

The development of English grammar and reading comprehension by majority and minority language children in a bilingual primary school

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Abstract

Both for the first language (L1) and for all additional languages (L2 or L3), grammatical knowledge plays a vital role in understanding texts (e.g., Grabe, 2005). However, little is known about the development and interaction of grammar and reading comprehension in beginning foreign language learning, especially with respect to children with a minority language background. This longitudinal study, therefore, examined minority and majority language children's English grammar and reading comprehension skills. The children attended a German-English partial immersion primary school and were tested at the end of Grades 3 and 4. As expected, we found grammar to affect reading comprehension but also reverse effects. Most importantly, the results did not reveal any differences between the two language groups, irrespective of the test. Therefore, immersion primary school programs seem to be suitable for minority language children, and these children do not automatically represent an at-risk group for foreign language learning.

Keywords: immersion; primary school; young learners; grammar; minority language

1. Introduction

Regardless of the language to be learnt, successful reading comprehension is dependent on the grammar the reader knows, that is grammar plays a very important role in understanding texts, both for the first language (L1) and for the other languages (L2 or L3)¹ acquired (e.g., Grabe, 2005, 2009; Jeon & Yamashita, 2014). However, little is currently known about how grammar and reading comprehension for English as a foreign language develop and interact in a bilingual primary school context, especially with respect to minority language children who often have a migration background. In Germany, individuals are usually regarded as immigrants if they (or at least one of their parents) migrated to Germany after 1949. In 2014, this was true for 35% of the children attending primary school (Autorengruppe Bildungsberichterstattung, 2016). There is often interdependence between minority group background, low socio-economic status, and linguistic and ethnic diversity (e.g., Bos & Pietsch, 2006; Chudaske, 2012; Hesse, Göbel, & Hartig, 2008; Schwippert, Wendt, & Tarelli, 2012) and this may affect foreign language learning in the classroom (e.g., Genesee & Fortune, 2014; Khodadady & Alaei, 2012).

As in many other countries, in Germany the number of schools offering bilingual programs is steadily increasing. There are currently almost 300 bilingual primary schools² corresponding to 2% of all (private or public) schools (FMKS . . . , 2014). Bilingual programs are particularly effective if 50% of the teaching time is used to teach content subjects entirely in the target language (e.g., Genesee, 1987, 2004; Pérez-Canado, 2012; Wesche, 2002; Wode, 1995). In such a (partial) immersion context, the students acquire skills in the school language (L1, often the students' first language, in this case German) as well as in the target language (here English).³ The umbrella term throughout Europe for the educational option of teaching content through another language is *Content and Language Integrated Learning* (CLIL), which refers to "all types of provision

¹ Following Hahn and Angelovska (2017), the terms L2 and L3 will be used according to the chronological onset of acquisition, that is the term *second language* (L2) refers to the first non-native language acquired by an individual, while *third language* (L3) relates to the second non-native language being learned.

² In Germany, primary schools generally start at the age of 6. After four years (i.e., after Grade 4), children leave for secondary school (which generally consists of Haupt- and Realschule, offering a six-year middle-school degree, and Gymnasium or Gesamtschule offering high-school diplomas that provide access to tertiary education).

³ In German primary schools children usually learn to read and write in German first. Reading and writing skills in English as a foreign language are acquired incidentally. An approach for systematic English literacy instruction for EFL teaching has not yet been developed (e.g., Burwitz, 2010).

in which a second language (a foreign, regional or minority language and/or another official state language) is used to teach certain subjects in the curriculum other than the language lessons themselves" (Eurydice, 2006). Since it is a legal requirement to teach the subject German language arts in German (Kultusministerkonferenz, 2013), public schools in Germany are only allowed to offer partial immersion programs, that is, a maximum of 70-80% of the teaching time may be conducted in the foreign language (FL). Minority and majority language children's development of grammar and reading comprehension in English as a foreign language constitute the focus of the present study. The children attended a bilingual German-English primary school offering a partial immersion program from Grade 1 to 4, with English being used in all subjects, except for German language arts, mathematics and religious studies, which corresponds to 50% of the teaching time. The L1 of the majority language children was German; for the minority children, German was their L2. English as a target language was, therefore, the majority language children's L2 and the minority language children's L3.

2. The acquisition of foreign language grammar

Competences in many different areas have to develop when a foreign language is learned, such as phonetic, phonological, lexical, morphological, syntactic, discourse-pragmatic as well as sociolinguistic skills. Although the learner's primary concern in the earliest stages of L2 acquisition may be the acquisition of the lexicon (Singleton, 2009), mastering the grammatical principles of the L2 is, of course, also essential for efficient communication in the language (Ellis, 2008).

As learning a new language entails the development of both receptive and productive language skills, a large body of research has been devoted to this relationship in grammar acquisition because, for early L1, it has repeatedly been claimed that comprehension⁴ leads to production (although this asymmetry does not necessarily seem to apply to all areas, e.g., Szagun, 2006). However, once L1 has been acquired, it is assumed that a person who is able to produce a grammar structure is also able to comprehend it, and vice versa (Hendriks, de Hoop, & Lamers, 2005; Hendriks & Koster, 2010). A similar comprehension/production asymmetry in early L2 acquisition has been proposed for a long time (e.g., Tasseva-Kurktchieva, 2008; Unsworth, 2007). The development of receptive L2 grammar knowledge, by contrast, is an area several researchers have declared an unexplored territory in SLA research (e.g., Ellis, 2008), possibly because the product of receptive language knowledge is much less accessible than

⁴ Following Buyl and Housen (2015), the terms *receptive grammar*, *grammatical comprehension* and *comprehension of grammar* will be used interchangeably.

productive knowledge (e.g., Peyer, Kaiser, & Berthele, 2006). An abundance of studies is concerned with productive L2 grammar acquisition, in particular with its systematicity, as shown by morpheme order studies (see e.g., Kwon, 2005, for a review) or by studies conducted in the field of *processability theory* (PT), a psycholinguistic theory of L2 grammar acquisition which explicitly predicts the order in which L2 learners learn to process different morphosyntactic phenomena (e.g., Pienemann, 2005).⁵ Within PT, it is tacitly assumed that the route of comprehending grammatical structures is identical (or at least similar) to the route found for the production of such structures, which means that the same developmental patterns are assumed for grammar comprehension and production (see e.g., Larsen-Freeman, 2002). L2 receptive grammar development was examined within the framework of the *Early Language and Intercultural Acquisition Project* (ELIAS), a project which focused on immersion education in bilingual preschools in four European countries (comprising Belgium, Germany, Great Britain and Sweden; see Kersten, Rohde, Schelletter, & Steinlen, 2010a). In this context, the ELIAS Grammar Test 1 (EGT-1; Kersten, Piske, Rohde, Steinlen, Weitz, & Kurth 2010b), a picture selection task, was administered with the aim to assess preschoolers' development of their grammar comprehension of English. The EGT-1 was administered to a total of 148 preschoolers (age 3-6), 39 of whom had a migration background and spoke languages other than the majority language at home (e.g., Arabic, Turkish, Greek, Urdu, to name just a few). The results of this study showed that increased L2 contact duration and L2 input intensity correlated with L2 grammar comprehension. In addition, no effects of gender were noted (Steinlen, Håkansson, Housen, & Schelletter, 2010). A surprising finding was that minority language children (for whom English was usually the L3) performed as well as their majority language peers in the EGT-1, that is, language background did not exert an influence on foreign language grammar comprehension. In a more detailed analysis of this population, Steinlen (2013) suggested that these results may have been due to the fact that the foreign language is used as a medium of communication in an immersion setting, and that such an approach seems to be particularly beneficial for immigrant children. Finally, relating to the question whether L2 grammar comprehension and production follow the same developmental patterns, Steinlen et al. (2010) found that some English grammatical phenomena (such as plural -s or genitive -'s, assumed

