# Author Accepted Manuscript version of the paper by Dianna Walla in Pedagogical Linguistics, 2023, https://doi.org/10.1075/pl.22003.wal <br> Distributed under the terms of the Creative Commons Attribution License (CC BY 4.0) 

## Assessing knowledge of English verb placement and subject-verb agreement among multilingual students in grades 5-7 in Norway


#### Abstract

This study investigates knowledge of English verbal morphosyntax among multilingual students and their L1 Norwegian peers in grades 5-7 in Norway. L1 Norwegian speakers have previously shown transfer from Norwegian to verb placement or subject-verb agreement in L2 English, but their multilingual peers may have an advantage in acquiring these properties in L3 English due to their knowledge of other languages. A written test examining verb placement in verb-second (V2) contexts and subject-verb agreement was used to compare L1 Norwegian students with their multilingual peers, who spoke a variety of different L1s in the home. The results showed that the difference in mean scores alone was not significant between the L1 Norwegian group and the multilingual group, but when grade level and academic achievement were controlled for, linguistic group membership did significantly predict better performance by the multilingual group for some, but not all, grammatical conditions examined.


Keywords: multilingualism, L3 English, heritage bilingualism, third language acquisition, verb-second, subject-verb agreement

## 1. Introduction and background

The importance of English as a school subject in Norway has grown over the past several decades, as English has become a global lingua franca and an increasingly important language within Norwegian society (Ljosland, 2007). At the same time, a steady rise in immigration has led to a higher proportion of students with immigration backgrounds in schools, meaning that many English classrooms in Norway are linguistically diverse, and not all students necessarily have Norwegian as a first language (L1). According to a report from Statistics Norway from 2017, around 1 in 6 children between the ages of 6-15 (i.e. schoolaged) is either an immigrant or born in Norway to immigrant parents (Steinkellner, 2017). While many teachers of English in Norway hold positive beliefs about multilingualism, they may lack specific knowledge about multilingualism or linguistics or how best to use multilingualism as a resource (Krulatz \& Dahl, 2016; Myklevold \& Speitz, 2021; Šurkalović, 2014), and monolingual teaching practices continue to be dominant in linguistically diverse classrooms (Lorenz, Krulatz, \& Torgersen, 2021). Studies about teacher beliefs elsewhere in Europe have led to similar findings (Gorter \& Arocena, 2020; Haukås, 2016).

In the case of minority language students in Norway who learn English at school, English may be considered (at least) a third language (L3). This has possible implications for English teaching in Norway, as many L3 researchers argue that there are reasons to consider second language (L2) and L3 acquisition separately (Cenoz \& Jessner, 2000; Flynn, Foley, \& Vinnitskaya, 2004; González Alonso \& Rothman, 2017). One key reason is that in L3
acquisition, the learner starts the acquisition process with "a larger amount of linguistic experience and mental representations to draw from" compared with a monolingual learner beginning to acquire an L2 (González Alonso \& Rothman, 2017: 281), meaning that prior linguistic knowledge can be a source of facilitative transfer into the new target language. Transfer can also be non-facilitative, however, so while students' knowledge of other languages is a potential resource in the language classroom, it is not always an advantage by default.

Given this background, this study assesses the explicit knowledge of English verbal morphosyntax by monolingual and multilingual primary school students in Norway in grades 5-7 by means of a paper-and-pencil test. The study takes place in the classroom context with a diverse range of L1s among the multilingual students. The test is comprised of four types of questions/tasks: multiple choice, jumbled sentences with a word bank, acceptability judgment, and translation. The grammatical structures chosen for the test have been shown by previous research to cause difficulties for some L1 Norwegian speakers acquiring L2 English: namely word order in verb-second (V2) contexts as well as present tense subject-verb agreement with $3^{\text {rd }}$ person singular $-s$. The scores obtained on the test of verbal morphosyntax are used to compare L1 Norwegian students with their peers who are already multilingual and acquiring English as an L3 to determine if the multilingual students have an advantage. The main research question is as follows:

## RQ: Do multilingual students in grades 5-7 acquiring L3 English in Norway perform better on a test of verb placement and subject-verb agreement in English than their L1 Norwegian peers?

## 2. English in the Norwegian context

English is a compulsory subject for all students in Norway and English instruction begins in the first grade (this differs from other foreign languages in Norwegian schools, which are only offered as options from grade 8). The number of hours of instruction remains low for the first several years, however (Dahl \& Vulchanova, 2014; Westergaard, 2003). Westergaard (2003: 79) argues that "this minimal exposure over an extended period of time is of little use with regard to the acquisition of structural properties of the language, such as word order." Nonetheless, for some children, the amount of exposure to English outside the classroom increases as they interact with English-language games and media in their free time (Sunde, 2017), and the status of English in higher education and professional realms leads to claims that English today occupies a transitional space between the traditional concepts of a "foreign language" or a "second language" in Norway (Rindal \& Piercy, 2013; Sunde \& Kristoffersen, 2018).

Instructional approaches in the English classroom tend to follow the communicative language teaching approach since it was introduced in the 1970s (Askland, 2020; Fenner \& Skulstad, 2020). Explicit grammar instruction is not a main focus, and this is largely the case for the Norwegian subject as well, where grammar instruction is most closely linked to developing students' writing skills (Askland, 2019). Teachers themselves may also lack explicit knowledge of grammar. Nygård and Brøseth (2021) found that teacher students training to teach Norwegian believe grammar is important, and consider their own competence of grammar to be good, but their performance on a grammatical knowledge test showed their performance was poorer than the students' self-reported knowledge, particularly for
metalanguage, language analysis, and subject knowledge. While I know of no comparable studies of English teachers in Norway, there is possibly some overlap given that teachers usually teach multiple subjects at the primary and lower secondary school level.

