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**Hand in hand until research tears us apart?**  
**A longitudinal analysis about the relationship**  
**between reading and spelling difficulties, internalizing**  
**behavioral problems, and victimization in children**

by

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## **Abstract**

Whether children and adolescents with reading and spelling difficulties are at higher risk for developing internalizing behavioral problems or being victimized in school is still controversial. In a longitudinal study 226 children were followed up from kindergarten until fourth grade. Reading and spelling test scores and teachers' ratings about children's internalizing behavior and victimization were recorded. Based on the literature, theoretical models to investigate the plausibility of a relationship between reading and spelling abilities and internalizing behavioral problems, reading and spelling abilities and victimization, and the long-term effects resulting from the interaction of these variables are proposed and then analyzed using structural equation modeling methods. Additionally intraclass correlations were calculated to analyze class effects. Results suggest that reading and spelling difficulties and internalizing behavioral problems as well as reading and spelling abilities and victimization do not seem to be directly associated. High class effects were found for reading and spelling. The underlying processes proved to be more complex than until now assumed, especially on the case of spelling, and further investigation is needed.

**Keywords:** reading difficulties, spelling difficulties, internalizing behavior, depressed mood, social withdrawal, victimization, behavioral problems, longitudinal, children, intraclass effect.

## **Zusammenfassung**

Der direkte Zusammenhang zwischen Lese- und Rechtschreibschwierigkeiten und internalisierende Verhaltensauffälligkeiten und zwischen Lese- und Rechtschreibschwierigkeiten und Victimisierung in der Schule bei Kindern und Jugendlichen ist noch umstritten. Im Rahmen einer Längsschnittstudie wurden 226 Kinder vom Kindergarten bis zur vierten Klasse in ihren Lese- und Rechtschreibfähigkeiten, sowie internalisierende Verhalten und Victimisierung untersucht. Lese- und Rechtschreib-Testscores und Lehrerurteil über das Verhalten der Kinder wurden erfasst. Basierend auf bisherigen Forschungsergebnissen wurden theoretische Modelle aufgestellt, die den Zusammenhang zwischen Lese- und Rechtschreibschwierigkeiten und internalisierende Verhaltensauffälligkeiten, zwischen Lese- und Rechtschreibschwierigkeiten und Victimisierung und die längerfristige Auswirkung der Interaktion zwischen diesen erklären sollten. Daten wurden mittels linearer Strukturgleichungsmodelle überprüft und es wurden zusätzlich intraclass-Korrelationen berechnet, um den Anteil des Einflusses aufgrund der Klassenzugehörigkeit zu erfassen. Die Ergebnisse zeigen keinen direkten Zusammenhang, weder zwischen Lese- und Rechtschreibschwierigkeiten und internalisierende Verhaltensauffälligkeiten noch zwischen Lese- und Rechtschreibschwierigkeiten und Victimisierung. Hoch intraclass Korrelationen wurden für Lesen und Rechtschreiben gefunden. Die darunterliegenden Prozesse scheinen, besonders bei Rechtschreiben, komplexer zu sein als bisher geglaubt, und weitere Analysen sind notwendig, um genauere Aussagen treffen zu können.

**Schlüsselwörter:** Leseschwierigkeiten, Rechtschreibschwierigkeiten, internalisierende Verhalten, depressive Verstimmung, sozialer Rückzug, Victimisierung, Verhaltensauffälligkeiten, Längsschnitt, Kinder, intraclass-Effekt.

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## 1 Introduction

### 1.1. *Why research reading and spelling and its effects*

Acquiring competence in reading and spelling proves to be an easy matter for most of the children, but not all children are so lucky (Perfetti, 1985). Epidemiology studies report a prevalence<sup>1</sup> of developmental reading and spelling difficulties of about 7-8% among 8-year-old children, about 4% among 12-year-old children, and about 4% among adolescents and young adults (Hasselhorn and Schuchardt, 2006). Results from the large PISA-Study conducted in Europe show that the number of 15-year-old students who achieved only the lowest scores in the reading test raised from 21.3% in 2000 to 24.1% in 2006 (Austria Press Agentur, 2008).

These difficulties seem to persist over the years and may influence the lives of the children affected. Bruck (1990) found deficits in reading speed and reading strategies in English speaking adults with childhood diagnosis of dyslexia. Other studies reinforce the idea that reading and spelling abilities are relatively stable and that poor readers do not reach the level of their peers later in school (Klicpera, Schabmann, Gasteiger-Klicpera, 1993; Landerl and Wimmer, 2007). In a longitudinal study Esser, Wyschkon, and Schmidt (2002) showed a negative effect of reading and spelling difficulties in elementary school on academic development and choice of jobs or careers in adulthood.

The consequences of these relatively stable reading and spelling difficulties on children's behavior are still unclear. A large epidemiological study done in 1970 on the Isle of Wight in the United Kingdom (Rutter, Tizard & Whitmore, 1970) reported correlations between reading and spelling difficulties and aggressive-disruptive behavior. McGee, Williams, Share, Anderson and Silva (1986) conducted a study on Dunedin boys to compare the relationship between specific reading problems and aggression/conduct problems on the one hand and the same reading and spelling difficulties and attention/hyperactivity problems on the other. Results showed a closer relationship between specific reading difficulties and attention/hyperactivity problems. Most recently researchers have also reported about emotional problems among children with severe reading difficulties (Arnold, David, Walsh, Reboussin, Daniel, Hickman, and Wood, 2005; Bonifacci, Candria, and

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<sup>1</sup> "prevalence usually refers to the number of persons with a defined disease or condition existing at a particular point in time (point prevalence) or within a specified time period (period prevalence or cumulative prevalence) relative to the total number of persons in the group or population exposed to risk" (Solberg and Olweus, 2003).

Contento, 2007; Maughan, Rowe, Loeber, and Stouthamer-Loeber, 2003; Miller, Hynd and Miller, 2006). Additionally, the social status of children with reading and spelling difficulties seems to be lower than that of average children which could in turn affect their peer relationships (Gasteiger-Klicpera, Klicpera, and Schabmann, 2006). In upper grades in school, children with reading and spelling difficulties are more often victimized and are perceived by their peers and teachers as being increasingly shy and withdrawn.

While studies about a direct relationship between reading and spelling difficulties and victimization are scarce, the results about the relationship between reading and spelling difficulties and internalizing behavioral problems in children, such as depressed mood and anxiety, is fairly contentious, since research results in this area are not as consistent as the ones presented on the relationship between reading and spelling difficulties and externalizing behavioral problems. Further investigation about the processes that could contribute to a possible relationship between reading and spelling difficulties and internalizing behavioral problems and the processes that underlie their adjacent developmental patterns is needed. Moreover, because early onset of problems in childhood may be indicative of the development of serious illness (Kovacs, Feinberg, Course-Novak, Paulauskas, and Finkelstein, 1984), longitudinal studies starting as early as in kindergarten are recommended.

This thesis aims to bring us closer to answering at least partially some of the questions about the long-term relationship between reading and spelling difficulties and internalizing behavioral problems, and between reading and spelling difficulties and victimization in children from kindergarten to the fourth grade. First, a short theoretical introduction about the processes that underlie normal reading and spelling abilities, followed by some definitions and explanation attempts about reading and spelling dysfunction are given. Then, information on prevalence and definitions of concomitant internalizing behavioral problems to reading and spelling difficulties, including depressive-related problems and problems in peer relations, are provided. Additionally some empirical evidence about possible relationships between reading and spelling difficulties and internalizing behavioral problems and reading and spelling difficulties and victimization are presented. Next, the main research question is introduced and the methods used to assess target variables are described. Finally, the results of the statistical analysis are presented and a discussion integrating them with the literature is provided.

## 2 Theoretical Background

### 2.1. Reading and spelling processes and the development of reading and spelling difficulties

In order to investigate how reading and spelling difficulties emerge, it is important to understand the processes that are involved in normal reading and spelling. At present researchers seem to agree that within the reading system there are two different processes involved in accomplishing the task to transform print to speech (Snowling and Hulme, 2005). The first attempt to describe the so called dual-route theory was made by Baron and Strawson in 1976 (figure 1) (Coltheart, 2005). This model shows a direct lexical-non-semantic route for reading whole words aloud from orthography to phonology and an alternative non-lexical route via semantics for word parts and whole words. In the direct lexical route orthography and phonology are connected in two ways: one in which phonemes as whole words are stored in a sort of lexicon and are retrieved as whole words when necessary (word-specific association); another where correspondence rules from letter to phoneme are stored and can be applied when a new word, which is not stored in the lexicon, has to be read (correspondence rules). The non-lexical semantic route is believed to account for effects of context when reading words. It comprises information about the meanings that are related to words. The lexical non-semantic and the non-lexical via semantics routes do not rule out each other. According to Baron, information processed by the routes complement each other. Thus, if one is deficient the other could supplement it.

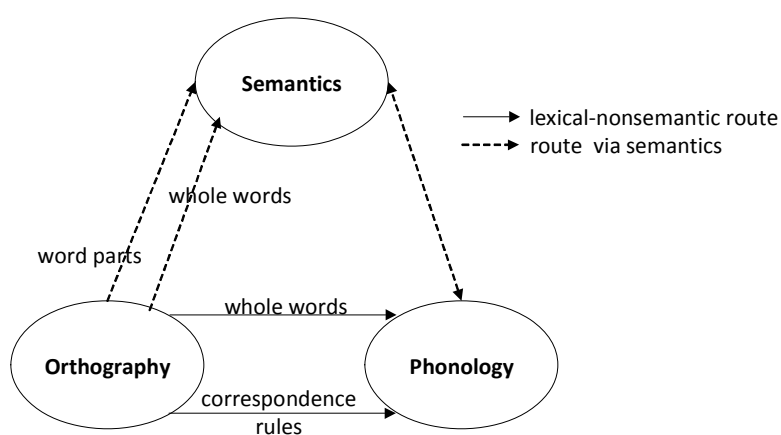


Figure 1. Architecture of the reading system from Baron (redrawn from Snowling and Hulme, 2005).

Baron's model of the reading system is an example of a connectionist model (Snowling and Hulme, 2005). The lines that connect the components are believed to be physically realizable as neuron-like networks. Nevertheless nowadays most evidence supports the non-connectionist dual-route models, such as the DRC-"dual-route cascaded" model (Coltheart et al., 2001) (figure 2). Here the connections are used just to explain how the components communicate with each other. The two ways in which the direct lexical route connects orthography and phonology in Baron's model can be compared to the two possible routes to process pronunciation from print in the DRC-model. These are called lexical and non-lexical.

The lexical processing involves first a visual input of the print which activates the letter units present in the string. These activate all real word units in the orthographic lexicon to which they are connected. The activated orthographic word units activate the word units in the phonological lexicon to which they are connected and in turn these activate the corresponding phonemes in the phoneme system allowing the printed word to be correctly pronounced (read aloud). Non-words cannot be read this way because they are not present in the lexicons. Lexical processes are also denominated as "top-down" processes, that is, processes that go from the whole to smaller parts.

The non-lexical processing involves grapheme-phoneme correspondence rules. This means that instead of activating whole words in the lexicons, rules will be applied to the letters present in the string and so each unit will be converted from print to sound. Such procedures, which start with the perception and processing of smaller units towards the recognition of larger units, are denominated "bottom-up" processes. Nevertheless when a non-word is very similar to real words in the lexicon, the direct lexicon processing will run parallel to the non-lexical processing. This means that it is conceivable that both "bottom-up" and "top-down" processes run simultaneously. The direct lexical processing can be seen as a short-cut that bypasses the necessity of the application of grapheme-phoneme rules. In case of irregular words or "exception words", if they are not present in the lexicon, the processing will produce rule-based pronunciations, which can be plausible, but will be incorrect. In case comprehension during reading is also required the semantic system will be additionally activated.

Both routes are also believed to deliver correct information to accomplish a task, but processes through the direct lexical route seem to produce faster responses. This explains

why reaction times for reading irregular words are longer than for regular words (Coltheart, Rastle, Perry, Langdon, and Ziegler, 2001). Moreover the fact that isolated difficulties in learning just in lexical or just in non-lexical routes were observed also supports the dual-route model of reading (Stothard, Snowling, and Hulme, 1996).

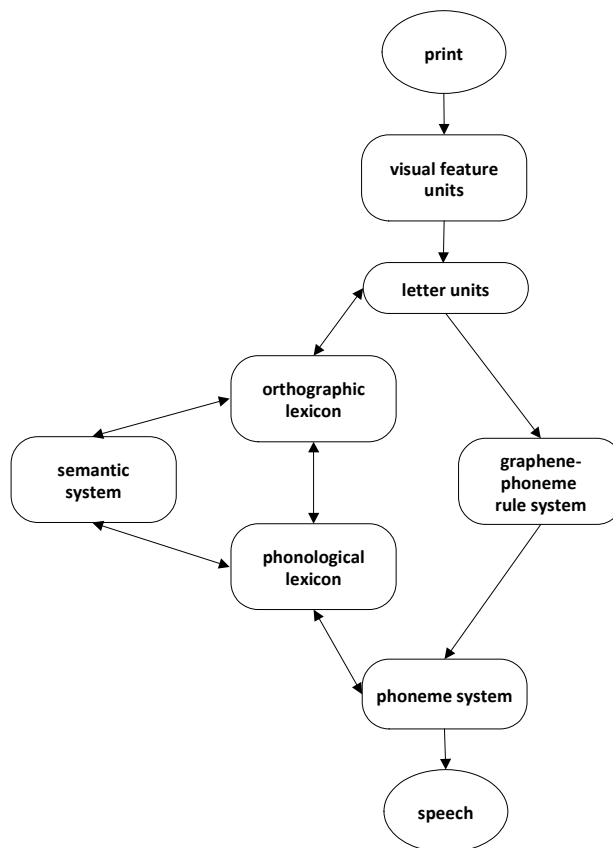


Figure 2. The DRC model of reading (redrawn from Snowling and Hulme, 2005).

The development of reading and spelling difficulties are related to different factors which interact with each other (Klicpera, Schabmann, and Gasteiger-Klicpera, 2003; Schulte-Körne, and Remschmidt, 2003). Theoretical models proposed include individual factors, such as learning and information processing abilities, as well as environmental factors, such as family support and teaching methods. These factors can also influence the course and severity of reading and spelling difficulties. The effects that all these factors have on reading and spelling are part of a very complex system and exceed the scope of this work. Therefore, only a short explanation about the information processing abilities will be provided.

There are many information processing abilities that are believed to be involved in reading and spelling, such as verbal ability, phonological memory, speech perception and production, phonological awareness (sensitivity), letter-name knowledge, and rapid automatized naming (RAN) (Bowey, 2005). Current research focuses on phonological processing abilities and RAN.

In works about the prediction of reading difficulties, phonological awareness seemed to be overestimated, especially in children learning to read shallow orthographies (Wimmer, Mayringer, and Landerl, 2000). Children learning to read German, for example, seem to have an advantage compared to English speaking children due to the consistency of the German language (grapheme-phoneme correspondence) (Landerl, Wimmer, and Frith, 1997). They seem to rely on phonological decoding more in the beginning of the learning process. Through practice the process becomes more and more automatized and children rely more and more on lexicon processing. Nonetheless children's difficulties cannot be totally compensated over time and the gaps to same age peers are never overcome. In a longitudinal study Klicpera and Schabmann (1993) measured children's reading and spelling abilities from the first to the eighth grade. They found that poor readers and spellers' differences in reading speed remained stable over time while differences in reading accuracy improved. Differences in spelling improved significantly in the first four grades of elementary school, but progress diminished after that.

Rapid automatized naming (RAN) tasks involve naming a continuous series of stimuli, such as letters, colors, or pictures, as quickly as possible (Bowey, 2005). Some researchers assume that responses are the result of an over-learning process (automatizing), that is, responses would involve the direct lexical route access to stimuli that are already stored in lexicon and would not need to be decoded. Some studies show that performance in RAN tasks with letters and digits can predict later reading performance, even though mediated by letter knowledge (Cronin and Carver, 1998; Wagner, Torgesen, and Rashotte, 1994; Wagner, Torgesen, Rashotte, Hecht, Barker, and Burgess, 1997; Wolf, Bally, and Morris, 1986). Nevertheless, there is still much controversy about what RAN really measures and about the assumption that its rapid serial processing component would reflect only non-phonological processes.

The occurrence of isolated reading and spelling difficulties and their different development over time incited scientists to look for separate theoretical models to explain

reading and spelling processes. Nevertheless theoretical models about spelling processes have some similarities to reading theoretical models. For example, Barry's Dual-Route Model of spelling production (1994) (figure 3) also allows for two separate routes of processing to run parallel: the lexical route and the assembled route.

The lexical route starts when a word is heard (Barry, 1994). The word is first recognized by the auditory system and then retrieved from the orthographic lexicon which contains all our knowledge about word spellings. This process takes place either through the word's meaning (semantically mediated spelling) or its output phonology (via phonological lexicon). The processed information is held in an output buffer until the final processes, for example writing or oral spelling, are being prepared and implemented.

The assembled route works in a similar way, except that this time the spelling of the word heard is not retrieved from the orthographic lexicon. Instead the word will be held in a sort of phonological short-term memory. Then information is segmented and a sound-to-spelling conversion takes place. The processed information ends in the same output buffer as in the case of the lexical route and is held there until the final step is implemented. This route is only reliable for regular words, that is, words that follow the phoneme-grapheme rules. Consequently, it is expected to be very efficient in spelling words in languages with a shallow orthographic system, such as Italian or Finnish (Barry, 1994).