⁵ PT offers an account of the stages learners go through in learning to process L2 morphosyntactic structures. More specifically, it predicts a basic developmental chronology, or "processability hierarchy", that consists of five hierarchically ranked developmental stages. While the processing mechanisms in the processability hierarchy are claimed to be universal, the resulting developmental schedules (i.e., which grammatical structures arise at each stage) are language-specific.

to be acquired at Stage 2 of the PT hierarchy) were indeed identified considerably better than other phenomena (such as third-person singular *-s*, Stage 5 of the PT hierarchy), although implicational scaling computations have not been carried out. In a more recent study, Buyl and Housen (2015) examined whether L2 receptive grammar follows a systematic and continuous development. 72 francophone beginning child L2 learners who acquired English in a bilingual primary school in Belgium (aged 6-9) were tested. The learners' ability to process six morphosyntactic phenomena was tested by means of the EGT-1. Buyl and Housen's (2015) results showed that the developmental orders obtained through implicational scaling for the six target phenomena agreed with PT's predictions, namely, the English grammatical phenomena negation, genitive *'s*, canonical word order and plural *-s* (which do not require any exchange of grammatical information and are predicted to be processable from Stage 2 of the PT hierarchy onwards) were receptively acquired before cases of third person singular *-s* (which do require an exchange of grammatical information and belong to Stage 5 of the PT hierarchy). Based on these findings, Buyl and Housen (2015) assume similar mechanisms underlying the acquisition of receptive and productive L2 grammar processing skills. Comparing the development of different English and German competences by minority and majority language children attending a bilingual primary school, Steinlen and Piske (2013) employed the EGT-2 (a revised version of the EGT-1 for older learners, see Kersten, Piske, Rohde, Steinlen, Weitz, & Kurth, 2012) in their small cross-sectional study with 20-25 children per grade. Controlling for cognitive and socio-economic background, Steinlen and Piske (2013) did not find any significant differences between minority and majority language children with respect to their scores in the EGT-2, independent of the grade, paralleling findings obtained in the preschool context. In order to better understand the relationship between L2 reading and grammar comprehension, the next section is devoted to the reading process and L2 studies conducted within the primary school context.

3. Development of foreign language reading comprehension

Reading is generally defined as the ability to "understand, use, reflect on and engage with written texts to achieve their own goals, to develop their own knowledge and potential, and to participate in social life" (OECD, 2009, p. 23). Reading skills depend, *inter alia*, on the reading speed and thus to a large extent on the short-term storage capacity of the reading person. Further determinants are background knowledge, lexical access, the presence of vocabulary and grammar, (reading) motivation and positive attitudes towards reading, as well as knowledge of textual features, reading strategies, and cognitive basic skills (e.g., OECD, 2009).

There are differences between the acquisition of reading skills in an L2 and an L1 because, unlike L1 reading, L2 reading involves two languages. This implies continuous interactions between the two languages and constant adjustments to accommodate the different demands of each language. For this reason, L2 reading is cross-linguistic and inherently more complex than L1 reading (see e.g., Koda, 2007). The following determinants for successful L2 reading skills have been identified: L1 reading skills (see above) and L2 language skills, such as L2 grammar and vocabulary knowledge, and the degree of automatization of L2 word recognition (see Frisch, 2013, for a review). L2 reading comprehension in bilingual schools has been assessed in many studies, in particular in Canada. In general, the results showed that children in immersion programs performed significantly better in L2 reading tests than comparable peers in mainstream foreign language programs and that they may even achieve scores similar to native monolingual children (see e.g., Genesee & Jared, 2008 for Canada, and Zaunbauer, Gebauer, & Möller, 2012 for Germany). In sum, the results of these studies clearly indicate the benefits of bilingual (immersion) programs for the development of L2 literacy skills. In Germany, only one study has focused on minority language children's development of foreign language reading skills in mainstream English programs, offering two lessons per week (Keßler & Paulick, 2010). In these tests, the minority language children performed worse than their majority language peers at the end of Grade 4. However, this discrepancy seems to disappear in later years, as large-scale studies conducted with ninth graders showed (e.g., Hesse, Göbel, & Hartig, 2008; Köller, Knigge, & Tesch, 2010; Rauch Rauch, Jurecka, & Hesse 2010; but see Van Gelderen, Schoonen, de Gloppe, Hulstijn, Snellings, & Simis, 2004 for different results from the Netherlands). With respect to bilingual school programs, the few studies examining the foreign language reading comprehension skills of minority language children did not report any differences between minority and majority language students (see Genesee & Jared, 2008, for a review). For the German context, Steinlen (2016) compared minority and majority language children in a bilingual primary school. The performance of both groups did not significantly differ in English reading tests in Grades 3 and 4, which suggests, among other things, that the phonological and orthographical similarity between many German and English words (the minority language children's L2 and L3) may have positively affected the outcomes of the English reading tests.

4. The impact of L2 grammar on L2 reading comprehension

Although grammar knowledge is a well-acknowledged component of reading comprehension in L1 and in L2 research (e.g., Bernhardt, 2000; Grabe, 2009; Jeon

& Yamashita, 2014; Van Gelderen et al., 2004), its role in reading comprehension is not a common topic in second language reading research. As an instructional issue, the separation of grammar and reading may be due to the relative non-emphasis on grammar in communicative methods and in language-arts instruction, especially at the beginning level in early foreign language teaching (Grabe, 2009).