Additionally, English instruction in Norway has largely been rooted within a monolingual framework (Brevik, Rindal, \& Beiler, 2020; Dahl \& Krulatz, 2016), meaning that the default assumption is that students' first language is Norwegian, and multilingual students are treated as an exception. While teachers may be aware that some of their students have a different L1, they are often unsure of how to use multilingualism as a resource in the classroom or they lack the more general linguistic competence that would enable them to better support minority language students (Krulatz \& Dahl, 2016; Krulatz \& Torgersen, 2016; Šurkalović, 2014).

## 3. Multilingualism research: L 2 and L 3 acquisition

The role of the learner's L1 has been a common theme in much L2 acquisition research (Thomas, 2013). As the field has progressed, different types of bi- and multilingualism have been given greater attention, including heritage bilingualism. This study is concerned with students who can be considered heritage bilinguals: namely, those students who learned a language at home that is not the dominant language of the country, but who acquired the majority language either at home from birth (as an additional L1) or as an early L2 (at daycare or school). Different researchers define heritage bilinguals in different ways, and Montrul (2016) notes that who is considered a heritage speaker is often context-specific, but Aalberse, Backus, and Muysken (2019: 1) write that what is "[c]ommon to most definitions of heritage speakers is that they learned a language at home that is not the dominant language of the country." They may also have acquired the majority language of the country at home, or as an early L2, but in either case they are also speakers of the majority language (see Aalberse et al. (2019: 11) for an overview of different definitions of heritage language in the field).

While these students can be called heritage speakers, in the Norwegian educational context they are most often referred to as minority language (minoritetsspråklig) students (Barne-likestillings- og inkluderingsdepartementet, 2013), and their home language is not always their strongest language, as exposure to the home language can vary greatly. In order to use terminology that will encompass both the concept of heritage speaker as well as minority language speaker, in this study I will use the term multilingual to refer to students who can be considered heritage bilinguals/minority language students acquiring English.

When it comes to the influence of a speaker's existing linguistic knowledge (i.e. languages they already know) on the acquisition of a new language, both crosslinguistic influence and transfer are terms which have been used to describe this phenomenon. Some researchers make no distinction between the terms, while others such as Rothman, Alonso, and PuigMayenco (2019) separate the terms, so that transfer refers to phenomena occurring "at the level of mental representation of the developing grammar (that is, in terms of competence)" (p. 2) while crosslinguistic influence can refer to other phenomena which "sit at the level of performance - real-time language use" (p. 2). In this operationalization of the terms, transfer is a type of crosslinguistic influence, but not all crosslinguistic influence is transfer. The
question of crosslinguistic influence in L2/L3 acquisition of English in schools is a relevant for language education, as multilingual students' (non-majority) L1s may play a role.

Furthermore, unless their home language is English, multilingual students in Norway acquire English as (at least) an L3, and there is reason to consider L2 acquisition and L3 acquisition separately, given the difference in the learner's previous linguistic knowledge (Cenoz \& Jessner, 2000; Flynn et al., 2004; Westergaard, Mitrofanova, Mykhaylyk, \& Rodina, 2017). According to González Alonso and Rothman (2017: 284), "[w]hat we seem to know for sure...is that L3 learners behave differently than L2 learners as it relates to linguistic transfer."

Much of the previous research on multilingualism and the potential advantage of multiple languages on L3 or additional language acquisition has been conducted on adults, rather than children (Berthele \& Udry, 2019), leading to a gap in knowledge about younger populations. However, the study of L3 acquisition among school-aged children and young adults is now a growing field, as an increasing number of studies which examine L1 influence in L3 English acquisition shows. Lorenz and Siemund (2019) investigated L3 acquisition of English in Germany among school-aged bilinguals (aged 12 and 16) using a written picture description task to elicit the progressive aspect. L1 German speakers acquiring L2 English were compared with L3 English learners with who were either Russian-German, Turkish-German, or Vietnamese-German bilinguals. While they did not find a general multilingual advantage, specific patterns within the language groups were singled out and they concluded that the respective grammatical systems of the heritage languages played a role on performance. Hopp, Kieseier, Vogelbacher, and Thoma (2018) examined L1 effects in L3 acquisition of both vocabulary and grammar in students aged 8-11. They found that L1 influence played a larger role in acquisition of vocabulary than grammar. In particular, the L3 English participants patterned with German monolinguals acquiring English as an L2 in showing influence from German word order (see section 4.1 for more detail). Hopp (2019) examined Turkish-German heritage bilinguals and German monolinguals acquiring English in the early stages in grades 3 and 4 and found that there was no difference in group performance on tasks involving sentence repetitions and oral sentence production, with both groups showing selected transfer of German grammatical properties into English.

In the Norwegian context, Jensen et al. (2021) looked at L3 acquisition of English among Russian-Norwegian bilinguals in Norway compared with monolingual Norwegian and Russian learners of L2 English aged 11-12 (after 5-6 years of English instruction for all groups). Examining seven different linguistic properties, they found that the L3 group showed facilitative influence from both of their previously acquired languages, and they patterned with the more accurate L2 group for four out of the seven conditions.

As this brief overview shows, in some cases prior multilingualism appeared to be an advantage, while in others multilingual students patterned with majority-language speakers acquiring English as an L2. Influence from both the L1 and the L2 is possible in different contexts and for different linguistic properties, and learners' previous exposure to specific grammatical structures plays a role.

## 4. The grammatical structures under investigation

### 4.1 Word order: verb placement and V2

Verb second (V2) describes languages in which finite verbs must occupy the second constituent position in main clauses. Most Germanic languages are V2 languages, including Norwegian. English is an exception, as it is not a V2 language but has SVO word order (meaning the basic unmarked word order is subject-verb-object). While the surface word order of English and Norwegian can overlap in simple subject-initial declaratives, the addition of adverbs or topicalization makes the distinction transparent. The following sentence pairs in examples 1-3 demonstrate this difference.
(1) (a) He reads a book.
(b) Han leser en bok.
he reads a book
'He reads a book.'
(2) (a) She always eats breakfast.
(b) Hun spiser alltid frokost.
she eats always breakfast
'She always eats breakfast.'
(3) (a) Yesterday they went to the store.
(b) Igàr gikk de til butikken.
yesterday went they to store.DEF.ART
'Yesterday they went to the store.'
While the word orders in (1a) and (1b) are identical, the position of the verb differs between example (2a), where the adverb takes the second position and thus precedes the verb eats in English, and (2b), where the verb spiser ('eats') remains in the second position and the adverb follows in Norwegian. Likewise, the topicalized structures in example 3 lead to differing orders in English and Norwegian. In (3a) we see the unchanged SVO order after the topicalized yesterday, so that the subject takes the second position and the verb takes the third, while in (3b), topicalization has caused the subject and verb to invert so that the verb remains in the second position and the subject follows.

