



LEXIN – Dictionaries for Minority Language Immigrants

Tove Bjørneset¹

Abstract

On a mission from the Norwegian government, a multidisciplinary project team in Uni Research has been working on developing the Norwegian version of the originally Swedish dictionary series LEXIN since 1996. Today the Norwegian project is owned and funded by The Norwegian Directorate for Education and Training. In 2008 the LEXIN project team was awarded with The Rosing Language Price from The Norwegian Computer Society in cooperation with The Language Council of Norway.

The LEXIN dictionaries are customized for non-native speakers who have limited proficiency in the Norwegian language and who may also be unfamiliar with the use of dictionaries as such. The dictionaries are illustrated and user friendly, and all content, design and user interface are developed with this target group in mind. Since the first dictionary launch in 2002 the users have been able to contact the project team directly through the project's website. This dialogue has proven to be of great value. User surveys have also contributed to our knowledge about the user habits and needs and about how they benefit from using LEXIN.

A speech synthesis with adjustable reading speed for all the Norwegian dictionary content was implemented in 2011, and the full text search solution implemented in 2010 enables the users to search in the entire Norwegian dictionary content, and no longer merely the entry words. All dictionaries are published online, and some of them also in printed editions: <www.udir.no/lexin> Online editions are free.

The Norwegian series consists of dictionaries with one of the two Norwegian official written standards, Bokmål and Nynorsk, as source languages and the following as target languages: Arabic, Burmese, Dari, English, Kurdish Kurmanji, Kurdish Sorani, Lithuanian, Persian (Farsi), Polish, Russian, Somali, Tagalog, Tamil, Thai, Tigrinya, Turkish, Urdu and Vietnamese. At present we are developing a technical solution allowing searches also the opposite way – making today's target languages function also as source languages (for searches to Norwegian Bokmål and Nynorsk).

Keywords: Dictionaries, Online dictionaries, Printed dictionaries, Language learning, Language teaching, Minority language, Pupils, Immigrants

1. Introduction and Background

The LEXIN dictionary series is customized for non-native speakers who have limited proficiency in the Norwegian language and who may also be unfamiliar with the use of dictionaries as such. The dictionaries are illustrated and user friendly, and all content, design and user interface are developed with this target group in mind.

The original Swedish project was established by the Swedish Government in 1979. During the 1990's they offered all the Nordic countries free reuse of the LEXIN database to facilitate the production of similar dictionaries in their respective countries. The objective was to utilize both the popular dictionary concept and the comprehensive source language material with translations to several minority languages, so that parts of the work could be carried out semi-automatically.

The Norwegian dictionary series LEXIN [1] consists of dictionaries with one of the two Norwegian official written standards, Bokmål and Nynorsk, as a source language and 18 target languages, see Fig. 1 below. This governmental funded dictionary series has now been available free of charge for all during the last 15 years. Several articles have been published nationally as well as internationally on the Nordic and the Norwegian LEXIN cooperation, the respective projects and the dictionary series [2] [3] [4] [5] [6] [7] [8] [9] [10]. In this paper I will focus on the Norwegian project. Two user surveys [11], continuous user dialogue and many personal encounters with users through two decades have given us important knowledge about LEXINs position among language learners and teachers in the Norwegian society and schools. All sources of information has proven to be of great value, both for the owner, The Norwegian Directorate for Education and Training [12], which is responsible for plotting out

¹ Uni Research, The Language and Language Technology Group (Norway)

the main lines of action, and for us in the multidisciplinary project team at Uni Research, which develop and maintain the dictionaries and their content as well as the tailor-made ICT solutions [9].

2. Twenty Years of Multidisciplinary Innovation and Dictionary Development

The LEXIN project at Uni Research started in 1996, by lexicographic transfer of the Swedish source language material. This was done parallel with establishing new Norwegian dictionary records to ensure a dictionary content suitable for Norwegian conditions. The comprehensive work was performed by lexicographers via a tailor-made net based editing tool with a SQL database.