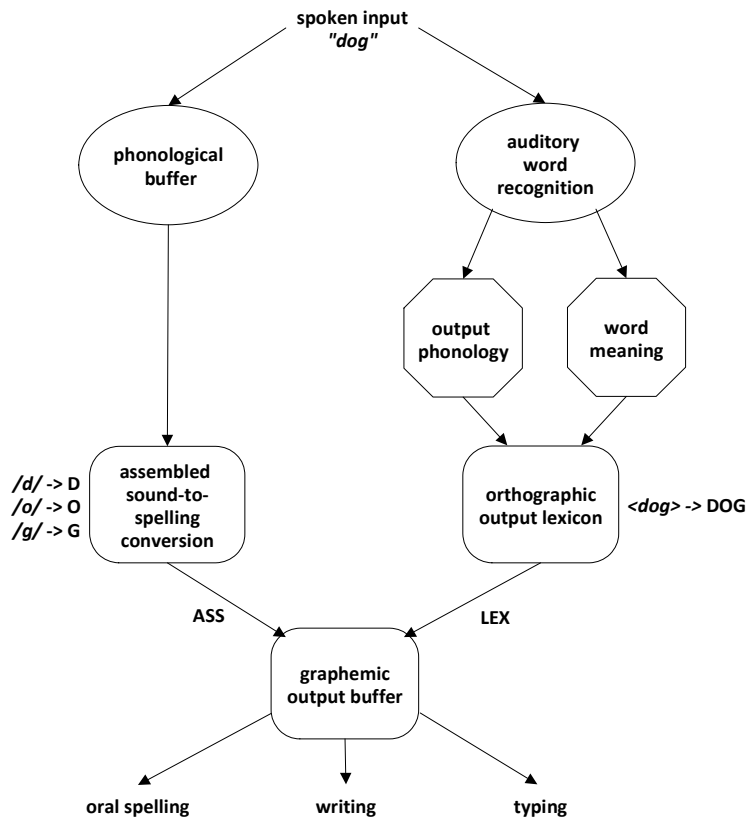


Figure 3. Barry's Dual-Route Model of spelling (redrawn from Barry, 1994).

## 2.2. Definition and symptoms of reading and spelling difficulties

Children with developmental reading and spelling difficulties show low academic achievement despite normal intelligence (IQ >70). This should not be accounted for by neurological damages or visual, hearing or motor co-ordination problems (Warnke, 1999). Additionally the diagnosis should take into consideration poor teaching and cultural factors. Reading and spelling difficulties are usually defined based on children's performances on the tests applied. Results are compared to the ones of average reading and spelling children. The criterion normally used is the identification of those children whose reading and spelling abilities fall below expectation for their age and general cognitive ability, for example, two standard deviations below the mean or two classes below age. These diagnostic concepts are in accordance with the classification systems ICD-10 (F81.0 Specific Reading Disorder / F81.1 Specific Spelling Disorder) and DSM-IV (Axis I – 315.00 Reading Disorder).

Symptoms of reading difficulties in the German language are omitting, substituting, displacing or adding words, parts of words or letters while reading. Children can also show slow reading speed, halting reading from word to word and from letter to letter, hesitate to

start reading, fail to follow the line being read, make imprecise intonation during reading, and are unable to reproduce what has been read or to draw conclusions from it. In the first grade, children may have difficulties in naming letters or recognizing rhymes (ICD-10).

Spelling mistakes in the German language include mistakes in graphemes, letter sequences, phonemes and orthographic rules. Grapheme mistakes are given when children mix up or reverse letters which are similar in their writing form, such as *nn* and *m*, *h* and *b*, or *p* and *b*. Mistakes in letter sequence take place when children displace letters when writing a word, that is, all letters of a word are correctly written, but their sequence is not right (e.g. die-dei). Orthographic mistakes occur when children follow the phonetics while writing a word, but do not take the orthographic convention rules into consideration (e.g. Fogel-Vogel). Mistakes in phonemes take place when children omit (e.g. ach-auch) or insert (e.g. spatzieren) letters. In a longitudinal study with Austrian children from the first to the eighth grade a detailed analysis of children's spelling mistakes from the second to the fourth grade was made in order to investigate if there was a difference in the amount and type of mistakes done between average and poor readers (Klicpera, Gasteiger-Klicpera and Schabmann, 1993). Although there were some differences in the developmental trends, only small differences in the type of mistakes done by average and poor readers were found. Therefore, researchers concluded that the number of mistakes is the main factor that differentiates average and poor readers and not the type of mistakes.

### **2.3. *Concomitant problems to reading and spelling difficulties***

Aside from the children who have severe reading and spelling difficulties, there is also a continuing concern about more ordinary failures of reading and spelling experienced by some children that can likewise affect their daily living and development. Children spend most of their time in school and reading is seen as a central matter (Perfetti, 1985). Especially at school entry children suffer great pressure to succeed in learning to read and write, also because this is the way they are supposed to acquire knowledge in all other school disciplines. In Austria, the school system stipulates an early separation of the school children according to their performance (Bundesministerium für Unterricht, Kunst und Kultur, 2007) (figure 4). Thus, Austrian children with early reading and spelling difficulties are especially at risk of being negatively influenced regarding their school pathway and future

career choices, despite their normal cognitive abilities. The high performance pressure summed up to difficulties in reading and spelling could lead to emotional problems which could be manifested in a negative change in behavior.

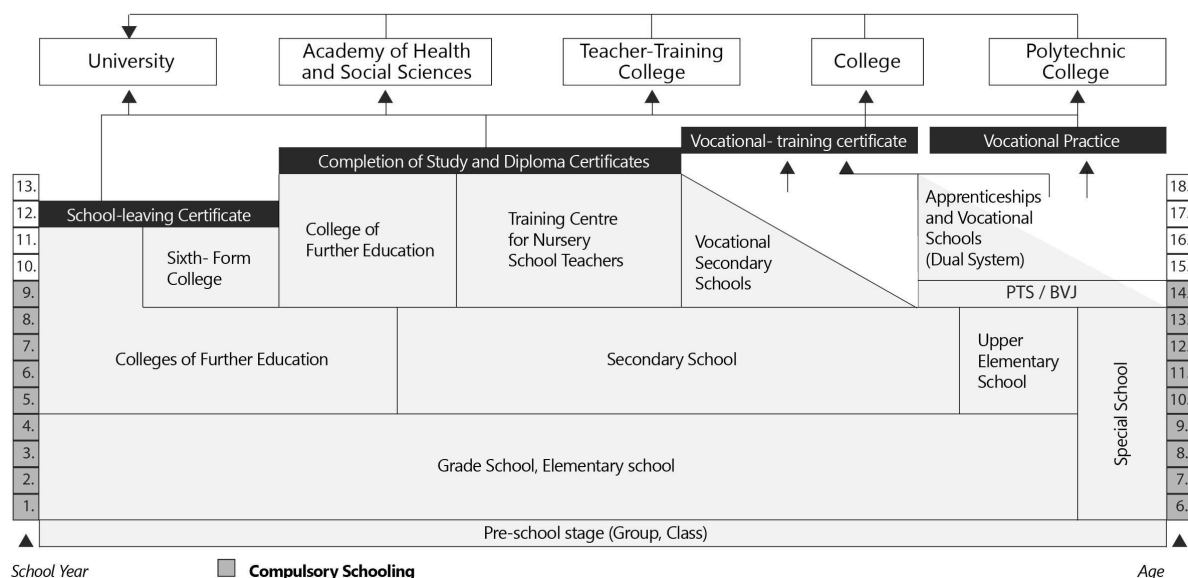


Figure 4. Austrian educational career paths (excerpted and translated from the original brochure “Bildungswege in Österreich”, 2007).

The first research works on the relationship between reading and spelling abilities and behavioral problems are dated in the 1940’s (Klicpera, Schabmann, and Gasteiger-Klicpera, 2003). These addressed a broad range of behavioral problems, including internalizing behavior such as depressed mood and social withdrawal, and externalizing behavior such as aggression and hyperactivity. For many years the research community has concentrated their efforts on the investigation of externalizing behavior. One reason for this could be the fact that internalizing behavior present unique challenges in identification, assessment and intervention. These difficulties could have lead to non-significant results, which are less probable to be published than significant results, although they may provide just as valuable evidence as significant results. Another reason that could have led to this focus of interest is that, in general, teachers report having more problems with students with externalizing behavior than with internalizing behavior, since the first is less tolerated (Gresham & Kern, 2007). In this case, there could be an under-identification of cases of internalizing behavioral problems, and therefore an intervention against externalizing

behavioral problems would be prioritized. In the last years it seems that researchers have split their attention in order to investigate also internalizing behavioral problems.

The consequences of reading and spelling difficulties on children's behavior are unclear. Warnke, Hemminger, Roth, and Schneck (2002) named in their book problems which may accompany children's reading and spelling difficulties: a generally slower ability in learning languages, attention problems and impulsivity, frustration and distress, low general academic achievement, motivational problems and depressed mood, somatic complaints, such as abdominal pain, headache, nausea and vomiting, conduct problems, and school refusal.

Up to this point research results about the relationship between reading and spelling difficulties and internalizing behavioral problems in children is fairly contentious and studies about the relationship between reading and spelling difficulties and victimization are scarce. The processes that underlie a relationship between them and the processes involved in their developmental patterns still need to be further investigated.

#### **2.4. *Internalizing and externalizing behavioral problems***

Childhood and adolescent behavioral problems can be classified as being either externalizing, which include aggression, disruption, opposition, and hyperactivity, or internalizing, which are marked by social withdrawal, depression, anxiety, somatization, and obsessive-compulsive behavior (Achenbach and Edelbrock, 1978; Cicchetti and Toth, 1991). Estimates of externalizing and internalizing behavioral problems prevalence rates in children from 5 to 18 years old vary between 7% and 20% (Cicchetti and Toth, 1991). According to Gresham & Kern (2004) externalizing behavior is directed toward the environment and can be characterized as uncontrolled and outer-directed. Internalizing behavior is directed toward the individual and can be characterized as over-controlled and inner-directed. Also psychosomatic symptoms such as headaches and abdominal pain have been seen as related or part of internalizing behavioral problems. Given that externalizing behavior is not of central interest in this work, it is not going to be explained in detail.

All internalizing disorders of children and adolescents are coded on Axis I "Clinical Disorders / Other Conditions that may be a focus of clinical attention" of the DSM-IV (American Psychiatric Association, 1994). Table 1 shows a description of three internalizing

disorders, as described in the DSM-IV, which are relevant for this work. In a study about the stability of internalizing behavioral problems in a non-clinical sample from kindergarten over a 2-year period, results revealed a low to moderate continuity of symptoms (Pianta and Castaldi, 1989). The continuity or increase in internalizing symptoms was related to child dependency, conduct and attention problems, and peer difficulties. However, some studies reported a significant stability of internalizing behavioral problems in young children (Verhulst and van der Ende, 1992; Ialongo, Edelsohn, and Kellam, 2001).

Table 1. Description of internalizing disorders in DSM-IV.

Internalizing Disorder	Description
Major depressive disorder (recurrent, mild – 296.31)	Depressed mood most of the day, nearly every day; reduced interest in activities that used to be enjoyed; weight loss or gain when not dieting; sleep disturbances (either not being able to sleep well or sleeping too much); psychomotor agitation or retardation; fatigue or loss of energy; feelings of worthlessness or excessive guilt; difficulty on concentrating, holding a conversation, paying attention, or making decisions that used to be made easily; suicidal thoughts or intentions. In children and adolescents, the mood may be irritable rather than sad.
Dysthymic disorder (300.4)	Depressed mood for most of the day, for more days than not, for at least two years. During this time, there must be at least two or more of the following symptoms: under- or over eating, sleep difficulties, fatigue, low self-esteem, difficulty with concentration or decision making, and feelings of hopelessness. In children, the mood may be irritable rather than sad.
Adjustment disorder	Development of clinically significant emotional or behavioral symptoms in response to an identifiable stressor(s). Distress is in excess of what it would be expected and there is an impairment of social and occupational functioning. Subtypes are with depressed mood (309.0), with anxiety (309.24), with mixed anxiety and depressed mood (309.28), with disturbance of conduct (309.3), or with mixed disturbance of emotions and conduct (309.4).

Based on the DSM-IV classification system, the major internalizing behavioral problems can be classified into three categories, namely anxiety-related, depressive-related, and problems in peer relationships (Gresham & Kern, 2004). Anxiety-related behavior was not included in this analysis and is therefore not going to be further explained. In the next two sections, 2.4.1. and 2.4.2., depressed-related behavior, including depressed mood and social withdrawal, and problems in peer relationships due to victimization will be respectively elucidated.

#### **2.4.1. *Depressive-related behavioral problems and reading and spelling difficulties***

The annual prevalence of depression (major depressive disorder, major depressive episode with and without diagnostic exclusions) in the general adult population in Europe is 6,9% (Wittchen and Jacobi, 2005). In children life prevalence of depression ranges from lower than 1% among pre-schoolers to 1% to 5% among elementary school children (Essau, 2002; Harrington, 1994). Young children experience depression in the same way as adults, but there may be some differences in its expression (American Psychiatric Association, 1994). Some of the symptoms of depressive-related problems in school children are looking sad, being very shy, crying easily, and getting easily frustrated. Sometimes their mood may be irritable or they might be hyperactive rather than sad.

The incidence of depressed mood among students with general learning disabilities has already been studied for a long time (Maag and Reid, 2006). Early interest was based on the fact that students with learning disabilities showed lower levels of self-esteem, which is a symptom of depression, and lower academic achievement compared to students without learning disabilities. Additionally, a similar cerebral dysfunction was supposed for learning disabilities and depression. Thus, most of the initial research was conducted with clinical samples inside clinical institutions and these findings cannot be simply generalized to include children who do not meet clinical criteria. Maag and Reid (2006) conducted a meta-analysis of fourteen studies about depression among students with different learning disabilities and reported significantly higher depression scores for students with learning disabilities than students without learning disabilities. In a review of studies published since 2004 regarding the comorbidity between literacy problems and psychiatric disorders in childhood, an

increased risk of both externalizing and internalizing disorders were found to be associated to literacy problems (Maughan and Carroll, 2006).

Recently, more specific studies that have been published about the relationship between reading and spelling difficulties and internalizing behavioral problems in children and adolescents have tried to investigate these relations based on non-clinical samples. Among other central issues that have been discussed in later works is the need of clear definitions of internalizing behavioral problems, especially to find a clear distinction between a clinical status of these behavioral problems and a milder form, in which children are not clinically ill, but their daily life and future developments are at risk of being affected. Researchers should only speak about depression if children meet DSM-IV criteria. Moreover better approaches have been recommended in the sense of an adequate assessment of target variables and control for relevant factors, such as environmental factors (social economic status and family) and comorbidities. A multimodal method design should be used when possible, for example, by collecting information not only from teachers, but also from parents and peers. Especially in case of internalizing behavior, it is important to include self-reports, since the assessment of an internal state through externally based reports can be problematic (Cicchetti and Toth, 1991). Finally, demands for studies also including girls and longitudinal designs from early childhood on have been advocated.

As already mentioned, the relationship between reading and spelling difficulties and internalizing behavior is still controversial. On the one hand, some of the studies that support the idea of a relationship between the two propose an influence of reading and spelling performance on internalizing behavior. Arnold et al. (2005) conducted a longitudinal study about the severity of emotional and behavioral problems among poor and typical readers. Adolescents were tested at ages 15, 16, 17. Single word reading ability and behavioral, emotional and attention problems were measured. Self-reports were completed by the participants and their parents to assess severity of depression, anxiety, somatic complaints, delinquency, aggression and attention. Additionally socio-demographic variables (gender, age, race, and socioeconomic status) were recorded. Results showed that even after controlling for both socio-demographic factors and ADHD, differences were found in depression, anxiety, somatic complaints, and attention with higher scores for poor readers than for typical readers. Poor readers showed a slower rate of decline in inattention as they grew older. Authors concluded that poor reading during mid- to late adolescence appears to

be associated with increased risk for internalizing behavior and emotional problems. One problem to be mentioned about this study is that the assessment of reading ability was based only on single-word reading tested at the beginning of the study. Over the course of time, no reading-related abilities were assessed.

Using data from the Pittsburgh Youth longitudinal study (PYS), Maughan (2003) explored the relationship between depressed mood and reading difficulties in American boys in grades one, four, and seven. The four main research questions were: (1) Are reading difficulties associated with increased risks for depressed mood? (2) What do the developmental trends of this association between reading and depressed mood look like? (3) Can this association between reading and depressed mood be explained by family functioning or comorbid disruptive behaviors? (4) What does the developmental trend say about the causal effect of reading difficulties on behavior? In addition to a screening, there were five follow-ups, in which the following information was collected: reading abilities, depressed mood, disruptive behaviors, hyperactivity, antisocial behavior (self-report), socioeconomic status and family atmosphere and parenting (parent's ratings). Based on the literature, the authors postulated three possible models to try to clarify the association between reading difficulties and depressed mood. In the first model the whole variance in the higher presence of depressed mood would be explained by reading difficulties. In the second model adverse psychosocial circumstances (family factors) and or comorbid disruptive behavior and attention difficulties could share some of the variance. In the last model this association could be mediated by a reduced sense of well-being and self-esteem. Results showed links between reading problems and increased risk for depressed mood in boys aged seven to ten years, but not in those who had entered their teens. These effects remained even after controlling for family factors, attention and behavioral difficulties. Authors concluded that reading problems lead to poor school performance which in turn could lead to low self-esteem. Low self-esteem could possibly work as a mediator between reading abilities and behavior problems, causing an elevated risk for depressed mood among children with reading difficulties. A generalization of these results remains constricted since the sample consisted of only boys.

In another study about the association between reading disability (RD) and internalizing and externalizing behavioral problems in a sample of twins, significantly higher rates of internalizing and externalizing behavioral problems were also found in individuals

with RD than in individuals without RD (Willcutt and Pennington, 2000). Likewise, after controlling for comorbid ADHD only internalizing behavior (depressive symptoms and somatic complaints) remained significantly higher for female individuals with RD compared to the ones without RD. The examination of common family factors between twins in which one individual presented RD and the other did not, pointed to an elevation of the exhibition of externalizing behavior in both individuals with RD and their siblings without RD, while elevations of internalizing problems were restricted to individuals with RD. Authors concluded that internalizing behavior is probably associated to RD and is not attributable to general family factors.

Valås (1999) assessed students regarding peer acceptance, loneliness, self-esteem, and depression. Results revealed that although students with learning disabilities were not more depressed than students without learning disabilities, they were less accepted by peers, had a lower self-esteem, and felt lonelier than the control group. The same result was obtained when students with learning disabilities were compared to low-achievers.