Previous L2 research has established that speakers of verb-second (V2) languages show evidence of syntactic transfer when acquiring English as a second or later language by transferring V2 structures that would be grammatically acceptable in their L1 into English.

Ravem (1968) provides an early case of apparent V2 transfer from Norwegian into English by a 6 -year-old acquiring English in a naturalistic (rather than instructed) setting. In a study of Norwegian primary school students in grades 4-7, Westergaard (2003) also found strong evidence of V2 transfer from Norwegian into English. While she found a gradual increase in "correct [target] performance" from the younger to the older grades, ungrammatical V2 constructions were accepted or present in the production of the children from all participating grades. Jensen et al. (2019) examined V2 transfer in Norwegian students acquiring English in grades 7, 11, and 12 as part of their study testing the Bottleneck Hypothesis (Slabakova, 2008), which proposes that functional morphology (such as $3^{\text {rd }}$ sg. $-s$ in English) is the most challenging part of language acquisition. While participants' accuracy on an acceptability judgment task improved with higher proficiency, they did still sometimes accept V2 word order in English, particularly in sentences with auxiliary verbs compared to lexical verbs.

As for L3 acquisition, the question of V2 transfer is increasingly being examined particularly when one of the speaker's previous languages is a V2 language and the other is not Westergaard et al. (2017) investigated crosslinguistic influence on L3 English acquisition through a grammaticality judgement task involving verb movement. Participating students were 11-14 and belonged to one of three groups: Norwegian-Russian bilinguals, Norwegian monolinguals, or Russian monolinguals (the latter two groups acquiring English as an L2). The results showed facilitative influence from Russian for the bilinguals in adverb-verb constructions, but they provided more accurate judgements for ungrammatical sentences than grammatical ones, suggesting some non-facilitative influence from Norwegian as well.

Hopp et al. (2018), mentioned in the previous section, examined L1 effects in L3 acquisition of both vocabulary and grammar in students aged 8-11. The grammar portion of the study involved a sentence repetition task focusing on word order. L3 English students with various L1s patterned with German monolinguals for task items involving verb placement, suggesting non-facilitative transfer from L2 German.

Stadt, Hulk, and Sleeman (2020) looked at L1 Dutch/L2 English students aged 11-13 acquiring L3 French. The study used a grammaticality judgement task and a guided production task to examine word order in non-subject-initial main clauses (in which Dutch word order differs from English and French) and adverb-verb constructions (in which English word order differs from Dutch and French). They found evidence of negative transfer from the L1, Dutch, at the initial stages of acquisition, meaning that they transferred the V2 word order of Dutch to L3 French, which is not V2, despite their knowledge of English.

The L3 studies outlined here all show some evidence of transfer from the V2 language into the non-V2 target language, although Westergaard et al. (2017) found stronger evidence of facilitative influence from Russian when it came to judging ungrammatical structures. Common to all three studies was that the V2 language (either German, Norwegian, or Dutch) was the majority language of society and of schooling, making the setting of this study in Norway comparable.

### 4.2 Subject-verb agreement

The other structure investigated in this study is overt subject-verb agreement. Verbal inflection to mark agreement between the subject and the verb can differ greatly across languages, and errors in subject-verb agreement are also relatively common among L2/Ln speakers of English (Ionin \& Wexler 2002; Jensen, Slabakova, \& Westergaard 2017). In Norwegian, the verb carries no overt agreement morphology in the present tense, while in English, the third person singular form of the verb is marked. The verbal inflectional morphology of English is relatively weak compared to many other languages, however, such as Spanish or Turkish, which have inflectional morphemes that differ for each person/number combination. These differences are outlined in the examples in the table below.

## Table 1

Subject-verb Agreement in Present Simple

| Form | Norwegian | English | Turkish |
| :---: | :---: | :---: | :---: |
| $1^{\text {st }}$ person sg. | jeg spis-er 'I eat' | I eat | ben ye-rim 'I eat' |
| $2^{\text {nd }}$ person sg. | du spis-er 'you eat' | you eat | sen ye-rsin <br> 'you eat' |
| $3^{\text {rd }}$ person sg. | han/hun spis-er 'he/she eats' | he/she/it eat-s | 0 ye-r <br> 'he/she eats' |
| $1^{\text {st }}$ person pl. | vi spis-er 'we eat' | we eat | biz ye-riz 'we eat' |
| $2^{\text {nd }}$ person pl. | dere spis-er 'you eat' | you eat | siz ye-rsiniz 'you eat' |
| $3{ }^{\text {rd }}$ person pl. | de spis-er <br> 'they eat' | they eat | onlar ye-rler 'they eat' |

Previous studies of L2/L3 English have shown that subject-verb agreement causes difficulties for learners of English. In her doctoral dissertation, Garshol (2019) examined student texts in English collected from L1 Norwegian speakers in grade 11. She found a relatively high number of present tense agreement errors: both omission of $-s$ in contexts where it should be present as well as the production of $-s$ where it should be absent.

