

NORWEGIAN FIRST-YEAR STUDENT TEACHERS' KNOWLEDGE OF L1 GRAMMAR

HEIDI BRØSETH & MARI NYGÅRD

Norwegian University of Science and Technology (NTNU), Department of Teacher Education

Abstract

Despite protracted concerns about Norwegian students' decline in grammatical knowledge, the issue is poorly researched empirically. Aiming to describe the level of Norwegian students' grammatical knowledge in more detail, this article presents the results from a grammar survey distributed to first-year student teachers (N=235). The following research question has guided the study: What characterises Norwegian student teachers' grammatical knowledge as they enter teacher education?

The results clearly show that the student teachers' grammatical knowledge is quite poor. The students know the word classes *verb*, *noun*, *adjective* and *pronoun*, as well as the sentence constituent *subject*. Their knowledge is founded on semantics, while structural features of language seem to be a blind spot. The study contributes to the international research on grammatical subject knowledge (an important part of Knowledge of Language [KaL]). The paper will also fill a research gap on Norwegian student teachers' grammatical knowledge. Moreover, this article will be the first to report student teachers' grammatical knowledge from a context with two written standards, as we have in Norway.

Keywords: grammatical knowledge, school grammar, student teachers

1. INTRODUCTION

Norwegian scholars, as well as the Norwegian Language Council, have voiced their concerns about students' lack of grammatical knowledge (Brøyn, 2014; Grov, 2018; Hognestad, 2019; Oksfjellelv, 2011). The concerns can be divided along two strands. Firstly, one might question whether the curriculum (official or implemented) in university-preparatory upper secondary education really prepares the pupils to be language students at university level. Secondly, the sparse time allocated to grammar in today's teacher education makes it impossible to provide the students with the necessary basis of grammar to teach it themselves. Complaints about students' poor grammatical knowledge seem to be a reoccurring phenomenon. According to Alderson and Hudson (2013), undergraduate students in British universities are commonly accused of a decline in Knowledge about Language (KaL), particularly with respect to knowledge of metalinguistic terminology for grammar. Hertzberg (1995, p. 144, our translation), who investigated (primarily Norwegian) debates about grammar from 1800 to 1995, states that complaints about students' lack of grammatical knowledge is not a new-fangled phenomenon, but emphasises also that such complaints are not scientifically reliable:

Such statements cannot be used as proof for how the situation actually was—not back then and not now. From a scientific point of view, the complaints about the pupils' lack of [grammatical] knowledge is just as unreliable whether they occur in 1886, 1986 or 1995.

Despite these uttered concerns, the issue of Norwegian students' grammatical knowledge is poorly researched. Therefore, we seek in this article to empirically investigate the topic.

In a comprehensive overview, Elsner (2021, p. 112) presents studies from different countries which have investigated teachers' and student teachers' grammatical knowledge. She summarises as follows: "[...] this body of research shows that teacher trainees as well as practising teachers around the world struggle with grammar." Studies that underpin this claim are, for instance, Alderson & Hudson (2013) who investigated 726 undergraduate students in 2009. They compared their findings with similar surveys from 1986, 1992 and 1994 and concluded that "[...] there has been a general reduction in school-leavers' knowledge of grammatical terminology since 1986" (Alderson & Hudson, 2013, p. 334). They also report that Spanish and overseas students perform better than UK students and speculate if the reason for this is that other countries teach grammatical terminology more successfully than the UK.

In 2014-15, Macken-Horarik et al. (2018) investigated characteristics of Australian teachers' (N=373) answers when they self-report on their grammatical subject knowledge. Their study supports previous findings (Alderson & Hudson, 2013; Cajkler & Hislam, 2002; Sangster et al., 2013) showing that teachers struggle with grammatical subject knowledge.

Van Rijt et al. (2021) also find that Dutch student teachers (N=108) struggle with grammatical reasoning tasks. One factor that significantly predicts the quality of their reasoning is their TGU (Test of Grammatical Understanding) scores. The better the TGU scores, the better grammatical reasoning, which demonstrates that grammatical subject knowledge is a prerequisite for grammatical reasoning quality.

In a Scandinavian context, Kabel et al. (2022) has found that traditional school grammar instructions are still prevalent in Danish L1 lower secondary classrooms, and that the students associate grammar with writing correctness. This prescriptive view of grammar is also documented in high stake test and learning materials (Kabel, 2020; Kabel et al., 2022). In Sweden, Boström & Josefsson (2006, p. 33ff) proclaimed a crisis within foreign language education since barely any students chose to study German or French at university, and they pointed to the lack of grammar teaching in upper secondary education as one possible reason. In 2014, Norwegian researchers filmed 47 8th grade classrooms for four hours in their L1 Norwegian classes (approximately 200 hours of video). Grammar teaching was documented in 18 classrooms (Blikstad-Balas & Roe, 2020). In 14 of these, grammar occurred together with the second-choice form of written Norwegian, which for all students in this study meant Nynorsk (see section 1.1 for explanation of Nynorsk and Bokmål). This grammar teaching was mostly root learning, with the teaching purpose to improve the students' prescriptive writing skills in Nynorsk. The study shows that apart from the teaching of Nynorsk, there was very little grammar teaching in Norwegian 8th grade classrooms. The common feature of better written language proficiency mirrors quite closely Brøseth et al.'s (2020) investigation of a commonly used L1 textbook for 8th-10th grade, showing that the textbook has meagre grammar subject knowledge which moreover is generally not integrated with other L1 topics. The exception is the section on Nynorsk, which does include grammatical terminology, but used in a manner presupposing that students already know and understand the terms.

Holmen (2014) uses grammar as a case in her study of quality in Norwegian teacher education. Our study is tangent to this study but with a different scope. Since Holmen's focus is to characterise quality, the results from the grammar test are more briefly reported. For instance, the results on word classes are presented with accurate scores only for three (out of ten) word classes. Holmen finds that the students (N=114) lack common content knowledge (Ball et al., 2008) and concludes that an increase in quality of grammar teaching presupposes a teacher education which counteract this lack by various pedagogical means.

Further, in a study on teacher students' conceptualization of grammar, Nygård & Brøseth (2021) report that Norwegian student teachers (N=235) associate grammar with writing correctness, and summarise overall average score of the grammar test, yet only specifying correct, incorrect and unclear answers. The current paper presents the results in more detail, giving a more nuanced picture of Norwegian student teachers' knowledge of grammar.

We present an empirical study of the level of Norwegian students' grammatical knowledge as they enter teacher education. The study contributes to the international research on grammatical subject knowledge (an important part of Knowledge of Language) from a Norwegian perspective, and it can help bring clarity to the claim that the Norwegian students' knowledge of grammar is deteriorating. Moreover, this article will be the first to report student teachers' grammatical knowledge from a context with two written standards, as we have in Norway. The research question we seek to answer is: What characterises Norwegian student teachers' grammatical knowledge as they enter teacher education?

1.1 The position of grammar in Norwegian schools and curricula

During the compulsory education of our informants, two different curricula have been introduced in Norway by the Norwegian Directorate for Education and Training (NDET). The first is The National Curriculum L97 (NDET, 1997), and secondly The Knowledge Promotion (NDET, 2006), which was revised in 2013 (NDET, 2013). These two versions of the curriculum are abbreviated as KP-06 and KP-13.

Traditionally, the Norwegian L1 subject has been historically oriented, also in the language syllabus, and topics such as historical linguistics, dialectology and Old Norse have then been facilitated by grammar training (Hognestad, 2019, p. 83). However, in KP-06, competence-oriented learning goals were prioritised over cultural-historical anchorage, and to a large extent, grammar was abolished (Hognestad, 2019, p. 84). In KP-13, two learning goals about grammatical meta-language resurfaced in the 10th grade, stating that the student should "master grammatical terminology describing how language is constructed" and "use grammatical terms to compare Nynorsk and Bokmål" (NDET, 2013, n.p.) These goals were important because they served as a continuation from a handful learning goals about grammar in primary and secondary school. Examples of learning goals from upper secondary are: "describe grammatical characteristics of the Norwegian language and compare them with other languages" (11th grade, general study programmes) and "give an account of key similarities and differences between Old Norse and modern Norwegian" (12th grade, general study programmes) (NDET, 2013, n.p.). We cannot know precisely how these different curricula have influenced the informants' knowledge of grammar, but in general, grammar has not had a prominent place in the official curricula for L1 Norwegian in the last 15 years. As for the implemented curricula, the research is limited, but Blikstad-Balas and Roe (2020) find that grammar teaching in lower secondary school is sparse and that it mostly concurs with Nynorsk.

A particular trait in the Norwegian context is that students both in school and teacher education undergo obligatory training in two written standards of L1 Norwegian: Bokmål (BM) and Nynorsk (NN). The origin for this goes back to the period when Norway was subject to Denmark (1537-1814). Bokmål stems from Danish which was used by the upper-class in the Norwegian cities. After the

liberation in 1814, several Norwegians voiced their criticism against the continuing use of (Norwegianised) Danish, aiming to create a “true” language based on the Norwegian dialects. This resulted in Nynorsk. From 1966, the two written variants have had official status (Jahr, 2014). NN and BM are written standards only, as there are no official spoken standard(s) in Norway. As early as 1878, the Norwegian parliament passed a law which stated that pupils were allowed to use their own dialect in all oral activities at school (Jahr, 2014). Linguistically, the two written standards are not very different. They are mutually understandable, yet they comprise certain grammatical differences, primarily in morphology but also in vocabulary and syntax. Pupils are required to learn and express themselves with confidence in both variants in school, starting in 2nd grade, when the pupils are seven years old. One might therefore speculate whether the continuous education in two written standards would lead to a particular grammatical awareness among Norwegian students.

The motivation for teaching grammar can be divided into two main strands: literacy-related rationales and knowledge-related rationales (van Rijt, 2020, p. 13ff). In the former, the main objective is to develop literacy skills like writing, while the latter values knowledge of grammar in its own right. Recent Norwegian curricula have given competence- and literacy-oriented learning goals a clear precedence. Yet, learning goals concerning BM and NN are not restricted to literacy rationales alone, as they demand linguistic comparison between the standards and comparison between local vernaculars and BM/NN (7th grade), and use of grammatical terms in the comparisons (10th grade). The comparative perspective focusses more on the linguistic properties of the variants and thus substantiates the knowledge rationale in the teaching of BM and NN since grammatical knowledge is a prerequisite to make comparisons possible.