As yet the role of L2 grammar in L2 reading comprehension is not well understood. For example, some authors have claimed that fluent L2 readers do not make extensive use of grammar knowledge once they progress to a certain point, when top-down schema knowledge, inferencing, and contextual knowledge play then more important roles in comprehension (e.g., Bernhardt, 2000; Celce-Murcia & Olshtain, 2000). Other authors (particularly Grabe, 2005, 2009) argue in favor of a strong relation between grammar and reading in L2 acquisition, because, in their opinion, grammar knowledge, along with the associated processes of syntactic parsing, is a major foundation of fluent L2 reading, even at very advanced levels of L2 comprehension (see also Alderson, 1993; Van Gelderen et al., 2004). In a meta-analysis of L2 reading comprehension and its correlates, Jeon and Yamashita (2014) came to the conclusion that L2 grammar knowledge was indeed one of the three strongest correlates of L2 reading comprehension (apart from L2 vocabulary and L2 word decoding). Several explanations have been put forward to account for the discrepancies relating to the role of grammar in L2 reading comprehension (e.g., Akbari, 2014). First, as there is an overlap between the knowledge of grammar and vocabulary, it is difficult to isolate the contribution made by grammar from that of vocabulary. Secondly, different test formats measure different aspects of language ability. In reading comprehension studies, grammar knowledge has been tested in various task types, ranging from form-focused discrete-point grammar tests (e.g., Gascoigne, 2005) to gap activities (e.g., López, 2008). Thirdly, the formats of L2 reading comprehension tests have not been equivalent, ranging from cloze tests of texts to assessments comprising the word-, sentence and text level (see Steinlen, 2016). A small body of studies has examined the reversed relationship between L2 grammar and reading, that is, how L2 reading affects L2 grammar knowledge. In a study with English-speaking university students learning Spanish, Rodrigo, Krashen, and Gribbons (2004) showed that L2 reading activities had positive effects on L2 grammar. Specifically, L2 extensive reading (i.e., reading a large amount of text at a relatively faster speed with the focus on meaning, not language) combined with discussions in the L2 seems to affect L2 grammar knowledge more positively than extensive L2 reading only (see also Lee, Schaller, & Kim, 2015). Thus, better L2 grammar performance facilitates L2 reading comprehension, and more L2 reading activities in the classroom result in better L2 grammar performance in tests. However, as these studies have only been conducted

with older L2 learners, there is a need to examine beginning L2 learners (in primary school) and learners for whom the target language is the L3 to better understand the relationship between grammar and reading in foreign language learning.

5. Research questions

As mentioned above, there is a lack of systematic investigations of the relationship between foreign language (FL) grammar and FL reading comprehension in bilingual primary schools. The following questions are, therefore, addressed in the present study:

1. How do English grammar and reading comprehension skills develop in a bilingual primary school within one year, that is, from Grade 3 to Grade 4?
2. Will majority and minority language children perform differently in the two tests as English is the L2 for majority language children and the L3 for their minority language peers?
3. Is there an influence of FL grammar comprehension on FL reading comprehension and vice versa?

6. Method

6.1. Participants and procedure

The data presented in this paper were collected in a public district primary school in Germany. The school offers both a musical and a partial German-English immersion program, with one cohort per year. In the partial immersion program, all subjects except for German language arts, religion, and mathematics are taught in English from the first day of Grade 1 onwards. The immersion students are thus exposed to both English and German for about 50% of the teaching time. In the subject lessons taught in English, the students usually receive their instruction from native speakers of German, who studied English in order to become English teachers. These teachers speak English exclusively in the classroom although technical terms are always introduced in both English and German (see Tamm, 2010).

As in other German primary schools, the children receive initial literacy instruction in German first, from Grade 1 onwards. Reading and writing skills in English are acquired incidentally and, according to the teachers, are not taught systematically. However, the English writing system is present from the start. In the middle of Grade 1, students start to read and write single English words. Different literacy activities focusing on the content of the respective subjects being taught in English are carried out from Grade 2 onwards (e.g., silent reading, reading aloud

in groups and in class, reading comprehension checks on texts, etc.). Students start to write longer English texts from Grade 3 onwards, but there is no specific focus on spelling errors. According to informal interviews, the teachers were insecure in the initial stages of the immersion program as to whether they should focus on grammar in the immersion classes at all. Theoretical findings such as those obtained by studies carried out in the context of *processability theory* (e.g., Piennemann, 2005) and reports from other immersion schools caused the teachers to deal with grammar very reluctantly, which was at that time hardly ever addressed in an explicit manner in class. However, experience soon showed that children in Grades 3 and 4 in particular asked for explanations of specific structures and also expected concrete answers. The teachers also felt that activities geared at specific grammatical phenomena seemed to help the children to internalize the structure in question. This is why certain grammatical aspects are now included in the school curriculum, including, for example, possessive pronouns, third-person singular -s, present continuous, past tense, and negation. However, the topics are always embedded in the context of teaching a particular subject in the foreign language, and offered either at the children's request, or because the teacher notices that without addressing a specific grammatical problem there would be a risk of fossilization (i.e., the incorrect language becomes a habit and cannot easily be corrected, e.g., Ellis, 2008). In this study, the data of four cohorts have been used, corresponding to 88 children (45 girls and 43 boys),⁶ all of whom had attended the IM-program since Grade 1. More than half of them (52%) had a minority language background. Such a background was attested when one or both parents were born abroad (see also Bos & Pietsch, 2006; Chudaske, 2012; Dollmann, 2010; Schwippert et al., 2012) and, most importantly, when a language other than German was spoken at home. The minority language children were all born in Germany, and none of them only spoke German or did not speak any German at all at home. The parents' questionnaire did not provide information concerning the use of the family language and the use of German before the children entered school. It is, therefore, not clear whether German is the children's L1 or L2. In informal interviews, however, most parents stated that the family language was their children's L1, with German being acquired in preschool (at age 3) at the latest. The target language (English) is, therefore, the children's L3. The family languages included Arabic, French, Greek, Kiswaheli, Kurdish, Persian, Russian, Serbo-Croatian, Spanish, and Turkish.⁷ The parents did not report any hearing problems

⁶ There were 21 girls and 26 boys in the majority language group and 30 girls and 22 boys in the minority language group.

⁷ Only the children with a Turkish background received Turkish lessons in school (one hour per week since Grade 1); the other minority language children were not instructed in their respective family languages.

of their children. The children were tested at two points in time (T1 and T2), with one year in between T1 and T2. In Grade 4 (T2), they were 10.2 years on average ($SD = 5.4$ months, $range = 112-144$ months). Accordingly, the children were twelve months younger in Grade 3 (T1). The data from the four cohorts in Grade 3 and Grade 4 were collapsed.⁸ The number of participants per test varied, for example, due to sickness or other school-related activities, because the tests were carried out on different days. The measures were taken approximately six weeks before the end of the school year.