Additionally, the complexity of the subject makes a difference when it comes to agreement errors. Jackson, Mormer, and Brehm (2018) note that subject-verb agreement errors by L2 speakers are more likely cross-linguistically with complex noun phrase (NP) subjects that contain a number mismatch between the grammatical number of the head noun and the local noun, as in The vase with the roses *were/was fragile. Jensen et al. (2019)'s study of Norwegian students in grades 7, 11, and 12 acquiring English tested subject-verb agreement with both simple as well as complex subjects with a grammatical number mismatch between the head noun and the local noun. Using a grammaticality judgement task containing both grammatical and ungrammatical sentences, they found that participants had the least difficulty in correctly judging sentences with simple subjects in the singular (e.g. The girl $\operatorname{drink}(s)$ a lot of water every day), and the greatest difficult in correctly judging sentences with complex subjects where the head noun was plural (e.g. The kids with the red bike play(s) in the garden).

In one L3 study of agreement, Siemund and Lechner (2015) examined the use of third person singular $-s$ in written English among learners aged 12 and 16: two bilingual groups (L2 German with either L1 Russian or L1 Vietnamese) and one monolingual group (L1 German). They found that the bilingual groups produced higher rates of target-like subject-verb agreement than the monolingual group, but only among the younger 12-year-old cohort. Omission of $-s$ was the most frequent error.

Based on the previous research, errors in subject-verb agreement are likely to occur in the present study as well, although whether or not the multilingual students will perform better than their monolingual peers is more difficult to predict.

## 5. Methodology and participants

### 5.1 Participants

A total of 110 students in grades 5-7 attending mainstream English classes at a primary school in Norway participated in the study. With the teachers' cooperation, information and consent forms were sent home to all students in grade 5-7 at the participating school (a total of 176 students were approached to participate). All students received the forms in Norwegian and English, and copies were also provided in students' home languages where applicable. The project and the consent forms were approved by the Norwegian Centre for Research Data (NSD) prior to distribution. Only students whose parents provided written consent participated in the study.

A language background questionnaire was filled out by the students during their English class and used to divide students into three groups: an L1 Norwegian group ( $N=78$ ), a multilingual group ( $N=21$ ), and an English group ( $N=11$ ). The language background questionnaire used to place students into groups took the form of a "language passport," a stapled booklet with a cover that mimicked an actual passport, and was based on activities published in Language Explorers: An activity book to learn about the languages of the world (Morgia, 2018). The language passport included questions about which languages the students spoke at home, which languages they could understand, speak, or read and write in, and which languages were used by their family members. While the language passport booklet was in English and it was completed during the students' English class, they were allowed to ask questions in Norwegian to clarify the task.

The Norwegian L1 group all shared the same L1 of Norwegian (which is also the majority language of schooling) and did not have regular exposure to languages other than Norwegian and English. The multilingual group was heterogeneous, with different L1s. The English group consisted of students who reported using English at home, but there was also heterogeneity within this group, as English was sometimes present alongside other languages in the home, and the language background questionnaire did not collect data on whether the parents or other family members of students in this group were L1 speakers of English. As such, the English group is not meant to be a control group, but rather another group for comparison. An overview of the participants by grade and linguistic group is provided in Table 2. Given that 32 out of 110 participants reported using a language other than Norwegian at home, $29 \%$ of participants used a minority language as at least one of their home languages. This is a higher proportion than the national average, given that $16 \%$ of children between 6-15 nationally are either immigrants or the children of immigrant parents (Steinkellner, 2017).

## Table 2

Overview of Participating Students

| Grade | L1 <br> Norwegian | Multilingual | English | Total <br> students |
| :---: | :---: | :---: | :---: | :---: |
| $\mathbf{5}$ | 28 | 9 | 3 | 40 |
| $\mathbf{6}$ | 22 | 6 | 3 | 31 |
| $\mathbf{7}$ | 28 | 6 | 5 | 39 |

An overview of the different home languages of the Multilingual and English groups is provided in Table 3, along with information about whether V2 word order or subject-verb agreement are properties of those languages.

## Table 3

Students' Home Languages

** Estonian exhibits V2 tendencies (Vihman \& Walkden, 2021).
The fact that the majority of the students' home languages do not exhibit V2 word order but do exhibit overt subject-verb agreement matters, because these features correspond more closely to English than to Norwegian. Following the Linguistic Proximity Model of transfer to an L3 (Westergaard et al., 2017), students' knowledge of their home languages could prove an advantage in acquiring English where features of English overlap with the home language but not the majority language. Among the home languages of this study's participants, only Swedish overlaps with Norwegian on both features ${ }^{\text {i. }}$

### 5.2 The verbal morphosyntax test

Elicited written production in the form of a pencil-and-paper test was used in this study. This was due to the use of the classroom setting and the collection of data during English class
itself, as a pencil-and-paper test was the easiest way to administer the tasks and collect data from multiple students in a single class session. The tasks included on the test covered the aforementioned areas of morphosyntax: both subject-verb agreement in present tense $3^{\text {rd }}$ person sg. $-s$ as well as word order in sentences that would trigger V2 constructions in Norwegian. These structures were chosen because they differ in Norwegian and English, previous research in the Norwegian context (L1 Norwegian acquiring L2 English) has shown evidence of transfer from Norwegian to English or difficulty of acquisition of the structure, and they are both simple and frequent enough to have been encountered by students in the final three grades of primary school.

The test developed for this study draws on the work of Jensen et al. (2019), who used V2 word order contexts and subject-verb agreement in order to test the Bottleneck Hypothesis. While that hypothesis is not the main focus of this study, and they investigated a slightly older student population ( $7^{\text {th }}, 11^{\text {th }}$, and $12^{\text {th }}$ grades), some of the choices used for their data collection were adopted in designing the written test used for this study. This included the conditions used in their test design (see below) as well as the choice to select lexical items from the 5,000 most frequent words in the Corpus of Contemporary American English (Davies, 2008-). Additionally, vocabulary was also checked against vocabulary lists in the textbooks used by the students in the previous school year, Quest 4-6 (Bade, 2014, 2015; Hansen, 2013), in order to determine the likelihood of familiarity.