1.2 Knowledge of grammar

This article investigates students' grammatical knowledge. However, both *grammar* and *knowledge* are concepts which are carved out differently by different scholars. Grammar can be understood as a term referring to prescriptivism, implying correct (oral or written) language. It can also refer to appropriate language use and how grammatical choices can have various effects, such as in rhetorical grammar (e.g., Myhill, 2019). The common denominator for these understandings is that grammar is primarily seen as a tool to achieve language proficiency. Further, the term grammar can refer both to the object under investigation and to the result of scientific investigation. The outcome of the investigations can be a descriptive grammar, aiming to account for (parts of) the grammatical inventory of a language, e.g., *The Norwegian Reference Grammar* (Faarlund et al., 1997), or it can be an explanatory grammar, seeking to explain observed language characteristics by modelling the cognitive source (the language faculty), e.g., *Norwegian Generative Syntax* (Åfarli & Eide, 2003). In Norwegian schools, grammar is primarily perceived

as prescriptive (to achieve accuracy), descriptive (to account for linguistic structure) and as the inherent system found in all languages (Hertzberg, 1995).

In addition, scientific theories hold diverging views about which parts of language should be included in the term grammar. A division line is often drawn between those who emphasise the language internal properties (phonology, morphology, syntax and structural semantics) (e.g., Chomsky, 1986) and those who stress that language use in context is also part of grammar, and perhaps even so, this should be seen as the very core of grammar (e.g., Halliday, 1961).

Regardless of the view one adheres to, the ability to verbalise one's knowledge of grammar hinges on a suitable vocabulary, often referred to as a metalanguage. For instance, when a teacher sets out to explain the grammatical differences between Bokmål and Nynorsk, it is essential that he/she masters the necessary terminology and understands the grammatical concepts related to the observed differences. What counts as suitable terminology will vary, depending on the purpose and the context. There is, however, no need to discard the terminology used in the traditional school grammars, as pointed out by (Hertzberg, 2004, pp. 107-108):

If we let the traditional school grammar be what it was originally developed to be, a system that allows us to speak about languages in a simple way, it is as good as gold. It also has the great advantage of being used all over the world. Many models have been developed that are probably better for a single purpose, but none are as widely known, nor as easy to acquire, and it has therefore existed as a kind of *lingua franca* among linguists (our translation).

In our study, we focus on the teacher students' knowledge of descriptive grammar aiming at language internal properties, primarily morphology and syntax.

As for the term *knowledge*, it is placed at the very core of education. In Bloom's revised taxonomy of educational objectives (Anderson & Krathwohl, 2001), the lowest cognitive process level is *remember*, which involves recalling knowledge as well as recognizing items by relating them to existing knowledge in long-term memory. The next level is *understand*, which entails explaining ideas and concepts in one's own words as well as exemplifying e.g., a concept, comparing objects and classifying items into categories. The next levels are *applying* and *analysing*, which for the former includes applying procedures for (un)familiar tasks, and for the latter involves identifying how elements function within a structure and separating relevant items from irrelevant ones. (The last levels *evaluate* and *create* are not relevant for our study.) Bloom's taxonomy is usually considered to be a hierarchy, where the lowest level *remember* is a prerequisite for *understand*, *understand* for *apply* and *apply* for *analyse*. The levels are accompanied by verbs describing the actions that a student should be able to perform at a given level. In our study, the relevant action verbs are *recall*, *classify*, *exemplify*, *execute*, *explain* and *differentiate*. Following Heyn et al. (2019), *recall* is found at the lowest cognitive level, while *classify*, *exemplify*, *compare* and *explain* are all found at the next level, *understand*. *Execute* is categorised at level three *apply* and *differentiate* is categorised at level four *analyse*. However, Stanny (2016) has showed that the same

action verb could occur at different cognitive levels. For instance, to *classify* is found both at the cognitive process level three *apply* (Hoy, 2016, p. 564) and level two *understand* (Heyn et al., 2019). The internal ranking of action verbs must therefore be interpreted with caution. Still, the essential claim in Bloom (1956, p. 33) is that there is a distinction between the lowest level and the five higher levels: “the intellectual abilities represented in the Taxonomy assume knowledge as a prerequisite.” This implies that without knowledge, a student will not be able to carry out cognitive processes at the higher levels. We acknowledge that there is a debate in the literature about the actual status of knowledge in cognitive processes like understanding (Grimm et al., 2017), but find these discussions to be beyond the scope of this paper. In this paper, we follow the categories in Bloom's taxonomy as they are represented in Heyn et al. (2019), but we recognise that the action verbs might occur at different cognitive levels in other versions of the taxonomy.

2. THE GRAMMAR SURVEY AND THE PARTICIPANTS

Our survey consisted of two separate parts. In the first part, the students were asked open-ended questions, probing their previous experiences with the topic and their beliefs about grammar (Nygård & Brøseth, 2021). The survey was written in Bokmål (BM), but the students were given no instructions as to which standard they should use. Ninety-seven percent of the students answered in BM. The survey was voluntary, and the students were informed that they could withdraw from the research inquiry at any time by not handing in either of the two parts. If they submitted both parts, they allowed for the answers be used for research purposes. Approximately 98% of the students submitted the survey. Later, 28 responses (10.7%) were removed since only part one was handed in. We then had a full survey from 235 students, which constituted the data set.

The data were collected by pen and paper in the student teachers' very first lesson of Norwegian at the Norwegian University of Science and Technology (NTNU). The students were enrolled in two different teacher education programs for primary and secondary school respectively, L1 Norwegian being a mandatory subject in both (together with two or three other additional teaching subjects). The data collecting period was between 2015 and 2017.

The survey consisted of 36 questions about various topics in Norwegian grammar, like word classes, morphology, clause structure and sentence constituents. The questions are given in Appendix A. The questions were based on learning goals in the national curriculum (NDET, 2013), the following goals being the most salient: The pupils should be able to describe word classes and their function (4th grade), perform basic constituent analysis (7th grade), master grammatical terminology which describes how language is constructed, use grammatical terms to compare Nynorsk and Bokmål (10th grade), and describe distinctive grammatical features of Norwegian (and compare to other languages) (upper secondary level 1). Having considered the learning goals and

textbooks on the topic, we are confident that our questions relate to central topics and terms in compulsory education. Since the survey relates to descriptive grammar, we have consulted *Norwegian Reference Grammar* (Faarlund et al., 1997) and *Grammar Terms for use in School. Recommendation from Norwegian Language Council and The Norwegian Directorate for Education and Training* (Norwegian language council & Norwegian Directorate for Education and Training, 2006), henceforth *The Recommendation*, to ensure that our judgment is in line with the discipline as well as official documents.

In addition to *remember* grammatical knowledge (1a), the survey asks the students to exemplify (1b), classify (1c) and explain (1d), which are all associated with the cognitive level two *understand* in Heyn et al. (2019). In (1e), the grammatical knowledge must be applied (action verb *execute*) to find an answer, which is associated with cognitive level three *apply*. (See Appendix A for an overview of the questions with action verb and cognitive level.)

- 1)
 - a. Which word class can be conjugated in degree?
 - b. Given an example of an irregular verb.
 - c. Which word class is this? *Houses*
 - d. What is a noun?
 - e. What is the subject of this sentence? *Ola ran out the door*

In the next chapter, we present the questions in two main sections: morphology in 3.1, and syntax in 3.2. Eight of the questions about word classes and morphology state a Norwegian word (isolated or part of a sentence) and ask the students to classify it by word class (Q1-3, 6, 22, 25, 27, and 29), see (2). In Q4, the students must classify a noun according to the categories number and definiteness. In addition, the student must recall a personal pronoun (Q8) and state the word class that has comparison conjugation (Q12), see (2). The students must also exemplify Norwegian word classes, subtypes of word classes and conjugation (Q10-11, 13, 16-17, 19, and 30), see (3). Finally, three questions ask the students to explain noun and genitive as well as the difference between regular and irregular verbs (Q9, 14, and 18), see (4). We also pose questions regarding sentence constituents (SC). The students must apply their grammatical knowledge to find a phrase or subordinate clause based on the SC term (Q5, 20, 24, and 28), or give the SC term of a phrase or subordinate clause (Q23 and 33), see (5). Further, we ask the students to underline the subordinate clause (Q7, 21, 26, and 31), see (6). Finally, we have four questions which ask the students to explain syntactical terms (Q15, and 34-36), see (7).

Questions where students are asked to find sentence constituents, are categorised as instantiations of the action verb *execute*, which implies that they apply (cognitive level three) their syntactical knowledge to identify SC in unknown sentences. One might also argue that sentence analysis belongs to cognitive level four *analyse*. We leave to future research to empirically establish whether *apply* or *analyse* best reflects the cognitive endeavours associated with sentence analysis, but

we hypothesise that the most likely approach taken by the students in our study, is applying previously learnt rules (of thumb) to an unfamiliar sentence. The students' answers to (1a-c) and (1e) were analysed as either *correct*, *incorrect* or *no answer*. For the answers in (1d), we did a thematic analysis. After investigating their correspondence with the discipline and official documents, we categorised them as *correct*, *incorrect*, *imprecise* and *no answer*.

The category Imprecise answers requires some comments. For instance, quite a few students wrote that "the subject is somebody that does something (in a sentence)". This explanation of the term is obviously not correct, exemplified by sentences such as *It rains* and *It was stolen*. However, it is not completely wrong that the subject is associated with an agentive "doer". Furthermore, the rule of thumb for finding the subject is to ask "who does" the action described by the main verb. For this reason, we have treated such answers as imprecise rather than incorrect. Some students have only provided a correct example but no explanation. These are also categorised as imprecise. The category was used in seven questions (Q9, 14-15, 18, and 34-36).

