

Reading comprehension as a function of a reading-strategy program in monolingual and bilingual students with Special Educational Needs: An experimental study

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Abstract: In order to find out if students with a different language background would benefit evenly by a reading-strategy program, 43 native speakers, 49 bilingual, and 55 second language speaking students from 5th to 7th grade with Special Educational Needs were trained in strategic reading. A pre-, post- and follow-up design was conducted during one academic year assessing reading comprehension and reading strategy knowledge. Results indicated that students that spoke a second language at home and not the language of instruction, profited more from the reading-strategy program than the bilingual and native speakers.

Keywords: Special Educational Needs, bilingual, reading strategies, intervention

1. Introduction

Inclusive schools are increasingly becoming a main concept of education (Fletcher, Bos & Johnson, 1999). Classrooms comprise of students from many linguistic backgrounds while the number of students with special educational needs increases in the inclusive academic environments (Saenz, Fuchs & Fuchs, 2005). There seems to be an unequal proportion of bilingual students with learning disabilities who are accommodated in special education classrooms, a phenomenon known as “overrepresentation” (Ruenda & Windmueller, 2006). This phenomenon is also met in the German schooling system where the present study has been conducted.

German special classrooms consist of students that exhibit learning disabilities, mild mental retardation, or deficits in the language of instruction (due to environmental disadvantages such as immigration or poverty) and are identified as students with Special Educational Needs (SEN) (Powell, 1994). Regarding the latter, the largest proportion of these students does not consist of native speakers, therefore they are instructed in a second language that most of them do not speak at their home and consequently face language deficits. Such students constitute a bilingual or multilingual population and are distinguished in 3 types of bilinguals: a) subordinate, b) balanced, and c) dominant. This characterization depends on the frequency and the proficiency that the second language is spoken outside the academic environment (Breznitz, Revital & Shelley, 2004).

Regardless of the characterization, it seems that bilingual students with Learning Disabilities are late in acquiring an academic language, while they face more difficulties in comparison to their monolingual peers (Duffy, Roehler, Meloth, Vavrus, Book, Putnam & Wesselman, 1987). Relevant literature research confirms that the level of phonological awareness is comparable in both first and second language (Lesaux & Sigel, 2003). Therefore, deficits in reading in the native language are common with reading deficits in the second (Swanson, Sáez, Gerber & Leafstedt, 2004). There is a significant relationship between skills in the two languages, which underlines the conclusion that by enhancing the reading ability in the native language (L1), the reading competence is also enhanced in the second (L2). Furthermore, when students use mostly

their native language at home they are more likely to show higher achievement than the bilingual students that speak two languages (L1 and L2) outside the academic environment (Figueroa & Sassenrath, 1989). This finding underlines “the value of a strong native language foundation and provides unique insights into the characteristics of [second language] learners who are more and less successful in school” (Klinger, Artiles & Barletta, 2006: p. 111). The students’ level of native language proficiency plays a prominent role in second language reading, a finding that appears to be predicted by the high phonological awareness of these students (Gottardo, 2002) and by the high level of strategy usage in their first language (Hardin, 2001).

Regarding the reading ability of bilingual students with Special Educational Needs, their basic characteristic is poor vocabulary knowledge which differentiates them from the monolingual students with Learning Disabilities (Barrera, 2006). The small margin of written material is also indicative of the Learning Disabilities of bilingual students (Barrera, 2006). Nevertheless they do not face deficits in visual processing while reading but only in the listening processes. The most frequent auditory deficits are found in grammatic and auditory closure, listening association and reception as well as in sound blending and memory related to listening (Klinger, Artiles & Barletta, 2006). They also find more difficulties in pseudoword decoding than in word decoding. An interesting finding regarding decoding, is that students who also speak the language of instruction at home (L2) are significantly better in the decoding of words and pseudowords in second language decoding (Durgunoglou, Nagy & Hancin-Bhatt, 1993), as well as in rapid automatized naming and phoneme segmentation (Haager & Windmueller, 2001) than those who speak only their native language at home (L1). On the other hand, students who speak both languages (L1 and L2) at home show deficits in expressing and organizing scriptually their thoughts (Barrera, 2003). Most researchers, though, conclude that the proficiency level of the native language determines the academic efficacy of students with disabilities in learning (Figueroa & Sassenrath, 1989). However, less is known about the reading comprehension of bilingual students with learning disabilities. The fact that the bilingual students’ vocabulary knowledge is poorer than that of monolinguals seems to worsen their reading comprehension ability (Barrera, 2006).

