



## Facilitating Norwegian Language Learning among Immigrants by Use of Tailormade Dictionaries

**Tove Bjørneset**

Uni Research

The Language and Language Technology Group  
(Norway)

### Abstract

*A multidisciplinary project team in The Language and Language Technology Group at Uni Research has since 1996 been working on developing the Norwegian version of the Swedish dictionary series LEXIN. The Swedish series with dictionaries from Swedish to approx. 20 languages was launched in the 1980's, designed specifically for minority language immigrants living in Sweden. The dictionaries are customized for non-native speakers who have limited proficiency in the source language and who may also be unfamiliar with the use of dictionaries as such. The dictionaries are illustrated, lucid and user-friendly, and the entry words and examples are selected with this target group in mind.*

*In 1996, The Norwegian Ministry for Education, Research and Church Affairs initiated the corresponding Norwegian project, at present owned and funded by The Norwegian Directorate for Education and Training (Utdanningsdirektoratet). The Norwegian dictionaries are tailormade for minority language pupils in the primary and secondary education and training. In addition to everyday words, the dictionaries contain words and expressions that are important to know for persons living in Norway. The dictionaries are useful also for others who would like to learn Norwegian. At present the Norwegian LEXIN series consists of dictionaries between the two Norwegian official written standards Bokmål and Nynorsk into 16 target languages, as Arabic, Dari, Somali, Tigrinya, Urdu and Vietnamese, and more are forthcoming, as Burmese and Lithuanian. All dictionaries are published online, and some of them also in printed editions: <[www.udir.no/lexin](http://www.udir.no/lexin)> The online editions are free.*

*The first Norwegian dictionaries were launched in 2002. Since then, the end users have been able to contact the project group directly through the project's website. This dialogue has proven to be of great value. Two user surveys have also contributed to our knowledge about the end user habits and needs in and outside the class rooms and about how they benefit from using LEXIN in their Norwegian language learning. According to the last user survey, 86% of the respondents found it easier to learn Norwegian by means of LEXIN.*



## 1. Introduction

The owner of Norwegian LEXIN, The Norwegian Directorate for Education and Training, is the executive agency for the Ministry of Education and Research and is responsible for the development of kindergarten and primary and secondary education in Norway [1]. The LEXIN project team at Uni Research is developing and maintaining the dictionaries and the tailor-made IT solutions.

The LEXIN dictionaries are developed especially for minority language pupils in the primary and secondary education and training [2]. In addition to everyday words the users will find words and expressions that are useful to know for persons living in Norway, making the dictionaries useful also for others who would like to learn Norwegian Bokmål or Nynorsk. [3] [4] [5] [6]

User statistics for the six first months of 2016 (14,510,017 searches) are showing an increase of 66,4% compared with the same period in 2015 (9,630,489 searches).

Du er her: [LEXIN](#) → [Online LEXIN dictionaries](#)

[Bokmål](#) | [Nynorsk](#) | [English](#) | 

## Online LEXIN dictionaries

Welcome to LEXIN!

The LEXIN dictionaries are developed especially for minority language pupils in the primary and secondary education and training. The entry words are selected with this target group mind. In addition to everyday words you will find words and expressions that are useful to know for persons living in Norway. The dictionaries are useful also for others who would like to learn Norwegian – Bokmål or Nynorsk.

From this page you have direct access to all the online LEXIN dictionaries and to Bildetema.

### Bokmål dictionaries

- › [Bokmål Dictionary](#)
- › [Bokmål-Nynorsk](#)
- › [Bokmål-Arabic](#)
- › [Bokmål-Dari](#)
- › [Bokmål-Kurdish \(Kurmanji\)](#)
- › [Bokmål-Kurdish \(Sorani\)](#)
- › [Bokmål-Persian](#)
- › [Bokmål-Polish](#)
- › [Bokmål-Russian](#)
- › [Bokmål-Somali](#)
- › [Bokmål-Tagalog](#)
- › [Bokmål-Tamil](#)
- › [Bokmål-Thai](#)
- › [Bokmål-Tigrinya](#)
- › [Bokmål-Turkish](#)
- › [Bokmål-Urdu](#)
- › [Bokmål-Vietnamese](#)

