Sign language dictionary as a digital tool in L2 teaching: Score evaluation of sentences for CEFR levels A1–B2

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In this paper, we describe the development of the Swedish Sign Language online dictionary for including CEFR level evaluations of the example sentences. This is done in order to support L2 learners at different stages of proficiency and facilitate sign language teaching.

For the students in the BA program for sign language and interpreting, the dictionary is used as a digital tool for searching and finding signs and sentences. In connection to this, we found that there was a need to adapt the sentences to different levels of proficiency, following the CEFR-based scale from A1 to B2. The focus on levels A1 to B2 is motivated by the levels reached within the 2-year program. As far as we are aware, no other sign language lexical database has applied this method – nor is there much international research pertaining to this – and as such this is a novel model.

During the fall semester of 2013, the first 3-year BA program for sign language and interpreting in Sweden started at Stockholm University. The program consists in part of theoretical and practical courses on Swedish Sign Language, in part of courses in interpreting between Swedish and Swedish Sign Language. The program is to a large extent practically oriented and the main goal is for the students to obtain proficiency in Swedish Sign Language as an L2. The practical segments is adapted to CEFR, which is a joint reference framework for language learning, teaching, and evaluation, established by the European Council for the purpose of describing second language proficiency.[1] The scale has three levels, each with two sublevels: A1–2 (basic user); B1–2 (independent user); and C1–2 (proficient user). PRO-Sign[2] has developed and adaptation of CEFR on the basis of sign language. PRO-Sign's CEFR profile includes a summary of the requirements for students, including production, comprehension, and conversation.

The Swedish Sign Language Dictionary was initiated in the end of the 1990s. The lexical database currently contains 21,000 sign entries and 4,100 example sentences and was launched in its present online form in October 2008.[3] The database contains video files (demonstrating signs and example sentences), phonological transcriptions, and sign glosses (for corpus annotation work). The purpose of the database is to document all signs found in Swedish Sign Language. Besides sign video demonstrations, each sign entry is associated with up to four video example sentences with up to 16 signs each. Each sentence example sign is indexed such that it can be found across different sign entries. The maximum number of 16 signs is motivated by a need to avoid too long sentences.

We are developing an idea evaluation method in which we are able to categorize each example sentence according to the CEFR scale (A1–B2). Based on this scale, we are able to select which grammatical functions (e.g., non-manual negation), parts of speech (e.g., verbs), clause types (e.g., declarative), and the number of signs to be included in a sentence.

[1] https://www.coe.int/en/web/common-european-framework-reference-languages
[2] https://www.ecml.at/ECML-Programme/Programme2012-2015/ProSign/tabid/1752/Default.aspx
[3] https://teckenspraklexikon.su.se

The sentences are either constructed or collected from the annotated Swedish Sign Language Corpus.[4] The SSL Corpus is an important resource for the development of the dictionary, but due to its limited size it is not possible to rely solely on authentic corpus example sentences.

In our database, different linguistic properties have been annotated – e.g., clause types, fingerspelling, auxiliary verbs, depicting signs, metaphors, negation, etc. – and each property has been assigned a certain score. By adding up the total score of the sentence and comparing this score to a predetermined evaluation scale, we are able to categorize the sentence according to the CEFR levels. In our preliminary evaluation scale, we have chosen to categorize the scores in the following intervals: A1 = 1–7 points; A2 = 8–17 points; B1 = 18–24 points; B2 = >25 points. This is illustrated in the following glossed example sentence:

POSS-1(J) BARN(J:) ALLTID(L) BRÅKA(BB:) VILL-INTE(5) MÖSSA(J) GÅ-UT(N).
POSS-1(J) CHILDREN(J:) ALWAYS(L) FIGHT(BB:) WANT-NOT(5) HAT(J) GO-OUT(N).
'My children are always fighting about not wanting a hat when going outside.'



The total score of this sentence is thus calculated as 12: 4 points for the clause type, and 8 points for the grammatical properties. As such, this sentence is categorized as an A2 level sentence.

With the help of this evaluation model, we are able to evaluate example sentences according to the different proficiency levels. The automatic conversion from point score to levels A1 and A2 are already considered relevant and we are now aiming to develop and adjust the conversion table for the other levels. According to the teaching staff, this method is useful and will be put to practice during the spring semester of 2019, with the hopes of receiving positive reactions from the students. The development of evaluation tools is of great importance, not only for the hearing L2 learners in or BA program, but also for similar sign language courses.

[4] https://www.ling.su.se/teckenspråksresurser/teckenspråkskorpusar/svensk-teckenspråkskorpus