the inclusion of SD in BT curriculum from the point of view of social justice. The lack of SD education for the minority

language pupils makes me believe that the objective of equality in education is not met here which as described by Özerk and Kerchner (2014) is one of the two foundation stones of Norwegian public education policy, the other being equity. In a broader context, Özerk and Kerchner (2014) stated that as per the Norwegian educational policy special needs of minority pupils are considered in order to equip them to take up higher education and employment. My argument here is that considering the significance of SD today and in the future ahead immigrant pupils should not be deprived of SD education as it could enable them to be as equipped with knowledge and skills as their Norwegian peers which is important from not only the social justice perspective but also when they become adults, they would be able to contribute effectively to the society.

It can be inferred from the findings that if SD was to be included in the MT curriculum just like its included in the basic Norwegian curriculum, the minority language pupils could have gained SD education and the MT support could have made SD education for these pupils more effective.

### **5.1.3 Importance of linguistic skills in learning sustainable development**

The teachers elaborated on the significant role of language in grasping academic concepts and believed that strong linguistic skills and rich vocabulary were essential for learning SD as it is a complex concept. One of the BT informants (Chloe) stated that the lack of fluency in Norwegian could limit the understanding of SD. Similarly, NO-T believed that although SD was a pluridisciplinary theme in the Norwegian curriculum, its effectiveness lays in the linguistic competence of pupils.

Higgen and Mösko (2020) stated that lack of proficiency in the destination language was an obstacle for immigrant pupils as it caused learning difficulties, affected their participation in class and socialization with peers. Heller (2019) discussed the pressure of learning a second language skills on pupils who have not yet attained academic proficiency in second language.

The basic Norwegian curriculum (UDIR, 2020a) focusses on skills and knowledge reflecting that the purpose of learning is steered in the direction of competence development. I argue that lack of support for developing linguistic skills would impact the competence of the newly arrived minority language pupils. It has also been highlighted in the findings that

understanding the concepts of SD is a challenge not only for the newly arrived pupils but also for the regular Norwegian pupils on account of fluency in language and vocabulary. This strongly indicates that for effective teaching and learning of SD, language competencies must be nurtured.

It was reiterated many times by one of the NO-T (Hazel) that at the language school their priority was to make the pupils learn Norwegian language and because of the constraint of time and the limited vocabulary of these pupils, explicit teaching of SD was not possible. This corroborates with the statement of Lødding (2015) cited in Krulatz et al. (2018) that the prime focus in the classroom is on learning Norwegian as a second language so that pupils get suitably equipped to function in Norwegian society. However, it's important to note here that limitation of this finding cannot be generalized because the language school is different from regular school settings. The focus on teaching Norwegian with the objective of making the pupil ready for regular school are reflective of what is considered to be essential skill and knowledge at the end of the learning period.

The informants discussed that lack of fluency in Norwegian could be supplemented by a language shared by pupils and teachers. One BT teacher (Chloe) expressed that every language was deficient in some words regarding depicting nature, but this deficiency could be complemented by learning another language. Different languages have developed their own vocabularies to convey the differences that are significant to their speakers e.g., the languages spoken in the Sahara Desert would not have many synonyms for snow or reindeer and not many words would be found for depicting different types of camels and sand in the languages of arctic and sub-arctic regions of the world (Skutnabb-Kangas, 2003, p. 21).

## **5.2 Promoting holistic integration of mother tongue**

The section explains the significance of mother tongue in teaching sustainable development, the need for strengthening mother tongue teaching in the school system and its role in combatting climate change.

### **5.2.1 The need for mother tongue in school education**

Both BT and NO-T teachers emphasized on the positive influence of mother tongue in education in general and in SD in particular. One of the teachers in BT group (Kylie) explained that brainstorming in MT before a difficult topic helped activate previous

knowledge. Cummins (2007, p. 3) posited that language development can be supported through engaging with pre-existing knowledge of first language. Therefore, mother tongue is an important link between previous knowledge and the new knowledge being acquired. The teachers also expressed the vital role of MT in supporting pupils to express themselves. Studies (e.g., Bøyesen, 2009, p. 45; Thomas & Collier, 2002, p.335) have found out that mother tongue instruction in the initial school stage forms a strong 'bridge' for pupils for the transfer of literacy skills from the already known language/s to a new language and support the learning of second/additional language and academic achievement. Bøyesen (2009, p. 44) advocated keeping the continuity of MT teaching until the child has gained mastery in the second language as MT facilitates concept formation in the learning process. I can relate to the significance of language as a medium of instruction in schools. My mother tongue is Hindi but I started my formal education in a school where the medium of instruction was English. While Hindi was one of the subjects taught in school, all the other teaching took place in English. As a beginner in the English language, it was very hard to comprehend what was being taught. Gradually, I started understanding English but lack of fluency in English would often limit my ability to answer questions in class. In my mind, I knew the answers, but I often did not have enough words in English to express myself. As a pupil, it came to my mind several times that if I had the opportunity to speak in Hindi, I could have answered the questions and even elaborated on them.