6.2. Measures

The *ELIAS Grammar Test 2* (EGT-2; Kersten et al., 2012), which was originally developed for bilingual preschools (see Steinlen et al., 2010), was adapted for the primary school context and included passive sentences and relative clauses in addition to the previously used sets word order, singular versus plural nouns, singular versus plural verbs, object pronouns masculine versus feminine, subject pronoun masculine versus feminine, negation, possessive pronouns and masculine versus feminine. The EGT-2 was conducted as a group test. The children heard a sentence or a phrase and had to match it with one of three images. Two of the images contrasted in one grammatical dimension, while the third image served as a distractor. In total there were 36 prompts. As the EGT-2 is not a standardized test, reliability and validity data are not available. The Australian *Test of Reading Comprehension* (TORCH; Mossenson, Stephanou, Forster, & Masters, 2003) is a modified cloze test. The students first read an English passage about grasshoppers and then filled in the blanks of another text about the same topic to demonstrate their comprehension. The total number of blanks was 19, and 30-40 minutes were allowed for the test. Spelling did not matter. This particular test on grasshoppers was originally designed for monolingual English-speaking children in Grade 3. The reliability coefficient was reported to be between .90 and .93, dependent on the text used, suggesting a strong degree of internal consistency. Validity data are not available.

6.3. Control variables

Due to the fact that test scores relating to linguistic or academic achievement may be affected by cognitive variables (e.g., Bleakley, & Chin, 2004; Chudaske,

⁸ For Grade 3, univariate ANOVAs did not reveal any significant differences among children in the four cohorts with respect to their age ($F(3,84) = 1.154, p > .05$) or with respect to their cognitive abilities (CPM: $F(3,73) = 0.367, p > .05$).

2012), these have to be taken into account as control variables. We used the CPM (*Coloured Progressive Matrices*; Raven, Bulheller & Häcker, 2002) in Grade 3 to measure general non-verbal intelligence. Using one of six possible alternatives, the children's task was to complete an incomplete geometrical pattern. The test consists of 36 items, which are presented in three sets of 12, in increasing order of difficulty within each set. 20 to 30 minutes are allocated for the test. The publishers reported the internal consistencies to lie between $r = .80$ and $r = .90$, and the CPM to be a good indicator for Spearman's g -factor, which also yielded satisfying correlations with school performance tests (Bulheller & Häcker, 2010).

6.4. Parent questionnaire

In addition to the child's age and his or her country of birth, the parents provided information about the language/s used at home and their educational background, with 0 corresponding to no school certificate and 6 to a university entrance certificate (following Zaunbauer et al., 2012). The parents also assessed their relative wealth compared to other families on a five-point scale, ranging from 1 (not wealthy at all) to 5 (very wealthy). Moreover, preschool reading activities at home (e.g., Dickinson, Griffith, Golinkoff, & Hirsh-Pasek, 2012) and parental supervision of the child's homework (e.g., Fan & Chen, 2001) were asked for and rated on a four-point scale (1 = *never*, 4 = *very often*). The parental questionnaire was answered by 73 persons, that is, there were 15 missing questionnaires regarding the tested children (8 minority language and 7 majority language children; see Table 1 for further information).

7. Results

Using ANOVAs, linear regression analyses, and repeated measure ANOVAs, statistical analyses were computed with the SPSS 23 version (2014). The data were not cleaned for outliers and the missing data were not imputed. In all the analyses, it was seen that the assumptions of homogeneity of variance and sphericity were met. In the following, results are reported in raw scores.

7.1. Family variables

The family variables were taken from the 73 parent questionnaires, corresponding to a response rate of 83% (generally, 75%-80% are considered acceptable, e.g., Draugalis, Coons, & Plaza, 2008). According to the teachers, non-responses were usually due to skepticism about surveys in general and/or parental time constraints, which may also account for the fact that not all questions were answered by all respondents.

As a first step, minority and majority language children were compared with regard to their family background (parents' self-estimated wealth, parental educational background) and family activities, such as supervision of homework and preschool reading activities, using one-way ANOVAs (Table 1). Any group differences may affect outcomes of the English tests (e.g., Genesee & Fortune, 2014; Khodadady & Alaei, 2012).

Table 1 One-way ANOVAs of language background by family background

	Max. points	Maj. lang. (<i>N</i> = 35-38) <i>M</i> (<i>SD</i>)	Min. lang. (<i>N</i> = 30-35) <i>M</i> (<i>SD</i>)	Comparison (<i>F</i> -test)
Family's self-assessed wealth	5	3.43 (0.73)	3.13 (0.86)	$F(1, 63) = 2.216$, $p = .142$
Mother's educational background	6	5.61 (0.87)	5.34 (1.05)	$F(1, 67) = 1.136$, $p = .290$
Parents read book to preschooler	4	3.43 (0.73)	3.20 (0.80)	$F(1, 70) = 1.672$, $p = .200$
Child reads alone	4	2.92 (0.94)	2.94 (0.95)	$F(1, 66) = 0.008$, $p = .928$
Parents supervise homework	4	3.03 (0.94)	3.21 (0.85)	$F(1, 70) = 3.792$, $p = .055$

As shown in Table 1, none the comparisons reached a conventional significance level ($p < .05$). The parents considered their background in between average and slightly above average in terms of wealth, and they greatly supported their child, as shown in the high values obtained for preschool reading activities and homework supervision. Therefore, the parents of the present study may be described as middle-class, concerned about their child's educational welfare, highly educated (i.e., Hochschul- or Fachhochschulreife, corresponding to a university entrance certificate), indicating a high educational background, independent of their migration and/or their language background.

7.2. Test for cognitive differences

Next we tested whether the cognitive development of the children, as operationalized by the CPM conducted in Grade 3, was age-appropriate by comparing the children's data with norm values using a one-way ANOVA (Table 2). We did not note any significant differences between minority and majority language children. All children showed norm-adequate performance (30-32/36 points were reported as norm values for this age group, Bulheller & Häcker, 2010).

Table 2 One-way ANOVAs of language background by CPM scores

	Max. points	Maj. lang. (N = 39) M (SD)	Min. lang. (N = 38) M (SD)	Comparison (F-test)
CPM Grade 3	36	31.4 (4.5)	30.0 (4.4)	F(1, 73) = 2.052, p = .156

7.3. Grammar and reading comprehension tests

Table 3 presents the results of the English grammar and reading tests conducted in Grades 3 and 4 for minority and majority language children separately, including the results of one-way ANOVAs.