On the other hand, there are also studies which point to an influence of internalizing behavior on reading and spelling performance. Bonifacci et al. (2007) conducted two studies to investigate how reading and spelling relate to anxiety and depression in Italian children. In the first study (N=72) they compared third grade children at risk for the development of anxiety and depression with a control group in their reading and spelling abilities. Children completed an intelligence test to control and match for verbal IQ. Accuracy and speed were collected for basic abilities (letters and numbers sound, grapheme discrimination, lexical decision) and reading efficiency (reading words, non-words and words with irregular accentuation). Comprehension was assessed through accuracy in a homophone<sup>2</sup> task. Additionally writing tasks were given, in which words, non-words and homophones were dictated, and accuracy was measured. Results showed no differences between groups in all reading tasks, but significant group differences were found in the spelling tasks. Despite controlling for verbal IQ, children in the depression group performed worse in the homophone task than the control group. In the second study (N=42) they recruited first grade children in order to investigate whether these associations could already be detected from the beginning of the literacy acquisition. Groups were built in the same way as in the

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<sup>2</sup> homophones are words which have the same pronunciation, but are spelled differently and have different meanings (e.g. in German the words Stadt – statt).

first study. Children completed an intelligence test and questionnaires on anxiety and depression were read aloud to them. Reading and spelling abilities were assessed in a test with lists of words containing mono-syllabic and disyllabic words and non-words. Speed and accuracy were measure for reading and accuracy was measure for spelling. Similar results were found, in sense that depressed children performed worse in spelling accuracy for words than the control group. Authors concluded that the lexical component (word and homophone) seemed to be more affected in association with depressed mood than phonologically based abilities, necessary in the non-word tasks. Thus, not reading ability per se seems to be related to depressed mood, but maybe different factors which determine the severity or range of reading difficulties and their effect on academic performance.

In addition to depressive symptoms and reading, Stringer & Heath (2006) included math abilities and academic self-perception in their analysis on school children. The main findings showed no effect of academic self-concept on performance and depression accounted for a small but significant portion of variation in reading and math scores. Authors concluded that depressive symptoms, even at a non-pathological level, can affect academic performance over time.

In the longitudinal study from Klicpera and colleagues (Klicpera et. al, 1993) previously cited, the relationship between behavior problems and reading and spelling difficulties was also investigated. The path-model included variables such as externalizing behavioral problems, motivation and attention, parental fostering, socio-economic status, and anxiousness and depressed mood. Based on the model loadings authors concluded that behavior problems, especially externalizing behavioral problems, are most likely to cause problems in school performance and in social adjustment. Anxiousness and depressed mood were correlated indirectly to reading and spelling performance through motivation and attention.

Contrasting results showing no significant relationship between reading and spelling difficulties and internalizing behavioral problems were reported by Lamm and Epsen (2001), who evaluated the general emotional status of adolescents and young adults with dyslexia in comparison to average readers. Self-reports about the emotional status of the dyslexic group did not differ from the ones in the control group. Miller and colleagues (2006) also reported in their study high similarity in terms of internalizing behavior between a dyslexic group and a control group. Their goal was to investigate whether dyslexic children would be

at risk for elevated internalizing symptoms such as depression, anxiety and somatization. The study included 79 American children between six and sixteen years of age. Children were divided in a dyslexic group and a control group. The assignment in the dyslexic group followed two different diagnostic models: (a) children with discrepancy in intelligence score and sub-average reading achievement and (b) children with sub-average reading achievement regardless of intelligence scores. Word recognition and decoding skills were assessed in a test. The internalizing symptoms (anxiety, depression and somatization) were collected by asking parents and teachers to fill up a questionnaire. Moreover, children who were eight years or older were also asked to complete self-report questionnaires on anxiety and depression. Both, in the first analysis following the first diagnostic model and in the second analysis following the second diagnostic model, no differences were found between groups. Limitations of this study are the relatively small sample size and stringent diagnostic criteria which just included children with severe reading problems.

Besides depressed mood, depressive-related problems comprise also social withdrawal (Gresham & Kern, 2004). In the Waterloo Longitudinal Project (WLP) the implications of early social withdrawal on future adaptation was explored (Rubin, Hymel, Mills, and Rose-Krasnor, 1991). The 180 children participating in the study were assessed in kindergarten and in the second, fourth, and fifth grades. From kindergarten to the fourth grade, they were observed in free play with their peers and examples of specific social and non-social behavior were recorded, based on a checklist. Additionally, children were administered *The Revised Class Play* by Masten, Morison, and Pellegrini (1985), in which they were requested to name peers, who would better fit certain behavior descriptors. In the fifth grade, only the peer nomination instrument was administered. Results showed social withdrawal in childhood as being a relatively stable phenomenon from kindergarten to fifth grade. Moreover, social withdrawal reflected problems regarding a child's self-esteem and affect and it could predict subsequent internalizing behavioral problems. In school, socially withdrawn children may show low activity level and low interaction with same-age peers, expressed by not talking to other children very often and not participating in games.

#### **2.4.2. *Victimization and reading and spelling difficulties***

In the same manner as earlier research on behavioral problems in school are concentrated on externalizing in comparison to internalizing problems, until recently physical or overt aggression received most of the attention from the scientific community. Nevertheless, there are important forms of covert aggression, such as relational victimization, which are emerging as relevant research topics (Crick, Casas, and Nelson, 2002).

Wolke, Woods, Stanford and Schulz (2001) reported in their study a prevalence rate of 24% of English children being victimized every week in school while in Germany they found a rate of 8%. Nevertheless, due to the fact that victimization is still a new area of research, the comparison of studies is difficult and rates on prevalence are marked by strong variability (Solberg and Olweus, 2003). There are many factors that can influence the estimation of prevalence rates. In the case of studies on victimization different data sources, such as teachers, parents or self-reports, can influence the results. In some studies a definition of bullying/victimization is given to the participants before they begin answering the questionnaire or start being interviewed. In others this procedure is not undertaken, and therefore leaving it up to the participants to base their answers on their personal understanding of the term.

Olweus (1999) defines being bullied or victimized as when a student is exposed repeatedly and over time to intentional negative action on the part of one or more other students. In case of bullying, there must also be a perceived imbalance in strength. Victimization can be physical, verbal or psychological. Physical victimization, as the name says, involves physical aggression, such as kicking, hitting, and taking away belongings. Verbal victimization includes name-calling, teasing and threatening. Psychological victimization, also called relational victimization, involves aggressive behavior in which a person tries to harm the victim through manipulation of relationships and threat of damage to them. This can take place directly in a face-to-face situation or indirectly by spreading rumors (e.g. when a child threatens to withdraw affection if the other person doesn't do what he/she wants) (Crick et al., 2002). In school, victimized children often get beaten and annoyed by other children and have often to be protected by the teacher since they don't stand up for themselves.

The negative peer relationships experienced by victimized children are associated with social adjustment problems which in turn can lead to internalizing behavioral problems, such as depressive symptoms (Crick et al., 2002; Solberg and Olweus, 2003). Victimized children describe themselves as unpopular and unhappy and report having fewer friends and being afraid in school (Boulton and Underwood, 1992; Colvin, Tobin, Beard, Hagan, and Sprague, 1998).

Although there are not many studies done about the relationship of victimization to other concomitant problems in school, some researchers have postulated that children with learning disabilities, including reading and spelling difficulties, are at greater risk of being victimized by peers (Gasteiger-Klicpera et al., 2006; Mishna, 2003; Olweus, 2001). In a longitudinal study Gasteiger-Klicpera and colleagues (2006) showed that social withdrawal and victimization were negatively affected by reading and spelling difficulties. Over time, the acceptance by peers and pro-social behavior seemed to diminish in the group of poor readers as a result of the reading and spelling difficulties. This would mean that being at greater risk of being victimized, children with reading and spelling difficulties are indirectly also at a greater risk of developing internalizing behavioral problems.

### 3 Research Question

Since science is a cumulative process of knowledge generation (Cone and Foster, 2006), there are two main questions which we should ask ourselves at this point. The first question is what has been answered so far based upon the mentioned previous research works and the second important question, which derives from the first, is what still has to be answered and how much this analysis can contribute to it.

In regard to the relationship between reading and spelling difficulties and internalizing behavioral problems in children and adolescents, some studies showed a small but significant correlation between these variables (Maag & Reid, 2006). Arnold et al. (2005) reported higher emotional problems among poor readers, similar to Willcutt and Pennington (2000) who found higher rates of internalizing and externalizing behaviors among reading disabled. Stringer & Heath (2006) found depression to explain a significant portion of variation in reading performance while Bonifacci et al. (2007) concluded that specific range and the severity of spelling difficulties affect performance and can work as a mediator for depressive mood. Valås (1999) found students not to be more depressed, although less accepted by peers and Maughan (2003) postulates self-esteem as a mediator between reading difficulties and depressed mood. Nevertheless there are also studies which report contrary results. Lamm and Epsen (2001) reported no differences in the emotional status between dyslexics and average adolescents and young adult readers, similar to Miller et al. (2006) who could not find any differences in anxiety, depression and somatic complaints between a dyslexic group and a group of average readers. Rubin et al. (1991) found social withdrawal to reflect problems in self-esteem in kindergarten and this could predict later internalizing behavioral problems. Summarizing, although most of the studies cited do speak in favor of a relationship between reading and spelling problems the fact of a direct relationship still has to be confirmed, since some studies point to an indirect relationship mediated by other factors.

In the case of victimization, we have seen that victimized children seem to be afflicted by social adjustment problems which can lead to internalizing behavioral problems (Crick et al, 2002; Solberg et al., 2003) and that they feel unpopular, unhappy, and afraid (Boulton et al. 1992; Colvin, 1998). Some studies showed that learning-disabled children are at a higher risk of been victimized (Gasteiger-Klicpera et al., 2006; Mishna, 2003; Olweus, 2001). Searching for literature on victimization proved to be a difficult matter, since there is still lack of

research in this area. Thus, more research is needed, before we are able to draw conclusions about the relationship of victimization to learning disabilities, especially reading and spelling difficulties.

Based on the results of the literature to the present date, the **first research question** alludes to the relationship between reading and spelling abilities and internalizing behavioral problems (depressed mood, social withdrawal) and reading and spelling difficulties and victimization in children. The two research models assume two different developmental pathways. The first model, called simple model (SM) (figure 5), proposes independent developmental paths for reading and spelling difficulties and for internalizing behavioral problems and victimization. This means that difficulties in reading and spelling abilities in children do not directly contribute to the co-existence of internalizing behavioral problems or victimization. Consequently, children with reading and spelling abilities would not be at higher risk of developing internalizing behavioral problems or being victimized compared to their same age peers without reading and spelling difficulties.

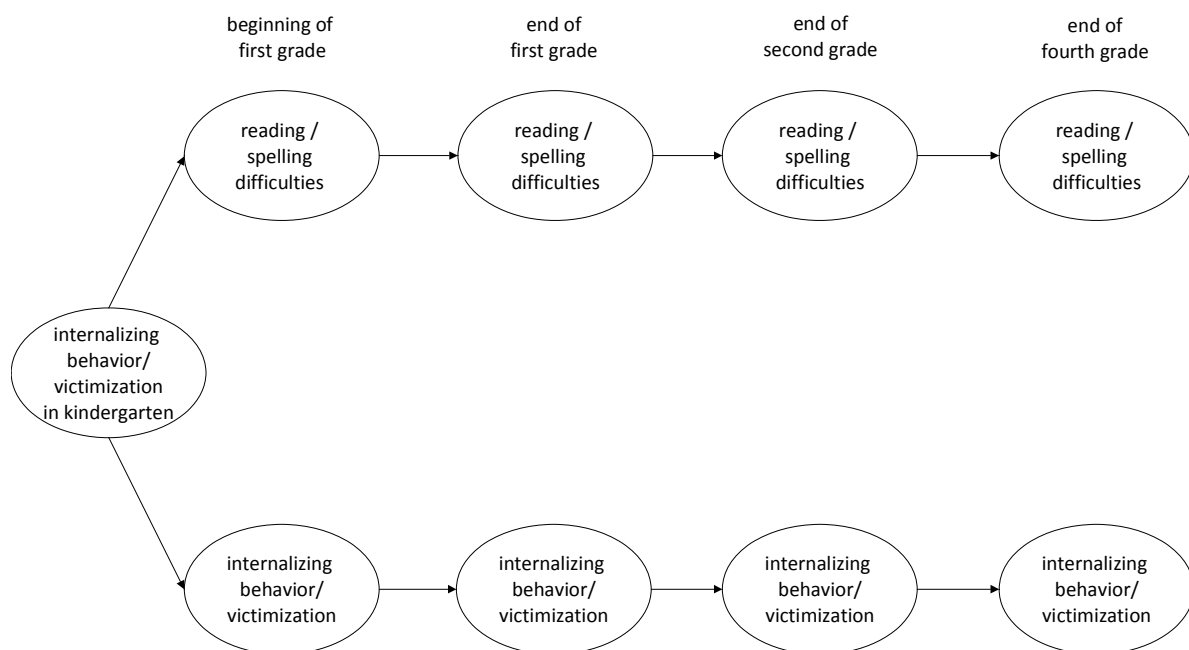


Figure 5. Proposed simple model (SM) of independent developmental paths for reading and spelling difficulties, internalizing behavioral problems, and victimization.

The second model, called unidirectional model (UM) (figure 6), indicates a direct correlation between reading and spelling difficulties and internalizing behavioral problems (depressed mood, social withdrawal) and reading and spelling and victimization in children. This would mean that children with reading and spelling problems are more likely to develop internalizing behavioral problems and to be victimized than children without reading and spelling problems, since reading and spelling problems would directly contribute to the development of internalizing behavioral problems and victimization. By comparing the SM and the UM based on most of the previous cited results a small but significant positive relationship between reading and spelling difficulties and internalizing behavioral problems and reading and spelling difficulties and victimization is expected to be confirmed. In this sense, the UM is expected to provide a better fit to the data than the SM.

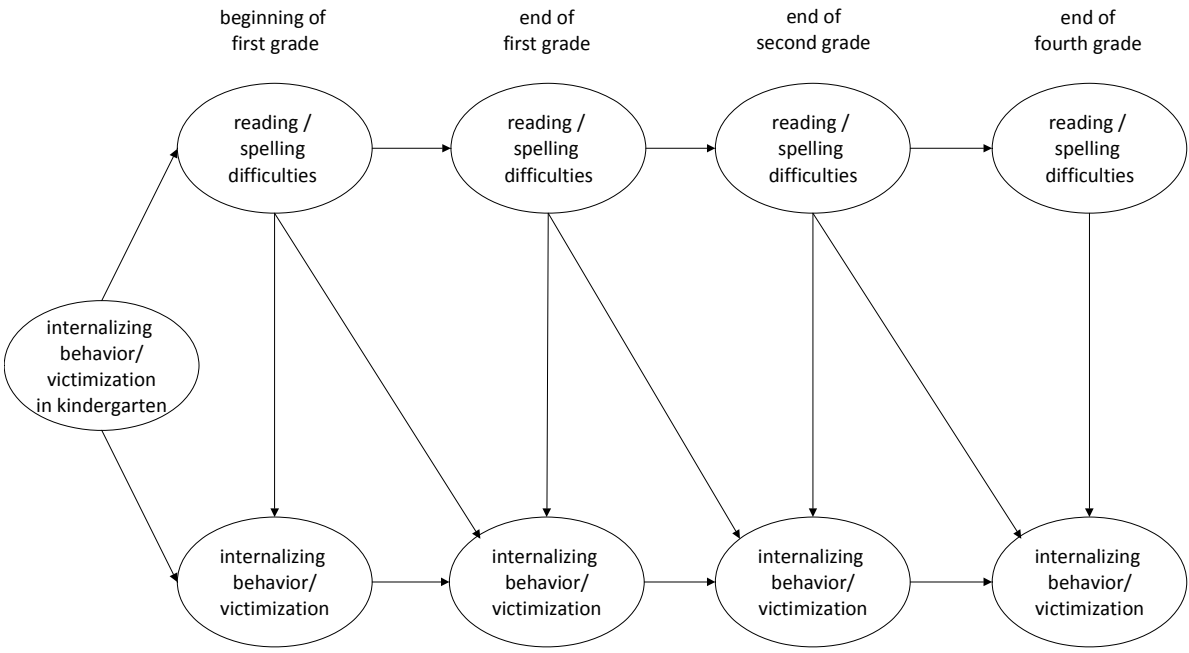


Figure 6. Proposed unidirectional model (UM) about the relationship between reading and spelling difficulties and internalizing behavioral problems and reading and spelling difficulties and victimization.

Studies about the long-term relationship between reading and spelling difficulties and internalizing behavior are scarce. Longitudinal studies are important in the investigation of the developmental pattern of these difficulties. They contribute not only to the

understanding of how reading and writing difficulties and internalizing behavioral problems interact over time, but can also bring some enlightenment regarding the direction of a possible causal relationship between the two. Two studies described in this work reported changes in effect over time which indicated an increase of depressed mood over time (Arnold et. al, 2005), although a direct relationship between reading and depressed mood was no longer significant as children entered their teens (Maughan, 2003). These variations could be a result of age-related developmental changes or they could be an indication of possible mediator variables between reading and spelling difficulties and internalizing behavioral problems. Moreover, a small effect of prior depressed mood on reading difficulties was found, which presumably suggests that school progress contributes to influencing the mood (Maughan, 2003). Klicpera and colleagues (1993) proposed a theoretical model which assumed the opposite, namely that behavior problems affect school performance. If this is to be true then this process must take place already in earlier years. Nonetheless they did not assess internalizing behavioral problems and victimization already in kindergarten. Assessing behavior before reading and spelling instruction had begun, should allow us to investigate the direction of the possible causal relationship between the reading and spelling difficulties and internalizing behavioral problems and reading and spelling difficulties and victimization. If children displays no noticeable behavioral problems or behavioral problem tendencies whatsoever in kindergarten, that is, no more than expected for age/class, this would mean that due to problems in learning to read and spell in the first grade, children would be more likely to develop internalizing behavioral problems or to be victimized. Therefore, the **second research question** should help us to investigate whether reading and spelling difficulties precede the internalizing behavioral problems (depressed mood, social withdrawal) and victimization. This is represented in the UM through the unidirectional paths marked by the arrows pointing from reading and spelling difficulties to the internalizing behavioral problems and victimization. It is hypothesized that reading and spelling difficulties precede internalizing behavioral problems and victimization and contribute to their emergence, which is in accordance to newest research works (Maughan, 2003). This means that the path correlation coefficients which link reading and spelling difficulties to internalizing behavioral problems and victimization are expected to be high and to reach significance.