The discussions in both the groups revealed that connection with nature was an important characteristic of Norwegian culture that is cultivated in citizens from a young age and it helps preserve the environment.

Further, to explain how mother tongue can help make connections with nature, I can cite example from my own mother tongue, Hindi. To my knowledge in Hindi, there are 11 words for ocean (*sāgara, samudra, saṁndara, pyodhi, vāridhi, sindhu, ratnākar, vārīśa, udadhi, ambudhi, araṇava*), seven words for forest (*jangala, vana, araṇaya, kānana, vipina, atavī, kāntāra*), six words for river (*nadī, saritā, āpaga, taramgiṇi, payasvinī, taṭanī*), six words for tree (*peṛa, taru, vrikṣa, drum, pādapa, rūkṣa*), nine words for mountains (*pahāra, parvata, girijā, śaēla, naga, girī, bhūdhara, kaṭidhara, achala*), and eight words for water (*pānī, jala, nīra, ambu, salila, amrita, toya, udaka*). This a brief account of the number of words in a language that can help an individual build and multiply connections with nature.

It is important to note here that from a human ecological perspective, knowledge does not come from individual brains, but from their relationship with their environment (Wurum, 2003 in Tershy et al., 2015, p.4) and the loss or the introduction of species also affects languages (p. 3) as new concepts are needed. Scholars from different disciplines have reported that reconnecting humans to nature can help fight the environmental crisis (Tam, 2013). Thus, it can be said that continuing education in mother tongue can ease the transition to new language and foster connections with nature.

### **5.2.2 Mother tongue – a limited learning place in the school system**

Here, it is important to have a look at the status of MT teaching in Norway and the wide variation in it. To illustrate, in 2021, a total of 39,725 pupils were reported to be attending additional training in Norwegian language, and only 10374 pupils were receiving both MT instruction and bilingual teaching (SSB, 2021b). These numbers are small considering that 18.5% of population in Norway comprises of immigrants and Norwegian-born to immigrant parents (SSB, 2021a). At the national level, there were 1989 pupils who received only mother tongue teaching and 6655 pupils who received only bilingual education (SSB, 2021b). There also was an astonishing variation in native language training and bilingual education among different regions in Norway. For instance, in Oslo there were only 4 pupils receiving both mother tongue and bilingual teaching whereas in Rogaland there were 230 such pupils (SSB, 2021b). The extent of linguistic diversity in Norwegian schools can be judged from Özerk (2013) as he reported that the linguistic minorities in Norway accounted for about 200 languages. In some schools in Oslo, the capital city of Norway, more than 90% students had their registered first language other than Norwegian and this could imply a wide variety of languages at a particular school (Özerk & Kerchner, 2014). Similarly, a wide variation in MT/BT support has been reported by Loona and Wennerholem (2017, p. 318) as percent of students offered MT/BT support in adapted Norwegian was 88-89% in some municipalities on West coast (Bergen) and central Norway (Trondheim) whereas it was only 20% in some municipalities in the eastern region (Oslo and Drammen). Looking at the above figures, it can be implied that mother tongue support is either not being offered or it is not being utilized effectively. A study by Brossard Børhaug and Helleve (2022) revealed the unjust state of bilingual teachers in the Norwegian school system implying that mother tongue teaching has many obstacles to overcome in order for it to be fully integrated. The



above discussion reflects that the mother tongue is an endangered state in the school system in the country.

In order for every child to be educated about sustainable development effectively, good language proficiency is a must which can be attained by supporting child's first language (sections 5.1.3 & 5.2.1). Choice of language instruction was crucial in teaching SD as it could develop the critical thinking skills required for maximum comprehension (Toppo & Rahman, 2020). Skutnabb-Kangas, (2003, p.43) reported that an incorrect medium of instruction in formal education could be one of the causes of depleting linguistic diversity.