Table 3 One-way ANOVAs of language background by grammar and reading test scores

Measure	Max. points	Norm values	Majority language background M (SD) [N]	Minority language background M (SD) [N]	Comparison (F-test)
English grammar Grade 3	36	n.a.	22.7 (5.4) [N = 39]	25.5 (5.0) [N = 40]	F(1, 77) = 5.804, p = .018*
English grammar Grade 4	36	n.a.	26.3 (5.0) [N = 38]	27.8 (5.4) [N = 42]	F(1, 78) = 1.842, p = .179
English reading Grade 3	19	12-14 (3rd graders)	7.5 (5.2) [N = 39]	7.4 (5.1) [N = 42]	F(1, 79) = 0.005, p = .942
English reading Grade 4	19	12-14 (3rd graders)	10.2 (5.6) [N = 40]	12.2 (5.4) [N = 39]	F(1, 77) = 2.612, p = .110

Note. n.a. = non-available

As shown in Table 3, no significant differences were noted for the comprehension tests contrasting the performance of minority versus majority language children, except for the EGT-2 conducted in Grade 3 where minority language children outperformed their majority language peers. Comparing the average values of all children in the partial immersion program with their monolingual English peers from Australia, our partial immersion group obtained lower scores in the reading comprehension test TORCH in Grades 3 and 4 (Mossenson et al., 2003), falling within the normal monolingual speaker range of third graders (12 points) in Grade 4, that is, lagging one year behind. For the EGT-2, norm values are not available; however, on average the children identified 75% of the prompts correctly. Descriptive analyses showed that such phenomena as word order, singular versus plural nouns, subject pronoun masculine versus feminine, negation and relative clauses were identified better (>85%) than passive sentences, singular versus plural verbs, object and possessive pronouns masculine versus feminine (<75%). In a future study, the implications of these asymmetries in foreign language grammar comprehension in relation to PT will be explored

in more detail (Steinlen & Piske, 2017). In order to examine the children's progress from Grade 3 to 4, majority and minority language children were grouped together, using paired *t*-test analyses. The results are presented in Table 4 which shows significant differences between Grade 3 and Grade 4, indicating progress in English grammar and reading skills within one year.

Table 4 Paired *t*-test analyses for reading and grammar test scores from Grade 3 to Grade 4

Measure	Time
English grammar Grade 3 to 4	$F(69) = -6.776,$ $p = .000$
English reading Grade 3 to 4	$F(70) = -7.139,$ $p = .000$

It is noted in many studies (e.g., Alderson, 1993) that there may be inter-correlations between L2 grammar and L2 reading at the same time. Table 5 presents the results of this analysis.

Table 5 Intercorrelations for two comprehension tests in Grade 3 and in Grade 4. All significant correlations ($p < .05$) are indicated by an asterisk (*)

English test Grade 3	
English grammar comprehension (EGT-2)	
English reading comprehension (TORCH)	.575*
English test Grade 4	
English grammar comprehension (EGT-2)	
English reading comprehension (TORCH)	.598*

Analyses indeed revealed significant correlations between English grammar and reading, both for Grade 3 and for Grade 4, which indicates that the better the results of the L2 reading test were, the better were the results of the L2 grammar test and vice versa. This result indicates that grammar plays an important role in reading, but that grammar is also positively affected by reading skills, although the route of causal effects, unfortunately, cannot be discerned by such an analysis. Finally, multiple linear regression analyses were computed (Table 6) to test whether reading comprehension at the end of Grade 4 can be predicted by the children's language background, their non-verbal intelligence, their scores obtained in the same reading test in Grade 3, and most importantly, by their grammar comprehension in Grade 3 and vice versa.

Table 6 Linear regression predicting English grammar and reading at the end of Grade 4

Dependent variable and predictors	Beta	R ² corrected
English reading Grade 4 [N = 59]		
Language background	.116, <i>p</i> = .210	
CPM	.140, <i>p</i> = .111	
English reading Grade 3	.642, <i>p</i> = .000*	
English grammar Grade 3	.136, <i>p</i> = .207	.585, <i>p</i> = .000
English grammar Grade 4 [N = 60]		
Language background	-.099, <i>p</i> = .279	
CPM	.093, <i>p</i> = .284	
English grammar Grade 3	.684, <i>p</i> = .000*	
English reading Grade 3	.141, <i>p</i> = .198	.582, <i>p</i> = .000

Table 6 shows that the children’s language background did not exert any influence on their English grammar and reading comprehension skills (all *beta*’s were not significant), and the same applies to the cognitive variable CPM. English grammar in Grade 4 was only significantly predicted by the same English grammar test at Grade 3, which accounted for 58% of variance. The same result was found for English reading that was only predicted by English reading the year before, which again accounted for 58% of variance. Parts of the non-significant findings may be due to the small sample size or due to the outliers which were not excluded from the analysis.

8. Discussion

In this study the development of English grammar and English reading comprehension was examined with respect to minority and majority language children attending a partial immersion program in a primary school.

8.1. Grammar and reading

With respect to the development in the target language, all children, unsurprisingly, showed progress from Grade 3 to Grade 4, irrespective of the English test. The positive impact of time has been noted in most longitudinal studies (see e.g., Buyl & Housen, 2015; Steinlen et al., 2010 for L2 grammar; Steinlen, 2016; Steinlen & Piske, 2016 for L2 reading). English reading comprehension skills, in particular, showed more gains (33%) than grammar (13%). Informal interviews with teachers indicated that considerably more reading comprehension activities were carried out in Grade 4 than in Grade 3, whereas any focus on grammar comprehension activities or explicit grammar instruction was on an on-demand

basis, which, according to interviews with teachers, occurred more often in Grades 4 than in Grade 3.

In addition, we found an interrelation between the English tests on grammar and reading (for each grade). The impact of L2 grammar on L2 reading has been reported in many studies (e.g., Grabe 2005, 2009; Jeon & Yamashita, 2014; Morvay, 2012; Shiotsu & Weir, 2007; Van Gelderen et al., 2004), indicating that, apart from L2 vocabulary and decoding, L2 grammar knowledge is one of the strongest correlates of L2 reading comprehension. Thus, the better the grammar is, the better the reading skills will be. However, the role of L2 reading for L2 grammar development is less well understood. In this study we also noted significant correlation values in both directions, in that L2 reading seemed to have a positive effect on L2 grammar as well. As informal interviews with teachers indicated, from Grade 3 onwards (and in Grade 4 particularly), children are more and more encouraged to read English books on their own, starting with picture books and moving to more complex story books. All classes have their own English library, and children are allowed to take home books *ad libidum*. As the small body of studies showed (e.g., Lee et al., 2015; Rodrigo et al., 2004), L2 extensive reading seems to positively affect L2 grammar knowledge, although we cannot infer which children of our sample actually engaged in such activities.

As regression analyses showed, such relationships between L2 grammar and L2 reading were not found across grades and across test formats, though. That is, English grammar in Grade 4 was not predicted by English reading in Grade 3 and vice versa. The only significant predictors for L2 test scores in Grade 4 turned out to be the same test format a year earlier, that is, English grammar in Grade 4 was well predicted by English grammar in Grade 3, accounting for 58% of variance (the same applies to L2 reading). Finally, in this study non-verbal intelligence predicted neither L2 reading nor L2 grammar in Grade 4, confirming an earlier finding on L2 grammar (French & O'Brien, 2008, but see Morvay, 2012, for a different result on L2 reading).