### Nynorsk dictionaries

- › [Nynorsk Dictionary](#)
- › [Nynorsk-Arabic](#)
- › [Nynorsk-Dari](#)
- › [Nynorsk-English](#)
- › [Nynorsk-Kurdish \(Kurmanji\)](#)
- › [Nynorsk-Kurdish \(Sorani\)](#)
- › [Nynorsk-Persian](#)
- › [Nynorsk-Polish](#)
- › [Nynorsk-Russian](#)
- › [Nynorsk-Somali](#)
- › [Nynorsk-Tagalog](#)
- › [Nynorsk-Tamil](#)
- › [Nynorsk-Thai](#)
- › [Nynorsk-Tigrinya](#)
- › [Nynorsk-Turkish](#)
- › [Nynorsk-Urdu](#)
- › [Nynorsk-Vietnamese](#)

Fig. 1: The Norwegian LEXIN homepage [8].

According to the user survey carried out by Rambøll Management Consulting in 2011 on assignment of The Norwegian Directorate for Education and Training, 86% of the users found it easier to learn Norwegian by means of LEXIN [7]. In the following I would like to share some of my personal assumptions on how tailor-made dictionaries like LEXIN may contribute to enhance Norwegian language learning among immigrants in such an extent.

## 2. Norwegian LEXIN Characteristics

The LEXIN dictionaries are easy to use, and the illustrations are making them suitable also for children and others with limited reading or writing skills. All information about the entry words is gathered in the dictionary entries and includes information on part of speech, full inflection, simple explanations and a multitude of examples.

A flexible speech synthesis for Norwegian dictionary content was implemented in 2011, allowing us to do all kinds of editing in the dictionaries without worries for non-corresponding audio files. The speech synthesis contains a female and a male voice for each of the two Norwegian written standards, and the users may easily adjust the reading speed.



In 2009 English was implemented in all online dictionaries except the two Norwegian ones, so that the users easily can switch to other dictionaries whenever needed. While Norwegian Bokmål, Nynorsk and English are represented in the so-called MAXI edition, approximately 37,000 words (i.e. the total number of entry words, compounds and derivations), the other languages are limited to 7,500 (Tamil) and 11,000 words due to resource reasons.

In 2010 we implemented a full text search solution, so that the users may search in the entire Norwegian content, and no longer merely the entry words [9]. As shown in Fig. 2 below, all occurrences of the search string are highlighted in yellow.

Since the first Norwegian LEXIN launch the search possibilities have been limited to one-way searches with Norwegian Bokmål or Nynorsk as source language. At present we are preparing the implementation of a new algorithm that will enable bidirectional searches, i.e. from foreign languages into Norwegian.

## 2.1 Examples

Examples often seem to be overlooked in the discussion of dictionaries, maybe because they are considered to be less important than definitions. However, examples will not only supplement the information given in the definition of the lemma, but also display the lemmas in their neutral contexts. Examples also show how different meanings may be distinguished from each other. Examples illustrate grammatical patterns, and may also show other typical collocations. Further, examples are a useful tool for displaying Norwegian morphology by displaying inclusion of entry words in compounds and derivations.

Examples are particularly important in bilingual dictionaries, as LEXIN. Entry words (lemmas) can rarely be translated in isolation, without a context – certain verbs, for instance, require a preposition etc. The objective is partly to show the contrasts between different languages, ranging from subtle differences in e.g. the use of articles to the use of different parts of speech to express the same content in the two languages. In such cases examples are an indispensable aid in discovering translation equivalents which can be used in real-life situations, and not only in meta-language, in definitions, etc.

The examples should show that the translation equivalent is not applicable in all contexts. There should also be examples showing how the entry word should be translated in those cases where no satisfactory equivalent can be found. These considerations contributed to our decision to give priority to and room for a magnitude of examples.

Abstract or metaphoric use of language is often a challenge for language learners. Set phrases and idioms are more or less fixed expressions the meaning of which does not reflect the meaning of the separate words. We have systematically selected and registered additional Norwegian set phrases and idioms, as such linguistic phenomena are considered to be of great importance for achieving fluency in a foreign language. Such expressions also give clue to the understanding of different cultures and ways of thinking. [5]

## 2.2 Illustrations

According to the user survey, the magnitude of illustrations linked to the dictionary entries are making the LEXIN dictionaries even more lucid and suitable for the youngest children or persons with limited reading or writing skills [7].