Besides the two main research questions, it was important to check how much of the variance in reading and spelling performance and in internalizing behavior and victimization

ratings were due to **class** membership. Traditionally, Austrian teachers base their evaluations more on spelling than on reading performances and this fact could influence children's performances and behavioral reactions. Therefore, spelling is expected to be more class dependent than reading alone.

The results of this analysis should help to draw some conclusions about the consequences of reading and spelling difficulties on children's behavior and, consequently, to clarify the relationship between reading and spelling difficulties and internalizing behavioral problems and between reading and spelling difficulties and victimization. Additionally, this analysis should contribute to the understanding of the developmental path of reading and spelling difficulties, internalizing behavioral problems and victimization from kindergarten to the fourth grade and help reveal how much of the variance in the reading and spelling performance and in the behavior can be explained by class membership.

## 4 Methods

### 4.1. *Participants and procedure*

The data used for this analysis were collected during the “Wiener Longitudinal Study Part II” conducted from 1997 until 2005. This study includes four waves with five assessment points each. The four waves took place in 1998, 1999, 2000, and 2001. In all waves the first assessment point was at the end of the kindergarten year. 352 children from 23 different kindergartens located in Lower Austria participated in the study. Since tracing these children in the following years in school was of main importance, the selected kindergartens were all located in small towns, so that the probability that these children would go to schools in the near neighborhood would be high. This fact also contributed to a leveling of children’s socio-economic status (SES). Requirements for recruitment included minimum age for school entry, which in Austria is six years old, German as native language, and an informed consent signed by the parents. The four subsequent assessments took place in 13 different Austrian public schools also located in Lower Austria at the beginning (10-15 weeks after beginning of first grade) and end of the first grade (end of school year), at the end of the second grade, and at the end of the fourth grade. 366 first graders, 328 second graders, and 303 fourth graders participated in the study. Altogether data from 1349 children from 64 classes were collected. From these only 226 children were assessed at all five time points. This can be explained by the fact that many new children were included in the study in the subsequent school years, since all children in the selected classes were included in the assessment and not only the ones who had participated in the study since kindergarten. The present analysis includes solely the 226 children (n=103 girls; n=123 boys) assessed at all time points. Children with missing data at any of the time points were eliminated from the analysis. There is no reason to believe that drop outs were systematic and effects on the representativeness of the sample are ruled out.

### 4.2. *Assessment of reading and spelling abilities*

Since by the first assessment point at the end of kindergarten formal reading and writing instructions had not yet begun, children were not assessed in their reading and spelling abilities per se, but in abilities that are known to be related to children’s later reading and writing development. Children were tested in their phonological awareness,

phonological recoding, visual attention and rapid naming using the *Bielefelder Screening* (BISC; Jansen, Mannhaupt, Marx & Slowronek, 1999). This test aims the early identification of reading and writing difficulties in children before initiation of formal instruction and is composed of four sections. One of the sections comprises tasks for testing the phonological awareness, such as recognizing rhymes (e.g. “Do the words *Fisch* and *Tisch* sound alike?”) and segmenting syllables (e.g. “Repeat the word after me and clap your hands by each syllable while speaking. – *fin - den*”). A second section measures phonological recoding abilities. Non-words are played in a computer or tape recorder and children are asked to repeat it (e.g. “*Ri so la mu*”). In a third section children are asked to compare and search for words in a list in order to measure visual attention abilities. A last section involves long-term memory information recall in a rapid naming task. Children are presented with black and white pictures of fruits and vegetables and are asked to name their typical colors as quickly as possible. In a second step they are shown the same pictures, but this time they are colored. The colors are incongruent, that is, the object is colored with an atypical color (e.g. a blue lemon). Children are again asked to name the objects’ typical colors as quickly as possible. Time and accuracy were registered for all tasks.

In the second assessment point in the beginning of the first grade test scores on reading were collected using a self-developed Reading Test (Klicpera, Humer, Gasteiger-Klicpera, and Schabmann, 2008). This procedure was seen as the most appropriate, since at this early point it was important to fit the test to the level achieved in the reading instruction and to the method used by the different teachers. Materials used by the teachers included “*Frohes Lesen*”, “*Das Lesehaus*”, “*Mimi die Lesemaus*”, “*Ich lerne Lesen*”, “*Das Lesenetz*”, “*Mia und Mo*”, and also self-developed lists of “Words to Learn” (“*Lernwörter*”). Children were presented with letters written in small and capital letters which should be read aloud, either its name or its correspondent phoneme. Additionally they were also asked to read words aloud. The lists of words were composed of familiar words which the children had learned in class and new words and non-words built with letters with which they were familiar. The number of mistakes, the type of mistakes and reading behavior were registered. Targeted reading behaviors for the observation were extended reading and vocalizing a single letter without linking it to the next letter. After the reading test, spelling abilities were measured using dictation. Six familiar words, four new words and three non-words built with familiar letters were dictated and children were asked to write them down. Accuracy was registered.

In the next three assessment points at the end of the first, second and fourth grades children's reading abilities were tested using an Individual Reading Test (Klicpera and Gasteiger-Klicpera, 1994), which consisted of word lists with frequent and infrequent words and non-words. Word length varied from one to three syllables. Time and accuracy were measured. Additionally certain reading behaviors were measured, such as when children extended letters or syllables while trying to read a word, or when children could not join the letters of a word while reading. Second and fourth graders spelling abilities were tested using the standardized subtest for spelling from the Salzburger Reading and Spelling Test (SLRT- *Salzburger Lese- und Rechtschreibtest*; Landerl, Wimmer and Moser, 1997). Children got a list with 49 sentences and in each sentence there was a missing word. The test instructor read the sentences including the missing word and children were supposed to write the missing word in the blanks. Spelling abilities of first graders were measured using the same kind of task as in the above-mentioned subtest from the *SLRT*, but a list of 56 sentences and words were especially chosen by the researchers, so that these would be challenging in terms of phoneme analysis. Additionally a list of non-words was dictated and first graders were asked to write these non-words down. At last, the developmental stage of these children's phonological awareness was assessed using a Language Analysis Test ("*Sprachanalysetest*"). This test was developed based on the auditory analysis test from Rosner and Simon (1971). Children were presented with 40 words and 20 non-words. Then they were asked to read the target word or non-word aloud leaving a specific letter out. The position of the letters which were supposed to be left out varied. The first two tasks required the children to leave the first or the last letter out. The last two tasks required the children to leave consonants from a consonant cluster in the beginning of the word out.

All test sessions took place in school and children were assessed individually. Only the *SLRT* in the second and fourth grade was administered in a group session. Reading and spelling abilities assessment methods remained the same in all four waves to allow data to be better integrated for further analysis.

### **4.3. Assessment of internalizing behavior (depressed mood / social withdrawal) and victimization**

At all assessment points information about children's internalizing and externalizing behavior and victimization were measured using teachers' ratings, parents' ratings, self-reports and peer ratings. The present analysis is based exclusively on teachers' ratings and focus on children's internalizing behavior. Therefore only teachers' ratings instruments and items that are related to internalizing behavior are described.

The questionnaires contained statements about children's internalizing behavior in class and in social interaction with their peers. Items were especially developed for this study by experts and are based on the literature and their experience. Each teacher filled out one questionnaire about each child in their class and response categories ranged from 1 ('strongly agree') to 5 ('strongly disagree'). In kindergarten the questionnaire contained four items about children's depressed mood (Cronbach's  $\alpha=.72$ ), six items about social withdrawal (Cronbach's  $\alpha=.82$ ), and three items about victimization (Cronbach's  $\alpha=.69$ ) (table 2). For the purpose of this study, the definitions of internalizing behavior in children do not strictly follow the ones given in the clinical classification systems. In case of the variable "depressed mood", a milder form of a major depressive mood disorder (subsyndromal depression), which does not meet a clinical diagnosis, was adopted.

Table 2. Items from teachers' questionnaire in kindergarten.

Internalizing behavior	Items <sup>a</sup>
Depressed mood	<p>He/she looks very sad and depressed.</p> <p>He/she starts to cry even when just a little provoked.</p> <p>He/she gets easily offended or his/her feelings get easily hurt.</p> <p>He/she feels easily frustrated, when he/she struggles at a task.</p>
Social withdrawal	<p>He/she speaks rarely with other children.</p> <p>He/she participates very enthusiastically in activities.</p> <p>He/she is very shy when interacting with other children.</p> <p>He/she is often by him/herself and stays isolated from other children.</p> <p>He/she rarely shows interest in participating in games.</p> <p>He/she often talks to me about his/her feelings and experiences.</p>
Victimization	<p>He/she has often to be protected from other children by me.</p> <p>He/she gets often beaten or hustled by other children.</p> <p>He/she is often annoyed by some children.</p>

<sup>a</sup>translated from the original in German (Appendix A).

The questionnaire at the beginning of the first grade contained two items about children's depressed mood (Cronbach's  $\alpha=.56$ ), four items about social withdrawal (Cronbach's  $\alpha=.69$ ), and two items about victimization (Cronbach's  $\alpha=.70$ ) (table 3). At the end of the first grade and in the second and fourth grades the questionnaires remained the same except for one item about social withdrawal which was removed from the questionnaire (Cronbach's  $\alpha=.62$  with only three items).

Table 3. Items from teachers' questionnaires in the first, second, and fourth grades.

Internalizing behavior	Items <sup>a</sup>
Depressed mood	He/she looks very sad and depressed.
	He/she cries easily even when just a little provoked.
Social withdrawal	He/she needs some time before coming out of his/her shell.
	He/she has difficulties in making friends in the class.
	He/she withdraws himself/herself from other children in the break.
	He/she is very shy when interacting with me. <sup>b</sup>
Victimization	He/she has often to be protected from other children by me.
	He/she is often shut out from playing by other children.

<sup>a</sup> translated from the original in German (Appendices B,C,D, and E); <sup>b</sup> this item was included only in the questionnaire at the beginning of the first grade.

Sum scores based on teachers' ratings were built separately for depressed mood, social withdrawal and victimization, as well as for reading and spelling. These scores were not standardized within the class. A combined reading/spelling variable was calculated, which included reading and spelling adequacy scores and reading speed.

#### **4.4. Statistical analyses**

Structural equation modeling (SEM) methods as implemented by AMOS 7.0 (Analysis of Moment Structures; Arbuckle, 1997) were used to analyze the plausibility of a relationship between reading and spelling abilities and internalizing behavioral problems and its long-term effects. Through this technique, hypothesized structures, called models, can be either rejected or tentatively accepted as consistent with collected data (Maruyama, 1998).

Given that the data is assumed to be multi-normally distributed and the sample size is larger than 100, maximum likelihood estimation methods were used, in order to obtain

the best estimates. The goodness-of-fit of the models was evaluated using the  $\chi^2$  goodness-of-fit statistic and the following supplementary fit indices: (1) the Root Mean Square Error of Approximation (RMSEA); (2) the Goodness of Fit Index (GFI); (3) Normed Fit Index (NFI). Since the  $\chi^2$  is sensitive to sample size the relative goodness-of-fit measure Comparative Fit Index (CFI) was also used. Additionally to adjust for the bias of the fit indices resulting from model complexity the adjusted Goodness of Fit Index (AGFI) was included. Values smaller than or equal to 0.05 for RMSEA (Browne and Cudek, 1993) and values greater than or equal to 0.90 for all other fit indices (Hoyle, 1995) are considered as indicating a good fit. In the cases where supplementary indices met the mentioned goodness-of-fit criteria, but the  $\chi^2$  – values did not,  $\chi^2/df$  – values were used to check for model fit. If  $\chi^2/df$  – values were smaller than or equal to 2.50, models were considered of good fit to the data. The complete-data method was used, so that all cases with missing data in any of the time points were not included (listwise deletion) (Schumacker and Lomax, 1996).

Besides calculating SM and UM for a combined reading and spelling performance (RS), separate SM and UM for reading (R) and for spelling (S) were additionally calculated, due to specific characteristics of the reading and spelling instructions in Austrian schools, as already mentioned in the “research question” section. The SM and UM were calculated separately for each internalizing behavior (depressed mood, social withdrawal) and victimization. In total, 18 models were calculated (Table 4).

Table 4. Calculated structural equation models.

		Theoretical Model
Depressed mood	Reading (R)	SM_Rdep
		UM_Rdep
	Spelling (S)	SM_Sdep
		UM_Sdep
	Reading+Spelling (RS)	SM_RSdep
		UM_RSdep
Social Withdrawal	Reading (R)	SM_Rsoc
		UM_Rsoc
	Spelling (S)	SM_Ssoc
		UM_Ssoc
	Reading+Spelling (RS)	SM_RSsoc
		UM_RSsoc
Victimization	Reading	SM_Rvic
		UM_Rvic
	Spelling	SM_Svic
		UM_Svic
	Reading+Spelling (RS)	SM_RSvic
		UM_RSvic

SM and UM were compared by subtracting the SM  $\chi^2$  and *df* values from the UM  $\chi^2$  and *df* values and testing for significance ( $\chi^2$ -distribution table). The .05 level of significance was chosen for the comparisons.

Additionally, intraclass correlations were calculated in order to analyze class effects. The intraclass correlation gives the proportion of variance of between group differences, by deriving means and variances from pooled estimates across all members of all groups (Koch, 1982). In this case of children nested in classes, the intraclass correlation gives the proportion of variance accounted for by class membership.

First, a multilevel model for each dependent variable (DV; reading, spelling, depressed mood, social withdrawal, victimization) in each time point was calculated in SPSS 15.0 (SPSS, 2006), using the unconditional means model described below.

Level 1:  $DV_{ij} = \beta_{0j} + e_{ij}$  (students)

Level 2:  $\beta_{0j} = \gamma_{00} + u_{0j}$  (classes)

Mixed:  $DV_{ij} = \gamma_{00} + u_{0j} + e_{ij}$

The model includes a population mean as fixed effect and population residual effects as random effects (table 5). Finally the intraclass correlations were calculated using the formula  $ICC = \frac{\sigma_0^2}{\sigma_0^2 + \sigma_e^2}$

Table 5. Specifications of the unconditional means model: description of parameters.

		Parameter
<i>Fixed Effects</i>		
Initial Status ( $\beta_{0j}$ )	Intercept	$\gamma_{00}$
<i>Variance Components</i>		
Level 1	within-person ( $e_{ij}$ )	$\sigma_e^2$
Level 2	in initial status ( $u_{0j}$ )	$\sigma_0^2$

## 5 Results

In order to test the hypothesis about the relationship between reading and spelling difficulties and internalizing behavior and victimization the fit of the SM and the UM were analyzed and then compared.

Regarding depressed mood, the goodness-of-fit indices are presented in table 6. For reading difficulties there was a slightly better fit in favor of the SM, but the difference between the SM and the UM was not significant ( $\Delta\chi^2(7)=7.04$ ;  $p=0.42$ ). In the case of spelling alone, both models SM and UM did not fit the data well. Reading and spelling combined presented in both models similar fits with a slightly better fit for the UM in comparison with the SM, although no significant difference between the two models was found ( $\Delta\chi^2(7)=11.69$ ;  $p=0.11$ ). The standardized beta coefficients were low (figure 8) with no significance in any of the unidirectional paths.

Table 6. SM and UM models for depressed mood: goodness-of-fit indices.

Theoretical Model	$\chi^2$	d.f.	RMSEA	GFI	NFI	CFI	AGFI
SM_Rdep	43.29*	28	.05	.96	.94	.98	.94
UM_Rdep	36.25*	21	.06	.97	.95	.98	.93
SM_Sdep	66.79*	28	.08	.94	.87	.92	.91
UM_Sdep	50.72*	21	.08	.95	.90	.94	.90
SM_RSdep	45.37*	28	.05	.96	.94	.98	.93
UM_RSdep	33.68*	21	.05	.97	.96	.98	.93

Note: RMSEA, Root Mean Square Error of Approximation; GFI, Goodness of Fit Index; NFI, Normed Fit Index; CFI, Comparative Fit Index; AGFI, Adjusted Goodness of Fit Index; \* $p \leq .05$

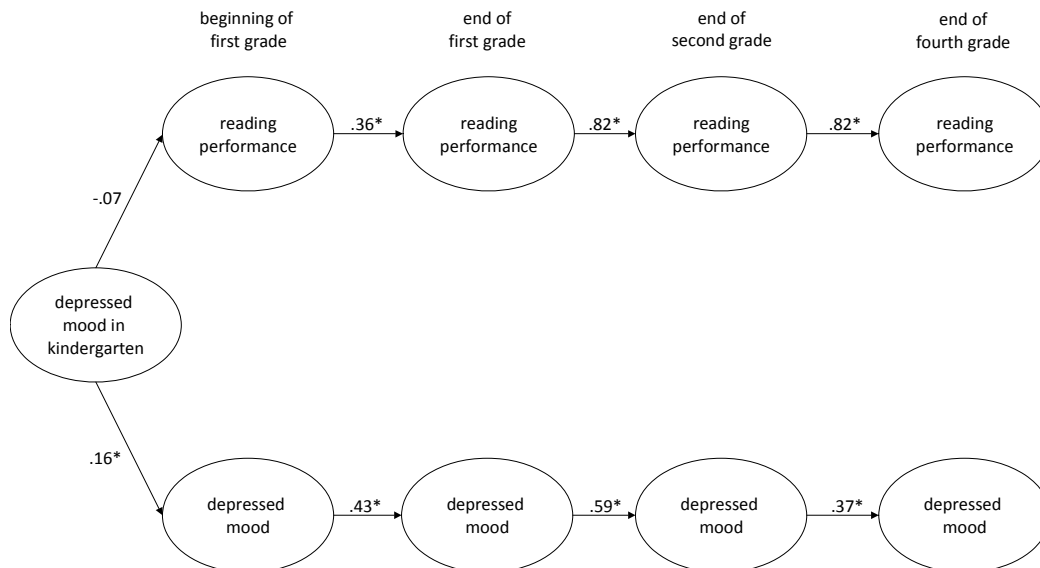


Figure 7. Standardized coefficients for the simple model of reading difficulties and depressed mood (UM-RSdep) (\* $p \leq .05$ ).