3. RESULTS AND ANALYSIS

In the figures, we have arranged the questions according to how well the students perform — from highest to lowest score. The Q+number correlates with the question's number in Appendix A, but the questions are translated to English and repeated in the text for convenience.

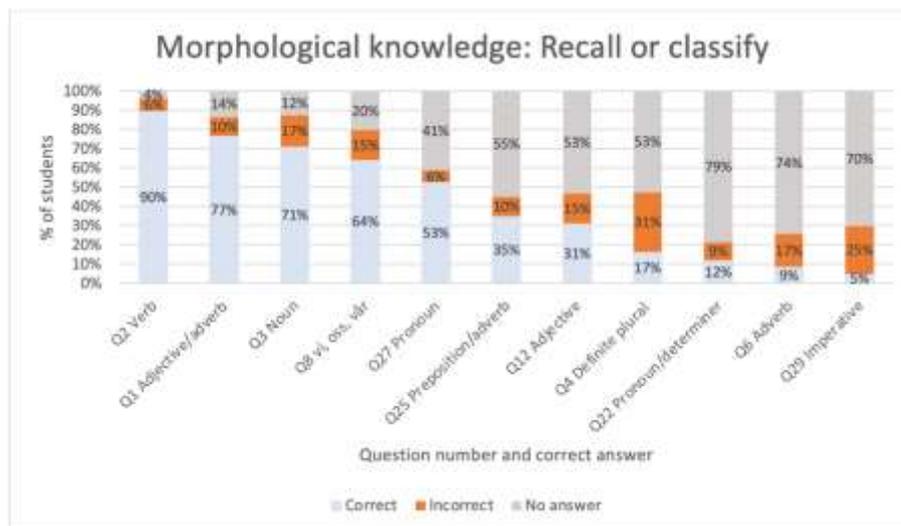
3.1 Morphology

The questions concerning morphology are listed below. They include both questions about word classes as well as categories and features related to these. The main results are presented in figure 1.

2)

- Q2 Which word class is this? *Spiste* [Ate]
- Q1 Which word class is this? *Raskest* [Fastest]
- Q3 Which word class is this? *Husene* [The houses]
- Q8 What is the personal pronoun in first person plural?
- Q27 Which word class is this? *Oss* [Us]
- Q25 Which word class is this? *Over* [Over]
- Q12 Which word class has comparison conjugation?
- Q4 Which form is this word in? *Husene* [The houses]
- Q22 Which word class is this? *Det* [It/the]
- Q6 Which word class is this? *Aldri* [Never]
- Q29 What is the verb form used here called? *Spis maten din!* [Eat your food!]

Figure 1. Morphological knowledge: recall or classify (N=235)



Ninety percent of the students classified the word *spiste* [ate] as a verb. The word *raskest* [fastest] were classified by 77% of the students, either as an adjective (70%) or an adverb (7%). Since there is a different classification of adjective and adverb in Faarlund et al. (1997) compared to *the Recommendation*, we accepted both these word classes as correct. The noun *husene* [the houses] were classified correctly by 71% of the students. Sixty-four percent of the students could recall the correct first-person plural pronoun. Just above half of the students could classify *oss* [us] as a pronoun. The word *over* [over] is classified as a preposition in Faarlund et al. (1997). However, *the Recommendation* places more emphasis on syntactic features in the classification of prepositions versus adverbs, which means that *over* is a preposition in the sentence *It fell over the chair*, but an adverb in the sentence *It fell over*. Since the word *over* is given in isolation in the survey, both word classes were marked as correct. Thirty-five percent of the students answered either, but it should be noted that only five (of 82 students) responded adverb. Thirty-one percent could recall that adjective is the word class with comparison conjugation. Q4 elaborates on the various forms a noun can have, i.e., definite/indefinite and singular/plural. Seventeen percent of the students knew that *husene* [the houses] was a definite, plural noun. Since the word form *det* [it/the] can be either a pronoun, as in *det krøp* [It crawled], or a determinative in a noun phrase, as in *det grønne insektet krøp* [The green bug crawled], we have accepted both as correct. Still only 11% have answered either of these in Q22. Only 20 students (9%) recognised the word *aldri* [never] as an adverb. In Q29, the students were asked to classify a verb form. In addition to imperative, we accepted answers that use more colloquial terms like *command form*,

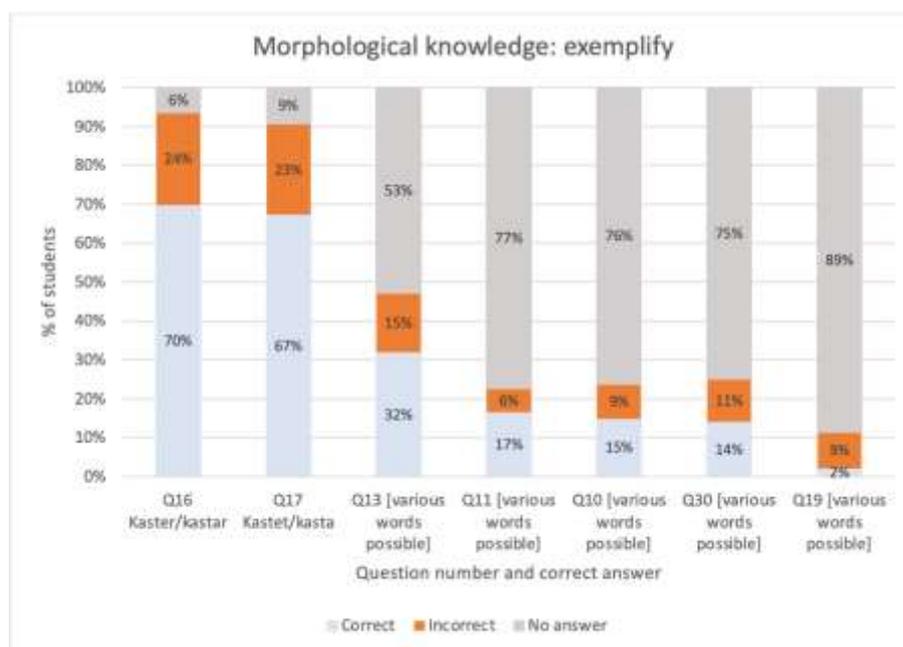
command, etc. since these occur in textbooks in compulsory education. Only 5% of the students answered imperative or one of the colloquial variants.

The students were also asked to exemplify Norwegian word classes, subtypes of word classes and conjugation, see (3). The results are presented in figure 2.

3)

- Q16 Can you conjugate this verb into present tense? *Kaste* [Toss]
- Q17 Can you conjugate this verb into past tense? *Kaste* [Toss]
- Q13 Give an example of a word that has comparison conjugation.
- Q11 Give an example of a regular verb.
- Q10 Give an example of an irregular verb.
- Q30 Give an example of an auxiliary verb.
- Q19 Can you give an example of a passive voice of a verb?

Figure 2. Morphological knowledge: exemplify (N=235)



In Q16 and Q17, the students are presented with the infinitive *kaste* [toss] and are asked to exemplify the present and past tense of this verb. *Kaste* belongs to the most common class of regular verbs in Norwegian with the suffix *-er* in BM present tense; *kaster*, and *-ar* in NN. In past tense, BM allows both *-et/-a* (*kastet/kasta*), but NN only allows *-a* (*kasta*). As we can see, 70% of the students knew how to exemplify the present tense of *kaste*, and 67% knew that the past tense was *kastet/kasta*. 32% presented an example of an adjective in Q13. The results in Q10 and Q11 are quite

similar, with 17% being able to exemplify a regular verb and 15% an irregular verb. As mentioned previously, *kaste* [toss] is a regular verb in Norwegian which can be recognised by an ending in past tense, while irregular verbs have vowel change and no ending in past tense, for instance *å synge-sang* [to sing-sang). Fourteen percent could exemplify an auxiliary verb. Only 2% could give an example of a verb in the passive voice. Prescriptive writing rules for passives state that the use of auxiliaries and the morphology are different in BM and NN, so these constructions are a typical phenomenon treated in a comparison between the two written standards.

Finally, the students were asked to explain and differentiate grammatical concepts in morphology.

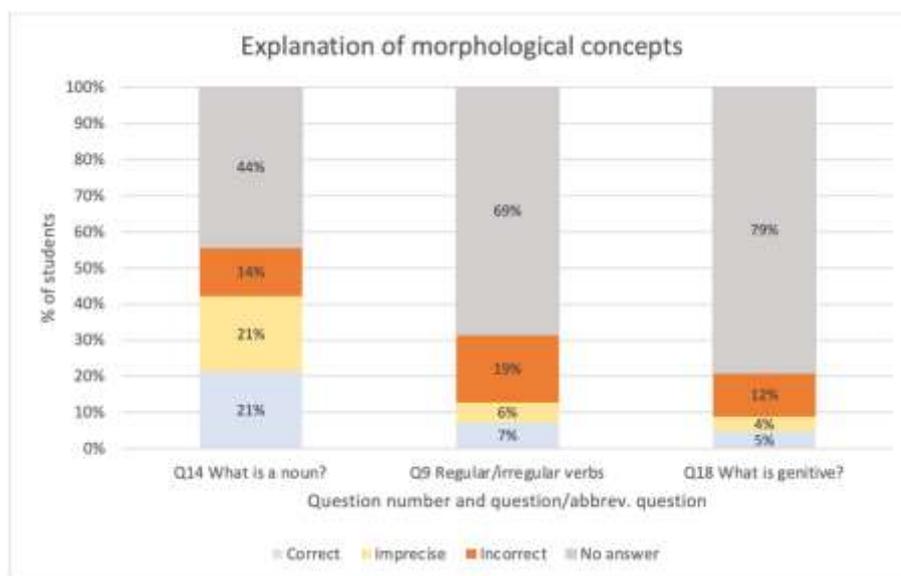
4)

Q14 What is a noun?

Q9 How do we tell regular and irregular verbs apart?

Q18 What is genitive?