The approximately 2,200 illustrations are divided into 33 picture themes entitled e.g. "The human body – external parts" and "Flowers and fungi". All illustrated entry words are indicated by a picture icon. When clicking this icon, the user is taken to the affiliated picture theme.



## Bokmål—tigrinja

Velg en annen ordbok

Jeg vil søke etter dette ordet:


[Hjelp](#)

1 - 10 av 165









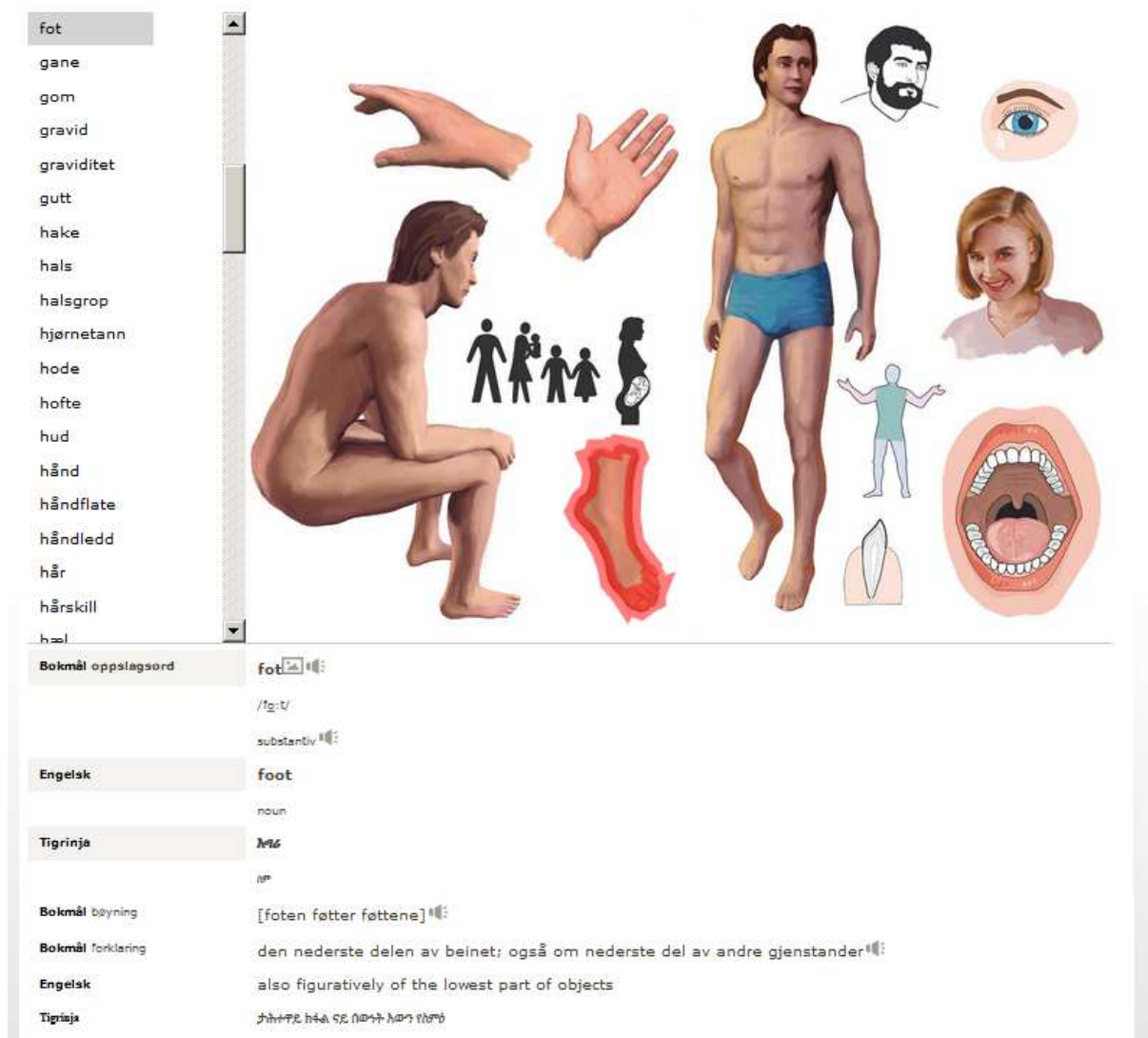


<b>Bokmål</b>	oppslagsord	<b>fot</b>   
		/fɔ:t/
		substantiv 
<b>Engelsk</b>		<b>foot</b>
		noun
<b>Tigrinja</b>		<b>አግሪ</b>
		ሰዎ
<b>Bokmål</b>	bøying	[ <b>f</b> o]en føtter føttene ] 
<b>Bokmål</b>	forklaring	den nederste delen av beinet, også om nederste del av andre gjenstander 
<b>Engelsk</b>		also figuratively of the lowest part of objects
<b>Tigrinja</b>		ታሕተዋይ ክፋል ናይ ሰውነት እውን የስምዕ
<hr/>		
<b>Bokmål</b>	eksempel	<b>f</b> oten av fjellet 
<b>Engelsk</b>		the foot of the mountain
<b>Tigrinja</b>		አግሪ ጎረቤት
<hr/>		
<b>Bokmål</b>	uttrykk	på stående <b>f</b> ot ("straks") 
<b>Engelsk</b>		off the cuff, off-hand
<b>Tigrinja</b>		ብቅድብት ዓይነት: ብቅድሞት


Fig. 2: The first part of the search result for 'fot' (English: 'foot') in the *Bokmål-Tigrinya dictionary*.