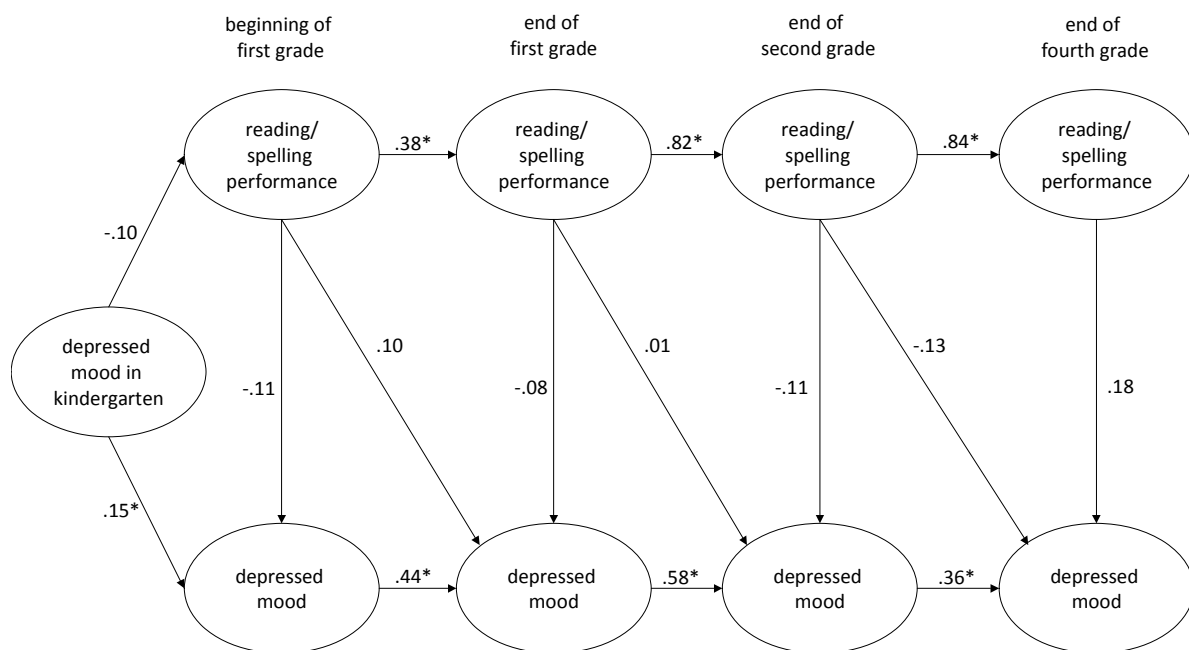


Figure 8. Standardized coefficients for the unidirectional model of reading and spelling difficulties combined and depressed mood (UM-RSdep) (\* $p \leq .05$ ).

As can be seen from table 7, reading difficulties seem to contribute to the development of social withdrawal, since the UM showed a better fit to the data than the SM and the difference between the two models was significant ( $\Delta\chi^2(7)=20.44$ ;  $p=0.00$ ).

Table 7. SM and UM models for social withdrawal: goodness-of-fit indices.

Theoretical Models	$\chi^2$	d.f.	RMSEA	GFI	NFI	CFI	AGFI
SM_Rsoc	47.67*	28	.06	.96	.95	.98	.93
UM_Rsoc	30.21	21	.04	.97	.97	.99	.94
SM_Ssoc	65.33*	28	.08	.94	.90	.94	.91
UM_Ssoc	49.92*	21	.08	.96	.92	.95	.91
SM_RSsoc	49.56*	28	.06	.96	.95	.98	.93
UM_RSsoc	32.98*	21	.05	.97	.96	.99	.93

Note: RMSEA, Root Mean Square Error of Approximation; GFI, Goodness of Fit Index; NFI, Normed Fit Index; CFI, Comparative Fit Index; AGFI, Adjusted Goodness of Fit Index; \* $p \leq .05$ .

In contrast, both SM and UM for spelling difficulties did not fit the data well. In the case of reading and spelling combined, there was a slightly better fit for the UM in comparison to the SM, with a significant difference between the two models ( $\Delta\chi^2(7)=23.38$ ;  $p=0.00$ ). The standardized beta coefficients showed only a low direct relation between reading difficulties and social withdrawal and reading and spelling difficulties combined and social withdrawal (figures 9 and 10) with only two significant coefficients, namely at the end of the second grade.

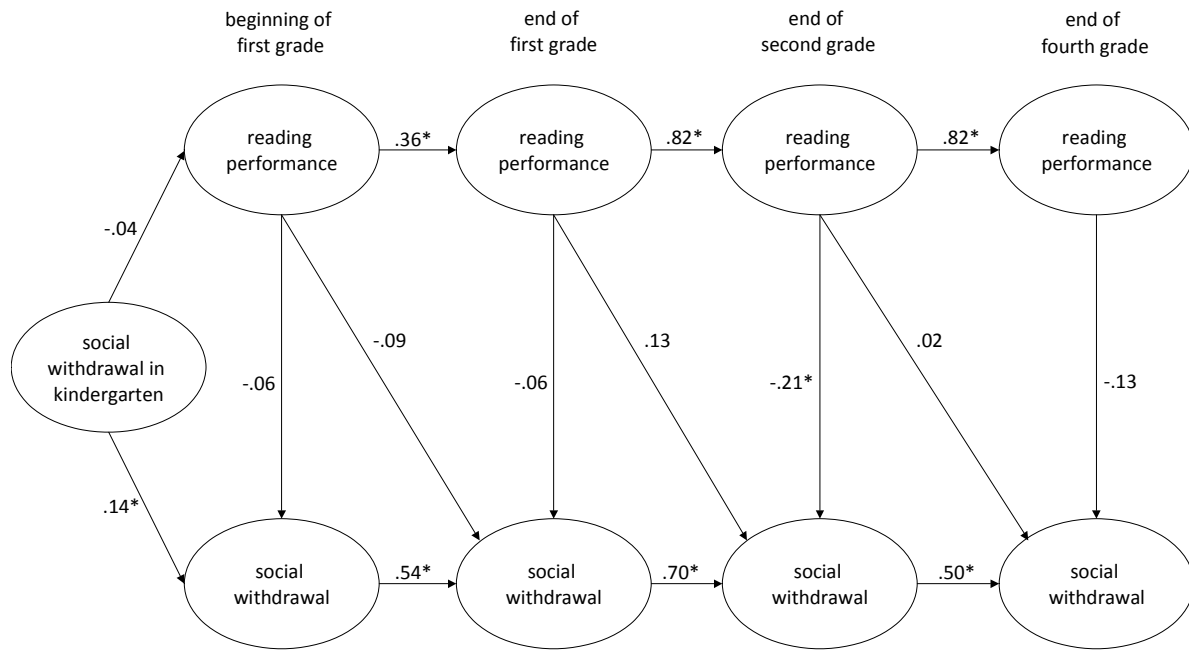


Figure 9. Standardized coefficients for the unidirectional model of reading difficulties and social withdrawal (UM-Rsoc) (\* $p \leq .05$ ).

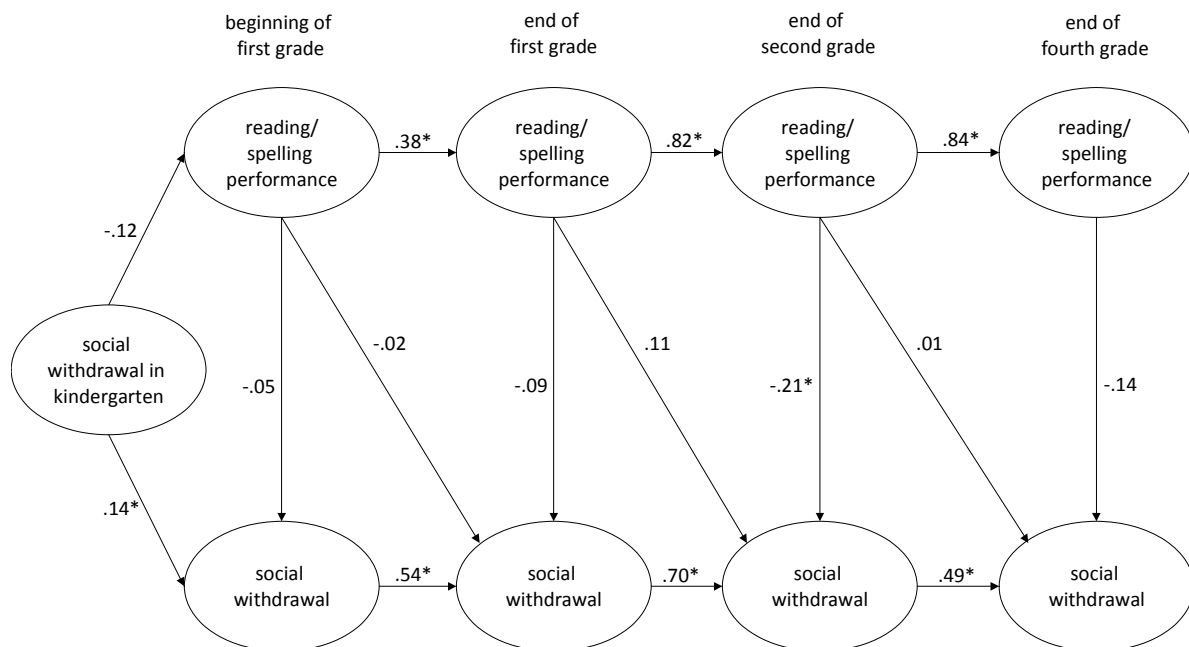


Figure 10. Standardized coefficients for the unidirectional model of reading and spelling difficulties combined and social withdrawal (UM-RSsoc) (\* $p \leq .05$ ).

The results for victimization can be seen in table 8. The UM fitted the data significantly better than the SM for both reading difficulties alone ( $\Delta\chi^2(7)=17.46$ ;  $p=0.01$ ) and reading and spelling difficulties combined ( $\Delta\chi^2(7)=16.58$ ;  $p=0.02$ ). Neither the SM nor the UM could provide a good model fit for spelling.

Table 8. SM and UM models for victimization: goodness-of-fit indices.

Theoretical Model	$\chi^2$	d.f.	RMSEA	GFI	NFI	CFI	AGFI
SM_Rvic	44.97*	28	.05	.96	.94	.98	.93
UM_Rvic	24.53	21	.03	.98	.97	.99	.95
SM_Svic	75.26*	28	.09	.93	.87	.91	.89
UM_Svic	51.53*	21	.08	.95	.91	.94	.90
SM_RSvic	50.14*	28	.06	.95	.94	.97	.93
UM_RSvic	26.76	21	.03	.97	.97	.99	.94

Note: RMSEA, Root Mean Square Error of Approximation; GFI, Goodness of Fit Index; NFI, Normed Fit Index; CFI, Comparative Fit Index; AGFI, Adjusted Goodness of Fit Index; \* $p \leq .05$ .

Figures 11 and 12 show the standardized beta coefficients for the UM-Rvic and UM-RSvic. Once more the coefficients pointed only to a low direct relation between reading difficulties and victimization and reading and spelling difficulties combined and victimization, with significant coefficients at the end of the second grade for reading alone and both at the end of the first and the second grades for reading and spelling combined.

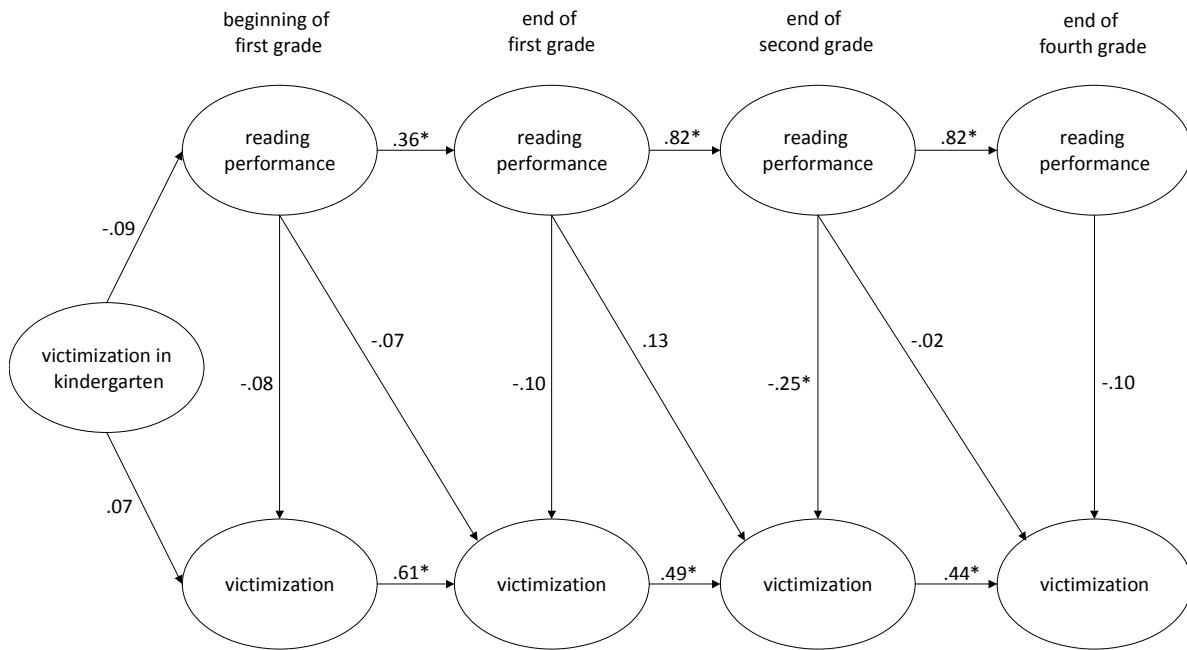


Figure 11. Standardized coefficients for the unidirectional model of reading difficulties and victimization (UM-Rvic) (\* $p \leq .05$ ).

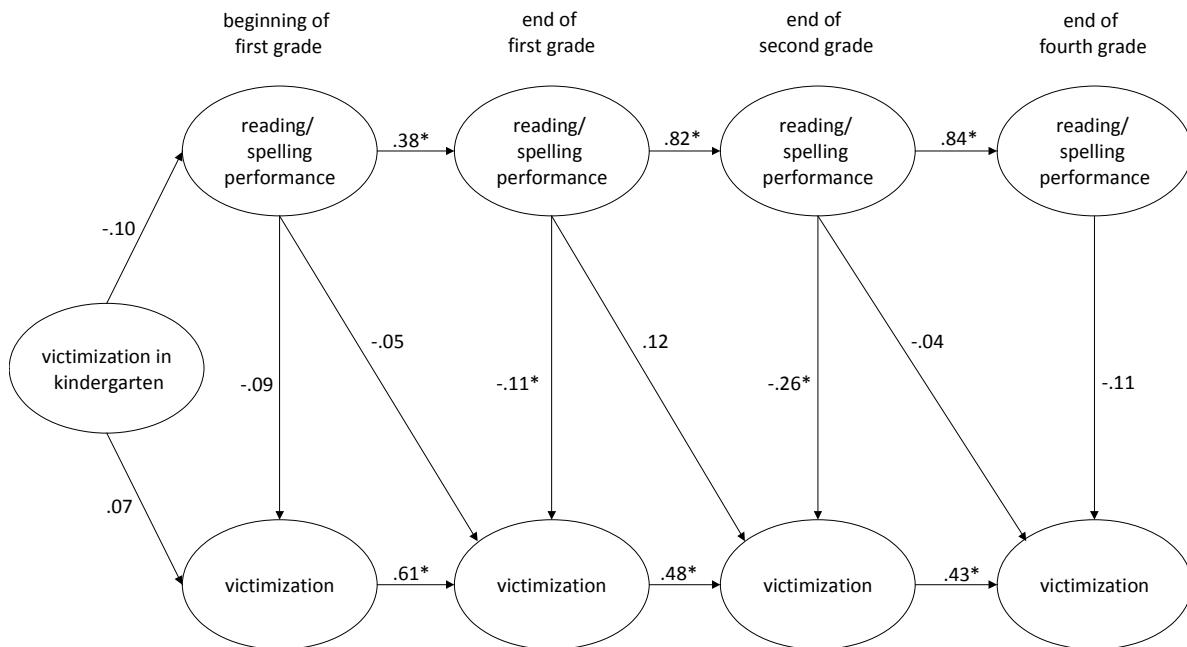


Figure 12. Standardized coefficients for the unidirectional model of reading and spelling difficulties combined and victimization (UM-RSvic) (\* $p \leq .05$ ).

The independent developmental paths of reading and spelling on the one hand and of internalizing behavior and victimization on the other hand were all significant (figures 7 to 12). Although the correlation paths of internalizing behavioral problems between kindergarten and beginning of the first grade were significant, they were very low when compared to the following longitudinal paths from the beginning of the first grade to the end of the fourth grade. This was not true in the case of spelling, for which the path coefficients from kindergarten to the beginning of the first grade were not significant. Depressed mood and social withdrawal ratings were similar in their course with coefficients peaking at the end of the second grade. Victimization showed a declining course, starting higher at the beginning of the first grade and getting lower in every further measurement. Internalizing behavioral problems and victimization in kindergarten do not seem to be correlated to reading and spelling problems at the beginning of the first grade, since the correlation paths were low and none of them reached significance.