In 2000 all English translations that were equivalent with the Norwegian dictionary content was implemented, while new Norwegian dictionary entries was translated manually. [5] [7] [8]

The owner of LEXIN, The Norwegian Directorate for Education and Training decided that the second target language had to be Tamil, even if there were no Tamil translations available in Swedish LEXIN. The reason was the precarious shortage of language tools for the Tamils that had fled to Norway during the 1980s. As the migration may differ between Norway and Sweden, Tamil is still not available in the Swedish LEXIN series. The development of the illustrated *Norwegian-Tamil LEXIN dictionary* started in 2001 and in 2002 the online edition was published along with the monolingual

Norwegian Bokmål and the bilingual *Norwegian-English online dictionary* editions. [5] [7] [8]

During the last 20 years the LEXIN project team at Uni Research has developed and published 40² online dictionary editions and 7 printed editions, covering a total of 20 languages:

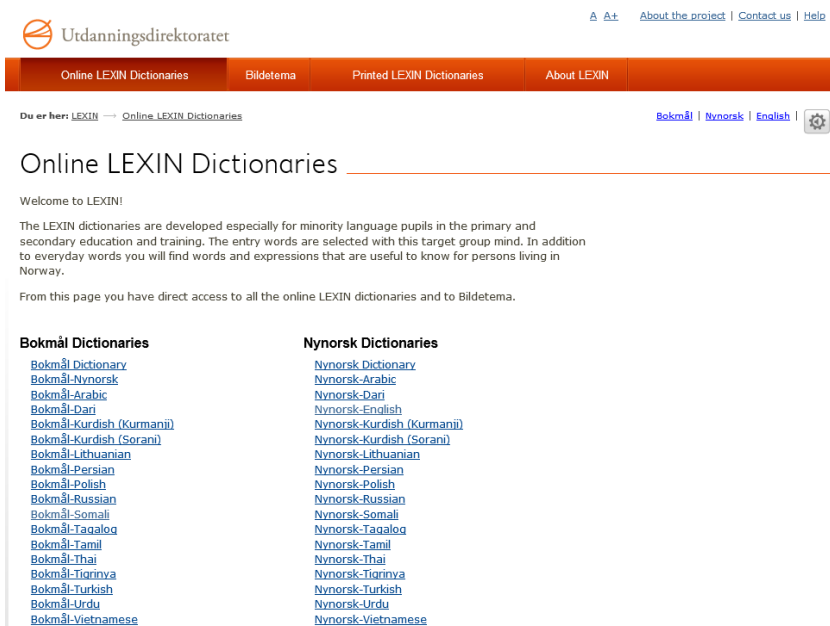


Fig. 1: The English version of the LEXIN homepage. [1]

The ongoing implementation of the technical solution facilitating bidirectional searches in all the online dictionaries will be finished this year, enabling searches from all today's target languages to Norwegian Bokmål and Nynorsk. This is a functionality many users have been asking for. It will also double the number of online dictionaries.

3. The Words to Say It: LEXIN in School and Kindergarten

According to The Norwegian Directorate for Education and Training there were 2,858 primary and lower secondary schools and 425 upper secondary schools in Norway during 2016-2017. [12] During 2015 there were 283,608 children in the kindergartens, corresponding to 90.4% of all 1–5 year-olds. There were also 623,755 pupils in the primary and lower secondary schools, which is virtually all 6-15

² In 2009 The Norwegian Directorate for Education and Training decided to remove the *Bokmål-English dictionary* due to demands from commercial publishing companies, but the English translations may still be reached in any of the dictionaries with another language than Norwegian as target language, as English is implemented as a third language in these editions. At present we are about to publish the Bokmål and Nynorsk version of the *Burmese online dictionary*, while the *Nynorsk-Bokmål online dictionary* is in progress. The second printed edition of the *Norwegian-Somali illustrated dictionary* is in print, while the first printed edition of the *Norwegian-Dari online dictionary* is in progress.



year-olds. In upper secondary schools there were 274,870 pupils (including apprentices, trainees and 15,146 students in post-secondary vocational schools), corresponding to 92.2% of all 16-18 year-olds, while there were 283,115 students at universities and university colleges, corresponding to 34.9% of all 19-24 year-olds. [15]

Through user surveys and user dialogue we have learned that the LEXIN dictionaries are used in many different ways and locations, but above all they are used in school. Teachers have good experiences using them at all levels in a variety of subjects and academic contexts. In addition to introductory courses and other courses for minority language immigrants, in the subjects Norwegian and Norwegian as a second language, they are used in mathematics, science and social studies for minority language immigrants at different ages and levels. The dictionaries are also used in elective subjects. [9] [11] [13]

The flexible user interface makes the dictionaries suitable both as conventional dictionaries and as learning tools. According to The National Centre for Multicultural Education (NAFO) [13] mother-tongue teachers include LEXIN in their timetables and teaching plans. Many teachers purchase the printed dictionaries and teach their pupils how to use them actively. According to NAFO an increasingly number of schools are linking LEXIN to the school's learning platforms and language teachers help their pupils using LEXIN on their private mobile phones. A LEXIN app has not yet been developed, but the online dictionary editions have been functioning well on standard mobile phones and tablets for several years. [9] [10] [11]

Several language teachers respond that they are using the LEXIN dictionaries in special needs teaching as well as in regular teaching where the main objective is to expand the pupil's vocabulary.

