A Multimodal Storytelling Intervention for Improving the Reading and Vocabulary Skills of Struggling German-as-a-Second-Language Adolescents With Learning and Behavioral Problems

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Students with learning and behavioral problems often face enormous barriers to successful school performance. When the language of instruction is not the students' first language and they are already in secondary school, this is compounded by additional challenges, especially with regard to vocabulary and reading – subjects that are fundamental to obtaining equal educational opportunities. In addition, difficulties in the language of instruction are often accompanied by declining student motivation. Direct word recognition and vocabulary acquisition are of great importance in language learning contexts. To address these areas, multimodal intervention approaches have proven useful. For this reason, a multimodal storytelling intervention was developed to help this group of students, in particular, to improve significantly in the aforementioned areas. Specifically, a multiple-baseline design across participants (N = 4) was applied to train the sight-word reading and vocabulary of adolescent students with learning and behavioral problems who spoke German as a second language. The training occurred three times a week over a period of five weeks. Results were promising for both variables in a short period of time, suggesting that the storytelling intervention in this form is an appropriate tool for teaching second-language German.

> *Keywords:* **storytelling, German as a second language, vocabulary, reading performance, learning disabilities, problem behavior, adolescents**

INTRODUCTION

Second Language Acquisition and Immigration in Germany

Germany remains one of the most important destination countries in Europe for international migrants, with numbers steadily increasing from 2000 to 2019 (International Organization for Migration [IOM], 2019). Acquiring the national language is vital for to be able to fully participate in society. Unfor-

tunately, a great proportion of children and adolescents encounter difficulties as they try to learn German to a native level, often associated with poor school performance and eventual dropout (Harju-Luukkainen et al., 2020; Isphording & Otten, 2014). Furthermore, young people with a migration background and insufficient German language skills experience unemployment and mental health issues more frequently than their native peers, eventually resulting in lower income and higher levels of marginalization (Macdonald et al., 2016; Marksteiner et al., 2019).

Tragically, as the 2018 Programme for International Student Assessment results indicate, there is an increasingly large academic achievement gap between students with and without a migration background (Organisation for Economic Co-operation and Development [OECD], 2019) and, in general, multilingual students are often perceived as having major learning difficulties in school (Burr et al., 2015).

Challenges in Language Proficiency

Students learning a second language (L2) face the challenge of having to link their previously learned first language (L1) and the newly learned L2 (Isphording & Otten, 2014). Pae (2018) found that reading and writing skills in L1 and L2 are significantly correlated (see also Li et al., 2017; Lin, 2018). That is, if a student has difficulties in L1, it usually takes a great deal of effort to make progress in L2.

One of biggest obstacles in language acquisition is expanding vocabulary, a first step toward further progress in the new language (Adwani & Shrivastava, 2017). For example, a lack of word knowledge often results in an inability to build reading skills and, in turn, attain a productive level of writing (Hacking & Tschirner, 2017; Shin et al., 2019). Additionally, related to a lack of vocabulary is the capacity of working memory (Mackey & Sachs, 2012), which also plays a crucial role in reading development (Shin, 2020). Not surprisingly, all this combines to negatively affect students' motivation in school (Saito et al., 2017).

The challenges that almost everyone experiences when trying to acquire a foreign language are severely compounded for individuals who have learning problems (Haager & Osipova, 2017; Sarisahin, 2020), particularly deficits in working memory capacity and information-processing speed (Bishara & Kaplan, 2016). For them, trying to become familiar with a new language can be an overwhelming task (Sparks, 2012). The same goes for students with externalizing behavioral problems, due to their lack of sufficient self-control skills and motivation to learn (Maehler & Schuchardt, 2016).

The Importance of Vocabulary and Reading in a Second Language

Overall, linguistic ability is dependent on the development of vocabulary (Adwani & Shrivastava, 2017). Thus, while enormously challenging, ex-

panding vocabulary plays a leading role in reading. In this regard, *word memory* refers to a mental lexicon that stores the information of acquired words at different levels, which can be divided into receptive and expressive vocabulary. *Receptive vocabulary* includes words that students can recognize but cannot actively use, whereas *expressive vocabulary* refers to words that students can actively use (Webb, 2005).

According to Coltheart et al. (2001), two different pathways can lead to word identification: a lexical and a non-lexical route. Through the *lexical route*, words are directly retrieved from the mental lexicon. In the *non-lexical route*, the letters of words are recoded into sounds via the application of grapheme–phoneme correspondence rules (Coltheart et al., 2001). The more words that are stored in the mental lexicon, the more working memory capacity is available to be devoted to reading comprehension (National Institute of Child Health and Human Development [NICHD], 2000).