8.2. Minority language children

The most important result of this study relates to minority language children and their achievement in English grammar and reading tests. A growing body of recent studies has reported that in partial immersion programs, minority language children performed as well as their majority language peers in different kinds of English tests (e.g., Steinlen & Piske, 2013, 2016; Steinlen, 2016). The same finding was obtained for this sample. Language background did not exert any influence on English grammar and reading comprehension at the end of Grade 4. Likewise, no significant differences between these two groups were

found regarding their performance in Grade 3, except for the grammar test, where minority language children even outperformed majority language children. Similar results have been reported in recent studies dealing with regular foreign language teaching programs where English is taught as a subject for two hours a week. For example, Hopp, Kieseier, Vogelbacher, and Thoma (2017) examined 200 minority and majority language children at the end of Grade 3 with a computer-based sentence repetition task assessing English grammatical structures such as SVO and verb raising. They did not find any significant differences between minority and majority language children, especially when language background was controlled for social and cognitive variables. Similar results were reported by Wilden and Porsch (2016) who conducted a study with over 3,000 students in Grade 5, of whom around 36% reported using a language other than German at home. In sum, a multilingual background per se does not necessarily lead to underachievement in learning a foreign language, as other studies have suggested (e.g., Elsner, 2007; May, 2006).

8.3. Implications for grammar instruction

In general, studies addressing the relationship between grammar and reading comprehension have been conducted with older foreign language learners, disregarding beginning L2 learners (in primary school). Grabe (2009) argued that in addition to word recognition, a simple foundational knowledge of L2 grammar is indeed essential for beginning L2 readers because much basic textual information is conveyed through grammatical information. In his view, some amount of early grammar instruction is therefore indispensable for L2 reading development because what beginning L2 readers need is the “glue” that holds sentences and texts together and which specifies how the content is to be understood. While there are multiple ways to teach grammar, recognition and awareness of grammatical structures seem to be the keys to reading comprehension (see also Angelovska & Hahn, 2014; Hahn & Angelovska, 2017).

In the primary school classroom, the minority language children’s family languages could also be used as a resource in foreign language teaching. This relates to tasks activating metalinguistic awareness (see Hopp et al., 2017). In interviews minority and majority language third graders were asked to comment on different grammatical structures as they are evident in German and English sentences. Minority language children sometimes also referred to their family language to account for structural differences, which indicates that they were able to exploit an additional resource, which hardly receives any attention in foreign language teaching (see Angelovska & Hahn, 2014, for similar results for adults).

9. Conclusion

In sum, this longitudinal study examined the development of English grammar and reading comprehension by minority and majority language children attending a bilingual primary school. No significant differences between these two groups were found in Grade 4, adding to a growing body of evidence showing that a minority language background per se does not constitute a risk factor for learning a new language in school. Likewise, no significant differences between these two groups were found regarding their performance in Grade 3, except for the grammar test, where minority language children even outperformed majority language children. In particular, a bilingual (i.e., partial immersion) context seems to be particularly beneficial for minority language children because the language of instruction is made very comprehensible and it therefore does not only promote the target language but also the children's majority language skills. However, in such a context, too, teachers should address grammatical aspects when carrying out reading activities, because the results reported here have shown once again that grammar and reading skills are intimately linked in the acquisition of the target language.

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References

- Akbari, Z. (2014). The role of grammar in second language reading comprehension: Iranian ESP context. *Procedia - Social and Behavioral Sciences*, 98, 122-126.
- Alderson, C. (1993). The relationship between grammar and reading in English for academic purposes test battery. In D. Douglas & C. Chapelle (Eds.), *A new decade of language testing research: Selected papers from the 1990 Language Testing Research Colloquium* (pp. 213-219). Alexandria, VA: TESOL.
- Angelovska, T., & Hahn, A. (2014). Raising language awareness for learning and teaching L3 grammar. In A. Benati, C. Laval, & M. Arche (Eds.), *The grammar dimension in instructed second language learning* (pp. 185-207). London: Bloomsbury.
- Autorengruppe Bildungsberichterstattung (2016). *Bildung in Deutschland. 2015*. Bielefeld: Bertelsmann.
- Bernhardt, E. B. (2000). Second-language reading as a case study of reading scholarship in the 20th century. In M. L. Kamil, P. D. Pearson, & R. Barr (Eds.), *Handbook of reading research* (Vol. III, pp. 791-811). New Jersey: Lawrence Erlbaum.
- Bleakley, H., & Chin, A. (2004). Language skills and earnings: Evidence from childhood immigrants. *Review of Economics and Statistics*, 86, 481-496.
- Bos, W., & Pietsch, M. (2006). *Kess 4: Kompetenzen und Einstellungen von Schülerinnen und Schülern am Ende der Jahrgangsstufe 4 in Hamburger Grundschulen*. Münster: Waxmann.
- Bulheller, S., & Häcker, H. (2010). *Coloured Progressive Matrices mit der Parallelform des Tests und der Puzzle-Form. Manual zu Raven's Progressive Matrices und Vocabulary Scales von J.C. Raven, J. Raven und J. H. Court*. Frankfurt: Pearson.
- Burwitz, M. (2010). Lesen und Schreiben im Englischunterricht der Primarschule und des Übergangs (Klasse 3 bis 6). In J. Appel, S. Doff, J. Rymarczyk, & E. Thaler (Eds.), *Foreign language teaching: History, theory, methods* (pp. 101-122). Berlin: Langenscheidt.
- Buyl, A., & Housen, A. (2015). Developmental stages in receptive grammar acquisition: A Processability Theory account. *Second Language Research*, 31, 523-550.
- Celce-Murcia, M., & Olshtain, E. (2000). *Discourse and context in language teaching*. New York, NY: Cambridge University Press.
- Chudaske, J. (2012). *Sprache, Migration und schulfachliche Leistung: Einfluss sprachlicher Kompetenz auf Lese-, Rechtschreib- und Mathematikleistungen*. Wiesbaden: VS.
- Dickinson, D. K., Griffith, J. A., Golinkoff, M. A., & Hirsh-Pasek, K. (2012). How reading books fosters language development around the world. *Child Development Research*. doi: 10.1155/2012/602807
- Dollmann, J. (2010). *Türkischstämmige Kinder am ersten Bildungsübergang*. Wiesbaden: VS.