Seven conditions were used for the test in the present study. Three corresponded to verb placement (4)-(6), and four to subject verb agreement (7)-(10):
(4) Topicalized declaratives with lexical verbs (V2-LEX)
(5) Topicalized declaratives with auxiliary verbs (V2-AUX)
(6) Declaratives with adverbs (V2-ADV)
(7) Local agreement with singular subjects (SVA-SING-LOC)
(8) Long-distance agreement with singular subjects (SVA-SING-LD)
(9) Local agreement with plural subjects (SVA-PLUR-LOC)
(10) Long-distance agreement with plural subjects (SVA-PLUR-LD)

These conditions correspond to the study by Jensen et al. (2019) with the exception of (6), which draws on Westergaard (2003).

The test consisted of four sections in a format consistent with activities the students are accustomed to from the workbook and handouts accompanying the textbook used in class. Each section contained instructions in English and Norwegian and provided an example. There were two versions of the test, an A version and a B version. Both versions contained the same items, but the order of the items within each section was different. The sections were presented in the same order in both versions. Students seated next to each other were given different versions of the test.

The first section consisted of 12 multiple-choice items, where pupils had to choose the correct present-tense form of a verb provided in parentheses at the end of each item. Each item was in the form of a statement with a $3^{\text {rd }}$ person subject, either in singular or plural. Subjects were either simple (a single noun phrase (NP), e.g. the brown dog) or complex (an NP with a prepositional phrase (PP) complement, e.g. the woman with the yellow glasses). The two NPs in each complex subject differ with regard to number. Three items corresponded to each agreement condition.

Figure 1
Example test items from section 1

1. The brown dog $\qquad$ with the yellow football. (to play)
a. play
b. plays
2. The teacher with the black shoes $\qquad$ to work. (to walk)
a. walk
b. walks
3. The teachers $\qquad$ their students a lot of homework. (to give)
a. give
b. gives
4. The kids with the red bike $\qquad$ in the garden. (to play)
a. play
b. plays

The second section of the test included nine items where the students had to build sentences by placing words provided in a word bank in the correct order. The target sentences were sentences that would trigger V2 order if the sentence were in Norwegian. Three items corresponded to each V2 condition (topicalization with lexical verb, topicalization with auxiliary verb, and adverbs). The six items corresponding to topicalization provided the topicalized phrase in situ, while the three items with adverbs provided only the word bank.

## Figure 2

Example test items from section 2
4. games friends always the together play
5.

## books bring the class to students their

Every day $\qquad$
$\qquad$ -.
6.
will get dog family a the new

## Tomorrow

$\qquad$
$\qquad$

The third section was an acceptability judgment task of 14 items covering both the V2 and subject-verb agreement conditions. The instructions indicated that some of the sentences had errors, and that none of the errors were spelling or punctuation errors. Students had to circle either "riktig" (correct) or "feil" (incorrect) to indicate if they thought the sentence was grammatical. Each of the seven grammatical conditions was represented by one grammatical sentence and one ungrammatical sentence (see Figure X for an example).

## Figure 3

Example test items from section 3, corresponding to subject-verb agreement with a singular subject and local agreement

| The doctor works at a hospital in town. | Riktig | Feil |
| :--- | :--- | :--- |
| The teacher go to the store after school. | Riktig | Feil |

The fourth section featured a translation task made up of seven Norwegian sentences which the pupils had to translate into English. These featured a mix of items targeting both $3^{\text {rd }}$ person sg. -s (4 items, one for each condition) and possible V2 transfer (three items, one for each condition).

## Figure 4

## Example test items from section 4

1. Jentene spiser egg til frokost hver morgen.
2. Hver morgen våkner mannen tidlig.

## 3. Hunden med de lange ørene løper hjem hver natt.

Students received one point for each correct response per test item. The total possible raw score was 42 points, with an equal number of test items for each agreement condition (six each for (7)-(10)) and an equal number for each verb placement condition (six each for (4)(6)). The total number of items corresponding to agreement was 24 , while 18 items corresponded to verb placement. Students were allowed to ask questions to clarify instructions or vocabulary for the duration of the test, as vocabulary was not the focus of this study. Both oral and written instructions for the test were provided in English and Norwegian.

The test was first piloted in two stages at a different school with two $6^{\text {th }}$ grade classes ( $N=$ $18, N=16$ ). Based on the pilot, several changes were made to the test. Section 1 originally consisted of a cloze task in which students wrote in the correct present-tense form of a given verb. In the pilot, however, many students chose the wrong tense (most frequently present progressive or past), and thus the cloze format was replaced by multiple choice in order to force the students to choose between present simple forms of the verb. Small changes were made to the translation task (section 4) in order to suggest present simple over present progressive for the English translation. The acceptability judgment task (section 3) was initially not part of the test but was added after the first stage of the pilot. Lastly, the V2 topicalization with auxiliary condition was added after the pilot stage, and a number of items were added across sections to correspond to this condition.

Once the test was carried out with all three grades, the statistical analysis was conducted with IBM SPSS version 27 (IBM Corp., 2020).

### 5.3 Test reliability

A reliability analysis was used to examine the item conditions in greater detail. For the initial analysis, items were divided into either V2 (word order/verb placement; 18 items), SVA singular (subject-verb agreement with a singular subject; 12 items), or SVA plural (subjectverb agreement with a plural subject; 12 items).

The V2 subscale appeared to have good internal consistency ( $\alpha=.90$ ). The reliability of the SVA singular subscale was acceptable ( $\alpha=.76$ ). The SVA plural subscale demonstrated lower internal consistency than the other scales $(\alpha=.63)$. An inspection revealed that item 3.11, an SVA-PLUR-LOC item, was negatively correlated with the subscale $(r=-.16)$. Because the item featured potentially unfamiliar vocabulary that could cause confusion (American English apartment, whereas the students' textbooks use the British English flat), it was thus excluded from the analysis. The ensuing scale reliability was still at the lower end ( $\alpha$ $=.67$ ), although somewhat more acceptable.