With respect to the lexical route, Ehri (2005) named sight words, that is, words read within one second of their appearance, as a significant component in the reading process. Specifically, they activate the lexical pathway and thus lead to faster word recognition. Studies show that an increase in sight words in reading can lead to an increase in reading fluency (e.g., Scammacca et al., 2007) and, consequently, to improved reading comprehension (e.g., Perfetti & Stafura, 2014).

Adequate Second-Language Support

The dual-coding theory (Paivio, 1991) offers a potentially promising approach to teaching language skills. Students learn best when new information is processed in visual and verbal ways. Thus, explicit teaching of visual and verbal mnemonics has been found to have the greatest effect on the acquisition of new words (De Vos et al., 2018; Uchihara et al., 2019).

In this regard, new content can be connected to existing knowledge through explanations, pictures, and gestures to enhance memorization of words. For example, studies confirm that newly learned words are better retained when taught by linking visual and verbal modalities (e.g., Johnson & Mayer, 2009). This form of multimedia presentation has been found to be particularly effective for L2 acquisition (Bisson et al., 2013), as well as for improving the language development of students with LD (Brady et al., 2015). Furthermore, higher effects are achieved when the content taught in the L2 is embedded in meaning-bearing contexts (Peker et al., 2018).

Method of teaching is another important factor. For example, content can be taught in an implicit manner, without direct instruction, or explicitly using direct instruction (Ellis et al., 2009). However, promoting vocabulary is particularly effective when a combination of implicit and explicit instruction is used (Marulis & Neumann, 2010). Additionally, the effectiveness of reading on

incidental learning of new words must be considered (Bisson et al., 2014). In a recent meta-analysis, Uchihara et al. (2019) found that the frequency of reading new terms is another important influencing variable in learning new words in a multimedia context. Furthermore, repetitive reading increases the reading fluency and, thus, the reading comprehension of students with and without learning problems (Lee & Yoon, 2017; Stevens et al., 2017).

Storytelling

The use of stories is a promising tool for teaching new content in the classroom (Landrum et al., 2019) as it combines many of the elements discussed above. Storytelling involves relating a narrative in an interactive way to engage the listeners in the process (Roney, 1996). To promote language development, learners should be provided with multimedia support at the three levels of reading, listening, and viewing (Feng & Webb, 2020; Mayer, 2005). Storytelling interventions seem to be useful for teaching general language skills and building students' listening and reading comprehension skills (Al-Mansour & Al-Shorman, 2011; Hemmati et al., 2015; Huang, 2006; Kim, 2010). Furthermore, this approach has proven to be effective for promoting vocabulary (Feng & Webb, 2020; Mello, 2001) and for building vocabulary skills in L2 English of students with severe learning difficulties (Barwasser et al., 2020; Knaak et al., 2021). Peters and Webb (2018) pointed to an increase in vocabulary among students through verbal delivery. New words are presented with the help of visualizations and the interactive reading aloud of a story.

New content in the L2 classroom should be explicitly taught (Hulstijn, 2005; Marulis & Neumann, 2010) because direct instruction methods are of great benefit particularly for at-risk students (Butler, 2020). In a meta-analysis, Stockhard et al. (2018) summarized strong effects of direct instruction on various participants. For example, using direct instruction, new words can be stored more effectively in students' mental lexicon (Uchihara et al., 2019). Various studies confirm these effects on students' sight vocabulary (e.g., Ehri, 2005; Fjortoft et al., 2014). Highly beneficial effects of direct instruction through the use of flashcards have also been demonstrated for students with learning problems (Fraher et al., 2019). For L2 learners, in particular, direct instruction provides another opportunity to store information from a story in the form of new words and to expand their vocabulary knowledge through context, which is necessary for improving their reading comprehension (Abbasian & Ghorbanpout, 2016; Liu, 2004).

Motivation and Second-Language Learning

Motivation plays a crucial role in learning in general (Stiensmeier-Pelster & Otterpohl, 2018). In language learning, for example, low motivation has been linked to decreasing performance (Grey et al., 2015). With regard to learning a new language, it is hypothesized that students' motivation arises in

part from L1 learning and has further effects on L2 acquisition (Sparks, 2016). Therefore, it is important to integrate motivational components into instruction to support the language acquisition of students with risk factors (Anjomshoa & Sadighi, 2015).