Thus, it can be inferred that fluency in mother tongue is an important factor for promoting education in SD. As such, the mother tongue teaching system needs to be strengthened in order to achieve desired results. In today's schools with a non-inclusion of SD in MT curriculum (UDIR, 2020b) and a weakened position of MT in the schooling conditions, indicates a problematic learning setting for SD education as well. The complex notion may not be addressed as it could have been. Furthermore, it indicates that the importance of linguistic and cultural aspect has been neglected contradicting the objective of SD with its interdependent dimensions of language and culture. This also reflects lack of democracy and social justice in educational practice and learning processes. When every child in the school system gets the same opportunities to thrive then only social justice in education can be achieved. Unfortunately, the newly arrived minority language pupils have been overlooked here in the Knowledge Promotion curriculum (Kunnskapsløftet, 2020) affecting the quality of education they receive. This makes holes in the democratic fabric of education and society as when these pupils grow up to be adults, they would be less skilled than their Norwegian counterparts who by then would have acquired a wealth of knowledge regarding sustainable development.

Moreover, with inadequacy in mother tongue education, it is very likely that over the years the pupil's link with their mother tongue would weaken and this could lead to loss in diversity as Pagel and Mace (2014) stated that it was likely that politically, technologically and economically dominant culture could displace weaker culture. The importance of maintaining mother tongue in making connections with nature has been highlighted in section 5.2.1. Furthermore, while mother tongue teaching helps to nurture the connection

with nature, it also plays an important role in the academic success of the minority language pupils.

Education Act (1998, section 2-8) of Norway provides immigrant pupils the right to have bilingual education, and this implies that pupils who have mother tongue other than Norwegian or Sami have the right to additional education in Norwegian until they are skilled enough to follow teaching in mainstream class. The law has a clause, “if considered necessary” implying that it is at the discretion of school to provide mother tongue and bilingual education to the pupil. Brossard Børhaug and Helleve (2022) reported that pupil’s residency period is not the deciding factor for getting bilingual education but it’s the school administration that decides who gets bilingual education. Norozi (2019) also reported that the Education Act is implemented throughout the country but there is a wide variation in organizing reception classes between municipalities and even between schools in the same municipality as the flexibility of deciding who will get mother and bilingual education rests with the municipality.

Keeping in view the significance of mother tongue education for the newly arrived minority language pupils from the perspectives of linguistic diversity, gaining a comprehensive understanding of SD, academic success, and social justice and democracy, it is highly important to strengthen mother tongue teaching in the school system. If right actions by means of policy changes are not taken in time, it can adversely affect education for SD which will limit the scope of fighting climate change and promoting biocultural diversity (discussed ahead in sections 5.2.3 and 5.3) in the country.

### **5.2.3 Because climate change is a linguistic, social and cultural phenomenon**

As mentioned, immigrants and Norwegians-born to immigrant parents constitute almost one-fifth (18.5%) of total population in Norway (SSB, 2021 a). The effects of such a large presence of immigrants in the society cannot be ignored which implies not only providing them equal opportunities but also empowering the Norwegian society to keep up with the changing demography. Language can play a significant role here by helping them understand each other’s culture.

There was similarity in the two FG as the informants appreciated the linguistic and cultural diversity in their classrooms and in the Norwegian society at large. One teacher in the NO-T

(Hazel) shared the ways in which teachers helped pupils learn about each other's language and culture such as sharing about things unique to their country or language. Everything a child brings along from home, including language, religion, culture, ways of being, or clothing, is an expression of the child's identity and the sense of belonging" (Krulatz et al., 2018). Another teacher (Molly) from the same group expressed the power of new words in the second language in learning about another culture. This depicts that teachers find it important that pupils understand each other's culture, and this also implies that the classrooms can be a platform for cultural exchange between the new pupils and their new society. In the BT group, a teacher (Chloe) shared how the process of migration adds to linguistic diversity within a family and the positive influence it exerted on society.

According to O'Brien et al. (2006) climate change can be an obstacle to the important goals of society, worsened inequalities and may affect communities that are trying to cope with the pressures of social, economic and demographic trends. It is highly important to address the human dimensions of climate change and gain an understanding of the ways in which different groups understand climate change issues (Scoville-Simonds, 2018).