The intraclass correlations are reported in table 9. High rates of variance in the rating scores, in case of internalizing behavior, or in test performance scores, in case of reading and spelling, in the beginning of the first grade, were found for depressed mood, reading, and spelling, with 18%, 19%, and 20%, respectively. At the end of the first grade, besides depressed mood (11%), reading (20%), and spelling (28%), also social withdrawal presented a high percentage of the total variance due to class membership, namely 14%. The same variables presented high percentages at the end of the second grade, with 13% for depressed mood, 17% for social withdrawal, 14% for reading, and 34% for spelling. At the end of the fourth grade, high percentages of intraclass correlations remained for depressed mood (15%), social withdrawal (11%) and spelling (12%). As expected, spelling showed higher rates of class effects than reading.

Table 9. Effect of class membership at all assessment points: intraclass correlations.

	Kindergarten	Beginning first grade	End first grade	End second grade	End fourth grade
Dep	.08	.18	.11	.13	.15
Soc	.09	.02	.14	.17	.11
Vic	.05	.03	.04	.04	.09
Reading	-	.19	.20	.14	.10
Spelling	-	.20	.28	.34	.12

## 6 Discussion

This manuscript aimed to clarify contradictions in the literature regarding the relationship between reading and spelling difficulties and internalizing behavioral problems (depressed mood, social withdrawal) in children and to investigate a possible relationship between reading and spelling difficulties and victimization. Two theoretical models were proposed: a simple model with two independent developmental pathways and a unidirectional model indicating a direct causal relationship between reading and spelling difficulties and internalizing behavioral problems (depressed mood, social withdrawal) and reading and spelling difficulties and victimization. In most of the cases, results did fulfill the expectations of a small but significant positive relationship between reading and spelling difficulties and internalizing behavioral problems and reading and spelling difficulties and victimization, but a direct causal relationship could not be confirmed. Moreover, no direct long-term effects of reading and spelling on internalizing behavior and victimization were found.

With respect to depressed mood, results showed that the presence of reading difficulties or spelling difficulties exclusively did not seem to contribute to the development of depressed mood in children, in contrary to reading and spelling difficulties combined, for which the unidirectional model provided acceptable data fitting. Nonetheless, none of the direct paths were significant, which suggests an indirect relationship between depressed mood and reading and spelling difficulties, instead of a direct causal relationship. Such results were also reported in other studies, which postulate an indirect relationship between depressed mood and reading and spelling difficulties, mediated by effects of academic performance on self-esteem, motivation or determined by other factors such as the severity or range of reading difficulties (Bonifacci et al., 2007; Klicpera et al., 1993; Maughan et al., 2003; Valås, 1999). The importance of self-esteem as well as its effect on scores of depression has also been reported by Alexander-Passe (2006).

In reference to social withdrawal, results pointed to a contribution of reading difficulties and the combination of reading and spelling difficulties in children to the co-existence of social withdrawal. This result was not true for spelling alone for which none of the models could provide an acceptable fit. Once again, although the unidirectional model did provide better model fit than the model with independent developmental paths, the direct paths were mostly low and only one achieved significance, namely at the end of the

second grade. Thus, even though reading and spelling seem to be related to social withdrawal, a direct causal relationship could not be confirmed. Other studies reported social withdrawal to be negatively affected by reading and spelling difficulties (Gasteiger-Klicpera, et al., 2006; Rubin et al, 1991). This could suggest an indirect relationship between reading and spelling difficulties and social withdrawal, in which reading and spelling difficulties affect children's self-esteem which in turn causes children to socially withdraw themselves. Additionally, some studies raised the interest of possible linkages between internalizing behavioral problems and deficient social skills (Cicchetti and Toth, 1991).

Results also showed that children with reading difficulties and with reading and spelling difficulties combined seemed to be at higher risk of being victimized, in contrast to spelling problems alone. Once more both models proposed did not fit the data in the case of spelling. Some studies also reported negative effects of reading and spelling difficulties on rates of victimization (Gasteiger-Klicpera et al., 2006; Mishna, 2003; Olweus, 2001). Nonetheless, a direct causal relationship could not be found, since the direct paths between reading and spelling difficulties and victimization remained just as low, independent of the good unidirectional model fit, with only two significant values at the end of the second and fourth grades. Some authors reported a decrease in peer acceptance and pro-social behavior in a group of poor readers over time as a result of reading and spelling difficulties (Gasteiger-Klicpera et al., 2006). This could be a possible explanation about the reason why children with reading and spelling problems are more likely to be victimized than average readers. Victimization could be indirectly affected by poor reading and spelling due to lower acceptance by peers.

An alternative explanation to an indirect relationship between reading and spelling difficulties and internalizing behavioral problems and victimization, could be that reading and spelling difficulties do not cause internalizing behavioral problems, but it can aggravate them, leading to a worse prognosis. Smart, Sanson, and Prior (1996) assessed children at the second and fourth grades in reading disabilities and internalizing and externalizing behavioral problems (anxiety/fear). Results showed that reading disabilities remained stable over time, but there was greater variability in the behavior problem status. Authors concluded that reading disabilities did not appear to lead to the development of behavioral problems. However, students who had both reading disabilities and behavioral problems had

the worst outcome at the follow-up, suggesting that behavioral problems may exacerbate reading difficulties.

The independent developmental paths of reading and spelling on the one hand and internalizing behavior and victimization on the other showed high significant coefficients. Reading and spelling difficulties showed high relative stability, especially from the end of the first grade on. Depressed mood and social withdrawal ratings were similar in their course with coefficients peaking at the end of the second grade. Victimization showed a declining course in the coefficients, starting higher at the beginning of the first grade and getting lower in every further measurement. This suggests that, although reading and spelling performance and teacher's ratings about children's internalizing behavior and victimization were not necessarily the same from the beginning of the first grade to the end of the fourth grade, they remained relatively stable over time. In other words, children with the worse performance or ratings at the beginning of the first grade, were also the ones with the worse performance or ratings at the end of the first, second, and fourth grades.

The fact that neither the SM nor the UM could provide an acceptable model fit for spelling indicates not only that spelling difficulties and internalizing behavioral problems are not directly correlated, but also that there might be much more complex interactions between them which should be further investigated in more complex models.

Innovative in this work, at least to a certain degree, since this was not taken into consideration in the previous research works cited, was the investigation of class effects. Results confirmed the expectation about spelling showing higher rates of class effects than reading, internalizing behavior, and victimization. Nevertheless, it is worth mentioning that, in general, high percentages of variance on children's reading and spelling performances and also in depressed mood and social withdrawal ratings were due to class membership. The fact that only teachers' ratings, in the case of behavior ratings, were analyzed could possibly play a role in the high percentages of class effects. This is one limitation of this study. The external rater (teacher) was used as the only source of information in the assessment of internalizing behavior. As already mentioned, it is recommended, especially in the case of internalizing behavior to include self-reports in the measurements. Therefore, further investigation using additional assessing methods is highly recommended, before looking for possible predictors.

Since long-term effects between reading and spelling difficulties on internalizing behavioral problems and victimization were not found, a possible general interpretation of the results could be that children realize over and over again that they cannot read and spell well. This could be reflected, for example, in bad grades or through teachers' reactions. Every time that this happens their self-esteem could be negatively influenced which in turn would cause them to become a little depressed, socially withdrawn, less accepted by peers and ultimately to be more often victimized. In general, spelling seemed to involve more complex relations in comparison to reading and more research is needed to help understand this result. Also the results on spelling difficulties related to class effects reinforce the need of further investigation and special attention. Traditionally, a child who cannot read well, but whose spelling abilities lie in normal range, is more positively evaluated than a child who can read well, but have difficulties in spelling. Since 2001, there are new regulations regarding the evaluation of spelling ("Erlass 2001" 32/2001 GZ36200/38) in Austrian primary schools. These propose a change by reinforcing a broader evaluation approach and emphasizing that there are other important abilities that children possess which should also be taken into account, especially in case of children with reading and/or spelling difficulties. Nevertheless, such changes usually take time before they become standard procedure, since practitioners have to adjust their evaluation habits to the new regulations, and most important, to change their beliefs. In this sense, it has not being suggested that spelling instruction is not important, but children's self-esteem should always be kept in mind, since it seems to play an important role as a mediator for internalizing behavioral problems and victimization. At the same time, reading instruction should not be left at second place in the evaluation, since for most people and in most professions reading will prove to be of much more importance than spelling.

Additional practical implications comes from the fact that no direct causal relationship between reading and spelling difficulties and internalizing behavior and reading and spelling difficulties and victimization could be found. This means that the development of different treatment plans might be necessary to support affected children, what can be very demanding for the teachers. Therefore, before they are confronted with this extra assignment, it is necessary to develop guidelines and trainings for teachers, so that they do not feel overwhelmed. Official regulations could help unify "first-aid" procedures and ensure quality of further support. Ideally, this should be done in collaboration with educators, school principles, psychologists, and parents, also in terms of assuring that the support given

is also the one needed by the child in particular. Especially in the case of internalizing symptoms, which are not easily observable, teachers should be trained to identify them and to react accordingly and as soon as possible.

In sum, a direct causal relationship between reading and spelling difficulties and internalizing behavioral problems and between reading and spelling difficulties and victimization could not be found. Nevertheless, they seem to be correlated in more complex relationships. Therefore, further investigation about possible constellations or situations in which this relationship is stronger or weaker is needed and the development of differentiated treatments plans is recommended.

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## Appendix A

### Questionnaire in kindergarten (teacher's ratings)

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Code:

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Sehr geehrte Kindergärtnerin,

Mit diesem Fragebogen wollen wir Aufschluß über die Sicht der Kindergärtnerinnen über das soziale Verhalten der Kinder in der Kindergartengruppe und ihre Vorbereitung auf die Schule gewinnen. Wir hoffen, daß Sie uns helfen können, manches von dem, was wir von den Kindern bereits erfahren haben, besser zu verstehen. Alle Informationen werden streng vertraulich behandelt. Sollten Sie irgendwelche Fragen haben, stehen wir Ihnen unter der angegebenen Telefonnummer gerne zur Verfügung.

#### **Allgemeine Fragen zum Kind**

Ist das Kind ein  Bub  Mädchen Geburtsdatum des Kindes \_\_\_\_ \_\_\_\_ 19 \_\_\_\_

Seit wann besucht dieses Kind Ihre Gruppe? ..... (Monate).

Ist dieses Kind vorwiegend vormittags da?  ja  nein

Wie viele Stunden am Tag ist dieses Kind durchschnittlich da? \_\_\_\_\_

Wie oft fehlt dieses Kind ?  fast nie  1x/ Woche  2x/ Woche  3-4x /Woche

kommt manchmal längere Zeit nicht und dann wieder

Ist der eventuell unregelmäßige Besuch auf Krankheiten des Kindes zurückzuführen?

ja  teilweise  nein

Hat dieses Kind Geschwister ?  nein  ja, wenn ja, wieviele: \_\_\_\_\_

Besuchen auch Geschwister dieselbe Gruppe ?  nein  ja, wenn ja, wieviele: \_\_\_\_\_

Ist das Kind ein Dispenskind  ja  nein

Ist Muttersprache des Kindes Deutsch?  ja  nein

↳ wenn nein , welche ist die Muttersprache? \_\_\_\_\_

Wie würden Sie die Deutschkenntnisse des Kindes einschätzen:

Das Kind kann sich :  gut  ausreichend  eher unzureichend  unzureichend

#### **Fragen zum sozialen Verhalten in der Gruppe**

Die folgenden Fragen beziehen sich auf das Verhalten der Kinder in der Gruppe. Bitte beantworten Sie die Fragen, indem Sie jeweils ein Kreuz bei jener Antwortalternative machen, die Sie für zutreffend halten. Bitte stützen Sie sich dabei sowohl auf konkrete Beobachtungen als auch auf den allgemeinen Eindruck, den Sie von dem Kind gewonnen haben. Beantworten Sie bitte alle Fragen und kreuzen Sie pro Zeile nur eine Antwortalternative an!

	Stimmt nicht	Stimmt kaum	Stimmt etwas	Stimmt ziemlich	Stimmt genau
Dieses Kind kann Konflikte in friedlicher Weise lösen.	①	②	③	④	⑤
Er/ sie streitet viel mit anderen Kindern.	①	②	③	④	⑤
Dieses Kind sagt oft zu anderen, daß er/ sie nicht mehr ihr Freund ist, wenn die anderen etwas tun, was ihm nicht paßt.	①	②	③	④	⑤
Er/ sie spricht von sich aus kaum mit anderen Kindern.	①	②	③	④	⑤
Er/ sie wird von anderen Kindern oft geschlagen oder angerempelt.	①	②	③	④	⑤
Er/ sie kann nicht stillsitzen, rutscht auf dem Stuhl hin und her.	①	②	③	④	⑤
Er/ sie stört öfters andere Kinder beim Spielen.	①	②	③	④	⑤
Er/ sie ist leicht gekränkt und verletzt.	①	②	③	④	⑤
Er/ sie kann gut mit anderen teilen.	①	②	③	④	⑤
Er/ sie kann im Spiel schlecht verlieren.	①	②	③	④	⑤
Dieses Kind reagiert gleich aggressiv, wenn ein anderes es stößt oder seine Spielsachen durcheinander bringt, auch wenn dies nicht mit Absicht geschehen ist.	①	②	③	④	⑤
Er/ sie schließt öfter andere aus der eigenen Spielgruppe aus bzw. läßt sie nicht mitspielen.	①	②	③	④	⑤

	Stimmt nicht	Stimmt kaum	Stimmt etwas	Stimmt ziemlich	Stimmt genau
Er/ sie nimmt recht aktiv am Gruppengeschehen teil.	①	②	③	④	⑤
Er/ sie wird von manchen viel geärgert oder sekkiert.	①	②	③	④	⑤
Er/ sie muß ständig in Bewegung sein, ist übermäßig unruhig.	①	②	③	④	⑤
Spricht oft gegenüber Erwachsenen zurück.	①	②	③	④	⑤
Er/ sie scheint recht traurig und niedergeschlagen zu sein.	①	②	③	④	⑤
Er/ sie kann Ideen und Anregungen akzeptieren, die von anderen Kindern ausgehen.	①	②	③	④	⑤
Er/ sie behauptet immer, daß die anderen an dem Streit Schuld seien, und hat auch wirklich das Gefühl, daß die anderen den Streit begonnen hätten.	①	②	③	④	⑤
Er/ sie neigt dazu, andere bei der Erzieherin zu verpetzen, wenn sie etwas tun, was ihm/ihr mißfällt.	①	②	③	④	⑤
Er/ sie ist anderen Kindern gegenüber scheu und zurückhaltend.	①	②	③	④	⑤
Wenn er/ sie von anderen geärgert wird, dann wird er/ sie leicht wütend und rächt sich an den anderen.	①	②	③	④	⑤

Er/ sie kann nicht zuwarten, seinen/ ihren Forderungen muß sofort entsprochen werden.	①	②	③	④	⑤
Er/ sie bricht Regeln, tut Dinge, die ihm nicht erlaubt sind.	①	②	③	④	⑤
Fängt bei ganz geringen Anlässen an zu weinen.	①	②	③	④	⑤
Er/ sie kann andere Kinder gut motivieren, bei dem mitzutun, was er/ sie will.	①	②	③	④	⑤
Er/ sie beschäftigt sich viel alleine und bleibt oft abseits von anderen Kindern.	①	②	③	④	⑤
Er/ sie rauft oft mit anderen (oder droht damit, andere zu schlagen), um in der Gruppe zu dominieren.	①	②	③	④	⑤
Er/ sie muß oft von mir vor anderen Kindern in Schutz genommen werden.	①	②	③	④	⑤
Er/ sie ist leicht ablenkbar und unaufmerksam.	①	②	③	④	⑤
Dieses Kind verrichtet Tätigkeiten, die ihm aufgetragen werden, zuverlässig.	①	②	③	④	⑤
Er/ sie bedroht oft andere oder schikaniert sie, um seinen Willen durchzusetzen.	①	②	③	④	⑤
Er/ sie kann sich selbständig längere Zeit mit einer Sache (z.B. Basteln, Konstruktionsmaterial, Zeichnen) beschäftigen.	①	②	③	④	⑤
Er/ sie hat öfters Wutausbrüche, wenn etwas von ihm verlangt wird, was er/ sie nicht will.	①	②	③	④	⑤
Dieses Kind zeigt wenig Interesse an den Dingen und Aktivitäten in seiner Umgebung.	①	②	③	④	⑤
Er/ sie hat oft gute Spielideen für das gemeinsame Spiel.	①	②	③	④	⑤
Er/ sie bringt andere Kinder dazu, sich gegen ein anderes Kind zusammenzuschließen, das es nicht mag.	①	②	③	④	⑤
Er/ sie zeigt selten eine Initiative, um in ein Spiel einbezogen zu werden.	①	②	③	④	⑤
Er/ sie arbeitet recht sorgfältig.	①	②	③	④	⑤
Folgt nur, wenn ihm mit Bestrafung gedroht wird.	①	②	③	④	⑤
Er/sie kann gut andere Kinder aufmuntern und trösten.	①	②	③	④	⑤
Er/ sie beschimpft andere oft oder schreit sie an.	①	②	③	④	⑤
Er/ sie ist leicht frustriert, wenn es sich bei einer Aufgabe anstrengen muß.	①	②	③	④	⑤
Er/ sie kann nicht zuhören und muß ständig dazwischen reden.	①	②	③	④	⑤

**Fragen zu Ihrer Beziehung zum Kind**

Bitte beantworten Sie die folgenden Fragen analog zu den obigen:

	stimmt nicht	stimmt kaum	stimmt etwas	stimmt ziemlich	stimmt genau
Zwischen diesem Kind und mir besteht eine liebevolle und herzliche Beziehung.	①	②	③	④	⑤
Das Kind und ich scheinen einander ständig in den Haaren zu liegen.	①	②	③	④	⑤
Wenn dieses Kind ein Problem hat, sucht er/sie bei mir Unterstützung	①	②	③	④	⑤
Für dieses Kind ist die Beziehung zu mir sehr wichtig.	①	②	③	④	⑤
Dieses Kind ist sehr mitteilungsbedürftig und erzählt mir spontan Dinge von sich.	①	②	③	④	⑤
Dieses Kind ärgert sich leicht über mich	①	②	③	④	⑤
Dieses Kind hat das Gefühl, daß ich es ungerecht behandle.	①	②	③	④	⑤
Es fällt mir leicht, die Gefühle dieses Kindes zu erkennen.	①	②	③	④	⑤
Wenn ich dieses Kind diszipliniere, reagiert es mit Zorn oder Widerstand.	①	②	③	④	⑤
Der Umgang mit diesem Kind kostet mich viel Kraft.	①	②	③	④	⑤
Trotz all meiner Bemühungen bin ich nicht zufrieden damit, wie das Kind und ich miteinander auskommen.	①	②	③	④	⑤
Dieses Kind teilt offen seine Gefühle und Erfahrungen mit mir.	①	②	③	④	⑤
Dieses Kind macht mich ärgerlich.	①	②	③	④	⑤
Bei der Arbeit mit diesem Kind erfahre ich Sicherheit und Bestätigung.	①	②	③	④	⑤

**Fragen zur Zusammenarbeit mit den Eltern**

Wie häufig haben Sie Kontakt zu den Eltern dieses Kindes (z.B. durch Gespräche)?

sehr selten oder nie    eher selten    ausreichend    häufig

Nehmen die Eltern dieses Kindes an Aktivitäten des Kindergartens teil (z.B. Feste, Ausflüge)?

sehr selten oder nie    eher selten    eher oft    immer oder fast immer

Unterstützen die Eltern dieses Kindes die Arbeit im Kindergarten (z.B. durch Material, positives Engagement)?

sehr selten oder nie    eher selten    eher oft    immer oder fast immer

War ein Elternteil dieses Kindes beim Elternabend anwesend?    immer    manchmal    nie

In welchem Ausmaß wird, nach Ihrer Einschätzung, dieses Kind von den Eltern gefördert?

im kognitiven Bereich    sehr    ausreichend    kaum

im sozialen Bereich    sehr    ausreichend    kaum

in seiner Arbeitshaltung    sehr    ausreichend    kaum



## Appendix B

### Questionnaire at the beginning of the first grade (teacher's ratings)

#### LEHRERINNEN

#### Fragebogen zum einzelnen Kind

Mit diesem Fragebogen wollen wir Aufschluß über die Sicht der Lehrerinnen über das soziale Verhalten der Kinder zu Beginn der ersten Volksschulklasse gewinnen. Deshalb bitten wir Sie, uns einige Fragen zu dieser Thematik zu beantworten. Alle Informationen werden selbstverständlich streng vertraulich behandelt.