The screenshot shows a dictionary interface. On the left is a vertical list of words in Bokmål, including 'fot', 'gane', 'gom', 'gravid', 'graviditet', 'gutt', 'hake', 'hals', 'halsgrop', 'hjørnetann', 'hode', 'hofta', 'hud', 'hånd', 'håndflate', 'håndledd', 'hår', 'hårskill', and 'hæl'. The word 'fot' is highlighted. Below the list, the selected entry for 'fot' is displayed with its phonetic transcription, part of speech, and translations in English and Tigrinya. To the right of the list is a large picture theme titled 'The human body – external parts', which contains various images related to the human body, including hands, a full body, a head, an eye, a woman's face, a mouth, a foot, and a family silhouette.

**fot**  

/fɔːt/


substantiv 


**Engelsk** **foot**

noun

**Tigrinja** **ፊት**

ፊት

**Bokmål** bøyning [foten føtter føttene] 

**Bokmål** forklaring den nederste delen av beinet; også om nederste del av andre gjenstander 

**Engelsk** also figuratively of the lowest part of objects

**Tigrinja** ታኩቶዲ ከፋል ናይ በዋጎት ኣዎን የኮም

Fig. 3: When clicking the picture icon in the *Bokmål-Tigrinya* dictionary entry 'fot', the users will be taken to the corresponding picture theme "The human body – external parts".

Once positioned in a picture theme, the users may click any picture objects or words in the word list, and study the correspondences. If they rather would like to return to the dictionary entry, they may easily do so by clicking the bottom of the display.