Although, there was no explicit question on climate change, it's notable that the Norwegian teachers quoted 'climate change' many times during the discussion but climate change was not brought up a single time by the bilingual teachers thereby revealing significant difference between the two groups with regard to climate change. The teachers in NO-T also discussed how the students could be social actors for issues like climate change. The NO-T expressed that lack of pupil's fluency in Norwegian and reduction in allocated teaching hours due to certain policy changes limited the discussion on subjects like climate change. It has been concluded in section 5.1.3 that fluency in language is essential for effective teaching and learning of SD. The reduction in teaching hours for both Norwegian and mother tongue pose as a big obstacle in learning language.

In order to confront the challenges of anthropogenic climate change, languages and conceptualization are some key elements for developing a more appropriate interpretation of climate change and its consequences (Fløttum et al., 2016). The important role of language study in climate change communications has been highlighted (Gjerstad & Fløttum, 2021; Fløttum & Gjerstad, 2017). Climate change is not only a scientific phenomenon but also importantly a linguistic and cultural phenomenon (Fløttum 2017, p.1).

Language plays an important role in climate change as the way it is described in climate communications determines the way people understand climate change (p.1). Culture impacts how the information about climate change influences the way people view the risks associated with climate change (p.4). This association of language and culture with climate change risks described by Fløttum reflects that communications and cultural beliefs are fundamental to the understanding and mitigation of climate change. The cause and effect of climate change thus cannot be delinked from culture (West et al., 2022, p. 28). Therefore, there is a need to address climate change from a strong and sustainable cultural perspective which implies strengthening mother tongue to foster linguistic and cultural diversity in society.

Alexandra (2021) calls for recognizing the ways in which cultures co-generate climate, as it is an important social dimension of climate change stating that “our understanding and experience of the climate is culturally conditioned” (p.63). According to Adger et al. (2013), it is important to understand that if the cultural dimension of climate change is neglected, it will possibly affect both adaptation and mitigation responses as they will not be able to connect to people and communities. West et al. (2022 p. 30) emphasized on the need of transforming educational policies, learning environments and cultures in order to develop democratic societal transformations in the face of climate change.

The discussion on data from FGD and the literature cited above shows that climate change therefore is a culturally embedded threat that can be addressed through nurturing linguistic and cultural diversity. This would require policy changes for strengthening mother tongue teaching, making the mother tongue curriculum holistic as the basic Norwegian curriculum by including the theme of SD.

### **5.3 Promoting biocultural diversity through newly arrived minority language pupils**

The newly arrived minority language pupils bring with them their language and culture which if nurtured, can foster biodiversity in nature. This section explains that providing adequate mother tongue support to the newly arrived minority pupils can promote biocultural diversity.

### **5.3.1 Biocultural diversity, an emergent and crucial perspective**

The concept of biocultural diversity was interestingly new for the informants of both the NO-T and BT groups as they acknowledged hearing first time about BCD from me. This was followed by them relating their preexisting knowledge about linguistic diversity, cultural diversity, and biodiversity. One of the teachers in the BT group was quick to reflect about BCD in her own teaching and was proud to conclude that they were already contributing towards BCD through MT teaching, but they were just not aware of it.

Further, the teachers in both the groups expressed their willingness to have the concept of BCD included in their curriculum as they inferred from the discussion that they were already contributing to it in some ways and BCD teaching had the potential of making a remarkable difference to the environment; it would therefore be beneficial to educate young citizens about it. As mentioned, human diversity is crucial in fostering biodiversity conservation as biodiversity acts as substrate for the evolutionary processes; less diversity in nature implies greater chance that life would be destroyed due to lack of resilience to the environmental change (Cocks, 2006). Thus, there is a need to foster linguistic and cultural diversity.

However, a teacher in the NO-T group emphatically stated that BCD should be included in the curriculum in a way that it did not feel like a burden on the teachers and the pupils alike. It can be said from the above discussion that BCD is not a commonly known concept and it can be addressed through education in order to achieve sustainability. It is important to educate children about BCD as they can be instrumental in bringing societal transformations and they are also future citizens of the country. However, BCD is in its nascent stage in becoming a part of school curriculum. In my course of study, I came across only a few published studies on inclusion of BCD in school curricula. For instance, Terralingua (2014, p.10) demonstrated integration of BCD into school curriculum through a pilot study in two schools in the USA. Cocks et al. (2012) executed a biocultural diversity education project in seven schools in South Africa that was formulated to incorporate cultural values in biodiversity management and they advocated the same to be adopted at the national level. In addition, biodiversity which is a component of biocultural diversity has been introduced in formal education as McRae and Böhn (2022, p.54) quoted biodiversity education examples from NBSAPs (National Biodiversity Strategies and Action Plans) that are enacted

by Convention on Biological Diversity (CBD) and reported that education for biodiversity has been included in formal education in Venezuela, Myanmar and the UK.