Codenummer der Schulklasse .....

Codenummer des Kindes .....

Geburtsdatum: . . . 19 . .

Geschlecht:  w

Muttersprache:  deutsch

m

.....

Wird das Kind nach dem Vorschullehrplan unterrichtet?  ja  nein

Die folgenden Fragen beziehen sich auf das Verhalten der Kinder in der Klasse. Bitte beantworten Sie die Fragen, indem Sie jeweils ein Kreuz bei jener Antwortalternative machen, die Sie für zutreffend halten. Bitte stützen Sie sich dabei sowohl auf konkrete Beobachtungen als auch auf den allgemeinen Eindruck, den Sie von dem Kind gewonnen haben. Beantworten Sie bitte alle Fragen und kreuzen Sie pro Zeile bzw. Frage nur eine Alternative an, außer es steht ausdrücklich dabei, daß mehrere Antworten möglich sind!

#### **FRAGEN ZUM UNTERRICHT (EINGEWÖHNUNGSPHASE)**

	stimmt nicht	stimmt kaum	stimmt etwas	stimmt ziemlich	stimmt genau
1. Dem Kind fällt es schwer, sich an gewisse Regeln zu halten (abzuwarten, bis es an die Reihe kommt, nicht rauszurufen)	0	1	2	3	4
2. Dem Kind fällt es schwer, still zu sitzen.	0	1	2	3	4
3. Das Kind stört öfters im Unterricht.	0	1	2	3	4
4. Das Kind braucht längere Zeit, bis es aus sich herausgeht (auftaut).	0	1	2	3	4
5. Das Kind gibt leicht auf, wenn ihm etwas nicht gleich gelingt.	0	1	2	3	4
6. Das Kind kann sich kaum für eine längere Zeit mit einer Aufgabe beschäftigen.	0	1	2	3	4
7. Das Kind nimmt kaum von sich aus am Unterricht teil (meldet sich kaum).	0	1	2	3	4
8. Das Kind braucht mehr Aufforderungen, um mit der Arbeit zu beginnen (ohne im Grunde unfolgsam zu sein).	0	1	2	3	4
9. Das Kind scheint öfters recht traurig und niedergeschlagen zu sein.	0	1	2	3	4
10. Das Kind ist recht empfindlich und weint oft.	0	1	2	3	4
11. Das Kind kann dem Unterrichtsgeschehen gut folgen.	0	1	2	3	4

12. Das Kind macht die ihm gestellten Aufgaben ordentlich und verlässlich.	0	1	2	3	4
13. Das Kind redet zurück und läßt sich von mir nur schwer etwas sagen.	0	1	2	3	4
14. Das Kind erbringt deutlich bessere Leistungen, wenn ich mit ihm allein arbeiten kann.	0	1	2	3	4

**FRAGEN ZUM SOZIALVERHALTEN**

	stimmt nicht	stimmt kaum	stimmt etwas	stimmt ziemlich	stimmt genau
1. Das Kind hat Schwierigkeiten Anschluß an die übrigen Kinder der Klasse zu finden.	0	1	2	3	4
2. Das Kind wird öfter von anderen Kindern vom Spielen ausgeschlossen.	0	1	2	3	4
3. Das Kind zieht sich in der Pause von sich aus öfters zurück.	0	1	2	3	4
4. Das Kind muß öfters von mir vor den anderen Kindern in Schutz genommen werden.	0	1	2	3	4
5. Das Kind streitet und rauft öfter als die anderen Kinder in der Klasse.	0	1	2	3	4
6. Das Kind beschimpft und kränkt öfters andere Kinder.	0	1	2	3	4
7. Das Kind redet hinter dem Rücken anderer Kinder böse über sie.	0	1	2	3	4
8. Das Kind hat wenig Schwierigkeiten etwas vor der Klasse zu sagen.	0	1	2	3	4
9. Das Kind kann sich gut in eine Arbeitsgruppe von Schülern einfügen.	0	1	2	3	4
10. Das Kind verhält sich mir gegenüber scheu und zurückhaltend.	0	1	2	3	4
11. Das Kind folgt mir kaum oder nur nach wiederholten Aufforderungen.	0	1	2	3	4
12. Das Kind teilt mir seine Gefühle und Erfahrungen recht offen mit.	0	1	2	3	4

**FRAGEN ZUM LEISTUNGSSTAND DES KINDES IM LESEN UND SCHREIBEN**

	stimmt nicht	stimmt kaum	stimmt etwas	stimmt ziemlich	stimmt genau
1. Das Kind kann die Position eines Lautes in einem Wort erkennen.	0	1	2	3	4
2. Das Kind kann kurze Wörter in Laute aufgliedern.	0	1	2	3	4
3. Das Kind kann zwei Laute zusammenschleifen.	0	1	2	3	4
4. Das Kind kann alle durchgenommenen Buchstaben lesen.	0	1	2	3	4
5. Das Kind kann alle bisher im Unterricht durchgenommenen Wörter sicher lesen.	0	1	2	3	4

6. Das Kind kann auch bisher im Unterricht noch nicht durchgenommenen Wörter, die aus bekannten Buchstaben zusammengesetzt sind, erlesen.	0	1	2	3	4
7. Das Kind hat mit der Linienführung beim Schreiben keine Probleme (schreibt sehr sauber).	0	1	2	3	4
8. Das Kind kann alle durchgenommenen Buchstaben auf Ansage schreiben.	0	1	2	3	4
9. Das Kind kann Wörter, die wir im Unterricht bereits geschrieben haben, bei nochmaliger Vorgabe richtig schreiben.	0	1	2	3	4
10. Das Kind kann Wörter, die im Unterricht nur gelesen wurden, richtig schreiben.	0	1	2	3	4
11. Das Kind kann auch kurze Wörter, die wir noch nicht gelesen haben, aber deren Buchstaben wir schon gelernt haben, richtig schreiben.	0	1	2	3	4
12. Das Kind hat größere Leistungsschwankungen, d.h. es kann Wörter, die es schon lesen bzw. schreiben konnte, am nächsten Tag nicht mehr lesen oder schreiben.	0	1	2	3	4

#### ZUSAMMENARBEIT MIT DEN ELTERN

1. In welchem Ausmaß wird, Ihrer Einschätzung nach, das Kind von den Eltern gefördert?

im kognitiven Bereich:       sehr       mittel       etwas       kaum

im sozialen Bereich:       sehr       mittel       etwas       kaum

2. Wie häufig erkundigten sich die Eltern bisher nach den Fortschritten ihres Kindes im Lesen und Schreiben?

öfters       2-3 x       bisher einmal       bisher noch nicht

3. Sofern sich die Eltern an Aktivitäten im Unterricht beteiligen dürfen, wie oft haben die Eltern dieses Kindes dies bisher getan?

öfters       2-3 x       bisher einmal       bisher noch nicht

## PROGNOSE

1. Wird das Kind Ihrer Meinung nach – angesichts seiner bisherigen Fortschritte – am Ende der ersten Klasse Schwierigkeiten beim **Lesen** haben?

- nein     eher nur Anfangsschwierigkeiten     eher nur vorübergehend     ja, längeranhaltend

Wird das Kind Ihrer Meinung nach – angesichts seiner bisherigen Fortschritte – in den höheren Klassen

Schwierigkeiten beim **Rechtschreiben** haben?

- nein     eher nur Anfangsschwierigkeiten     eher nur vorübergehend     ja, längeranhaltend

2. Glauben Sie, daß das Kind anfängliche Schwierigkeiten im Lesen und Schreiben ohne zusätzliche Förderung bewältigen wird?

- ja, sicher     ja, wahrscheinlich     eher nicht     nein

Falls nicht, was haben Sie bisher diesbezüglich unternommen? (mehrere Antworten möglich)

- Ich versuche das Kind nicht zu überfordern, um ihm Zeit zu geben.
- Ich probiere dem Kind individuell zu helfen.
- Ich nehme das Kind in der Stunde öfter als andere Kinder dran.
- Ich probiere mich dem Kind mehr zuzuwenden, damit es am Unterricht aktiver teilnimmt.
- Ich nehme das Kind in meine Förderstunde
- sonstiges .....

3. Haben Sie mit den Eltern über die Schwierigkeiten bereits gesprochen?

- ja, ausführlich     ja, kurz     nein

Wenn ja, was haben Sie Ihnen geraten? (mehrere Antworten möglich)

- ihr Kind nicht zu überfordern, um ihm Zeit zu geben
- mit ihrem Kind häufiger lesen zu üben
- mit ihrem Kind häufiger schreiben zu üben
- für ihr Kind Hilfe außerhalb der Schule zu suchen (Nachhilfeunterricht)
- sonstiges .....

4. Glauben Sie, daß eine Rückstellung des Kindes nötig ist?

- ja, wäre sehr zu empfehlen     eventuell     nein

**VIELEN DANK !**

## Appendix C

### Questionnaire at the end of the first grade (teacher's ratings)

#### LEHRERINNEN

#### Fragebogen zum einzelnen Kind

Mit diesem Fragebogen wollen wir Aufschluß über die Sicht der Lehrerinnen über das soziale Verhalten der Kinder im **2. Halbjahr** der ersten Volksschulklasse gewinnen. Deshalb bitten wir Sie, uns einige Fragen zu dieser Thematik zu beantworten. Alle Informationen werden selbstverständlich streng vertraulich behandelt.

Codenummer der Schulklasse: ..... Codenummer des Kindes: ..... Geburtsdatum:.....  
 Geschlecht:  w  m

Welche Sprache wird zu Hause vorwiegend gesprochen ?  Deutsch  andere.....

Wenn das Kind aus einer nicht deutschsprachigen Familie kommt, wie sind die Sprachkenntnisse des Kindes in Deutsch?

sehr gut  gut  mittel  schlecht

Die folgenden Fragen beziehen sich auf das Verhalten der Kinder in der Klasse. Bitte beantworten Sie die Fragen, indem Sie jeweils ein Kreuz bei jener Alternative machen, die Sie für zutreffend halten. Bitte stützen Sie sich dabei sowohl auf konkrete Beobachtungen als auch auf den allgemeinen Eindruck, den Sie von dem Kind gewonnen haben. Beantworten Sie bitte alle Fragen und kreuzen Sie pro Zeile bzw. Frage nur eine Alternative an, außer es steht ausdrücklich dabei, daß mehrere Antworten möglich sind.

#### Fragen zum Unterricht

	stimmt nicht	stimmt kaum	stimmt etwas	stimmt ziemlich	stimmt genau
1. Dem Kind fällt es schwer, sich an gewisse Regeln zu halten (z.B: nicht rauszurufen).	1	2	3	4	5
2. Dem Kind fällt es schwer, still zu sitzen.	1	2	3	4	5
3. Das Kind stört öfters im Unterricht.	1	2	3	4	5
4. Das Kind braucht längere Zeit, bis es aus sich herausgeht.	1	2	3	4	5
5. Das Kind kann sich kaum für längere Zeit mit einer Aufgabe beschäftigen.	1	2	3	4	5
6. Das Kind nimmt von sich aus kaum am Unterricht teil.	1	2	3	4	5
7. Das Kind braucht mehrere Aufforderungen, um mit der Arbeit zu beginnen.	1	2	3	4	5

8. Das Kind scheint öfters recht traurig und niedergeschlagen zu sein.	1	2	3	4	5
9. Das Kind ist recht empfindlich und weint oft.	1	2	3	4	5
10. Das Kind kann dem Unterrichtsgeschehen gut folgen.	1	2	3	4	5
11. Das Kind redet zurück und läßt sich von mir nur schwer etwas sagen.	1	2	3	4	5

### Fragen zum Sozialverhalten

	stimmt nicht	stimmt kaum	stimmt etwas	stimmt ziemlich	stimmt genau
1. Das Kind hat Schwierigkeiten Anschluß an die übrigen Kinder der Klasse zu finden.	1	2	3	4	5
2. Das Kind wird öfter von anderen Kindern vom Spielen ausgeschlossen.	1	2	3	4	5
3. Das Kind zieht sich in der Pause von sich aus öfters zurück.	1	2	3	4	5
4. Das Kind muß öfters von mir vor den anderen Kindern in Schutz genommen werden.	1	2	3	4	5
5. Das Kind streitet und rauft öfter als die anderen Kinder in der Klasse.	1	2	3	4	5
6. Das Kind beschimpft und kränkt öfters andere Kinder.	1	2	3	4	5
7. Das Kind redet hinter dem Rücken anderer Kinder böse über sie.	1	2	3	4	5
8. Das Kind hat Schwierigkeiten etwas vor der Klasse zu sagen.	1	2	3	4	5

### Beziehung der Lehrerin zum Kind

	stimmt nicht	stimmt kaum	stimmt etwas	stimmt ziemlich	stimmt genau
1. Zwischen diesem Kind und mir besteht eine liebevolle und herzliche Beziehung.	1	2	3	4	5
2. Das Kind und ich scheinen einander ständig in den Haaren zu liegen.	1	2	3	4	5
3. Wenn dieses Kind ein Problem hat, sucht es bei mir vertrauensvoll Unterstützung.	1	2	3	4	5

4. Für dieses Kind ist die Beziehung zu mir sehr wichtig.	1	2	3	4	5
5. Dieses Kind ist sehr mitteilungsbedürftig und erzählt mir spontan Dinge von sich.	1	2	3	4	5
6. Dieses Kind hat oft das Gefühl, daß ich es ungerecht behandle.	1	2	3	4	5
7. Der Umgang mit diesem Kind kostet mich viel Kraft.	1	2	3	4	5
8. Trotz all meiner Bemühungen bin ich nicht damit zufrieden, wie das Kind und ich miteinander auskommen.	1	2	3	4	5
9. Dieses Kind macht mich ärgerlich.	1	2	3	4	5
10. Im Umgang mit diesem Kind fühle ich mich in meiner Arbeit bestätigt.	1	2	3	4	5

#### Fragen zum Leistungsstand des Kindes im Lesen und Schreiben

1.) Kreuzen Sie bitte an, wie Sie die Entwicklung dieses Kindes in folgenden Bereichen einstufen:

	gut	eher gut	eher schlecht	schlecht
Lesesicherheit	1	2	3	4
Lesegeschwindigkeit	1	2	3	4
Leseverständnis	1	2	3	4
Rechtschreibeisicherheit	1	2	3	4
Rechenfertigkeit	1	2	3	4

#### Bedarf an Förderung

1. Benötigt dieses Kind spezielle Hilfe beim Lesen und Schreiben ?

ja

nein

2. Ist für differenzierte Maßnahmen im Rahmen des Unterrichts ausreichend Gelegenheit ?

ja

teilweise

nein

3. Braucht das Kind darüber hinaus noch Hilfen ?

ja

nein

wenn ja, welche ?

- Teilnahme an einem Legasthenikerförderkurs
- andere schulische Maßnahmen.....
- spezielle und gezielte Förderung durch die Eltern
- andere außerschulische Maßnahmen (z.B: Nachhilfeunterricht):.....

**Zusammenarbeit mit den Eltern**

1. Wie häufig haben Sie mit den Eltern dieses Kindes über die Fortschritte im Lesen und Schreiben seit Weihnachten gesprochen?

- oft                       gelegentlich                       selten                       nie

2. Wie oft haben die Eltern des Kindes bisher an folgenden Aktivitäten teilgenommen ?

	oft	gelegentlich	selten	nie
Elternabende	1	2	3	4
Ausflüge, Lehrausgänge	1	2	3	4
Mitarbeit im Unterricht	1	2	3	4

3. Wie zufrieden sind Sie mit der Unterstützung und Förderung, die das Kind von den Eltern für das Lesen- und Schreibenlernen erhält ?

