



The development of migrant and non-migrant students' literacy skills in an immersion elementary school: A pilot study

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- In Germany, the number of elementary schools offering immersion (IM) programs is steadily increasing.
- The effectiveness of these programs for **majority language students** has been demonstrated in a larger number of studies (for overviews, see, e.g., Wode 2009, Steinlen & Piske 2013).
- However, the number of **students with migrant backgrounds/L1's** other than the majority language is also increasing in Germany.
- In Germany, students are regarded as “migrant students” if they or at least one of their parents migrated to Germany after 1949.

- In 2011, 32% of all 0- to 15-year-old children living in Germany had a migrant background (Federal Statistics Office of Germany 2012: 56).
- A migrant status in conjunction with an L1 background other than German is often described as a risk factor for students' adequate acquisition of the majority language German.
- And limited skills in German have been found to hinder participation in education and society (e.g., Chudaske 2012).

Migrant students' literacy skills in non-IM schools in Germany

- Performance in the majority language German:
 - In both elementary and secondary schools, migrant students have been found to obtain significantly lower scores than non-migrant students in German **reading and writing tests** (e.g., Bos et al. 2006, Hesse et al. 2008, Dollmann 2010, Köller et al. 2010, Stanat et al. 2012, Schwippert et al. 2012).

Migrant students' literacy skills in non-IM schools in Germany

- **Performance in the L2 (L3) English** (English as subject lessons):
 - a) **Elementary schools**
 - In **reading tests**, migrant students have been found to perform equally well as non-migrant students (e.g., Keßler & Paulick 2010, see also Haenni-Hoti 2008).
 - There is a lack of studies systematically examining migrant students' **writing skills** in the L2 English.
 - However, for grade 2 students Rymarczyk (2010) found that
 - migrant children from educated families performed slightly better in L2 writing tests than children from non-migrant families,
 - early exposure to the L2 writing system helped children overcome incorrect (“fossilized”) L2 spellings based on their L1 writing system.

Migrant students' literacy skills in non-IM schools in Germany

- Performance in the L2 English (traditional English as subject lessons):
 - b) **Secondary schools**
 - In **reading tests**, 9th grade migrant students have been found to perform equally well as non-migrant students (e.g., Hesse et al. 2008, Köller et al. 2010).
 - In tests examining **text production** skills, 9th grade migrant students have also been found to perform equally well as non-migrant students (e.g., Hesse et al. 2008, Köller et al. 2010).
 - ⇒ **In non-IM schools, migrant students have been found to score significantly lower than non-migrant students in tests examining their literacy skills in the majority language German, but not in tests examining their literacy skills in the L2 English.**
 - ⇒ **What about IM students?**

Literacy skills of majority language children in elementary IM schools in Germany

- In Germany, there is a lack of studies systematically examining migrant students' literacy skills in IM schools.
- So far studies have mainly focused on the reading and writing skills of majority language children in elementary school IM and non-IM programs:
 - Studies examining reading/writing skills in the **majority language German** did not report any significant differences between IM and non-IM children (e.g., Zaunbauer & Möller 2006, 2007).
 - More explorative studies examining IM students' writing skills in the **L2 English** have found that in grade 4 (last year of elementary school) IM students still produce a relatively high number of spelling errors (e.g., Burmeister & Piske 2008, Rymarczyk 2008, Burmeister 2010).

2. Research questions

- In Germany, many parents, teachers and school administrators are concerned that migrant children enrolled in elementary school IM programs may show deficits in the development of their literacy skills.
- This is why we decided to examine the following research questions:
 - a) How do migrant and non-migrant students enrolled in an elementary school IM program perform in reading and writing tests in the **majority language German**?
 - b) How do migrant and non-migrant students enrolled in an elementary school IM program perform in reading and writing tests in the **L2 English**?

3. Method

Subjects examined in the pilot study

- **Elementary school, grades 1-4** (children aged 6-10 years, e.g., Tamm 2010)
 - District elementary school offering a German-English one-way partial immersion program
 - 50% of the content subjects are taught in English (i.e., all subjects, except for German language arts, math, and religious education)
 - 20-30% of the students in each IM class attended a bilingual preschool
 - Percentage of migrant students in each class: 40-60% (the students and their parents spoke at least one language other than German at home)
 - Migrant and non-migrant students comparable in terms of their socioeconomic status.
 - Number of children tested in pilot study: 100

Subjects examined in the pilot study

- **Literacy instruction**
 - Students learn to read and write in the majority language German first.
 - Reading and writing in the L2 English are not introduced systematically.
 - However, the English writing system is present from the start.
 - Different reading activities are carried out from grade 2 onwards.
 - In the middle of grade 1, students start to write single English words.
 - They start to write longer English texts from grade 3 onwards.
 - There is no specific focus on spelling errors.