Self-monitoring interventions provide a means of motivational support in this regard (Maag, 2019). One such method is self-graphing. In this strategy, students visualize their daily progress in their own learning process (Hirsch et al., 2013). Various studies have shown the effectiveness of this method in terms of behavior and academic achievement, above all for students with emotional disorders (McDaniel et al., 2013; Sutherland & Snyder, 2007).

Research Questions

Against a background showing that students with German as an L2, in particular,

often have challenges performing well in school and that additional difficulties such as learning and behavioral problems lead to increased difficulty, a storytelling intervention was developed that is theoretically and empirically oriented toward the L2 literature and addresses students' personal interests as a means of increasing motivation. The goal was to break the vicious cycle of underachievement and frustration and provide learners with a sense of accomplishment and a fair educational opportunity. Finally, given the limited amount of research on secondary-level students with low achievement in an L2 (Young-Scholten, 2015), the present study will help fill the research gap in this area.

Accordingly, the research questions were as follows:

1. Does a combined storytelling intervention lead to an increase in expressive vocabulary of struggling L2 German adolescents with learning and behavior problems?

2. Does a combined storytelling intervention lead to an increase in the number of sight words of struggling L2 German adolescents with learning and behavior problems?

METHODS

Participants and Setting

The study was conducted at a school for students with special needs with a focus on learning disabilities (LD) in a large city in North Rhine-Westphalia, Germany. In Germany, an LD is defined as failure to develop the knowledge, skill, will, and self-regulation necessary to succeed in key subject areas. Unlike in the United States and other countries, in Germany, these problems can be accompanied by a moderately reduced IQ (70–85). As part of the definition of LD is also the requirement that a student's problems cannot be overcome without additional help (Grünke & Cavendish, 2016). With regard to the participants in the current study, Grades 6–8 were targeted, specifically students with German

as an L2. Accordingly, teachers made the first selection of potential subjects. Socioeconomic data on the participants were collected via a teacher questionnaire.

Before the data collection started, consent forms were sent to the parents of potential subjects. At the beginning of the study, 12 adolescents took part in a series of assessments: four students from Grade 6, four from Grade 7, and four from Grade 8. First, to determine the students' German vocabulary skills, the German vocabulary subtest as part of the Culture Fair Intelligence Test (CFT; Weiß, 2006) was administered. The vocabulary test contains a total of 30 words, with each word having a total of four choices of words, one of which is the closest match to the one shown. The instrument is supposed to be a measure of an individual's range of vocabulary. The test procedure was based on a representative sample of all school types from Grade 3 to 13 (N = 2724), with a reliability of r = .87 (Weiß, 2006). All subjects who had a percentile rank below 15 were considered eligible for the study (N = 9).

To identify potential problem areas in reading, a German reading screening, the Salzburg Reading and Spelling Test (Moll & Landerl, 2010), was administered. The two subtests of word reading and pseudo-word reading were conducted within one minute. Norms were created based on data from 2,000 students from Grade 1 to 6. Reliability of the parallel test ranges from .90 to .98, and correlations with other reading tests range from .69 to .92.

In addition, the German translation of the Integrated System Teacher Rating Form (Volpe et al., 2018) was administered to assess externalizing behavior problems. Here, the shortened version consisting of 16 items was used due to time limitations. Behavior is rated in two dimensions (learning-related behavior and oppositional/disruptive behavior), with eight items each. In accordance with the information given by Volpe et al. (2018), students above a cutoff value of 13 are considered as having externalizing behavior problems.

To crystalize the selection of the final words for the intervention, which were to be words that the participants could neither read nor express actively, a word pretest was conducted. The word pool was taken from the Metacom symbols (Kitzinger, 2020), including words important in the students' everyday lives. A total of 140 words were selected, and the matching Metacom symbols were each put on a PowerPoint (PPT) slide. The students were asked if they knew the correct vocabulary term for the picture presented. The same 140 words were tested a second time on another day as written-out words on PPT slides in the context of reading. The PPT ran in a one-second cycle (see Ehri, 2005).

From these pretests, we obtained a pool of 40 words for expressive vocabulary and 30 words for reading, which were also included in the expressive pool. We chose 10 more words for the expressive vocabulary because the students performed better on the expressive pretest and we wanted to prevent ceiling effects.