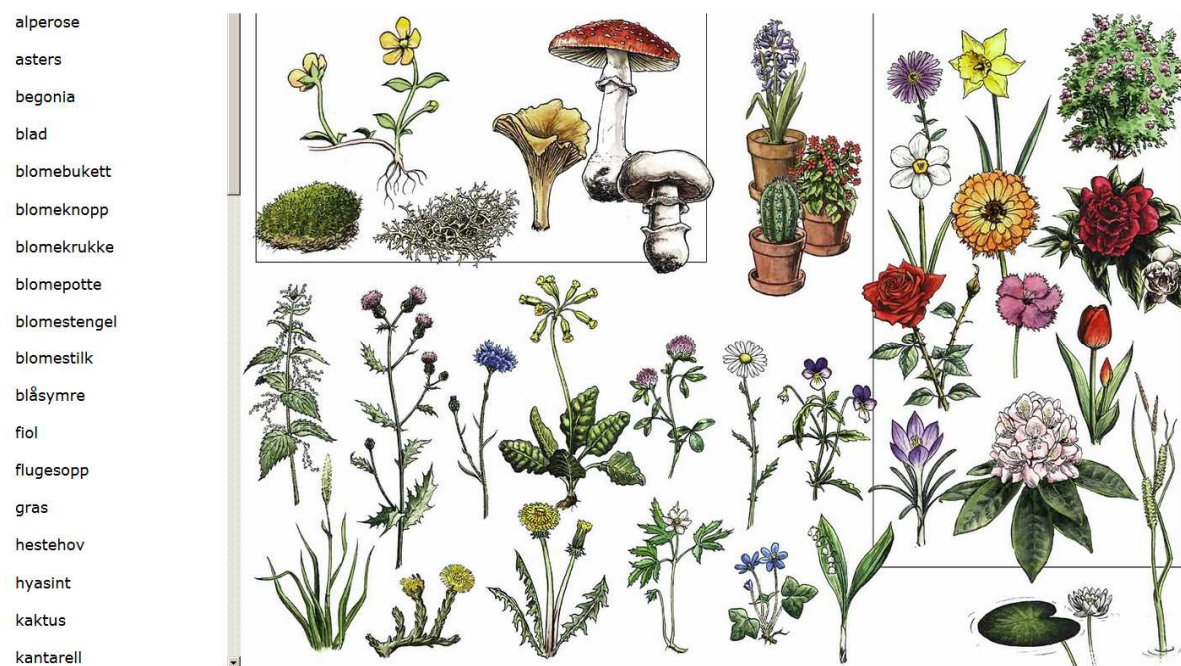


Fig. 4: The picture theme "Flowers and fungi" with the picture words listed in Norwegian Nynorsk.

### 3. Some User Survey Results

In 2011 Rambøll Management Consulting carried out a comprehensive user survey on assignment from The Norwegian Directorate for Education and Training. The point of departure was the Directorate's need for an in-depth mapping of how and to which extent the LEXIN dictionaries are used. They also wanted insight in the user experiences with the online and printed dictionaries and suggestions for further development from all groups of users – pupils, school leaders, teachers, commercial publishers, The Language Council of Norway and the LEXIN reference group. Rambøll was also asked to map the user opinions about the user interface and their personal benefits from using LEXIN.[7]

The user survey verifies extensive use of LEXIN in a multitude of ways and locations in Norway as well as abroad and it gives us important knowledge about the users and how they benefit from using LEXIN. The user group is gender balanced, but otherwise heterogeneous. While the youngest user was 6 years old, the oldest was 81, and the average age was 31. As many as 76% of the users were not born in Norway, and 9% of them were living abroad. The majority had been living in Norway for 2–5 years.

The dictionaries are used a lot by pupils with special needs. Approximately 80% are using them at home, while 40% are using them only at school. While approximately 35% are using them on a daily basis, 50% are using them twice a week or more. Many parents are using LEXIN to help their children with homework. Above all, the dictionaries are used in school as a teaching aid on all levels and age levels in a wide range of subjects and contexts. Approximately 80% of the teachers are using them, especially in introductory courses and elementary classes for minority language immigrants such as Norwegian, Norwegian as a second language, Natural Science and Social Subjects. Many mother tongue teachers include LEXIN in their timetables and annual plans, and an increasingly number of schools are entering the LEXIN URL into the school's learning platform.

Many respondents found it positive that the dictionaries are suitable for use both in plenary and individual on all levels. The majority of the respondents appreciated that the information on inflection is written out in full. Most respondent are also contented with the number of entry words and examples. One respondent wrote that the user-friendliness are turning the LEXIN series into a "stepping stone" into other and more traditional dictionaries.

Rambøll is concluding with a high degree of satisfaction in all user groups regarding the technical solution and the user interface. Rambøll also concludes with a high degree of contentment with LEXIN as a teaching aid and learning tool. All user groups agree (86%) that the LEXIN dictionaries facilitate Norwegian learning. [7] [9] [10].



#### 4. Closing Remark

According to Statistics Norway [11] 698,600 immigrants and 149,700 Norwegian born with immigrant parents were settled in Norway by the beginning of 2016, equivalent to 16,3% of the total Norwegian population. The immigrants are coming from 223 countries and self-governed areas. The requirement for user-friendly dictionaries in even more languages is growing naturally accordingly to the increasing number of immigrants settled in all of Norway's 428 municipalities. Apparently the almost 40 years old original Swedish and pioneering user-friendly LEXIN concept is still standing the test of time, for the benefit of human mobility, communication and integration.

#### References

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