Minimal research has focused on the instruction of reading strategies to students with diverse language backgrounds and special educational needs. It has been found that comprehensive interventions to bilingual or to students with SEN that do not speak the instructional language at home do not seem to be effective for all without exception. Additionally, what is reported is that there are not many effective interventions which can lead to long term effects or systematic and explicit interventions for all students with different language backgrounds that attend a classroom (Linan-Thompson, Vaughn, Prater & Cirino, 2006).

Specifically, literature findings point out that interventions based on the instruction of strategies and their appliance (Jimenez, 1997) along with reading comprehension programs, based on reciprocal teaching which encourage students to use the language that they prefer during discussions (Klinger & Vaughn, 1999), proved to be highly effective. It seems that enhancement of basic skills only, such as word decoding does not improve reading comprehension (Denton, Anthony, Parker & Hasbrouck, 2004; Denton, Fletcher, Anthony & Francis, 2006; Gunn et al., 2000; Velluntino, Scanlon, Small & Fanuele, 2006). A number of research studies have shown that reading comprehension can be enhanced through the explicit instruction of reading strategies in combination with the training of basic reading skills such as decoding and fluency (De La Colina, Parker, Hasbrouck & Lara-Alecio, 2001; Denton, Anthony, Parker &

Hasbrouck, 2004; Klinger, et al., 2003; Linan-Thompson, Vaughn, Prater & Cirino, 2006). A core matter of comprehension interventions is however, not only basic skills instruction but also vocabulary instruction and the introduction of reading strategies that enhance text understanding (Denton et al., 2004; Klinger et al., 2006).

The purpose of this manuscript was to investigate if a reading strategy program which has already proven to be effective in the enhancement of the reading comprehension of students with special educational needs (Antoniou, 2006) would enhance in different amounts the reading comprehension of SEN students who were monolinguals (L1), spoke 2 or more languages at home (L1 and L2) or spoke another language than the language of instruction at home. It was hypothesized that students who spoke only one language at home would profit more from the reading strategy program with regard to their reading comprehension since they have acquired proficiency in language in comparison to the bilingual speakers. A second hypothesis was that all students, irrespective of their language background, would profit evenly from the reading strategy program since their special educational needs do not prohibit strategy knowledge and usage. In particular, the research question of this study was: Do students with special educational needs and a different language background- profit equally in the short and in the long-run by a reading strategy program regarding their reading comprehension and reading strategy knowledge?

2. Method

2.1 Participants

Participants were 147 5th to 7th graders attending the special education schools of Germany. They all were diagnosed by the state as having Learning Disabilities and their classrooms were selected randomly to attend the program after their teachers' voluntary acceptance of participating. 78 students were male while 69 were female and had a mean age of 13.8 (sd = 1.00). 55 students were native German speaking students (monolinguals), 49 students spoke German and a second language at home and 45 students spoke a language other than German at home.

Students of the three language groups were tested prior to intervention in intelligence, decoding speed and vocabulary knowledge and it was found that students were similar in their intelligence scores [$F(146) = .794, p > .10$] and decoding speed [$F(146) = 2.078, p > .10$], but not in vocabulary knowledge [$F(146) = 8.961, p < .001$]. Native language speakers had a significantly better vocabulary knowledge ($M = 15.87, sd = 5.88$) than students who spoke two languages at home ($M = 12.90, sd = 5.89$) or the other than German speaking students ($M = 11.14, sd = 4.94$). Additionally, students who did not speak the language of instruction at home showed significantly lower competence in the reading comprehension assessment which was conducted prior to intervention than that of native speakers and bilingual students [$F(120) = 4.707, p < .05$].

2.2 Procedure

The strategy-oriented reading programme presented in this article has already been proven to be effective in students with special educational needs (Antoniou, 2006) or with specific learning disabilities (Antoniou & Souvignier, 2007) as compared to students that received only traditional instruction. For the purposes of this study, it was evaluated in 14 special education classrooms and the evaluation was run in a pre-post and follow-up design during an academic year. The program consisted of a series of 29 lessons and was implemented by the educator during the first 4 months, while trained undergraduate students conducted a number of lesson supervisions. The program has

been developed in order to enhance the reading comprehension of students with special educational needs and students were treated as such (and not as students with poor knowledge of the language of instruction), as it has been reported by the teachers. However, observation sheets revealed that for students with a bilingual background the instruction of the second strategy (the clarification of unknown words) lasted longer.