- Draugalis, J. R., Coons S. J., & Plaza C. M. (2008). Best practices for survey research reports: A synopsis for authors and reviewers. *American Journal of Pharmaceutical Education*, 72(1), 11.
- Ellis, R. (2008). *The study of second language acquisition*. Oxford: Oxford University Press.
- Elsner, D. (2007). *Hörverstehen im Englischunterricht der Grundschule. Ein Leistungsvergleich zwischen Kindern mit Deutsch als Muttersprache und Deutsch als Zweitsprache*. Frankfurt a.M.: Lang.
- Eurydice. (2006). *Content and Language Integrated Learning at school in Europe*. Eurydice European Unit. Retrieved from http://www.indire.it/lucabas/lkmw_file/eurydice/CLIL_EN.pdf
- Fan, X., & Chen, M. (2001). Parental involvement and students' academic achievement: A meta-analysis. *Educational Psychology Review*, 13(1), 1-22.
- FMKS, Verein für frühe Mehrsprachigkeit in Kindertagesstätten und Schulen. (2014). *Ranking: bilinguale Kitas und Grundschulen im Bundesvergleich*. Retrieved from <http://www.fmks-online.de/download.html>
- French, L. M., & O'Brien, I. (2008). Phonological memory and children's second language grammar learning. *Applied Psycholinguistics*, 29, 463-487.
- Frisch, S. (2013). *Lesen im Englischunterricht der Grundschule. Eine Vergleichsstudie zur Wirksamkeit zweier Lehrverfahren*. Tübingen: Narr.
- Gascoigne, C. (2005). Toward an understanding of the relationship between L2 reading comprehension and grammar competence. *The Reading Matrix*, 5, 1-14.
- Genesee, F. H. (1987). *Learning through two languages: Studies of immersion and bilingual education*. Cambridge, MA: Newbury House.
- Genesee, F. H. (2004). What do we know about bilingual education for majority language students? In T. K. Bhatia & W. C. Ritchie (Eds.), *Handbook of bilingualism and multiculturalism* (pp. 547-61). Malden, MA: Blackwell.
- Genesee, F. H., & Fortune, T. W. (2014). Bilingual education and at-risk students. *Journal of Immersion and Content-Based Language Education*, 2, 196-209.
- Genesee, F. H., & Jared, D. (2008). Literacy development in early French immersion programs. *Canadian Psychology*, 49, 140-147.
- Grabe, W. (2005). The role of grammar in reading comprehension. In J. Frodesen & C. Holton (Eds.), *The power of context in language teaching and learning* (pp. 268-282). Boston: Heinle & Heinle.
- Grabe, W. (2009). *Reading in a second language: Moving from theory to practice*. Cambridge: Cambridge University Press.
- Hahn, A., & T. Angelovska (2017). Input-practice-output: A model for teaching L3 English after L2 German with a focus on syntactic transfer. In T. Angelovska & A. Hahn (Eds.), *L3 syntactic transfer: Models, new developments and implications* (pp. 299-319). Amsterdam: Benjamins.

- Hendriks, P., & Koster, C. (2010). Production/comprehension asymmetries in language acquisition. *Lingua*, 120, 1887-1897.
- Hendriks, P., de Hoop, H., & Lamers, M. (2005). Asymmetries in language use reveal asymmetries in the grammar. In P. Dekker & M. Franke (Eds.), *Proceedings of the Fifteenth Amsterdam Colloquium* (pp. 113-118). Amsterdam: ILLC.
- Hesse, H.-G., Göbel, K., & Hartig, J. (2008). Sprachliche Kompetenzen von mehrsprachigen Jugendlichen und Jugendlichen nichtdeutscher Erstsprache. In DESI-Konsortium (Eds.), *Unterricht und Kompetenzerwerb in Deutsch und Englisch* (pp. 208-30). Weinheim: Beltz.
- Hopp, H., Kieseier, T., Vogelbacher, M., Köser, S., & Thoma, D. (2017). Mehrsprachigkeit und metalinguistische Bewusstheit im Englischunterricht in der Grundschule. In I. Fuchs, S. Jeuk, & W. Knapp (Eds.), *Mehrsprachigkeit: Spracherwerb, Unterrichtsprozesse, Schulentwicklung* (pp. 55-74). Stuttgart: Fillibach bei Klett.
- Jeon, E. H., & Yamashita, J. (2014). L2 reading comprehension and its correlates: A meta-analysis. *Language Learning*, 64, 160-212.
- Kersten, K., Rohde, A., Schelletter, C., & Steinlen, A. (2010a). *Bilingual preschools. Vol. I: Learning and development. Vol. II: Best practises*. Trier: WVT.
- Kersten, K., Piske, T., Rohde, A., Steinlen, A., Weitz, M., & Kurth, S. (2010b). *ELIAS grammar test*. University of Magdeburg: ELIAS. Retrieved from <http://www.elias.bilikita.org>
- Kersten, K., Piske, T., Rohde, A., Steinlen, A., Weitz, M., & Kurth, S. (2012). *ELIAS grammar test II*. University of Magdeburg: Manuscript.
- Keßler, J.-U., & Paulick, C. (2010). Mehrsprachigkeit und schulisches Englischlernen bei Lernern mit Migrationshintergrund. In B. Ahrenholtz (Ed.), *Fachunterricht und Deutsch als Zweitsprache* (pp. 257-278). Tübingen: Narr.
- Koda, K. (2007). Reading and language learning: Constraints on second language reading development. *Language*, 57, 1-44.
- Köller, O., Knigge, M., & Tesch, B. (2010). *Sprachliche Kompetenzen im Ländervergleich*. Münster: Waxmann.
- Khodadady, E., & Alaei, F. F. (2012). Parent education and high school achievement in English as a foreign language. *Theory and Practice in Language Studies*, 2, 1811-1817.
- Kultusministerkonferenz. (2013). *Konzepte für den bilingualen Unterricht – Erfahrungsbericht und Vorschläge zur Weiterentwicklung*. Retrieved from http://www.kmk.org/fileadmin/veroeffentlichungen_beschluesse/2013/201_10_17-Konzepte-_bilingualer-_Unterricht.pdf
- Kwon, E. (2005). The "natural order" of morpheme acquisition: A historical survey. *Teachers College, Columbia University Working Papers in TESOL & Applied Linguistics*, 5, 1-21.