Batista and Andrade (2021) in their analysis of documents from the Portuguese educational system reported that education for SD was incomplete without the theme of BCD as BCD education is needed for the survival of all species and communities, reestablishing connections with natural as well as social environment, and for a healthy cultural diversity in society. Therefore, in the pursuit of becoming a sustainable country, it is important that Norway includes BCD in its school curricula.

### **5.3.2 Promoting biocultural diversity and mitigating climate change through bilingual learning**

As already stated, research shows that linguistic diversity, cultural diversity and biodiversity are not stand-alone compartments, rather they co-exist (Maffi 2005; Skutnabbs-Kangas et al. 2003, pp. 9-10; Loh & Harmon, 2005). The diversity of ideas carried by different languages and cultures is as much needed as diversity of species and ecosystems for sustaining human life on earth as this diversity gives the maximum possible spectrum of solutions to the challenges of survival (Skutnabb-Kangas, 2003, p. 29). Therefore, international organizations such as UNEP, UNESCO, CBD, the IUCN have shown a high level of recognition for the link between biodiversity and cultural diversity (Hong, 2013).

I argue that learning about sustainable development is important from the point of promoting BCD and combatting climate change. If mother tongue teaching is strengthened in the education system and the concept of sustainable development is taught to every child, their beneficial effects on the environment could multiply several times as the child can gain a holistic understanding of SD and make more connections with nature. This would help check climate change and nurture biocultural diversity as described in sections 5.2.3 and 5.3.1, respectively. BCD can be addressed by including it in the school curricula so that the future citizens of the country acquire this knowledge from a young age.

Moreover, the Education Act (1998) reflects that mother tongue teaching is provided to ease the transition from pupil's mother tongue to Norwegian. However, the Act limits the language training to a maximum of two years. Considering the significance of mother tongue (section 5.2.1) and its role in climate change (section 5.2.3) and biocultural diversity

(section 5.3.1), it is important that the conditionality of Education Act is removed to maximize the benefits of the Education Act for both, the newly arrived minority language pupils and the Norwegian society.

In other words, resilience in the environment can therefore be achieved by nurturing linguistic diversity in society. A practical approach to this is to have extended mother tongue support for newly arrived minority language pupils so that they can maintain connection not only with their mother tongue but also with nature. Further, if the theme of sustainable development is included in the mother tongue curriculum it would equip them with the required knowledge and skills regarding SD and this can go a long way in them becoming environmentally responsible adults. In addition, mother tongue support can bolster SD education as it facilitates academic understanding of the concepts. Since SD is a pluridisciplinary theme introduced from primary school years and lasts until high school, it can help the pupil gain sufficient skills and knowledge that could support in the fight against climate change and loss in biodiversity.

In the aforementioned discussion, it can be said that if we are to achieve the goals of education for SD, we must recognize the significant role of MT education by including SD in MT curriculum; considering its positive effects on climate change and biocultural diversity. Further, inclusion of the theme of SD in MT curriculum will add to the quality life of newly arrived minority language pupils with its effects multiplied to climate change and BCD. In addition, it will nurture democracy and social justice in education.

## 6 Conclusion

Research has already established the importance of linguistic diversity to foster biocultural diversity but there is a need to find out pragmatic ways of fostering it in today's Norwegian society which is rapidly becoming linguistically and culturally diverse. The Education Act (1998 section 2-8) in Norway enables the minority language pupils to have mother tongue instruction/bilingual teaching but this Act is conditional and the variability in its implementation throughout the country needs to be addressed in order to maximize the benefits of the Education Act for the minority language pupils and for the Norwegian society at large.

Norway has accorded high significance to sustainable development by including it as a pluridisciplinary theme in Knowledge Promotion curriculum 2020 (Kunnskapsløftet, 2020). The thesis highlights that Knowledge Promotion curriculum (2020) when including SD as a theme in the new curriculum overlooked the mother tongue curriculum as it did not include SD as a theme in the MT curriculum (UDIR, 2020b) whereas it is a pluridisciplinary theme in the basic Norwegian curriculum (UDIR, 2020a). This difference in the curriculum puts the minority language pupils at disadvantage as they do not receive SD education thereby defying the Norwegian principles of equity and equality in education.