In particular, initially students were introduced for 3 academic hours to a story that constituted the background story of the program: students should identify themselves with detectives who tried through strategy usage to solve incomprehensible cases. Each reading strategy corresponded to a detective method and was used in order to solve the case. For the following 3 hours students were taught strategies in order to activate prior knowledge by thinking about the head line. For the next 3 hours students were instructed on how to clarify difficult or unknown words and the last 12 hours students learned the strategies of making a summary of a narrative text (6 hours) and summarising an expository passage (6 hours). For the last 7 hours students were introduced to a metacognitive strategy on how to regulate their own reading process. Teachers were introduced to the reading strategy program through informational sessions which intended to familiarise them with the reading program and the material they would use. The outlined lessons were presented as general guidelines where the educators could adjust their personal way of teaching and make changes to the text in order to correspond to the students' reading level.

2.3 Dependent measures

In order to assess reading comprehension, students had to read a 250-word text and answer seven multiple-choice and five open questions corresponding to the text. The whole class was assessed simultaneously and students were allowed to go back to the text in order to find the information to answer all questions. For the pre-, post-, and follow-up tests, three different test versions were used, including different texts of the same genre (narrative) but with the same type of questions. Questions corresponded to the main characteristics of narrative texts - the main character and his aims, and the solution of the story. Students could achieve 17 points in this test. The internal consistency of this measure was $\alpha = .65$.

Reading-strategy knowledge was assessed by three items where students had to give marks to six reading strategy choices corresponding to each of the three reading tasks. For example, the first item introduced a problematic situation where a student faced difficulties in understanding a difficult text. The students who participated in the assessment had to think about which strategies (of the six proposed) were the most effective ones for the student who faced the difficulties in order to make this difficult text more comprehensible to him/her. Students had to rate them regarding their effectiveness on the problematic situation. With the mark 1 for the best strategy (i.e. summarize the text) and 6 for the worst (i.e. read the text aloud) students had to evaluate the importance and value of eighteen different strategies that corresponded to three academic problems related to the memorization or to the comprehension of a text. Students could achieve in this test up to 34 points, while the same version of the test was administered in three testing points. The reliability of the test was satisfactory, with $\alpha = .87$.

3. Results

A univariate analysis of variance (ANOVA) was undertaken, in order to examine the significant interactions between the gain scores of the groups. It has been shown that students with Special Educational Needs, who have a native language other than

German, have shown a significantly higher profit from the program in reading comprehension shortly after its implementation, in contradiction to the native German speakers and the bilingual students [$F(2, 144) = 3.803, p < .05$]. The same result, for the reading comprehension gains of the SEN students who spoke a native language other than German, was replicated in the follow-up measurement. This group of students improved their reading comprehension significantly more than the native language speakers and the bilinguals two months after the program's completion [$F(2, 144) = 8.093, p < .01$]. However, all students seemed to enhance their reading comprehension by the reading strategy program as is revealed by the mean scores that are illustrated in Table 1. Nevertheless, the group that seemed to have more room for improvement was the one who spoke a language other than the instructional one at home.

Table 1. Descriptive statistics on reading comprehension for three intervention groups at three testing points

Testing points	Language groups		
	<u>Native speakers</u>	<u>Bilingual</u>	<u>Other than German</u>
	M (SD)	M (SD)	M (SD)
Pre	9.26 (3.80)	8.00 (3.49)	5.44 (3.30)
Post	12.44 (3.51)	12.41 (3.15)	10.42 (3.30)
Follow-up	11.89 (3.38)	10.76 (3.26)	10.74 (3.13)

The second set of analyses focused on the effects of the reading strategy program on the students' reading strategy knowledge. Exactly after the intervention, the students' knowledge of reading strategies did not seem to be affected by their language background, therefore there were no significant interactions between the gain scores [$F(2, 144) = .149, p > .10$]. No significant differences between the gain scores of the three language groups were apparent 2 months after the intervention [$F(2, 144) = .096, p > .10$]. It seems that language background does not play a significant role in students' improvement of reading strategy knowledge. As revealed in Table 2 students of all three groups improved their knowledge of reading strategies regardless of their native language.