Figure 3. Morphological knowledge: explain and differentiate (N=235)



According to Faarlund et al. (1997), noun is a word class which is the syntactic head of a noun phrase, and which can be preceded by various determinatives. In BM, we have the indefinite article *en* in masculine, *et* in neuter and *ei* in feminine. In NN, the indefinite articles are *ein* (m.), *eit* (n.) and *ei* (f.). The definite singular article is a suffix, and they are the same in both written standards: *-en* (m.), *-et* (n.) and *-a* (f.). However, BM also allows for the suffix *-en* in feminine, while NN does not.

If a student described noun simply as a word class or said that it can be preceded by the indefinite article (or can have a definite suffix), such answers were marked as correct. This was the case for 21% of the students. We quickly discovered that many students answered that nouns are “things”. In a previous inquiry of Norwegian textbooks, we found that nouns are often defined as “names for persons, things and phenomena” (Brøseth et al., 2020, p. 196). However, alone, this definition is not always helpful. For instance, one might ask if “writing” is a thing? Yet, since “nouns are things” is obviously a definition that pupils have learnt in their previous education, we considered that it would be harsh to judge it as wrong. Therefore, these answers were marked as imprecise, which gave us a quite high percentage of imprecise answers (21%). However, the even more narrow answers like “Nouns are things you can touch” were marked as wrong (14%).

Norwegian verbs are divided into two main groups (regular and irregular) based on their form in the past tense. A conjugational suffix is added to the regular verb stem making the past tense a two-syllable form, while in the irregular verbs, there is usually a change in the root vowel and no added suffix. Sixty-nine percent of the students didn't answer Q9, and 19% gave an incorrect answer. As we can see, 7% of the students gave a correct answer, but only five of the 17 correct answers mention key grammatical terms like past tense, suffix or vowel change. Even though many of the correct answers are quite generic, we still have marked them as correct since they all refer to regular and irregular conjugation in relation to the correct verb type. The answers marked as *Imprecise* also mention conjugation, regular or irregular, but they do not make an explicit connection between the conjugation pattern and the corresponding verb type. Typical answers in this category are for example “they change in past tense” and “they have different conjugation pattern”. It can be noted that for Q10 and Q11, in which the students are asked to exemplify regular and irregular verbs, there are 17% and 15% correct answers, but in Q9, which asks the students to explain the difference between regular and irregular verbs, the rate drops to 7%. The students have more difficulties in verbalising knowledge about regular and irregular verbs than just giving examples.

Genitive -s is a relic of previous case marking on nouns and pronouns in Norwegian, which nowadays primarily expresses possession: *Jons bil* [Jon's car]. Since the prescriptive rules for the genitive -s is slightly different between the two written standards of Norwegian, this phenomenon is often described in school textbooks. The pupils are taught that the genitive -s should be avoided in NN. BM, on the other hand, freely allows for this construction. In our inquiry, only 5% of the students can verbalise what a genitive -s is, e.g., “Genitive is when you describe who owns something”. Most students (79%) do not answer this question.

3.2 Sentences and sentence constituents

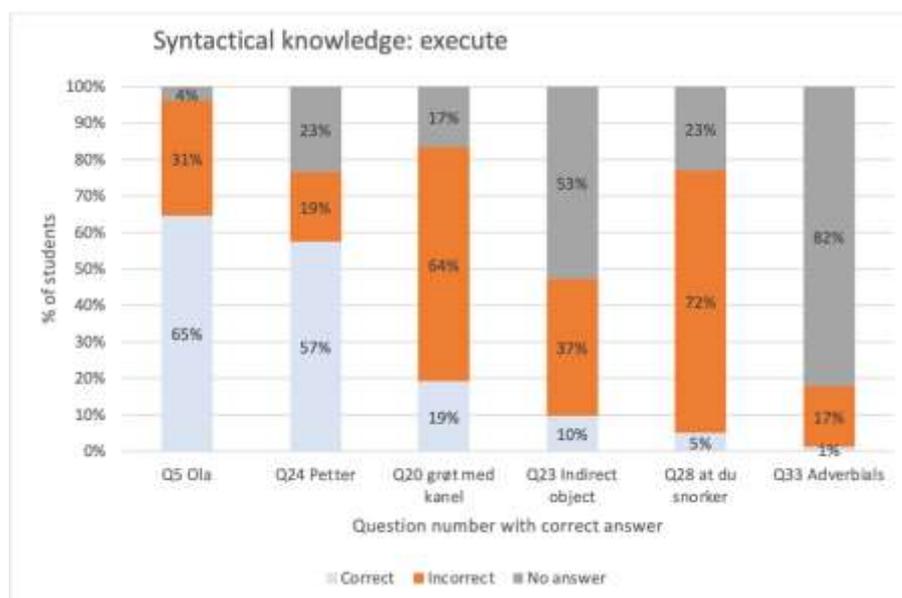
Sixty-five percent of the students found the subject in Q5, while 57% could do the same in Q24. (Note that in both these questions, the subject is a one-word

constituent.) Nineteen percent of the students correctly said that *grøt med kanel* [porridge with cinnamon] was the direct object in Q20. Ten percent knew that Kari was an indirect object in Q23. In Q28, only 5% found the subordinate sentence functioning as a direct object, and 1% of the students knew that the underlined constituents in Q33 were adverbials.

5)

- Q5 What is the subject in this sentence? *Ola sprang ut døra* [Ola ran out the door]
- Q24 What is the subject in this sentence? *Til jul fikk ikke Petter presanger* [For Christmas, Petter didn't get any presents]
- Q20 What is the object in this sentence? *Du spiser alltid grøt med kanel til frokost* [You always eat porridge with cinnamon for breakfast]
- Q23 What sentence constituent is Kari in this sentence? *Petter sendte Kari et kjærlighetsbrev* [Petter sent Kari a love letter]
- Q28 Find the direct object in this sentence. *Jeg hater at du snorker* [I hate that you snore]
- Q33 What type of sentence constituents are the underlined words here? *Vi spiser middag hver kveld når ungene har gjort lekser.* [We eat dinner every night when the kids have done their homework]

Figure 4. Syntactical knowledge: execute (N=235)



The percentage of incorrect answers is relatively high for both Q20 and Q28. Since the correct answer requires the students to label the whole phrase or sentence,

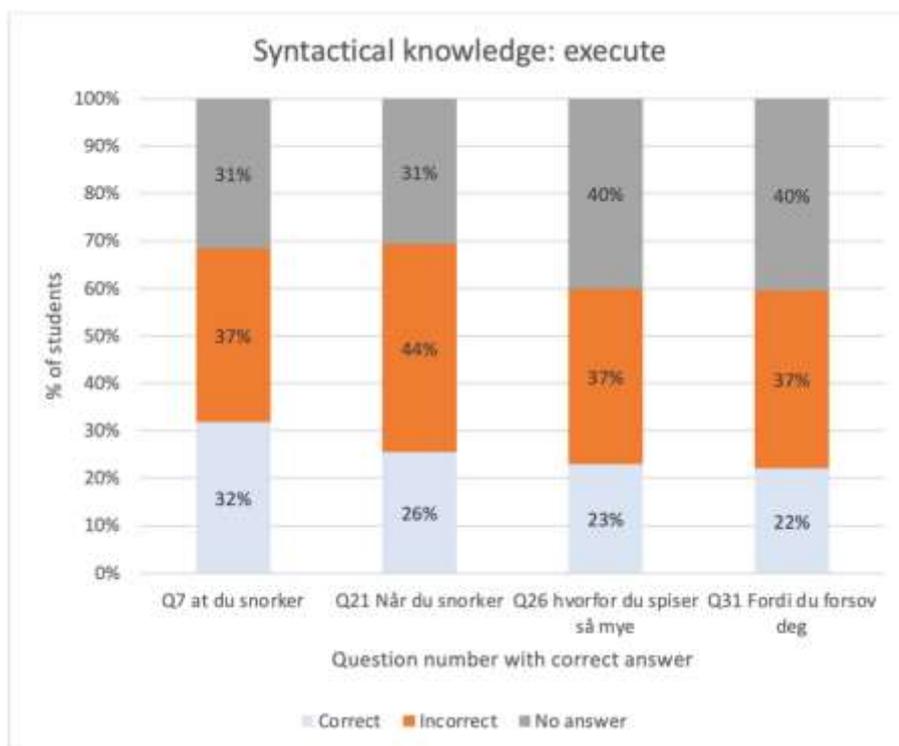
naming them only partially was marked as incorrect, like for instance *grøt* [porridge] and *du* [you]. Note that these are in fact the most frequent error types: 37% of the students have answered *porridge* in Q20, and 38% thought that *you* were the direct object in Q28.

Four questions in the survey asked the students to underline a subordinate clause.