The study was conducted by having FGD with two groups of teachers teaching the newly arrived minority language pupils namely, the teachers who teach basic Norwegian and the teachers responsible for bilingual learning. The total sample of the study comprised of five teachers. The results indicate that both the groups of teachers emphasized the importance of mother tongue in learning second language (Norwegian). The teachers brought up the notion that teaching and learning sustainable development is important from the environmental perspective but in practice teaching it to children is complex as it requires strong linguistic skills.

Further, the results indicate that mother tongue teaching can be much beneficial in imparting sustainable development education and including the theme of SD in mother tongue curriculum can make SD education more effective. The study also reveals the significance of SD education for young citizens. Prior research has found out that language, culture and biodiversity coexist and are intertwined and a decline in linguistic and/or



cultural diversity can lead to overall decrease in biodiversity (Maffi 2005; Skutnabbs-Kangas et al. 2003, pp. 9-10; Loh & Harmon 2005).

The findings from the thesis suggest that the implementation of the Education Act (1998) needs to be reviewed in order to have a uniform and effective system of mother tongue teaching by extending the scope of mother tongue education. Further, with Norway intending to become a sustainable country, it is highly important to have sustainable development as a theme in the mother tongue curriculum and also strengthen mother tongue teaching in the school system so that each and every child is educated about SD. As minority pupils come from different backgrounds, languages and culture, it is essential for them to have both mother tongue education and sustainable development education to be at par with their Norwegian peers. Strengthening the education system by providing adequate mother tongue support and education for sustainable development to minority language pupils can seam the disparity in education which would be beneficial for the country as these young citizens will grow up to be environmentally responsible adults contributing to country's economic, social, cultural growth and innovations.

There is no denying the fact that as citizens of the country the minority language pupils must learn Norwegian, but their education should not be compromised by depriving them of SD education and weakening their ties with their mother tongue. This is important from the perspective of promoting diversity in society while strengthening the two founding principles of Norwegian system of education, equity and equality. As the schools in Norway are becoming more and more culturally and linguistically diverse, the agenda of equality and equity in education needs to be implemented more effectively.

The study has a few limitations. The literature reviewed for this study is limited to the literature available in English and only English-speaking informants could be recruited in the study. The results of the study cannot be generalized for Norway because of the small sample size of this study. Qualitative nature of the study also limits generalization as views and opinions expressed by the informants of this study and can never be exactly the same as other teachers. Further, the study is relevant only in the Norwegian school context as it is based on the Norwegian Education Act (1998).

Decline in biodiversity and climate change are two of the ten most important environmental threats (Sæverot & Torgersen, 2022, p.3). In order to overcome these threats, it is important to develop holistic and sustainable solutions. Mother tongue should be strengthened for making sustainable development education effective and this could immensely contribute towards combatting environmental threats of decrease in biodiversity and climate change. Promoting linguistic diversity and education for sustainable development thus, are the two dimensions from which these threats can be addressed.

There is a need to explore further sustainable ways to address environmental threats from a cultural point of view. For instance, study by Brossard Børhaug (2021) highlight the importance of intercultural education in combatting anthropogenic climate change. A study by Tauro et al. (2021) propose field environment philosophy, a novel educational methodology which utilizes ecotourism practices to reestablish connections between nature and citizens. Innovative educational actions are needed and this thesis is a small attempt to do so.

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## Appendix 1 Letter of Informed Consent

### Are you interested in taking part in the research project

“Promoting linguistic diversity for fostering biological and cultural diversity in [XXXXXX]”<sup>7</sup>?

This is an inquiry about participation in a research project where the main purpose is to understand how the teachers in basic Norwegian and in mother tongue incorporate the concept of sustainable development in teaching newly arrived immigrants in [XXXXXX], Norway. In this letter, we will give you information about the purpose of the project and what your participation will involve.

#### **Purpose of the project**

Language is an important tool for communication that we use in our daily lives. Further, every language has a huge impact on biodiversity. When a language is lost, the ways to understand the local nature also get lost. On the contrary, if local and minority languages are sustained, it helps to achieve sustainable development which is the development that ensures that present day needs of the population are met without altering the ability of future generations to fulfil their own needs.

In this project a key aim is to look closer at language teaching and how it may preserve biological and cultural diversity.

We plan to carry out this study in [XXXXXX] at [YYYYYY]<sup>8</sup>. The [YYYYYY] has for a long time been imparting language education to minority pupils and gathers teachers for both mother tongue and Norwegian language.