- sehr zufrieden       ziemlich zufrieden       wenig zufrieden       gar nicht zufrieden

**Herzlichen Dank für Ihre Mitarbeit !!!**

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## Appendix D

### Questionnaire at the end of the second grade (teacher's ratings)

#### LEHRERINNEN-Fragebogen zum einzelnen Kind

Mit diesem Fragebogen wollen wir Aufschluß über die Sicht der Lehrerinnen über das soziale Verhalten und den Leistungsstand der Kinder im Lesen und Rechtschreiben am Ende der 2.Volksschulklasse gewinnen. Einige der nun folgenden Fragen wurden Ihnen bereits gestellt. Da uns jedoch die längerfristige Entwicklung der Schüler interessiert, bitten wir Sie sehr, diese Fragen nochmals mit großer Sorgfalt zu beantworten. Alle Informationen werden selbstverständlich streng vertraulich behandelt.

#### Fragen zum Unterricht

	stimmt nicht	stimmt kaum	stimmt etwas	stimmt ziemlich	stimmt genau
1. Dem Kind fällt es schwer, sich an gewisse Regeln zu halten (z.B: nicht rauszurufen).	1	2	3	4	5
2. Dem Kind fällt es schwer, still zu sitzen.	1	2	3	4	5
3. Das Kind stört öfters im Unterricht.	1	2	3	4	5
4. Das Kind braucht längere Zeit, bis es aus sich herausgeht.	1	2	3	4	5
5. Das Kind kann sich kaum für längere Zeit mit einer Aufgabe beschäftigen.	1	2	3	4	5
6. Das Kind nimmt von sich aus kaum am Unterricht teil.	1	2	3	4	5
7. Das Kind braucht mehrere Aufforderungen, um mit der Arbeit zu beginnen.	1	2	3	4	5
8. Das Kind scheint öfters recht traurig und niedergeschlagen zu sein.	1	2	3	4	5
9. Das Kind ist recht empfindlich und weint oft.	1	2	3	4	5
10. Das Kind kann dem Unterrichtsgeschehen gut folgen.	1	2	3	4	5
11. Das Kind redet zurück und läßt sich von mir nur schwer etwas sagen.	1	2	3	4	5

#### Fragen zum Sozialverhalten

	stimmt nicht	stimmt kaum	stimmt etwas	stimmt ziemlich	stimmt genau
1. Das Kind hat Schwierigkeiten, Anschluß an die übrigen Kinder der Klasse zu	1	2	3	4	5

finden.					
2. Das Kind wird öfter von anderen Kindern vom Spielen ausgeschlossen.	1	2	3	4	5
3. Das Kind zieht sich in der Pause von sich aus öfters zurück.	1	2	3	4	5
4. Das Kind muß öfters von mir vor den anderen Kindern in Schutz genommen werden.	1	2	3	4	5
5. Das Kind streitet und rauft öfter als die anderen Kinder in der Klasse.	1	2	3	4	5
6. Das Kind beschimpft und kränkt öfters andere Kinder.	1	2	3	4	5
7. Das Kind redet hinter dem Rücken anderer Kinder böse über sie.	1	2	3	4	5
8. Das Kind hat Schwierigkeiten etwas vor der Klasse zu sagen.	1	2	3	4	5

### Beziehung der Lehrerin zum Kind

	stimmt nicht	stimmt kaum	stimmt etwas	stimmt ziemlich	stimmt genau
1. Zwischen diesem Kind und mir besteht eine liebevolle und herzliche Beziehung.	1	2	3	4	5
2. Das Kind und ich scheinen einander ständig in den Haaren zu liegen.	1	2	3	4	5
3. Wenn dieses Kind ein Problem hat, sucht es bei mir vertrauensvoll Unterstützung.	1	2	3	4	5
4. Der Umgang mit diesem Kind kostet mich viel Kraft.	1	2	3	4	5
5. Trotz all meiner Bemühungen bin ich nicht damit zufrieden, wie das Kind und ich miteinander auskommen.	1	2	3	4	5
6. Dieses Kind macht mich ärgerlich.	1	2	3	4	5

### Fragen zum Leistungsstand des Kindes im Lesen und Schreiben

1.) Kreuzen Sie bitte an, wie Sie die Entwicklung dieses Kindes in folgenden Bereichen einstufen:

	gut	eher gut	eher schlecht	schlecht
Lesesicherheit	1	2	3	4
Lesegeschwindigkeit	1	2	3	4
Leseverständnis	1	2	3	4
Rechtschreibeisicherheit	1	2	3	4
Rechenfertigkeit	1	2	3	4

Wenn das Kind aus einer nicht deutschsprachigen Familie kommt, wie sind die Sprachkenntnisse des Kindes jetzt in Deutsch?  sehr gut  gut  ausreichend  kaum ausreichend

6. Welche Noten wird das Kind voraussichtlich zu Schluß bekommen?

Mathematik:  1  2  3  4  5

Deutsch, Lesen, Schreiben:  1  2  3  4  5

7. Benötigt dieses Kind im kommenden Schuljahr spezielle Hilfen beim Lesen und Schreiben?

in hohem Ausmaß  in mittlerem Ausmaß  in geringem Ausmaß  nein

Bedarf an Förderung

1. Benötigte dieses Kind im vergangenen Schuljahr spezielle Hilfe beim Lesen und Schreiben ?

in hohem Ausmaß  in mittlerem Ausmaß  in geringem Ausmaß  nie

2. Wie oft nahm das Kind im vergangenen Schuljahr an der Förderstunde des Klassenlehrers teil?

sehr oft  oft  gelegentlich  selten  nie

3. Hat das Kind letztes Jahr am Förderkurs für Kinder mit Teilleistungsschwächen teilgenommen?

ja, immer  ja, teilweise  nein

4. Wie oft bestand im vergangenen Jahr die Möglichkeit, das Kind zusätzlich zum regulären Unterricht im Rahmen von differenzierenden Maßnahmen im Lesen und Schreiben zu fördern?

1x pro Woche  2x pro Monat  1x pro Monat  selten  nie

5. War es im vergangenen Schuljahr möglich, daß das Kind für das Lesen und Rechtschreiben spezielle Aufgaben oder Hilfestellungen während des regulären Lese- und Rechtschreibunterrichts in der Klasse bekam?

ja  nein

Wenn ja, wie oft?  täglich  mehrmals pro Woche  1-2 mal pro Woche  selten

6. Wie groß war in etwa der Anteil am regulären Deutschunterricht, den diese differenzierenden Maßnahmen ausmachten? \_\_\_\_\_%

7. Bekam das Kind zusätzliche Aufgaben zum Lesen und Rechtschreiben, über die normalerweise dafür vorgesehene Zeit hinaus?  ja  nein

Wenn ja, in welchem Stundenausmaß? \_\_\_\_\_ pro Woche

8. Um welche Aufgaben handelte es sich dabei? (*mehrere Antworten möglich*)

Wiederholungen aus dem bisherigen Unterricht  zusätzliche Arbeitsblätter zum Üben

zusätzliche Leseübungen  Sonstige \_\_\_\_\_

9. Bekam dieser Schüler in Deutsch eine andere Hausübung als Kinder ohne Lese- und Rechtschreibschwierigkeiten?

mehrmals pro Woche    1-2 mal pro Woche    1-2 mal alle 14 Tage    selten    nie

10. Stand für differenzierende Maßnahmen bei diesem Schüler noch jemand zur Verfügung?

Wenn ja, wer? \_\_\_\_\_

In welchem Ausmaß? \_\_\_\_\_ Stunden pro Woche

11. Inwieweit war es Ihnen als Lehrer möglich, dem Kind mehr Aufmerksamkeit zu widmen als den übrigen Kindern in der Klasse?    in großem Ausmaß    recht oft    kaum    überhaupt nicht

12. Waren Ihrer Meinung nach die Möglichkeiten für individuelle Fördermaßnahmen im Rahmen des Unterrichts bei diesem Schüler ausreichend?

völlig ausreichend    noch ausreichend    wenig ausreichend    nicht ausreichend

### Zusammenarbeit mit den Eltern

1. Wie häufig haben Sie mit den Eltern dieses Kindes über die Fortschritte im Lesen und Schreiben in diesem Schuljahr gesprochen?

oft    gelegentlich    selten    nie

2. Haben Sie die Eltern des Kindes bezüglich zusätzlicher Haus- und Übungsaufgaben speziell beraten?    ja, wiederholt    ja, einmal    nein

3. Wie zufrieden sind Sie mit der Unterstützung und Förderung, die das Kind von den Eltern für das Lesen- und Schreibenlernen erhält ?

sehr zufrieden    ziemlich zufrieden    wenig zufrieden    gar nicht zufrieden

4. Wie oft beteiligten sich die Eltern dieses Kindes an Elternabenden und anderen schulischen Aktivitäten, zu denen auch die Eltern eingeladen waren?

oft    gelegentlich    selten    nie

**Herzlichen Dank für Ihre Mitarbeit !!!**

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## Appendix E

### Questionnaire at the end of the fourth grade (teacher's ratings)

#### LehrerInnen-Fragebogen zum einzelnen Kind

Vorname + 1. Buchstabe des Familiennamens des Schülers: \_\_\_\_\_ Klasse: \_\_\_\_\_

Mit diesem Fragebogen wollen wir Aufschluss über die Sicht der LehrerInnen über das soziale Verhalten und den Leistungsstand der Kinder im Lesen und Rechtschreiben in der 4.Volksschulklasse gewinnen. Einige der nun folgenden Fragen wurden Ihnen bereits gestellt. Da uns jedoch die längerfristige Entwicklung der Schüler interessiert, bitten wir Sie sehr, diese Fragen nochmals mit großer Sorgfalt zu beantworten. Alle Informationen werden selbstverständlich streng vertraulich behandelt.

#### Fragen zum Unterricht

	stimmt nicht	stimmt kaum	stimmt etwas	stimmt ziemlich	stimmt genau
1. Dem Kind fällt es schwer, sich an gewisse Regeln zu halten (z.B.: nicht rauszurufen)	1	2	3	4	5
2. Dem Kind fällt es schwer, still zu sitzen	1	2	3	4	5
3. Das Kind stört öfters im Unterricht	1	2	3	4	5
4. Das Kind braucht längere Zeit, bis es aus sich herausgeht	1	2	3	4	5
5. Das Kind kann sich kaum für längere Zeit mit einer Aufgabe beschäftigen	1	2	3	4	5
6. Das Kind nimmt von sich aus kaum am Unterricht teil	1	2	3	4	5
7. Das Kind braucht mehrere Aufforderungen, um mit der Arbeit zu beginnen	1	2	3	4	5
8. Das Kind scheint öfters recht traurig und niedergeschlagen zu sein	1	2	3	4	5
9. Das Kind ist recht empfindlich und weint oft	1	2	3	4	5
10. Das Kind kann dem Unterrichtsgeschehen gut folgen	1	2	3	4	5
11. Das Kind redet zurück und lässt sich von mir nur schwer etwas sagen	1	2	3	4	5

#### Fragen zum Sozialverhalten

	stimmt nicht	stimmt kaum	stimmt etwas	stimmt ziemlich	stimmt genau

12. Das Kind hat Schwierigkeiten, Anschluss an die übrigen Kinder der Klasse zu finden	1	2	3	4	5
13. Das Kind wird öfters von anderen Kindern vom Spielen ausgeschlossen	1	2	3	4	5
14. Das Kind zieht sich in der Pause von sich aus öfters zurück	1	2	3	4	5
15. Das Kind muss öfters von mir vor den anderen Kindern in Schutz genommen werden	1	2	3	4	5
16. Das Kind streitet und rauft öfter als die anderen Kinder in der Klasse	1	2	3	4	5
17. Das Kind beschimpft und kränkt öfters andere Kinder	1	2	3	4	5
18. Das Kind redet hinter dem Rücken anderer Kinder böse über sie	1	2	3	4	5
19. Das Kind hat Schwierigkeiten etwas vor der Klasse zu sagen	1	2	3	4	5

<i>Fragen zur sozialen Kompetenz</i>					
	sehr gut	recht gut	ganz o.K.	eher schwach	recht schwach
20. Wie gut kann er/sie jemanden helfen, dass er sich besser fühlt, wenn er traurig oder unglücklich ist?	1	2	3	4	5
21. Wie gut kann er/sie Meinungs-verschiedenheiten in einer Weise beilegen, die die Dinge besser macht und nicht schlechter?	1	2	3	4	5
22. Wie gut kann er/sie Meinungsverschiedenheiten so beilegen, dass sich keiner der Beteiligten verletzt oder abgelehnt fühlt?	1	2	3	4	5
23. Wie gut kann er/sie aus sich herausgehen und sich auf andere einstellen, um einen neuen Freund zu gewinnen?	1	2	3	4	5
24. Wie gut kann diese/r SchülerIn ein anderes Kind, das er/sie noch nicht so gut kennt fragen, etwas gemeinsam zu unternehmen, wie etwa zusammen zu spielen oder einander zu besuchen?	1	2	3	4	5
25. Wie gut kann er/sie die Verantwortung und Leitung in einer Gruppe übernehmen?	1	2	3	4	5

<i>Beziehung der LehrerIn zum Kind</i>					
	stimmt nicht	stimmt kaum	stimmt etwas	stimmt ziemlich	stimmt genau
26. Zwischen diesem Kind und mir besteht eine liebevolle und herzliche Beziehung	1	2	3	4	5
27. Das Kind und ich scheinen einander ständig in den Haaren zu liegen	1	2	3	4	5
28. Wenn dieses Kind ein Problem hat, sucht es bei mir vertrauensvoll Unterstützung	1	2	3	4	5
29. Der Umgang mit diesem Kind kostet mich viel Kraft	1	2	3	4	5
30. Trotz all meiner Bemühungen bin ich nicht damit zufrieden, wie das Kind und ich miteinander auskommen	1	2	3	4	5
31. Dieses Kind macht mich ärgerlich	1	2	3	4	5

*Fragen zum Leistungsstand des Kindes im Lesen und Schreiben*

32. Kreuzen Sie bitte an, wie Sie die **Entwicklung** dieses Kindes in folgenden Bereichen einstufen:

	gut	eher gut	eher schlecht	schlecht
Lesesicherheit	1	2	3	4
Lesegeschwindigkeit	1	2	3	4
Leseverständnis	1	2	3	4
Rechtschreibsicherheit	1	2	3	4
Rechenfertigkeit	1	2	3	4
Texterarbeitung (Aufsatzschreiben)	1	2	3	4

32a. Wenn das Kind aus einer nicht deutschsprachigen Familie kommt, wie sind die **Sprachkenntnisse**

des Kindes jetzt in Deutsch?  sehr gut  gut  ausreichend  kaum ausreichend

33. Welche **Noten** wird das Kind voraussichtlich zu Schulschluss bekommen?

Mathematik:  1  2  3  4  5

Deutsch - Lesen:  1  2  3  4  5

34. Welcher **Schultyp** wäre für das Kind im nächsten Schuljahr Ihrer Meinung nach passend?

- Hauptschule     Gymnasium     Wiederholung der 4. Klasse VS     sonstige

35. Welchen **Schultyp** wird das Kind im nächsten Schuljahr voraussichtlich besuchen?

- Hauptschule     Gymnasium     Wiederholung der 4. Klasse VS     sonstige

36. Wie wird das Kind mit den **Anforderungen** des gewählten Schultyps, Ihrer Meinung nach, zurechtkommen?

- sehr gut     eher gut     durchschnittlich     eher schwer     sehr schwer

#### *Zusammenarbeit mit den Eltern*

37. Wie zufrieden sind Sie mit der **Unterstützung und Förderung**, die das Kind von den Eltern für das schulische Lernen erhalten hat?

- sehr zufrieden     ziemlich zufrieden     wenig zufrieden     gar nicht zufrieden

38. **Wie oft** beteiligten sich die Eltern dieses Kindes an Elternabenden und anderen schulischen Aktivitäten, zu denen auch die Eltern eingeladen waren?

- meist     gelegentlich     selten     nie

**Herzlichen Dank für Ihre Mitarbeit !!!**

Hiermit bestätige ich, Clara Gomes, dass ich die vorliegende Arbeit in allen relevanten Teilen selbstständig durchgeführt habe.

Für alle verwendeten Bilder in dieser Arbeit wurden die entsprechenden Quelle zitiert. Sollte dennoch eine Urheberrechtsverletzung bekannt werden, ersuche ich um Meldung bei mir.

Clara Gomes

## CURRICULUM VITAE

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### EDUCATION

- Oct/2002-Jan/2009: Graduate Studies in Psychology at the University of Vienna (with emphasis on Educational Psychology and Research Methods)
- Jan/2000 – Dec/2001: Undergraduate Studies with Major in Psychology at the University of Pittsburgh-USA
- July/1993 – July/1996: Bachelor Degree in "Executive Bilingual Secretary –Portuguese/English" at the Universidade Paulista in São Paulo – Brazil
- Jan/1989 – April/1992: High School (technician – Architecture /Engineering) at Fundação Instituto Tecnológico de Osasco in São Paulo – Brazil

### PROFESSIONAL EXPERIENCE

- Since March/2008: Research and Teaching Assistant at the University of Vienna – Educational Psychology and Evaluation.
- Oct/2006 – Sep/2008: Research and Teaching Assistant at the University of Vienna in the CBM Project – Cascaded Blended Mentoring
- Jan/2001 – Dec/2001: Research Assistant at the University of Pittsburgh in the Pitt Mother and Child Project – USA
- Aug/2000 – Apr/2001: Research Assistant at the University of Pittsburgh in the LRDC-Learning Research and Development Center –USA
- Mar/1997 – Oct/1999: Bilingual Secretary in the Marketing Department at Roche Pharmaceuticals in São Paulo – Brazil
- Aug/1995 – Jan/1997: Import Assistant at the Medical School University in São Paulo – Brazil
- Dec/1993 – July/1995: Secretary at IMS – Pharmaceutical Research and at United Export-Import in São Paulo – Brazil