The items with the lowest correlation to their subscales all came from Part 3 of the test (regardless of condition), which was made up of acceptability judgment tasks. One possible explanation for this is the relative unfamiliarity of the task type compared with the other sections of the test. Additionally, participants may have judged sentences to be acceptable or not based on factors other than the V2 or subject-verb agreement elements.

## 6. Results

An overview of scores will be presented, followed by a discussion of the results and their implications.

### 6.1 Total score means

A summary of the mean and standard deviation of the total scores by linguistic group is presented in Table 4. The highest possible score was 42 points.

Figure 5
Mean Score by Linguistic Group


At a glance, the mean score for the multilingual group is higher than the mean score for the L1 Norwegian group, and the mean score for the English group was highest of all.
A one-way between-subjects ANOVA was conducted on the total scores for each linguistic group, which revealed a statistically significant effect of linguistic group membership $(F(2,107)=3.654, p<0.05)$. Games-Howell post hoc tests revealed that the only statistically significant difference in means was between the L1 Norwegian group and the English group, however. Crucially, this means that the difference in means between the L1 Norwegian group and the Multilingual group was not significant, nor was the difference in means between the Multilingual group and the English group (as shown in Table 4).

Table 4
Results of Post Hoc Tests of Group Mean Differences

|  |  |  |  | 95\% Confidence <br> Interval |  |  |
| :--- | :--- | :--- | :--- | :---: | :---: | :---: |
|  |  | Mean | Std. Error | Sig. | Lower <br> Bound | Upper <br> Bound |
| L1 Nor. | Multilingual | Difference | -1.676 | 1.467 | .494 | -5.24 |
| Multilingual | English | $-5.780^{*}$ | 1.778 | .013 | -10.37 | -1.19 |
|  | English | -4.104 | 1.991 | .122 | -9.11 | .90 |

Returning to the research question of how multilingual students perform on a test of verb placement and subject-verb agreement compared to their L1 Norwegian peers, we can say that based on the raw scores alone, there was no significant difference between the L1 Norwegian group and the Multilingual group. This analysis does not account for individual differences within each group, however (such as grade level or academic performance), so
section 6.3 addresses whether linguistic group membership can predict performance when certain additional factors are controlled for.

### 6.2 Mean scores by linguistic structure

In order to gain a picture of the relative difficulty of each linguistic structure, mean scores for each structure were calculated from all participant scores.

On average, performance was higher for test items pertaining to word order ( $69.1 \%$ correct) than for those pertaining to subject-verb agreement ( $55.2 \%$ correct). These can be broken down into the seven sub-conditions for a more nuanced view.

Figure 6
Average percentage correct by sub-condition


It becomes clear when looking at performance on the sub-conditions that there are differences in performance on verb placement depending on the sub-condition, and likewise the difference in performance is clear between subject-verb agreement items with singular subjects versus plural subjects. Among the verb placement sub-conditions, students struggled the most with test items relating to verb-adverb placement (V2-ADV) while they did the best on those where the target structure was a sentence with a lexical verb (V2-LEX). The test design may have played a role here, as three out of six V2-ADV items were from section 2, where students had to use the word bank to form the sentence, and some of the adverbs could reasonably be placed at the beginning or end of the sentence. As for subject-verb agreement, students overall performed much better for items with singular subjects (SVA-SING-LOC and SVA-SING-LD) than with plural ones (SVA-PLUR-LOC and SVA-PLUR-LD).

### 6.3 Group membership as a performance predictor

In order to control for individual differences and examine the sub-conditions in closer detail, data were fitted to multiple linear regression models to predict scaled scores for three conditions (V2, SVA singular, and SVA plural), with grade level, gender, an academic proficiency score (see below), and linguistic group as variables.

Grade level refers the students' placement in grade 5, 6 , or 7 . Gender was either male or female as reported by the school. The academic proficiency score was used as a measure of general academic achievement, as no language proficiency tests were conducted in this study. This variable is explained in greater detail below. Linguistic group was either L1 Norwegian, Multilingual, or English.

The academic proficiency score was based on the students' performance on the $5^{\text {th }}$ grade national tests. In Norway, national tests in reading, math, and English are carried out in public schools in grades 5 and 8 (the reading and math tests are in Norwegian). Because the participants in this study were in grades 5-7, all grades had completed the $5^{\text {th }}$ grade national tests. Unfortunately, the English test scores were unavailable for the participants in grade 5. Instead, a combined score was calculated for each student to be used as a measure of academic achievement, comprised of the mean of each student's scaled score on the reading and math tests. For example, participant 5037 had a scaled score of 74 on the reading test and 53 on the math test, so participant 5037's combined $5^{\text {th }}$ grade national test score was the mean of these three scores, or 63.5 . The 5th grade national test scores are scaled scores, since raw scores from year to year are not comparable due to differences in test difficulty from year to year. The average in the scale is 50 with a standard deviation of 10 , meaning that a score of 74 indicates a score that is 2.4 SDs above the national average, for example.
$5^{\text {th }}$ grade national test scores were not available for all 110 participants, so 6 participants were excluded from this portion of the analysis: 5 from the Multilingual group and 1 from the English group. The adjusted group totals for the linear regression are thus: L1 Norwegian ( $N$ $=78)$, Multilingual $(N=16)$, and English $(N=10)$.

A two-step hierarchical regression was employed. First a model was run with grade, gender, and combined $5^{\text {th }}$ grade national test score, followed by a model that also included linguistic group, which allowed for an estimation of the proportion of variance explained by linguistic group. A summary of the results for each category is provided below.