Because the study was conducted during the COVID-19 pandemic, this paper focuses on four participants explicitly: Tana (male), Cem (male), Mattina (female), and Alen (male). The remaining students were dropped from the study due to missing data, mainly because of quarantine. Our sample included two participants in Grade 7 (Tana and Cem), one in Grade 6 (Mattina), and one in Grade 8 (Alen). All students spoke Turkish as their L1 and had started to learn German upon entry into kindergarten at the age of 3. Vocabulary knowledge, as well as reading ability, was severely low for all four participants.

Design

A multiple-baseline design across participants was chosen to be able to assess the individual learning progress of each student and to exclude alternative explanations for the effectiveness of the treatment as best as possible through the delayed start of the intervention (Ledford & Gast, 2018). The participants were divided into three groups of four children each, who started the intervention on different days after baseline. Group 1 was from Grade 6, Group 2 from Grade 7, and Group 3 from Grade 8.

Groups were randomly assigned to start the intervention. Group 1 had four planned baseline measurements, Group 2 had five baseline measurements, and Group 3 had six baseline measurements. A total of 18 measurement time points were planned. Due to the COVID-19 pandemic, the study had to be stopped after 11 measurement time points because the school had to close. The baseline measurements and the intervention took place three times a week within 30 minutes over a period of 4 weeks. Two well-instructed graduate students served as interventionists. They conducted the assessments and applied the training. The interventionists supervised all three groups together.

Dependent Variables and Measurement

There were two dependent variables, which we expected would be positively influenced by the intervention: expressive vocabulary and sight word reading. Both were tested using the word pool of the previously selected 40 and 30 words. The procedure was exactly the same as the word pretest. For expressive vocabulary, with 40 words, the appropriate pictures were each put on a PPT slide, and the youth were asked to name the correct expression for the picture. For sight word reading, with 30 words, the words were each written on a slide, and the students were asked to read them within one second of their occurrence (Ehri, 2005). The presentation in the context of reading was set at a one-second rate. First, the pool of expressive words was assessed, and then the pool of words for reading. The order of the words was randomized for each measurement. Both interventionists performed the measurements, with each participant being assessed individually. The total number of words correctly identified (expressive vocabulary) and the number of words correctly read (sight vocabulary) were recorded.

Table 1. *Characteristics of Participants*

	Age	Gender	IQ	Special Needs	ITRF	Reading W	Reading PW	Vocabulary PR	L1
Tana	14;4	female	70-85	LD	18	<1	1-2	4	Turkish
Cem	14;7	male	70-85	LD	27	<1	1-2	5	Turkish
Mattina	13;6	female	70-85	LD	18	<1	1-2	2	Turkish
Alen	15;1	male	70-85	LD	14	3-4	7-10	4	Turkish

Note. LD = learning disability; ITRF = integrated teacher report form; L1 = first language; PW = pseudo word; PR = percentile; W = words.

Material

In the baseline phase, cognitive puzzles were used (taken from CFT-20-R, Weiß, 2006; German adapted version of the CFT) that the adolescents had to solve together. For the intervention phase, 8.3 x 11.7-inch cardboard flashcards were developed for Phase A, each showing the picture and the matching word together. For Phase B, short stories were written by the students themselves, adapted to the students' interests. The training words were embedded in each of the stories, with 10 per session drawn from the total pool of 40 and inserted into the stories in which the 30 reading words were included. The training words were marked in green in the text, while the rest of the text was black. Care was taken to ensure that the text was not too difficult and that it was of the same length across sessions. The substories built on each other. All stories were stretched in 8.3 x 11.7-inch on a ring binder for the students to follow the story. For the reward system, each student was given two self-graphing sheets with rows of boxes underneath each other, where the rows represented the number of sessions, and the 40/30 boxes per row represented the maximum number of correct words known or read.

Procedures

The baseline phase was used to measure the two dependent variables without the influence of a specific intervention directed at improving either expressive vocabulary or sight word reading. Students were instructed to solve cognitive puzzles together in 30 minutes. The cognitive puzzles contained, on the one hand, the logical continuation of a certain sequence and, on the other hand, the task of deciding which symbol, from five symbols shown, did not match the others. These task types were taken from the Basic Intelligence Test Scale 2 (CFT; Weiß, 2006). Just like the intervention, the baseline took place in the three small groups. After the 30 minutes were up, the participants were assessed individually with respect to the two dependent variables.