Table 2. Descriptive statistics on reading strategy knowledge for three intervention groups at three testing points

Testing points	Language groups		
	<u>Native speakers</u>	<u>Bilingual</u>	<u>Other than German</u>
	M (SD)	M (SD)	M (SD)
Pre	17.66 (5.40)	17.67 (4.60)	15.40 (6.18)
Post	20.11 (5.49)	20.69 (5.15)	17.93 (7.13)
Follow-up	21.27 (4.79)	21.06 (5.00)	18.54 (5.48)

4. Discussion

Bilingual and non native students who attend special education environments are required to overcome their major academic deficits and simultaneously to become proficient in a second language. This makes their struggle more difficult than that of their monolingual peers and the educators' effort to ameliorate their reading difficulties even greater. Therefore, the need for reading interventions that enhance the reading competence of bilingual students with special educational needs becomes eminent. The results of this study add to the recent literature reports that students with SEN can enhance their reading competence through intensive and explicit instruction in a second

language (De La Colina, et al, 2001; Denton, et al., 2004; Klinger, et el., 2003; Linan-Thompson et al., 2006; Saenz et al., 2005). This study's findings provide evidence that students with special educational needs can enhance their reading comprehension and reading strategy knowledge in the short- and long-term and offer an explanatory look at the degree that students from different language backgrounds respond to intervention.

It was hypothesized that the reading strategy program would enhance the reading comprehension competence of all students with special educational needs and that the language background would not influence all SEN students' reading comprehension improvement in the same amounts. Post and follow up gains indicated that students who spoke at home a language other than the one they are instructed at school profited significantly more from the reading strategy program than their peers who were native speakers or bilinguals. Additionally, the hypothesis that all students, in spite of their language background would show the same level of achievement in reading strategy knowledge right after the program's implementation as well as in the long term was proven by the findings. Reading strategy knowledge results did not reveal any significant differences between the groups for the two testing points.

Regarding the former finding, the enhancement of reading comprehension of all students, and especially of those with a background language other than the instructional language, proved that students with special educational needs responded adequately to intervention. However, the fact that this specific language group showed the highest progress leads to a twofold conclusion.

On the one hand, it seems that the students who benefited more from the program were the students who did not have the language of instruction as native, and not the native speakers or the bilingual students. This leads to the assumption that the gains in competence should perhaps be attributed to their more general development. A closer look at these students' pretest scores in reading comprehension and vocabulary knowledge underlined their significantly lower competence in comparison to the other language groups' abilities in these variables.

On the other hand, this finding establishes the assumption that a number of students who face language problems end in special education classrooms due to their lack of vocabulary knowledge and not because of their learning disabilities (Ruenda & Windmueller, 2006). It seems that as long as their learning is facilitated, their response to intervention is adequate. In fact, lately, the term "response to intervention" has become one of the most important issues in the field of learning disabilities identification and instruction (Linan-Thompson et al., 2006). This term corresponds to the degree that students, who faced learning disabilities and were provided with intervention, have benefited from the intervention and have shown a considerable elimination of their academic deficits (Speece & Case, 2001).

This study's results indicate that students identified as students with special educational needs profited from the reading strategy program which leads to the assumption that they may not actually have learning disabilities, but that they are in need of more explicit and intensive intervention. Therefore, education processes which are often focused on finding students' disabilities, should guide their interest to the interpretation of their performance as an individual and cultural characteristic. In other words, more research on inadequate responders who are instructed in another than their native language is needed in order to address the question of the amount of response that would lead to the definition of these students as LD or just poor in vocabulary knowledge and in the second language comprehension.

With regard to reading strategy knowledge results, it was indicated that all SEN students profited from the reading strategy program and were able to recall and use the

instructed reading strategies not only in the short- but also in the long run in order to gain reading understanding regardless their language background. This finding is in line with the literature findings that students with learning disabilities can adopt in their learning procedure reading strategies (Gersten et al., 2001; Pressley, 2000; Swanson, 1999). It also replicates the findings of numerous studies that indicate that strategy instruction is achievable and fruitful for bilingual students with special educational needs (Jimenez, 1997; Klinger & Vaughn, 1999).

4.1 Limitations

Although the study yielded important findings, it also has recognizable limitations, a major one being that the results of this research are limited to a particular environment and curriculum as well as to a specific academic level. An additional limitation of this intervention is that the measurements took place only before and after the intervention and not periodically. More frequent assessment would provide information on the exact point of improvement and on the amount of enforcement that each strategy provided to the students' reading comprehension improvement. Furthermore, the conclusions about the intervention would be representative if all students had the same initial basis of basic skills and knowledge (i.e. reading comprehension and vocabulary knowledge levels) before the reading program's implementation. Lastly, the length of intervention may have been too short for the bilingual students who often lack proficiency in both their native and the language of instruction.

4.2 Implications for practice

Since, however, these students gained from reading comprehension and reading strategy knowledge, an interesting future implication would focus on learning more about the role of native language instruction in parallel to second language teaching and on discovering what works best in order to enhance the reading performance of all students that are accommodated in special education classrooms.

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