This may be done in different ways.

Some teachers make teaching plans where the pupils are using LEXIN to identify, explore and define key concepts, key words or "difficult" words in selected texts. Other teachers give their pupils the task of writing digital texts and establishing links to what they think are key concepts or key words.

Another common task is to let the pupils correct dictations and find the correct spelling for each other. It is also common to let the pupils translate and write their own explanations of "the word of the week" in the classroom, often in all the languages represented there. We also know that the dictionaries are used in tasks where the pupils are mapping synonyms in e.g. Norwegian and their mother tongue, and possibly also in English. Furthermore, the pupils obviously use the dictionaries when translating, entering the translations into their glossary or creating their own sentences with the translations:

In some classes the pupils are given the task of making a three- or four-tier scheme with the identical concepts in several languages and with their own explanation:

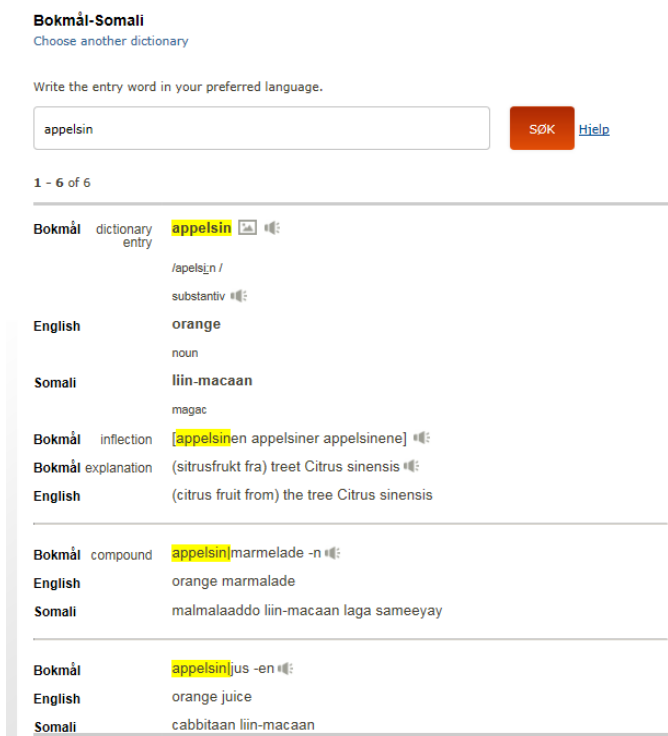


Fig. 2: The first out of 11 search results for the search word 'appelsin' in the Bokmål-Somali LEXIN dictionary.

Norwegian Bokmål	Somali	English	Explanation in Norwegian
appelsin	liin-macaan	orange	en frukt med oransje skall
ransel	boorso dhabar oo yar	backpack	en ryggsekk til bære skolesaker i
år	sanad	year	365 dager

Fig. 3: A four-tier scheme with three basic noun concepts.

Alternatively, the pupils may add pictures or multiple languages, and exclude the explanation. Skilled teachers and language didactics will probably have a multitude of possibilities for variety and personal adaptations according to their pupils' needs. If these tasks are performed digitally, it may also improve the pupils' digital skills, something which is highly prioritized in the Norwegian school today.

Another widely used task is to let the pupils mark all the difficult words in a self chosen text. Thereafter they translate the text and inflect or conjugate all the words before creating bilingual or trilingual glossaries. It seems common practice to save the outcome in personal knowledge banks.

Several teachers allow their pupils to use LEXIN as a support for writing more advanced texts, with emphasis on understanding and active use of synonyms, antonyms, idioms, collocations, metaphors and proverbs. We know that the simple explanations of the metaphorical expressions in LEXIN are useful for many. LEXIN is also used when pupils are studying or comparing language structures, such as comparison of the position of verbs and adjectives in their mother tongue versus in Norwegian. According to teachers and university students learning Norwegian, LEXIN's full text search is a useful and flexible language tool.