Table 5
Model Summary of Hierarchical Regression Analysis for Variables Predicting Performance on V2 Items

| Model | R | $\mathbf{R}^{2}$ | $\begin{aligned} & \hline \text { Adjusted } \\ & \mathbf{R}^{2} \end{aligned}$ | Std. <br> Error of the Estimate | Change Statistics |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | $\Delta \mathbf{R}^{2}$ | F <br> Change | df1 | df2 | Sig. F Change |
| 1 | ,580 ${ }^{\text {a }}$ | ,336 | ,309 | 3,96172 | ,336 | 12,520 | 4 | 99 | <,001 |
| 2 | ,670 ${ }^{\text {b }}$ | ,449 | ,414 | 3,64735 | ,113 | 9,901 | 2 | 97 | <,001 |

a. Predictors: (Constant), Grade 7, Academic Proficiency score, Female, Grade 6
b. Predictors: (Constant), Grade 7, Academic Proficiency score, Female, Grade 6, English group, Multilingual group

## Table 6

Coefficients for Variables Predicting Performance on V2 Items

| Model |  | Unstandardized Coefficients |  | Standardized Coefficients Beta | t | p-value |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | B | Std. Error |  |  |  |
| 1 | (Constant) | -2,698 | 2,782 |  | -,970 | ,335 |
|  | Academic Proficiency score | ,257 | ,050 | ,433 | 5,192 | <,001 |
|  | Female | -,107 | ,803 | -,011 | -,133 | ,895 |
|  | Grade 6 | ,713 | ,976 | ,067 | ,731 | ,467 |
|  | Grade 7 | 4,180 | ,919 | ,419 | 4,547 | <,001 |
| 2 | (Constant) | -4,606 | 2,598 |  | -1,773 | ,079 |
|  | Academic Proficiency score | ,277 | ,046 | ,465 | 6,038 | <,001 |
|  | Female | -,340 | ,741 | -,035 | -,460 | ,647 |
|  | Grade 6 | ,809 | ,901 | ,076 | ,897 | ,372 |
|  | Grade 7 | 4,376 | ,852 | ,439 | 5,135 | <,001 |
|  | Multilingual group | 3,377 | 1,011 | ,257 | 3,341 | ,001 |
|  | English group | 4,174 | 1,233 | ,259 | 3,385 | ,001 |

a. Dependent Variable: V2_COMBINED

For V2 score as a dependent variable, a significant regression equation was found for both the first model $(\mathrm{F}(4,99)=12.520, \mathrm{p}<.001)$ with an $\mathrm{R}^{2}$ of .309 , and the second model $(\mathrm{F}(6,97)=$ $13.148, \mathrm{p}<.001$ ) with an $\mathrm{R}^{2}$ of 414 (see Table 7). Academic proficiency score, membership in the Multilingual group, and membership in the English group added statistically significantly to the prediction, $\mathrm{p}<.01$. Model 2 showed that inclusion of the linguistic groups accounted for an additional $11.3 \%$ of variance after grade level, gender, and academic proficiency scores were accounted for.

Table 7
Model Summary of Hierarchical Regression Analysis for Variables Predicting Performance on SVA Singular Items

| Model | $\mathbf{R}$ | $\mathbf{R}^{\mathbf{2}}$ | Adjusted |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $\mathbf{R}^{\mathbf{2}}$ |  |  |  |

a. Predictors: (Constant), Grade 7, Academic Proficiency score, Female, Grade 6
b. Predictors: (Constant), Grade 7, Academic Proficiency score, Female, Grade 6, English group, Multilingual group

Table 8
Coefficients for Variables Predicting Performance on SVA Singular Items

| Model |  | Unstandardized Coefficients |  | Standardized Coefficients Beta | t | p-value |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | B | Std. Error |  |  |  |
| 1 | (Constant) | 2,977 | 1,887 |  | 1,578 | ,118 |
|  | Academic Proficiency score | ,072 | ,034 | ,199 | 2,156 | ,033 |
|  | Female | -,315 | ,544 | -,053 | -,578 | ,564 |
|  | Grade 6 | 1,454 | ,662 | ,224 | 2,197 | ,030 |
|  | Grade 7 | 2,573 | ,623 | ,421 | 4,128 | <,001 |
| 2 | (Constant) | 1,913 | 1,822 |  | 1,050 | ,296 |
|  | Academic Proficiency score | ,083 | ,032 | ,228 | 2,581 | ,011 |
|  | Female | -,438 | ,520 | -,074 | -,842 | ,402 |
|  | Grade 6 | 1,529 | ,632 | ,236 | 2,418 | ,017 |
|  | Grade 7 | 2,710 | ,598 | ,444 | 4,535 | <,001 |
|  | Multilingual group | 2,066 | ,709 | ,257 | 2,915 | ,004 |
|  | English group | 2,000 | ,865 | ,203 | 2,313 | ,023 |

a. Dependent Variable: SVA_SING_COMBINED

For SVA singular, a significant regression equation was found for both the first model $(\mathrm{F}(4,99)=5.687, \mathrm{p}<.001)$ with an $\mathrm{R}^{2}$ of .187 , and the second model $(\mathrm{F}(6,97)=6.210, \mathrm{p}<$ .01 ) with an $\mathrm{R}^{2}$ of .278 (see Table 11). This indicates that inclusion of the linguistic groups accounted for an additional $9.1 \%$ of variance after grade level, gender, and academic proficiency scores were accounted for. Academic proficiency score, grade level, membership in the Multilingual group, and membership in the English group all added statistically significantly to the prediction, $\mathrm{p}<.05$.