#### **Research Question-**

*How do teachers in basic Norwegian and in mother tongue incorporate the concept of sustainable development in teaching newly arrived immigrants in [XXXXXX], Norway?*

This research project is a master thesis. VID Specialized University, Norway is the institution responsible for the project.

#### **Why are you being asked to participate?**

Since we are to identify how language teaching can promote sustainable development, we need to know the views and thoughts of the language teachers about teaching sustainable development to minority pupils. You have been contacted for this study as you are a language teacher at [YYYYYY].

[YYYYYY] has been contacted to ask permission for interviewing teachers.

#### **What does participation involve for you?**

You are asked to participate in a group discussion with some fellow colleagues and the researcher (master student). The discussion will take 45 to max. 60 minutes. The questions will be regarding importance of teaching about sustainable development to minority language pupils. You do not need to make any preparations for the discussion.

Your answers will be recorded electronically.

#### **Participation is voluntary**

Participation in the project is voluntary. If you chose to participate, you can withdraw your consent at any time without giving a reason. All information about you will then be made anonymous. There will be no negative consequences for you if you chose not to participate or later decide to withdraw.

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<sup>7</sup> The name of the city is redacted

<sup>8</sup> The name of the language school is redacted



### **Your personal privacy – how we will store and use your personal data**

We will only use your personal data for the purpose(s) specified in this information letter. We will process your personal data confidentially and in accordance with data protection legislation (the General Data Protection Regulation and Personal Data Act).

Only the student researcher Mallika Manral and the master's thesis supervisor Prof. **Frédérique Brossard Børhaug** at VID Specialized University, Norway will have access to data. Your name will be replaced with a code (fictive name). The languages you teach will be encoded as Norwegian = 1 and mother tongue = 2

The list of names and respective codes will be stored separately from the rest of the collected data.

The voice recorders would be encrypted/locked away.

No personal information will be given in the publication, all information from respondents will be anonymised.

### **What will happen to your personal data at the end of the research project?**

The project is scheduled to end 30.06.2022.

All the personal data including the voice recordings will be permanently deleted from all the devices.

All data will be anonymised at the end of the project.

### **Your rights**

So long as you can be identified in the collected data, you have the right to:

- access the personal data that is being processed about you
- request that your personal data is deleted
- request that incorrect personal data about you is corrected/rectified
- receive a copy of your personal data (data portability), and
- send a complaint to the Data Protection Officer or The Norwegian Data Protection Authority regarding the processing of your personal data

### **What gives us the right to process your personal data?**

We will process your personal data based on your consent.

Based on an agreement with VID Specialized University, Norway, NSD – The Norwegian Centre for Research Data AS has assessed that the processing of personal data in this project is in accordance with data protection legislation.

### **Where can I find out more?**

If you have questions about the project, or want to exercise your rights, contact:

- **Prof. Frédérique Brossard Børhaug**  
*VID Specialized University, Norway*  
*Email: [frederique.borhaug@vid.no](mailto:frederique.borhaug@vid.no)*
- Our Data Protection Officer: Nancy Yue Lui ([nancy.yue.liu@diakonhjemmet.no](mailto:nancy.yue.liu@diakonhjemmet.no))
- NSD – The Norwegian Centre for Research Data AS, by email: ([personverntjenester@nsd.no](mailto:personverntjenester@nsd.no)) or by telephone: +47 53 21 15 00.

Yours sincerely,

Prof. Frédérique Brossard Børhaug  
Project Leader  
(Supervisor)

Mallika Manral  
Student

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**Consent form**

I have received and understood information about the project “Promoting linguistic diversity for fostering biological and cultural diversity in [XXXXXX]” and have been given the opportunity to ask questions. I give consent:

- to participate in group discussion
- that excerpts of discussion in anonymised form will be published in Master’s thesis and/or other publication.

I give consent for my personal data to be processed until the end date of the project, approx. 30.06.2022.

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(Signed by participant, date)

## Appendix 2 Interview Guide used in Focus Group Discussion

Group number .... with number of participants....

Sex: Male/ Female

Language(s) taught: L1 / L2

Grade level(s) taught:

Language teaching experience (years): 1 to 10, >10

First part

1. What is sustainable development for you?
2. Why do you think the theme of sustainable development gained such importance in the new curriculum, *Knowledge Promotion 2020*? (it has become a pluridisciplinary theme in all subjects)
3. Have you been teaching about sustainable development in your class? What did you focus on more concretely? Did you come over when pupils were studying this theme in other subjects?