- Larsen-Freeman D. (2002). Making sense of frequency. *Studies in Second Language Acquisition*, 24, 275-85.
- Lee, J., Schaller, D. L., & Kim, E. (2015). Effects of extensive reading and translation activities on grammar knowledge and attitudes for EFL adolescents. *System*, 52, 38-50.
- López, A. L. (2008). To what extent does grammar knowledge account for competence in FL reading comprehension in university students? *Revista Española de Lingüística Aplicada*, 21, 181-200.
- May, P. (2006). Englisch-Hörverstehen am Ende der Grundschulzeit. In W. Bos & M. Pietsch (Eds.), *KESS 4. Kompetenzen und Einstellungen von Schülerinnen und Schülern der 4. Klasse an Hamburger Grundschulen* (pp. 203-224). Münster: Waxmann.
- Morvay, G. (2012). The relationship between syntactic knowledge and reading comprehension in EFL learners. *Studies in Second Language Learning and Teaching*, 2, 415-438.
- Mossenson, L., Stephanou, A., Forster, M., Masters, G., McGregor, M., Anderson, P., & Hill, P. (2003). *Tests of reading comprehension* (2nd ed.). Melbourne: ACER Press.
- Organisation for Economic Co-Operation and Development (OECD, 2009). *PISA 2009: Assessment framework: Key competences in reading, mathematics and science*. PISA: OECD Publishing.
- Pérez-Cañado, M. L. (2012). CLIL research in Europe: Past, present and future. *International Journal of Bilingual Education and Bilingualism*, 15, 315-341.
- Peyer, E., Kaiser, I., & Berthele, R. (2006). Psycholinguistische Grundlagen einer rezeptiven Grammatik des Deutschen. In A. Abel, M. Stuflesser, & M. Putz, (Eds.), *Multilingualism across Europe: Findings, needs, best practices* (pp. 309-321). Bolzano/Bozen: Eurac.
- Pienemann M. (2005) *Cross-linguistic aspects of Processability Theory*. Amsterdam – Philadelphia, PA: John Benjamins.
- Rauch, D. P., Jurecka, A., & Hesse, H.-G. (2010). Für den Drittspracherwerb zählt auch die Lesekompetenz in der Herkunftssprache. Untersuchung der Türkisch-, Deutsch- und Englisch-Lesekompetenz bei Deutsch-Türkisch bilingualen Schülern. In C. Allemann-Ghionda, P. Stanat, K. Göbel, & C. Röhner (Eds.), *Migration, Identität, Sprache und Bildungserfolg* (pp. 78-100). Weinheim: Beltz.
- Raven, J. C., Bulheller, S., & Häcker, H. (2002). *CPM. Colored Progressive Matrices* (3rd ed.). Göttingen: Hogrefe.
- Rodrigo, V., Krashen, S., & Gribbons, B. (2004). The effectiveness of two comprehensible input approaches to foreign language instruction at the intermediate level. *System*, 32, 53-60.

- Schwippert, K., Wendt, H., & Tarelli, I. (2012). Lesekompetenzen von Schülerinnen und Schülern mit Migrationshintergrund. In W. Bos, I. Tarelli, A. Bremerich-Vos, & K. Schwippert (Eds.), *IGLU 2011: Lesekompetenzen von Grundschulkindern in Deutschland im internationalen Vergleich* (pp. 191-207). Münster: Waxmann.
- Shiotsu, T., & Weir, C. J. (2007). The relative significance of syntactic knowledge and vocabulary breadth in the prediction of reading comprehension test performance. *Language Testing*, 24, 99-128.
- Singleton, D. (2009). *Exploring the second language mental lexicon*. Cambridge: Cambridge University Press.
- Steinlen, A., Håkansson, G., Housen, A., & Schelletter, C. (2010). Receptive L2 grammar knowledge development in bilingual preschools. In K. Kersten, A. Rohde, C. Schelletter, & A. Steinlen (Eds.), *Bilingual preschools, Vol. 1: Learning and development* (pp. 69-100). Trier: WVT.
- Steinlen, A. K. (2013). "Flera språk – fler möjligheter" - Immigrant children's acquisition of English in bilingual preschools. In A. Flyman Mattsson (Ed.), *Language acquisition and use in multilingual contexts* (pp. 170-184). *Travaux de l'Institut de Linguistique de Lund*, 52. Lund: Media-Tryck.
- Steinlen, A. K. (2016). Primary school minority and majority language children in a partial immersion program: The development of German and English reading skills. *Journal of Immersion and Content-Based Language Education*, 4, 198-224.
- Steinlen, A. K., & Piske, T. (2013). Academic achievement of children with and without migration backgrounds in an immersion primary school: A pilot study. *Zeitschrift für Anglistik und Amerikanistik*, 61, 215-244.
- Steinlen, A. K., & Piske, T. (2016). Wortschatz und Leseverständnis des Englischen von Kindern mit und ohne Migrationshintergrund in einer bilingualen Grundschule. In A. Steinlen & T. Piske (Eds.), *Wortschatzentwicklung in bilingualen Schulen und Kindertagesstätten* (pp. 123-166). Frankfurt: Lang.
- Steinlen, A. K., & Piske, T. (2017). *Receptive English grammar acquisition by minority and majority language children in a bilingual school: Does the L1 matter?* Manuscript in preparation.
- Szagon, G. (2006). *Sprachentwicklung beim Kind*. Weinheim: Beltz.
- Tamm, C. (2010). Eine Schule macht sich auf den Weg: Einführung eines bilingualen Zuges an der Grundschule an der Hügelstraße. In U. Massler & P. Burmeister (Eds.), *CLIL und Immersion. Fremdsprachlicher Sachfachunterricht in der Grundschule* (pp. 30-37). Braunschweig: Westermann.
- Tasseva-Kurktchieva, M. (2008). What about grammar? Comprehension and production at the initial stage of L2 acquisition. In R. Slabakova (Ed.), *Proceedings of the 9th Generative Approaches to Second Language Acquisition Conference* (pp. 242-250). Somerville, MA: Cascadilla.

- Unsworth, S. (2007). L1 and L2 acquisition between sentence and discourse: Comparing production and comprehension. *Lingua*, 117, 1930-1958.
- Van Gelderen, A., Schoonen, R., de Glopper, K., Hulstijn, J., Snellings, P., & Simis, A. (2004). Roles of linguistic knowledge, metacognitive knowledge and processing speed in L3, L2 and L1 reading comprehension: A structural equation modeling approach. *International Journal of Bilingualism*, 7, 7-25.
- Wesche, M. B. (2002). Early French immersion: How has the original Canadian model stood the test of time? In P. Burmeister, T. Piske, & A. Rohde (Eds.), *An integrated view of language development* (pp. 357-379). Trier: WVT.
- Wilden, E., & Porsch, R. (2016). Learning EFL from Year 1 or Year 3? A comparative study on children's EFL listening and reading comprehension at the end of primary education. In M. Nikolov (Ed.), *Assessing young learners of English: Global and local perspectives* (pp. 191-212). Cham: Springer.
- Wode, H. (1995). *Lernen in der Fremdsprache: Grundzüge von Immersion und bilinguaem Unterricht*. Ismaning: Hueber.
- Zaunbauer, A. C. M., Gebauer, S. K., & Möller, J. (2012). Englischleistungen immersiv unterrichteter Schülerinnen und Schüler. *Unterrichtswissenschaft: Zeitschrift für Lernforschung*, 40(4), 315-333.