4. Bildetema – The Low-threshold Picture Leaflet with Natural Speech and Animations

Teachers in kindergartens and lower grades often prefer to use the LEXIN dictionaries in combination with *Bildetema*, or solely Bildetema. This is a low-threshold and interactive picture leaflet with 1,920 illustrated concepts with animations and natural speech in approximately 40 languages, including Arabic, English, Somali, Thai, Urdu and Vietnamese.



Fig. 3: The Bildetema index page.



Fig. 4: The design of the picture themes 25, 13, 2 and 22 in various languages.

Bildetema has recently been converted from Flash to HTML5, making this low-threshold language resource suitable also for tablets, and no longer merely computers. Language stimulating and language training start already in the kindergartens. Kindergarten teachers are content using Bildetema on tablets also for the smallest children, who are not yet capable to read on their own. The simple user interface allows them to simply tap the screen to listen to the pronunciation of the picture words.

5. The limits of my language mean the limits of my world. Closing Remark

According to Statistics Norway, there were 725,000 immigrants and 159,000 Norwegian born with immigrant parents at the beginning of 2017, corresponding to 16.8% of the total population [16]. The immigrants are coming from approximately 220 countries and autonomous areas.

The user statistics for 2015, 2016 and the first 8 months of 2017 clearly states that the use of LEXIN is still strongly increasing. While the number of manual searches in 2015 and 2016 was respectively 18,245,213 and 29,508,689, the numbers for 2017 passed 25,820,475 by September 1.

The philosopher Ludwig Wittgenstein formulated the possibilities and limitations in language like this: "The limits of my language mean the limits of my world." [17] The need for easy accessible and low-threshold dictionaries in several languages increases parallel with the growth of the immigrant population and the number of asylum seekers and refugees.



References

- [1] The Norwegian LEXIN homepage: www.udir.no/lexin
- [2] Pálfi, L.-L. & Sven Tarp "Lernerlexikographie in Skandinavien – Entwicklung, Kritik und Vorschläge", *Lexicographica* 25/2009, Tübingen, Max Niemeyer Verlag, 2009, 135-154.
- [3] Hovdenak, M. "Dei norske LEXIN-ordbøkene", *LexicoNordica* 15, 2008, 219-234.
- [4] Bjørneset, T. "Dictionaries for Immigrants and Refugees in Norway: NORDLEXIN-N", *Proceedings of The 7th Conference of the International Society for the Study of European Ideas (ISSEI)*, Bergen, 2000 (CD version).
- [5] Bjørneset, T. "The Dictionary Project NORDLEXIN-N", *Lexicographica Series Maior* 109, Tübingen, Max Niemeyer Verlag, 2002, 31-43.
- [6] Bjørneset, T. & Asta Svavarsdottir "Nord-Lexin", *Nordiske studiar i leksikografi 7 / Rapport frå Konferanse om leksikografi i Norden*, Volda, 2003, 52-66
- [7] Bjørneset, T. "The NORDLEXIN-N Dictionary Project: Part II", *Lexicographica Series Maior* 115, Tübingen, Niemeyer, 2005, 133–145.
- [8] Bjørneset, T. "Facilitating Norwegian Language Learning Among Immigrants by Use of Tailormade Dictionaries", *Conference Proceedings. ICT for Language Learning*. Padova, Italia: Libreria Universitaria Edizioni 2016, 147-152.
- [9] Bjørneset, T. "Gjennom orda: LEXIN-ordbøkene og bruken av dei i og utanfor klasserommet", *LexicoNordica* 23, 2016b, 17-34.
- [10] Bjørneset, T. "LEXIN i Norge – Hva sier brukerne?", *Skrifter / Nordisk forening for leksikografi* 13, 2016a, 89-99.
- [11] Rambøll Management http://www.ramboll.no/projects/rm/no_2012_lexin-godt-lik-men-lite-kjent-ordbok, Oslo, 2012.
- [12] The Norwegian Directorate for Education and Training: <https://skoleporten.udir.no/#>
- [13] The National Centre for Multicultural Education (NAFO): <http://nafo.hioa.no/om-nafo/about-nafo/>
- [14] Bildetema: <http://clu.uni.no/prod/bildetema-portal/index.html?page=simple-flash&version=norwegian>
- [15] Statistics Norway: <https://www.ssb.no/en/utdanning/nokkeltall>
- [16] Statistics Norway: <http://www.ssb.no/en/>; <http://ssb.no/innvbf>.
- [17] Wittgenstein, L. "Tractatus logico-philosophicus", 1922.