6)

- Q7 Underline the subordinate clause in the sentence below. *Jeg liker ikke at du snorker* [I don't like that you snore]
 Q21 Underline the subordinate clause in the sentence below. *Når du snorker, får jeg ikke sove* [When you snore, I can't sleep]
 Q26 Underline the subordinate clause in the sentence below. *Jeg vet ikke hvorfor du spiser så mye* [I don't know why you eat so much]
 Q31 Underline the subordinate clause in the sentence below. *Fordi du forsov deg, kom du for sent* [Because you overslept, you came late]

Figure 5. Syntactical knowledge: execute (N=235)



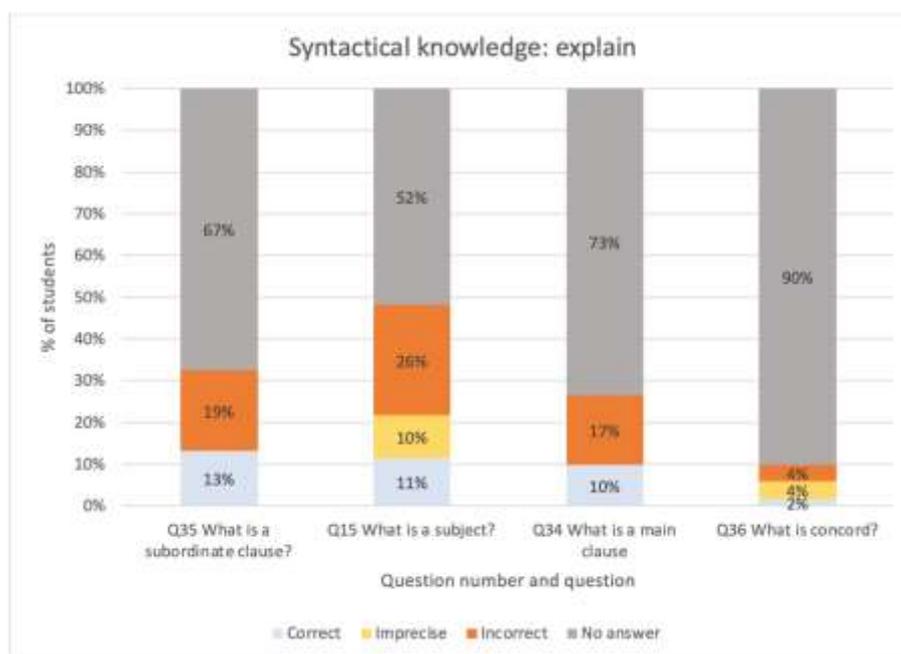
More students are able to find the nominal and canonically placed *that*-clause (Q7) compared to the fronted adverbial clauses (Q21, Q31) and the *wh*-question (Q26), but the differences in scores are minor. Between 22% and 32% of the students can identify the subordinate clauses. In addition to underline subordinate clauses, we asked the students to give an example of a relative clause (Q32). Only one student (0.4%) succeeded in doing so.

Finally, there were some questions asking the students to explain syntactical concepts.

7)

- Q34 What is a main clause?
- Q15 What is a subject?
- Q35 What is a subordinate clause?
- Q36 What is concord?

Figure 6. Syntactical knowledge: explain



As seen in figure 6, 13% of the students give relevant explanations of a subordinate clause. For the subject, the result is 11%, and 10% for main clauses. The lowest success rate (2%) in this group is seen in Q36 about concord.

Explaining the subject is not a trivial task. According to Faarlund et al. (1997, p. 674 et seq), a subject can primarily be given a syntactical definition, i.e., based on the position in a sentence. The subject is typically a nominal constituent (including

nominal sentences), and it has various semantical and (additional) syntactical characteristics. In the students' answers, we found no reference to constituent type nor sentence position. The only occurrence of the terms *sentence* and *constituent* is when they state that the subject is part of a sentence, or that it is a sentence constituent. Instead, their answers rely heavily on semantic meaning. The semantic properties of the subject, however, are not easily accounted for, but some general principles of the relationship between sentence constituents and semantic roles have been proposed (Baker, 1988). Faarlund et al. (1997, pp. 47-48) map out the semantic characteristics of subjects in Norwegian by referring to the roles *agent*, *recipient*, and *patient*. The common definition of an agent-role is the one who performs an action or is the source of a process. If the main verb assigns the semantic role agent, it will be assigned to the subject. However, the agent role need not be expressed by the subject since the role also can be found with adverbial phrases (*John was kissed by Mary*), or not at all, as with expletive subjects (*It rains*). If the verb doesn't assign an agent role, the subject can get a recipient role (*John got a kiss*), or a patient role (*The bike was completely new*). The students' description of the subject is semantic, and it matches one of the semantic roles described by Faarlund et al. (1997), namely the agent, even though none of the students use this term explicitly.

A sentence is, in writing, traditionally understood as including the words and phrases found between large punctuation marks, whereas a clause is commonly defined as a nexus consisting of a nominal (the subject) and a verb phrase (the predicate) and covers both main and subordinate clauses (Radford, 2004). The term sentence can also comprise this grammatical definition. (In Norwegian there is only one term covering both 'sentence' and 'clause'. In this paper, the two terms are therefore used as equivalents.)

There are different views on whether the verb needs to be finite for something to be called a sentence (e.g., small clauses (Chomsky, 1981) and infinitives), so finiteness can, but may not, be relevant to define a sentence. Faarlund et al. (1997, p. 40) divides Norwegian sentences into two groups depending on their formal syntactical features. In the A-sentences, the finite verb occupies the position of the second constituent, while the initial position in B-sentences is reserved for subordinators and interrogative words. Sentences also have functional properties. Since Faarlund et al. (1997, p. 41, our translation) concern themselves with written Norwegian, the functional definition of a main sentence is "a sentence that can stand alone between two major punctuation marks and therefore constitutes an utterance by itself, [...]. The main clause is a complete grammatical unity." The subordinate clause is defined as a sentence that is a constituent in another sentence (Faarlund et al., 1997), but apart from that, their functions are very heterogeneous (Faarlund et al., 1997, p. 973). A much-used functional definition in textbooks is that a subordinate clause doesn't make sense alone. This definition is rarely (never?) found in linguistic literature and is contradicted by Faarlund et al. (1997, p. 960) who state that Norwegian utterances with subordinate clause-structure, can function both

semantically and syntactically on their own: *At du vil! [ThatSUBORDINATOR you want!]*.

Thirteen percent of the students give a relevant explanation of what a subordinate clause is. Their answers state that the subordinate clause is incomplete or cannot stand alone—if it stands alone, it does not make sense. Five students also mention that the subordinate clause is part of another sentence, which constitute the only reference to syntactic properties in Q34 and Q35. In general, subordinate clauses are explained with the antonyms of the words used to state what a main sentence is. With main clause, 10% of the students states that it can stand alone and still make sense, or that it is a complete sentence. As we can see, the students' descriptions of a main sentence are quite similar to the functional definition found in Faarlund et al. (1997), while the explanation of a subordinate sentence rests almost entirely on the common textbook definition.

In Norwegian, concord is found in nominal phrases where the attributive adjective agrees with the noun in gender and number, and on adjectives in predicative position. This agreement holds for both BM and NN. In addition, the past participle can optionally agree with the subject in passive constructions in NN. In BM, however, the participle is the same regardless of the subject's number.

Two percent of the students give a relevant explanation of concord. Interestingly, all the answers scored as correct only refer to subject-verb-agreement, which is not found in standard BM or NN, while nobody has mentioned the most common concord in both BM and NN, represented by attribute and predicative adjectives. The imprecise answers (4%) just repeat the terms found in the question, like "concord is when words concord". Such answers are obviously not wrong, but they are tautologic and do not really reveal anything about the students' level of knowledge about the phenomenon.

3.3 Summary of main tendencies

To summarise the main tendencies in our data material, one could say that most of the students are able to classify verb, adjective, noun (lexical word classes) and pronoun (functional word class). They also succeed in exemplifying present and past tense of a regular verb. However, as soon as the questions address other morphological traits or subtypes of word classes, the score plunges, and even though the students manage to classify a word as a noun (71%), they struggle when asked to explain what a noun is (21%), both in colloquial terms and in more professional metalanguage. Other word classes, like preposition and adverb, are much harder for the students to classify. There's no indication of the students having a particular awareness of grammatical topics which are prescriptively different in BM and NN, like passive and genitive. At the syntactical level, the students manage to find the subject in a sentence, but their score is significantly lower when they try to explain what a subject is. Also, they have far less success in finding other sentence constituents, like direct object, indirect object and adverbial. Furthermore,

subordination constitutes a considerable challenge for most students. They struggle both with finding and explaining subordinate clauses. Judging from the fact that more students (38%) believed that *you* were the direct object in the sentence *I hate that you snore* than those who answered correctly (5%), they seem reluctant to even consider a subordinate clause to be a possible constituent in a sentence.

4. DISCUSSION

We set out to investigate the level of grammatical knowledge among first-year students. Even though the data set is from 2015-17, since then there have been marginal changes in the grammatical learning goals in the schools' curriculum in Norway. Also, recently admitted student teachers adhered to the former curriculum in their schooling. In sum, this gives us reason to believe that our findings are transferable also to today's situation. Having accounted for the main findings, some tendencies require a more thorough discussion. Alderson & Hudson (2013, pp. 325-326) pose an interesting question: "What would be an acceptable threshold for considering that a group as a whole 'knows' the term?" They do not give a conclusive answer but point to 50% as their lowest suggestion. If we adopt 50% as our threshold, this will imply that the Norwegian student teachers know only four different word classes when they enter higher education, namely verbs (90%), adjectives (77%), nouns (71%) and pronouns (64% and 53%), in addition to the sentence constituent subject, both when it is sentence initial (65%) and not (56%). More specifically, the students know how to *classify* all the mentioned word classes, *exemplify* a (regular) verb, *recall* a pronoun in 1st person plural and *execute* a rule to find the subject. However, when asked to explain what a noun is, only 21% give a reasonable explanation. For the explanation of a subject, the result is 11%. The same pattern can be observed with subordinate clauses. Between 22% and 32% of the students can find a subordinate clause, but only 13% can present an acceptable explanation for the term. The students obviously struggle more with explaining than they do with classifying or exemplifying. In Heyn et al. (2019), the action verb *explain* is found at the same cognitive level in Bloom's taxonomy as *classify* and *exemplify*, but according to Stanny (2016) *explain* occurs at the cognitive levels *understand*, *apply*, *evaluate* and *create*. This suggests that *explain* could be at a higher cognitive level, and thus more challenging for the students. Yet, more research on grammatical knowledge is needed to determine the exact relationship of *classify* and *exemplify* on one side, and *explain* on the other, in the grammar discipline.

There has, however, been established a link between understanding and explaining in recent grammar research, using students' ability to explain a linguistic phenomenon or think reflectively about it in a linguistically valid manner, to evaluate their understanding of grammar (van Rijt, 2020; van Rijt et al., 2021; van Rijt et al., 2022; Wijnands et al., 2022). This body of research suggests that explaining is a particular fruitful way of measuring grammatical understanding. It also ties in with the criticism raised against traditional grammar teaching practices based on root

learning and rules of thumbs (Berry, 2015; Myhill, 2000; van Rijt et al., 2019). Since rules of thumb consist of short statements, they are easy to recall, but the recitation of such rules are not necessarily signs of understanding. (Rules of thumbs also have additional problems like insufficient precision.) The observation that the Norwegian student teachers have less success in explaining than classifying and exemplifying, could also be seen in relation to previous education. Brennhau (2021) found that out of 385 grammar tasks in a L1 Norwegian textbook for 8th-10th grade, only seven tasks asked the students to explain. In Brennhau's study, the category *understanding* amounts to only 3.4%, and is by far the least frequent one compared to the other activity types *production* (42.6%), *judgement* (26.2%) and *exploration* (27.8%).