- **Different standardized tests are administered to the students:**
 - a) cognitive tests: deductive reasoning (CPM, SPM) and attention (d2-R)**
(Raven 1976, Raven et al. 2002, Brickenkamp et al. 2010)
 - carried out in order to determine whether migrant and non-migrant students differed in terms of basic cognitive abilities
 - ⇒ No significant differences between students in both groups in this study.
 - ⇒ Values obtained for both groups of students were age appropriate.

b) German language tests

- reading comprehension (*Ein Leseverstehenstest für Erst- bis Sechstklässler – Elfe*)
(Lenhard & Schneider 2006)
- reading fluency (Würzburger Leise-Leseprobe – WLLP) (Küspert
& Schneider 1998)
- writing test (*Hamburger Schreib-Probe - HSP*) (May
2002)

c) English language tests

- reading comprehension (Australian Test of Reading Comprehension – TORCH)
(Mossenson et al. 2003)
- reading fluency (Test of Silent Word Reading Fluency – TOSWRF, Australia)
(Mather et al. 2004)
- writing test (Primary School Assessment Kit – PSAK, Ireland)

4. Results

German language tests: Reading (e.g. Steinlen & Piske 2014)

Reading fluency

WLLP (grades 1-4)

- ⇒ Values are mostly within the monolingual norm for each grade and each test (except for WLLP, grade 1b)
- ⇒ No significant differences between migrant and non-migrant students

Reading comprehension

ELFE (only grade 4)

- ⇒ No significant differences between migrant and non-migrant children
- ⇒ IM students scored slightly above the norms for monolingual German students

German language tests: Writing

HSP (grades 1-4)

- ⇒ Values are within the monolingual norm for each grade and each test
- ⇒ No significant differences between migrant and non-migrant students

English language Tests: Reading

(e.g., Steinlen & Piske 2014)

Reading fluency

TOSWRF, grades 1-4

⇒ Progression from grade 1 to 4 (reading fluency)

Reading comprehension

TORCH, grades 3-4

⇒ TORCH: almost native-like results in grade 4

⇒ **No significant differences between migrant and non-migrant students in both types of tests.**

PSAK-W, grades 3-4

- ⇒ Progression from grade 3 to 4
- ⇒ No significant differences between migrant and non-migrant students
- ⇒ End of grade 4: Level A2 (CEFR)
- ⇒ A correlation analysis indicated:
The higher the students' scores in the German writing tests in grades 3 and 4, the higher were their scores in the English writing tests and vice versa.

Tentative results of a qualitative analysis of English texts written by IM students in grades 3 and 4

- Texts written about the same topic became longer (about 3 times) from grade 3 to 4 (see also Wright 1995).
 - The number of spelling errors decreased from grade 3 to grade 4 (by half) (see also Treiman 1993 , Wright 1995).
 - The types of errors changed:
 - The number of phonetic spellings decreased from grade 3 to grade 4 (see also Burmeister 2010).
 - The number of transfer errors increased (e.g., capitalization of nouns, use of <k> instead of <c> in words such as *come*, etc. (see also Burwitz-Melzer 2010)
- ⇒ In grade 4, texts written in the L2 English were characterized by fluency and coherence, but still contained a relatively high number of spelling errors.

5. Summary and discussion

- **The pilot study presented here yielded several encouraging results:**
 - Scores obtained for IM students in tests on **German** reading and writing corresponded to monolingual age norms (see also Zaunbauer et al. 2007, Gebauer et al. 2012).
 - In the tests on **L2 English** reading and writing, the students showed a clear progression from one grade level to the next.
 - Results obtained for **reading comprehension in English** were almost native-like in grade 4.
 - No significant differences were found between migrant and non-migrant students (see also Steinlen & Piske 2013 with regard to tests on other linguistic skills)
- ⇒ The literacy skills of second and third language children appeared to benefit from the IM program in much the same way.
- ⇒ Because of the rather low number of participants from just one school all these results, of course, have to be interpreted with due caution.

Summary and discussion

- **Moreover:**
 - The number of **spelling errors** produced in texts written by the IM students in the L2 English remained relatively high throughout elementary school.
 - This may lead to problems in secondary school, in particular if students have to enter a non-IM program after elementary school.
 - Whereas IM elementary school teachers value aspects of written texts such as content, fluency and coherence, secondary school teachers often mainly focus on “correctness”.
- ⇒ For IM schools in Germany, we need a concept for systematic simultaneous literacy instruction enabling students to learn
- a) to read and write equally well in the majority language and the IM language,
 - b) to read and write in such a way that by the end of elementary/beginning of secondary school the expectations of both elementary and secondary school teachers will be met.
- **Which concept for simultaneous literacy instruction would be useful?**
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