Table 9
Summary of Hierarchical Regression Analysis for Variables Predicting Performance on SVA Plural Items

| Model | $\mathbf{R}$ | $\mathbf{R}^{\mathbf{2}}$ | Adjusted |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $\mathbf{R}^{\mathbf{2}}$ |  |  |  |

a. Predictors: (Constant), Grade 7, Academic Proficiency score, Female, Grade 6
b. Predictors: (Constant), Grade 7, Academic Proficiency score, Female, Grade 6, English group, Multilingual group

Table 10

Coefficients for Variables Predicting Performance on SVA Plural Items

| Model |  | Unstandardized Coefficients |  | Standardized Coefficients Beta | t | p-value |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | B | Std. Error |  |  |  |
| 1 | (Constant) | 4,210 | 1,780 |  | 2,366 | ,020 |
|  | Academic Proficiency score | ,021 | ,032 | ,067 | ,669 | ,505 |
|  | Female | -,318 | , 513 | -,062 | -,619 | ,538 |
|  | Grade 6 | -,311 | ,624 | -,055 | -,498 | ,619 |
|  | Grade 7 | -,930 | ,588 | -,176 | -1,582 | ,117 |
| 2 | (Constant) | 4,691 | 1,781 |  | 2,634 | ,010 |
|  | Academic Proficiency score | ,017 | ,031 | ,055 | ,554 | ,581 |
|  | Female | -,284 | ,508 | -,055 | -,559 | ,578 |
|  | Grade 6 | -,408 | ,618 | -,073 | -,660 | ,511 |
|  | Grade 7 | -1,075 | ,584 | -,203 | -1,840 | ,069 |
|  | Multilingual group | -1,481 | ,693 | -,212 | -2,138 | ,035 |
|  | English group | ,069 | ,845 | ,008 | ,081 | ,935 |

a. Dependent Variable: SVA_PLUR_COMBINED

For SVA plural, neither model led to a significant regression equation, indicating that performance on the SVA plural items could not be predicted by any of the variables. The only significant predictor as seen in Table 12 was being in the Multilingual group, where group membership actually predicted a lower score on SVA plural items, $\mathrm{p}<.05$. The overall models were not significant, however. The implications of this will be discussed further in the following section.

## 7. Discussion and conclusion

Returning to the research question posed by this study, we can say that on average, the Multilingual group did not perform significantly differently than their L1 Norwegian peers on the test as a whole when the means for total score were compared by linguistic group. The absolute mean of the Multilingual group was nonetheless higher than that of the L1 Norwegian group, and the Multilingual group also did not differ significantly from the mean of the English group. Because the difference in means between the English group and the L1 Norwegian group was statistically significant, however, this indicates that the Multilingual group did trend toward slightly higher total scores than the L1 Norwegian group, despite the lack of statistical significance. The relatively small scale of the study (with only 21
participants in the Multilingual group and 11 in the English group) may have played a role in the lack of statistical significance.

However, a closer look at performance by grammatical condition indicated that being multilingual (and thus having exposure to other grammars) may be an advantage for learning specific grammatical properties of English. Membership in the Multilingual group or English group did significantly predict better performance for V2 and SVA singular items when grade level, gender, and academic achievement were controlled for. Performance on SVA plural items could not be predicted by linguistic group, however. Interestingly, grade level and academic proficiency were also not significant predictors for performance on SVA plural items, in contrast to the other conditions. The relative difficulty of each condition may play a role here, as Jensen et al. (2019) found that their L1 Norwegian/L2 English study participants seemed to develop a mastery of verb placement in English before subject-verb agreement, and subject- verb agreement with singular subjects developed slightly earlier than subjectverb agreement with plural subjects. For the slightly younger participants of the present study, subject-verb agreement with plural subjects may still be the least developed subcondition in their acquisition of English, and indeed they scored the lowest on SVA plural items out of all the sub-conditions. As for the lower scores on V2-ADV items compared to the other V2 conditions, the results seem to echo Westergaard (2003), who found higher rates of V2 transfer for constructions with adverbs compared to topicalization. Nonetheless the performance on the V2-ADV items with the word bank could be due to the test design itself, as noted in section 5.2.

Overall, the multilingual students who participated in this study performed on average at least as well as their L1 Norwegian peers on the test of verbal morphosyntax, which is an encouraging finding. While some advantages were found in the case of specific conditions tested, these were not seen for all conditions. This points to facilitative crosslinguistic influence on a structure by structure basis rather than a wholesale multilingual advantage, supporting results found in previous research such as Jensen et al. (2021), Lorenz and Siemund (2019) and Westergaard, Mitrofanova, Mykhaylyk, and Rodina (2017). For some of the sub-conditions tested in this study, the results are also in line with previous studies that have found multilingual students patterning with majority-language monolingual peers in the acquisition of grammar, such as in Hopp et al. (2018). In their conclusion, they suggested that the students' lack of instruction that included cross-linguistic comparisons of English with the L1 could play a role, since "they may have been unaware of grammatical correspondences between their L1 and English in that they did not notice cross-linguistic (dis-)similarities" (Hopp et al., 2018: 326). In other words, teaching that specifically builds multilingual awareness between students' L1s and the target language could have a facilitative effect on acquisition.

The same could be said for the students participating in this study, for they also did not receive any kind of systematic instruction that focused on cross-linguistic comparisons of grammar or language structure. There are experimental studies being carried out that do include such teaching, however, such as a more recent study by Hopp and Thoma (2021), which showed benefits for all students (not just multilingual students) in terms students' grammatical development after systematic plurilingual language teaching. Future research should continue to examine how more plurilingual language teaching that builds multilingual awareness can benefit students' grammatical development in a target language.

The linguistic heterogeneity amongst the multilingual students makes for a complex set of data, but that complexity reflects the lived reality of language teachers, both in Norway and elsewhere in the world. The results nonetheless echo some of the research conducted on more specific groups of speakers in which individual language combinations can more easily be compared, particularly L3 research that deals with heritage language speakers.

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${ }^{i}$ A note on the inclusion of German and Swedish-speaking students in the Multilingual group: Because these languages pattern with Norwegian in being V2 languages, and Swedish patterns with Norwegian in terms of subject-verb agreement, I considered removing these students from the relevant linear regression models. The total number of German speakers included in this study was 3 , and the total number of Swedish speakers was 2. One German speaker and one Swedish speaker were already excluded from the linear regression models due to unavailable $5^{\text {th }}$ grade national test scores. Re-running the regression models (without German or Swedish speakers for V2 items and without Swedish speakers for subject-verb agreement items) showed minimal differences, with no changes in which variables were significant predictors. The models presented in this study thus include the remaining German speakers $(n=2)$ and Swedish speaker $(n=1)$.