Further, the explanations that the students *do* provide for the subject, noun, main and subordinate clause are mostly semantically based. The semantic dominance found in students' conceptualisation of the subject is also documented in previous studies (Jouili & Elafouf, 2021; Notario, 2020). The students' inclination for semantics might also influence the pattern found with the word classes. The top-three word classes *verb*, *adjective* and *noun* are all lexical words, and have a clearer semantic meaning than functional word classes, like determiner and preposition. If semantics is what constitutes the students' knowledge of word classes, it is not surprising that they struggle a lot more with word classes that are semantically less clear. When a student encounters a word with a less clear semantic meaning, like function words, she will lack alternative strategies, such as using morphological or syntactical traits to recognise word classes. Yet, our results on lexical and functional words are not completely clear cut, since the lexical word class *adverb* is the last but one. If we look at the word classes less known by the Norwegian students; *preposition/adverb* (35%), *pronoun/determiner* (11%) and *adverb* (9%), we can note that a similar pattern is documented for UK students in Alderson and Hudson (2013, p. 326), where *adverb* (42.94%) and *preposition* (34.45%) have lower scores than the lexical word classes *verb*, *noun* and *adjective*. The pattern also resembles the findings in Holmen (2014, p. 90), with *verb*, *adjective* and *noun* on top, followed by *preposition* (24%) and *adverb* (18%). This means that despite differences in the test battery between our survey and these earlier inquiries, the ranking between word classes is resemblant. The observation that students primarily use semantics to talk about language is previously documented in Watson & Newman (2017) and van Rijt et al. (2019), where the latter found that grammatical reasoning quality appears to be more related to form than to meaning. We have not tested the students' ability to reason, but the findings in van Rijt et al. (2019) make the Norwegian students' lack of knowledge related to form rather worrying.

The students have less success with questions that require more understanding of structural phenomena. Only 19% answer that the noun phrase *porridge with cinnamon* is the direct object. Note that if we had accepted answers only naming the noun *porridge* as DO, the percentage would increase to 56%. Thus, the students seem reluctant to include a complement phrase (*with cinnamon*) as part of the DO.

As previously mentioned, the students also score poorly when they are asked to underline subordinate clauses. In addition, only 5% (Q28) identify a subordinate clause as a sentence constituent (DO). Strangely, 38% of the students believe that the subject *you* in the subordinate clause is the direct object in this example: *I hate that you snore*. Our results mirror the findings relating to grammatical structure in Josefsson & Lundin (2017). They analysed failed grammar exam in higher education and identified three major groups of problems; difficulties with separating meaning, form and function, inability to separate between a hierarchical and linear dimension and inability to delineate sentences and phrases, where the last one is closely related to the hierarchical and linear dimension. According to Josefsson & Lundin (2017), these topics could be considered threshold concepts in grammar, and they emphasise the importance of addressing such concepts in education. In Norway, however, this does not seem to be the case. In a previous study of grammatical metalanguage in a Norwegian textbook, a clear focus on words and their meaning is documented, while grammatical structure is seldom topicalised. For instance, the term *phrase* was not mentioned at all, and the explanation of sentence(s) was very brief, while the term *word* was frequently used, also to refer to phrases (Brøseth et al., 2020). This lack of sufficient and correct presentation of grammatical structure in textbooks is also found in other Scandinavian studies (Bandh, 2019; Lundin & Bandh, 2019).

It is worrying that language structure appears to be a blind spot for Norwegian students starting at university, since this should be considered a part of language that is equally important as semantics. In fact, van Rijt & Coppen (2017, p. 374) found that beside the overarching pair *form* and *meaning*, syntactic structural concepts are actually judged to be more important than the purely semantic concepts when experts were asked which linguistic concepts are important both in linguistics and in secondary education.

Even though the results show that most students know the word classes noun, adjective and verb, they seem unfamiliar with their sub-categories and characteristic traits. Seventy-one percent of the students can identify the word *husene* [houses] as a noun, but only 17% can correctly classify the same noun according to the subcategories of this word class, i.e., definiteness and number. We see a similar trend for the word *raskest* [fastest]. Seventy-seven percent recognise this word as an adjective or adverb, yet 32% can state that comparison conjugation is a characteristic trait, and none of the students mention adjectives in relation to the question about concord. Despite the fact that the word class verb is quite familiar to the students, the sub-categories are not: regular verb (17%), irregular (15%), auxiliaries (14%), imperative (5%) and passive verb (2%). When the students are asked to explain the difference between regular and irregular verbs, only 7% answer correctly. The same pattern is observed by Alderson and Hudson (2013, p. 327), where the traditional word classes, for instance verb, have better scores than sub-classes, like auxiliary verb and finite verb. These results indicate that both Norwegian and UK students have little knowledge of word classes beyond their main

classification. Alderson & Hudson (2013) also speculate whether other countries teach grammatical terminology more successfully than the UK. Even though a direct comparison is not possible since the tests are different, our study shows that the Norwegian students have a lower score on all word classes compared to the UK students, which perhaps puts Norway among the more unsuccessful countries in this respect.

The results also indicate that the students do not display any particular awareness of topics which are different in the two written standards, like genitive and passive. One might suspect that they have been a recurring topic in the students' previous education considering that prescriptive rules are different in BM and NN, but only 7% give a relevant explanation of what genitive is, and 2% can exemplify a passive verb. However, one obvious pitfall, when grammar and writing are intertwined, is that prescriptive grammar takes precedence (Aa, 2021), and this is indeed what previous studies have documented, specially related to the students' second written standard, most often NN (Brennhaug, 2021; Brøseth et al., 2020; Nygård & Brøseth, 2021). Prescriptivism is also the predominant view of first-year student teachers, who associate the term grammar with (writing) correct language (Nygård & Brøseth, 2021).

There is an inherent peril that grammar teaching in association with writing ends up as a prescriptive endeavour. If writing correctly is perceived as the main motivation for grammar teaching, this would affect the didactics, making teaching more about orthography than about understanding the grammatical phenomena. In addition, writing is predominantly performed in text editors (like Office Word), which have grammar and spelling check for both written standards. Grammar teaching focussed on prescriptive rules might make the students less motivated to learn about the grammatical differences in BM and NN (and perhaps the teachers less inclined to teach it), since the text editor can do a decent job for them anyway.

An overriding question is whether the knowledge that we evoke, is really that essential to grammar teaching. We would argue that the questions in our survey indeed are at the core, both with respect to the National Curriculum and grammar in general. As previously mentioned, the learning goals in The National Curriculum are stated as rather broad topics, i.e., "master grammatical terminology describing how language is constructed". There are no official documents that elaborate the exact content of this grammatical terminology, but terms related to word classes, sentence constituents and basic sentence types, like the ones evoked in our study, are essential in this and other learning goals about grammar. In addition, topics like form and meaning, syntactic functions, constituent structure, word structure, sentence types, agreement, definiteness, main syntactic categories (NP, VP, AP, PP) and tense have been considered important for both linguistic theory and grammar education by linguistic experts (van Rijt and Coppen, 2017). Our survey did not target these metaconcepts themselves, but the terminology in our survey subsumes under these. For example, to express one's knowledge of the metaconcept *sentence types*, the terms *main sentence* and

subordinate sentence are essential. However, learning a grammatical metalanguage without aiming at achieving grammatical understanding is of minimal value.

In addition, we see a particular challenge with the Norwegian curriculum which emphasises that grammatical terminology should preferably be used and learnt in relation to the pupils' own (written) texts since this lays the pavement for an unfortunate fragmentation of grammar. If the pupils learn the term *adjective* and its function in one writing task, while the term *verb* is learnt in another, they will stand in danger of never being presented to the system of word classes, which in turn will make it impossible for them to skilfully reason about words.

Finally, one might ask whether knowledge of terminology is a suitable measurement of grammatical knowledge. It is, of course, possible to express observations about language without using the concomitant linguistic terms. This is undoubtedly true for almost any phenomena. Yet, a common professional metalanguage enhances the precision and ease mutual understanding. As previously mentioned, the explicit use of metalanguage, especially concepts related to form, has been documented to enhance reasoning quality (van Rijt et al., 2019). For grammar, the names of word classes, sentence constituents and sentence types are central part of this metalanguage, which are precisely the topics we have investigated.

4.1 Limitations of study

A possible limitation of our study is that students might have more knowledge of grammar than the results indicate. We did not ask the students to self-assess their performance, which means that the low scores and the vast amount of no answers could be caused by students' indifference towards the survey, since it was not part of their course requirement or grade. To better evaluate future survey data, students' self-assessment should be included. It can be noted, however, that the students appeared to take the current survey seriously, and most students sat through full time. Further, it is a limitation of the data set that the survey did not include structurally complex subjects.

5. CONCLUSION

In the beginning of this article, we posed the following research question: What characterises Norwegian student teachers' grammatical knowledge as they enter teacher education? The short answer is that their grammatical knowledge when entering teacher education is rather poor. The Norwegian students score lower on all word classes and sentence constituents compared to UK students (Alderson & Hudson, 2013), still bearing in mind that even though the tests probed the same grammatical categories, the questions were not the same. Concerning the qualitative differences in the students' knowledge of grammatical topics, the short answer is that they can classify four word classes (*noun*, *verb*, *adjective*, and

pronoun). In addition, the students can exemplify present and past tense of a regular verb and recall a form of a personal pronoun. Apart from the SC subject, few students manage to find other sentence constituents. It seems that the students struggle when the linguistic item in question consists of more than a single word, so phrases and subordinate clauses are topics they appear to have little familiarity with. This can explain why the students succeed in finding the subject in the example sentences. In all of these, the subject consisted of only one word (a proper name). This logic also holds for delineating subordinate clauses, which also require the students to know something about syntactic structures beyond the word unit. The students struggle more when knowledge of language structure and form is vital. Their explanations are based on semantics, and it appears that form and structure are a blind spot for them. Overall, it appears that many of the students lean towards semantic rather than structural explanations. They seldom point to syntactic or morphological features. Also, they seem to struggle with structurally complex constituents. Both these tendencies give support to Josefsson & Lundin's (2017) proposal about threshold concepts in grammar learning.