Second part

4. What are the words related to nature that come up during your discussions/ interactions with your pupils on the topic of sustainable development?
5. Did you reflect that language teaching can promote sustainable development? Why should language learning contribute to it?
6. Did you reflect on the fact that sustainable development is not included in subject of the mother tongue? What do you think about it?

Third part

7. What comes to your mind when you hear the words “biocultural diversity”? Did you know that word?
8. Do you want to include this topic in your future teaching? If yes, why/if no, why?

**Thank you for your participation!**

## Appendix 3 Approval from Norwegian Centre for Research Data

12/17/21, 1:56 PM

Notification form for processing personal data



### Assessment

#### Reference number

937423

#### Project title

Promoting linguistic diversity for fostering biological and cultural diversity in [XXXXXX]

#### Institution responsible for treatment

VID University College / Faculty of Theology, Diakonia and Management / Faculty of Theology, Diakonia and Management Stavanger

#### Project manager (scientific employee / supervisor or research fellow)

Frédérique Brossard Børhaug, frederique.borhaug@vid.no, tlf: +4791595620

#### Type of project

Student project, master's degree

#### Contact information, student

Mallika Manral, manralyashu@gmail.com, tlf: +4798647992

#### Project period

01.12.2021 - 30.06.2022

#### Rating (1)

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#### 15.11.2021 - Assessed

Our assessment is that the processing of personal data in this project will comply with data protection legislation, so long as it is carried out in accordance with what is documented in the Notification Form and attachments, dated 15.11.2021. Everything is in place for the processing to begin.

#### DUTY OF CONFIDENTIALITY

Please note that teachers are bound by a duty of confidentiality. It is therefore important that the interviews are conducted in such a way that confidential information about individual pupils is not gathered.

#### TYPE OF DATA AND DURATION

The project will process general categories of personal data until 30.06.2022.

#### LEGAL BASIS

The project will gain consent from data subjects to process their personal data. We find that consent will meet

the necessary requirements under art. 4 (11) and 7, in that it will be a freely given, specific, informed and unambiguous statement or action, which will be documented and can be withdrawn.

The legal basis for processing general categories of personal data is therefore consent given by the data subject, cf. the General Data Protection Regulation art. 6.1 a).

#### PRINCIPLES RELATING TO PROCESSING PERSONAL DATA

NSD finds that the planned processing of personal data will be in accordance with the principles under the General Data Protection Regulation regarding:

- lawfulness, fairness and transparency (art. 5.1 a), in that data subjects will receive sufficient information about the processing and will give their consent
- purpose limitation (art. 5.1 b), in that personal data will be collected for specified, explicit and legitimate purposes, and will not be processed for new, incompatible purposes
- data minimisation (art. 5.1 c), in that only personal data which are adequate, relevant and necessary for the purpose of the project will be processed
- storage limitation (art. 5.1 e), in that personal data will not be stored for longer than is necessary to fulfil the project's purpose

#### THE RIGHTS OF DATA SUBJECTS

NSD finds that the information that will be given to data subjects about the processing of their personal data will meet the legal requirements for form and content, cf. art. 12.1 and art. 13.

Data subjects will have the following rights in this project: access (art. 15), rectification (art. 16), erasure (art. 17), restriction of processing (art. 18), notification (art. 19) and data portability (art. 20). These rights apply so long as the data subject can be identified in the collected data.

We remind you that if a data subject contacts you about their rights, the data controller has a duty to reply within a month.

#### FOLLOW YOUR INSTITUTION'S GUIDELINES

NSD presupposes that the project will meet the requirements of accuracy (art. 5.1 d), integrity and confidentiality (art. 5.1 f) and security (art. 32) when processing personal data.

To ensure that these requirements are met you must follow your institution's internal guidelines and/or consult with your institution (i.e. the institution responsible for the project).

#### NOTIFY CHANGES

If you intend to make changes to the processing of personal data in this project it may be necessary to notify NSD. This is done by updating the information registered in the Notification Form. On our website we explain which changes must be notified. Wait until you receive an answer from us before you carry out the changes.

#### FOLLOW-UP OF THE PROJECT

NSD will follow up the progress of the project at the planned end date in order to determine whether the processing of personal data has been concluded.

Good luck with the project!

Contact person at NSD: Line Raknes Hjellvik