As a closing remark, one could ask whether, and why, it is of importance that students entering teacher education display a very low level of grammatical knowledge and understanding? We would claim that this is indeed problematic, given that they have completed a high school program designed to prepare them for higher education (Wollscheid et al., 2021), and given that a basic grammatical knowledge is essential for understanding language structure both in L1 and other languages.

AUTHOR'S NOTE

We have presented different parts of this study at various conferences MONS (2019 and 2022), NNMF (2021), SIG EDULING (2021), GRADIMO (2022) and CONGRAM (2023), and we are grateful both for the enthusiastic and critical comments that we have received. The participants at these conferences have all contributed to our thinking and re-thinking of this study. We would also like to thank the members of the research group GrammaKiKK (Grammatical Competence in Cognition and Classroom) at the Norwegian University of Science and Technology for feedback on the early drafts on this paper. Last, but not least, we thank the two anonymous reviewers for sharing their insights and useful suggestions. Your comments had a real impact on the final version of the article. Any errors, however, are not a shared achievement, but ours alone.

REFERENCES

- Aa, L. I. (2021). Grammatikdidaktikk på grammatikkfeltets grunn [Grammar didactics on the grounds of grammar theory]. *Norsklæreren. Tidsskrift for språk, litteratur og didaktikk*(4), 65-81. <https://www.norskundervisning.no/nyheter-og-artikler/aa-grammatikdidaktikk-p-grammatikkfeltets-grunn-1>

- Åfarli, T. A., & Eide, K. M. (2003). Norsk generativ syntaks [Norwegian Generative Syntax]. Novus.
- Alderson, J. C., & Hudson, R. (2013). The metalinguistic knowledge of undergraduate students of English language or linguistics. *Language Awareness*, 22(4), 320-337. <https://doi.org/10.1080/09658416.2012.722644>
- Anderson, L. W., & Krathwohl, D. R. (2001). *A Taxonomy for learning, teaching, and assessing: A revision of Bloom's Taxonomy of educational objectives*. Longman.
- Baker, M. C. (1988). *Incorporation: A theory of grammatical function changing*. University of Chicago Press.
- Ball, D. L., Thames, M. H., & Phelps, G. (2008). Content Knowledge for Teaching: What Makes It Special? *Journal of Teacher Education*, 59(5), 389-407. <https://doi.org/10.1177/0022487108324554>
- Bandh, E. (2019). *Problematiske beskrivninger av grammatik: En studie om läromedels beskrivningar av grammatik och svensklärares reaktioner på dessa* [Problematic descriptions of textbooks' description of grammar and Swedish teachers' reactions to these]. Lund university.
- Berry, R. (2015). Grammar Myths. *Language Awareness*, 24(1), 15-37. <https://doi.org/10.1080/09658416.2013.873803>
- Blikstad-Balas, M., & Roe, A. (2020). Grammatikkens plass i undervisningen [The position of grammar in teaching]. In *Hva foregår i norsktimene?: utfordringer og muligheter i norskfaget på ungdomstrinnet* (pp. 149-173). Universitetsforlaget.
- Bloom, B. S. (1956). *Taxonomy of educational objectives: The classification of educational goals: 1: Cognitive domain*. McKay.
- Boström, L., & Josefsson, G. (2006). *Vägar till grammatik* [Roads to grammar]. Studentlitteratur.
- Brennhaug, C. (2021). *Grammatikkoppgaver etter fagfornyelsen. En teoretisk analyse av grammatikkoppgavene i en lærebok i norsk for 8.-10. trinn*. [Grammar tasks after the Knowledge Promotion 2020. A theoretical analysis of grammar tasks in a L1 Norwegian textbook for 8.-10. grade.] (Vol. MA). NTNU.
- Brøseth, H., Busterud, G., & Nygård, M. (2020). "Oppslagsdelen bak i boka gir oversikt over grammatikk." Analyse av grammatisk metaspråk i ei lærebok for ungdomstrinnet. ["The look up-pages at the end of the book gives an overview of grammar". An analysis of grammatical metalanguage in a textbook for lower secondary school.] *Norsk lingvistisk tidsskrift*, 2. <http://ojs.novus.no/index.php/NLT/article/view/1843/1825>
- Brøyn, T. (2014). Hvorfor har det blitt så vanskelig å snakke om språket? [Why is it so difficult to talk about language?]. *Bedre skole*(1), 8-9. <http://utdanningsforskning.no/artikler/hvorfor-det-er-blitt-sa-vanskelig-a-snakke-om-spraket/>
- Cajkler, W., & Hislam, J. (2002). Trainee Teachers' Grammatical Knowledge: The Tension Between Public Expectation and Individual Competence. *Language Awareness*, 11(3), 161-177. <https://doi.org/10.1080/09658410208667054>
- Chomsky, N. (1981). *Lectures on Government and Binding*. Foris.
- Chomsky, N. (1986). *Barriers*. MIT Press.
- Elsner, D. (2021). Knowledge about grammar and the role of epistemological beliefs. *Pedagogical Linguistics*, 2(2), 107-128. <https://doi.org/https://doi.org/10.1075/pl.21003.els>
- Faarlund, J. T., Lie, S., & Vannebo, K. I. (1997). *Norsk referansegrammatikk* [Norwegian Reference Grammar]. Universitetsforlaget.
- Grimm, S. R., Baumberger, C., & Ammon, S. (2017). *Explaining understanding: New perspectives from epistemology and philosophy of science*. Routledge.
- Grov, A. M. (2018). Språkundervisningen som forsvant? [The language teaching that disappeared?]. *Språknytt*(2), 18-23. <https://www.sprakradet.no/Vi-og-vart/Publikasjoner/Spraaknytt/spraknytt-22018/sprakundervisningen-som-forsvant/>
- Halliday, M. A. K. (1961). Categories of the theory of grammar. *WORD: Journal of the International Linguistic Association*, 17(2), 241-292. <https://doi.org/10.1080/00437956.1961.11659756>
- Hertzberg, F. (1995). *Norsk grammatikkdebatt i historisk lys* [Norwegian grammar debate through history]. Novus.
- Hertzberg, F. (2004). Hva har skjedd med problembarnet? Grammatikken og norskfaget nok en gang [What happened to the problem child? Grammar and Norwegian once again]. In P. Hamre, O. Langlo,

- O. Monsson, & H. Osdal (Eds.), *Fag og fagnad. Festschrift til Kjell-Arild Madssen i høve 60-årsdagen 28. oktober 2004* (pp. 97-111). Høgskulen i Volda, avd. for humanistiske fag.
- Heyn, L., Olsen, U., Phelps, J., Gray, R., & Raaheim, A. (2019). Taksonomitabellen: en oversettelse av The Taxonomy Table til norsk [The Taxonomy table: A translation of the Taxonomy table to Norwegian]. *Nordisk sygeplejeforskning*, 9(4), 272-284. <https://doi.org/10.18261/issn.1892-2686-2019-04-05>
- Hognestad, J. K. (2019). Språkemnene i norskfaget: Fornyes de i fagfornyelsen? [The language subjects in Norwegian: Are they renewed in the new curriculum?] In M. Blikstad-Balas & K. R. Solbu (Eds.), *Det (nye) nye norskfaget* (pp. 83-96). Fagbokforlaget Landslaget for norskundervisning.
- Holmen, S. E. (2014). Kvalitet i grammatikkundervisningen i lærerutdanningen [Quality in grammar teaching in teacher education]. In J. Amdam, Ø. Helgesen, & K. W. Sæther (Eds.), *Det mangfoldige kvalitetsomgrepet. Fjordantologien 2013*. (pp. 83-100). Forlag1. <http://fjordkonferansen.no/wp-content/uploads/2016/06/Fjordantologien-2013.pdf>
- Hoy, A. W. (2016). *Educational psychology* (13th ed.). Pearson Education Limited.
- Jahr, E. H. k. (2014). *Language planning as a sociolinguistic experiment: the case of modern Norwegian*. Edinburgh University Press. <https://doi.org/10.3366/edinburgh/9780748637829.001.0001>
- Josefsson, G., & Lundin, K. (2017). Trøskelbegrepp inom grammatiken [Threshold concepts in grammar]. *Högre Utbildning*, 7(2), 18-34. <https://doi.org/https://doi.org/10.23865/hu.v7.1033>
- Jouili, E., & Elaouf, M.-L. (2021). La conceptualisation de la notion de sujet, étude comparative au cycle 4. *Le français aujourd'hui*(3), 51-67. <https://doi.org/10.3917/lfa.214.0051>
- Kabel, K. (2020). For what benefit? Grammar teaching materials in upper primary Danish L1. *L1-Educational Studies in Language and Literature*, 20, *Running Issue* (Running Issue), 1-25. <https://doi.org/10.17239/L1ESLL-2020.20.02.02>
- Kabel, K., Christensen, M. V., & Brok, L. S. (2022). A focused ethnographic study on grammar teaching practices across language subjects in schools. *Language, culture, and curriculum*, 35(1), 51-66. <https://doi.org/10.1080/07908318.2021.1918144>
- Lundin, K., & Bandh, E. (2019). Grammatikläromedel innehåller många fel [Grammar teaching aids contain many errors]. *Svenskläraren*, 63(1), 8-11.
- Macken-Horarik, M., Love, K., & Horarik, S. (2018). Rethinking Grammar in Language Arts: Insights from an Australian Survey of Teachers' Subject Knowledge. *Research in the teaching of English*, 52(3), 288-316.
- Myhill, D. (2000). Misconceptions and Difficulties in the Acquisition of Metalinguistic Knowledge. *Language and Education*, 14(3), 151-163. <https://doi.org/10.1080/09500780008666787>
- Myhill, D. (2019). Linguistic choice as empowerment - Teaching rhetorical decision-making in writing. *Utbildning och demokrati*, 28(2), 55-75. <https://doi.org/10.48059/uod.v28i2.1121>
- Norwegian Directorate for Education and Training. (1997). *Læreplanverket for den 10-årige grunnutdanningen L97* [The National Curriculum L97].
- Norwegian Directorate for Education and Training. (2006). *Kunnskapsløftet* [The Knowledge Promotion].
- Norwegian Directorate for Education and Training. (2013). *Kunnskapsløftet* [The Knowledge Promotion].
- Norwegian language council, & Norwegian Directorate for Education and Training. (2006). *Grammatiske termer til bruk i skoleverket. Tilråding fra Norsk språkråd og Utdanningsdirektoratet* [Grammatical terminology to use in the school system. A recommendation from the Language Council of Norway and the Norwegian Directorate for Education and Training] (2nd ed.). <http://www.sprakradet.no/localfiles/gramterm.pdf>
- Notario, G. (2020). Secondary school students' grammatical concepts: The subject. In A. Camps & X. Fontich (Eds.), *Research and teaching at the intersection: Navigating the territory of grammar and writing in the context of metalinguistic activity* (Vol. 50, pp. 273-285). P.I.E., Peter Lang S.A.
- Nygård, M., & Brøseth, H. (2021). Norwegian teacher students' conceptions of grammar. *Pedagogical Linguistics*. <https://doi.org/https://doi.org/10.1075/pl.21005.nyg>
- Oksfjellelv, B. (2011). Lærarstudentane kan for lite grammatikk [The teacher students know too little grammar] *Norsk læreren. Tidsskrift for språk, litteratur og didaktikk*(3).
- Radford, A. (2004). *Minimalist syntax: Exploring the structure of English*. Cambridge University Press. <https://doi.org/https://doi.org/10.1017/CBO9780511811319>

- Sangster, P., Anderson, C., & O'Hara, P. (2013). Perceived and actual levels of knowledge about language amongst primary and secondary student teachers: Do they know what they think they know? *Language Awareness*, 22(4), 293-319. <https://doi.org/10.1080/09658416.2012.722643>
- Stanny, C. J. (2016). Reevaluating Bloom's Taxonomy: What Measurable Verbs Can and Cannot Say about Student Learning. *Education Sciences*, 6(4). <https://doi.org/https://doi.org/10.3390/educsci6040037>
- van Rijt, J. (2020). *Understanding grammar. The impact of linguistic metaconcepts on L1 grammar education*. Radboud University.
- van Rijt, J., & Coppen, P.-A. (2017). Bridging the gap between linguistic theory and L1 grammar education—experts' views on essential linguistic concepts. *Language Awareness*, 26(4), 360-380. <https://doi.org/10.1080/09658416.2017.1410552>
- van Rijt, J., de Swart, P., Wijnands, A., & Coppen, P.-A. (2019). When students tackle grammatical problems: Exploring linguistics reasoning with linguistic metaconcepts in L1 grammar education. *Linguistics and education*, 52, 78-88. <https://doi.org/https://doi.org/10.1016/j.linged.2019.06.004>
- van Rijt, J., Wijnands, A., & Coppen, P.-A. (2019). Dutch teachers' beliefs on linguistic concepts and reflective judgement in grammar teaching. Special issue What is grammar in L1 Education Today? *L1-Educational Studies in Language and Literature* (19), 1-28. <https://doi.org/10.17239/L1ESLL-2019.19.02.03>
- Van Rijt, J., Hulshof, H. & Coppen, P.-A. (2021). 'X is the odd one out, because the other two are more about the farmland' – Dutch L1 student teachers' struggles to reason about grammar in odd one out tasks. *Studies in Educational Evaluation*, 70, 1-13. <https://doi.org/10.1016/j.stueduc.2021.101007>
- Watson, A. M., & Newman, R. M. C. (2017). Talking Grammatically: L1 Adolescent Metalinguistic Reflection on Writing. *Language Awareness*, 26(4), 381-398. <https://doi.org/10.1080/09658416.2017.1410554>
- Wollscheid, S., Lødding, B., & Aamodt, P. O. (2021). Prepared for higher education? Staff and student perceptions of academic literacy dimensions across disciplines. *Quality in higher education*, 27(1), 20-39. <https://doi.org/10.1080/13538322.2021.1830534>

APPENDIX A

Table 1. Overview of questions in the survey with English translation and answers scored as correct and proposed cognitive level

Question number	Questions in Norwegian	Translation English	Answers	Cognitive level
Q1	Hvilken ordklasse er dette? Raskest	Which word class is this? Fastest	Adjective and/or adverb	2 Classify
Q2	Hvilken ordklasse er dette? Spiste	Which word class is this? Ate	Verb	2 Classify
Q3	Hvilken ordklasse er dette ordet? Husene	Which word class is this? The houses	Noun	2 Classify
Q4	Hvilken form står dette ordet i? Husene	Which form is this word in? The houses	Definite plural	2 Classify
Q5	Hva er subjektet i denne setningen? Ola sprang ut døra	What is the subject of this sentence? Ola ran out the door	Ola	4 Apply
Q6	Hvilken ordklasse er dette?	Which word class is this?	Adverb	2 Classify

Question number	Questions in Norwegian	Translation English	Answers	Cognitive level
	Aldri	Never		
Q7	Strek under leddsetningen i setningen nedenfor: Jeg liker ikke at du snorker	Underline the subordinate clause in the sentence below: I don't like that you snore	<u>At du snorker</u> <u>[that you snore]</u>	4 Apply
Q8	Hva er personlig pronomen i første person flertall?	What is the personal pronoun in first person plural?	Vi, oss, vår [We, us, our]	1 Recall
Q9	Hvordan skiller vi mellom sterke og svake verb?	How do we tell strong and weak verbs apart?		4 Differentiate
Q10	Gi et eksempel på et sterkt verb	Given an example of an irregular verb.		2 Exemplify
Q11	Gi et eksempel på et svakt verb	Given an example of a regular verb.		2 Exemplify
Q12	Hvilken ordklasse kan gradbøyes?	Which word class has comparison conjugation	Adjective and/or adverb	1 Recall
Q13	Vis et eksempel på et ord med gradbøying	Give an example of a word that has comparison conjugation	Adjective and/or adverb	2 Exemplify
Q14	Hva er et substantiv?	What is a noun		2 Explain
Q15	Hva er et subjekt?	What is a subject?		2 Explain
Q16	Kan du bøye dette verbet i presens? Kaste	Can you conjugate this verb into present tense? Toss	Kaster [toss]	2 Exemplify
Q17	Kan du bøye dette verbet i preteritum? Kaste	Can you conjugate this verb into past tense? Toss	Kastet [tossed]	2 Exemplify
Q18	Hva er genitiv?	What is genitive?		2 Explain
Q19	Kan du gi et eksempel på passiv form av verbet?	Can you give an example of a passive voice of the verb?		2 Exemplify
Q20	Hva er det direkte objektet i denne setningen? Du spiser alltid grøt med kanel til frokost	What is the direct object in this sentence? You always eat porridge with cinnamon for breakfast	Grøt med kanel [porridge with cinnamon]	4 Apply

Question number	Questions in Norwegian	Translation English	Answers	Cognitive level
Q21	Strek under leddsetningen i setningen nedenfor: Når du snorker, får jeg ikke sove.	Underline the subordinate clause in the sentence below: When you snore, I can't sleep	<u>Når du snorer</u> [When you snore]	4 Apply
Q22	Hvilken ordklasse er dette? Det	Which word class is this? It/the	Pronoun and/or Determinative	2 Classify
Q23	Hvilken setningsledd er Kari i denne setningen? Petter sendte Kari et kjærlighetsbrev	What sentence constituent is Kari in this sentence? Petter sent Kari a love letter	Indirect object	4 Apply
Q24	Hva er subjektet i denne setningen? Til jul fikk ikke Petter presanger	What is the subject in this sentence? For Christmas, Petter didn't get presents	Petter	4 Apply
Q25	Hvilken ordklasse er dette? Over	Which word class is this? Over	Preposition and/or adverb	2 Classify
Q26	Strek under leddsetningen i setningen nedenfor: Jeg vet ikke hvorfor du spiser så mye	Underline the subordinate clause below: I don't know why you eat so much	<u>Hvorfor du spiser så mye</u> [why you eat so much]	4 Apply
Q27	Hvilken ordklasse er dette? Oss	Which word class is this? Us	Pronoun, Personal pronoun, First person plural	2 Classify
Q28	Finn det direkte objektet i denne setningen: Jeg hater at du snorker	Find the direct object in this sentence: I hate that you snore	at du snorker [that you snore]	4 Apply
Q29	Hva heter formen på verbet som er brukt her? Spis maten din!	What is the verb form used here called? Eat your food!	Imperative, Command form	2 Classify
Q30	Gi et eksempel på et hjelpeverb.	Give an example of an auxiliary verb		2 Exemplify

<i>Question number</i>	<i>Questions in Norwegian</i>	<i>Translation English</i>	<i>Answers</i>	<i>Cognitive level</i>
Q31	Strek under leddsetningen i setningen nedenfor: Fordi du forsov deg, kom du for sent.	Underline the subordinate clause in the sentence below: Because you overslept, you came late.	[<u>Fordi du forsov deg</u>] <u>Because you overslept</u>	4 Apply
Q32	Gi et eksempel på en relativsetning	Give an example of a relative clause		2 Exemplify
Q33	Hvilke setningsledd er de understreketede ordene her: Vi spiser middag <u>hver kveld når ungene har gjort lekser.</u>	What type of sentence constituents are the underlined words here: We eat dinner <u>every night when the kids have done their homework.</u>	Adverbials	4 Apply
Q34	Hva er en helsetning?	What is a main clause?		2 Explain
Q35	Hva er en leddsetning?	What is a subordinate clause?		2 Explain
Q36	Hva er samsvarsbøying?	What is concord?		2 Explain