The three small groups remained intact throughout the intervention phase, so the storytelling intervention, like the baseline phase, also took place in small groups. The storytelling intervention was divided into two stages in each session. For each session, a short story was designed that included the 10 training words for that session. The reason for training only 10 out of 40 words per session was to avoid overtaxing the students. Stage 1 was the introduction and repetition of the expressive training words and reading of these words. In each session, 10 of the 40 words were directly taught, in random order. Care was taken to ensure that students were exposed to the words in somewhat equal numbers. The participants were seated in a semicircle around the two interventionists, who introduced the words using the flashcards. To do so, they first covered up the word and referred to the picture, and then asked which of the students had an idea of what the word matching word would be. Then, the

interventionists revealed the written word, read the word aloud and clearly, and then asked all students to read the word in chorus; individual students were also allowed to try. The aim was for students to store the image and form of the word in their mental lexicon. Additionally, the content of the stories from the previous session was repeated.

In Stage 2, after 10 minutes, the storytelling intervention was implemented. The interventionists recited the story as well as they could from memory according to the principles of storytelling, with lots of gestures and facial expressions. When a training word (marked in green) came up, the story was stopped, and the appropriate flashcard was consulted. The students were asked if they remembered the word and if anyone would like to read it. This continued for 15 minutes. Thus, the total length of each session was 25 minutes, always consisting of Stage 1 and Stage 2. Following each intervention session, students were again measured individually with respect to the two dependent variables.

Based on the results of each measurement, all participants plotted the correct number of words they knew on their two self-graphing sheets for expressive vocabulary, as well as the number of words read correctly. This steps was incorporated to show the students a learning progression to further motivate them.

Treatment Fidelity

The importance of treatment fidelity has gained enormous attention in recent years, especially with regard to better assessing treatment effects and the beneficial effects of an intervention (Nelson et al., 2012). To keep the implementation as similar as possible in all three small groups, which was additionally ensured by the fact that the same two interventionists instructed all groups, and to better estimate which outcome was influenced by the intervention, a guideline was created to which the interventionists had to strictly adhere. Additionally, a checklist was designed as part of the treatment fidelity to factually record the same implementation. The sheet was divided into the following areas: "Attendance," "External Circumstances," "Implementation of the Intervention," "Student Behavior," and "Feedback." Both interventionists filled out this sheet after each session; also, one third of the way through the intervention, an external person came to observe the intervention in the three groups and to fill out the sheet. There was 100% agreement between the interventionists themselves, as well as between the interventionists and the external person.

RESULTS

The statistical program R was used to analyze the data. Initially, the focus was on visual inspection and descriptive data, including the mean baseline difference (MBD) calculation (Campbell, 2003). For further analysis, overlap measures – the percentage exceeding the median (PEM; Ma, 2006), non-overlap of all pairs (NAP), and Tau-U (Parker et al., 2011), with additional correction for a possible baseline trend (A vs. B + Trend B + Trend A) – were also used. A Level 2 regression analysis was performed across all subjects with special attention to the trend as well as the level and slope effect from Phase A to Phase B (Huitema & McKean, 2000).

Expressive Vocabulary

For the first dependent variable, there was a clearly visible increase from Phase A to Phase B for Tana, Cem, and Alen, including direct increases when the intervention was applied. For Mattina, there was also a steady improvement, although it took her longer than the others. For Alen, a discrete trend tendency can be observed in Phase A. The descriptive data show the highest percentage increase for Mattina (1071%). Unlike the others, Mattina had a very flat baseline with lower values. Cem and Alen reached 35.00 words in Phase B, and Mattina had the lowest total, with 16.00.

Table 2. *Descriptive Data for Expressive Vocabulary*

	N(A)	N(B)	*M*(A)SD	*M*(B) SD	Max A	Max B	MBD
Tana	4	7	3.67(1.53)	22.71(4.82)	5.00	27.00	518,80%
Cem	4	7	5.67(1.53)	29.14(6.31)	7.00	35.00	413,93%
Mattina	5	8	1.00(0.82)	11.71(4.82)	2.00	16.00	1071%
Alen	6	7	6.00(7.47)	27.14(7.47)	10.00	35.00	352,33%

Note. N = measurements; A = Phase A; B = Phase B; *M* = mean; *SD* = standard deviation; MBD = mean baseline difference.

The NAP and PEM show a value of 100.00 for all students, which can be described as a maximum value and indicates a strong effect. The Tau-U results show a moderate effect for Mattina ($p < .05$) and Alen ($p < .01$), and a large change for Tana ($p < .001$) and Cem ($p < .01$). In the regression analysis, a no statistically significant A-Phase trend was found throughout ($p = .26$). A significant level ($p < .001$) and slope ($p < .05$) effect can be reported, however, with the participants managing to improve expressively by an average of 1.410 words per intervention session.
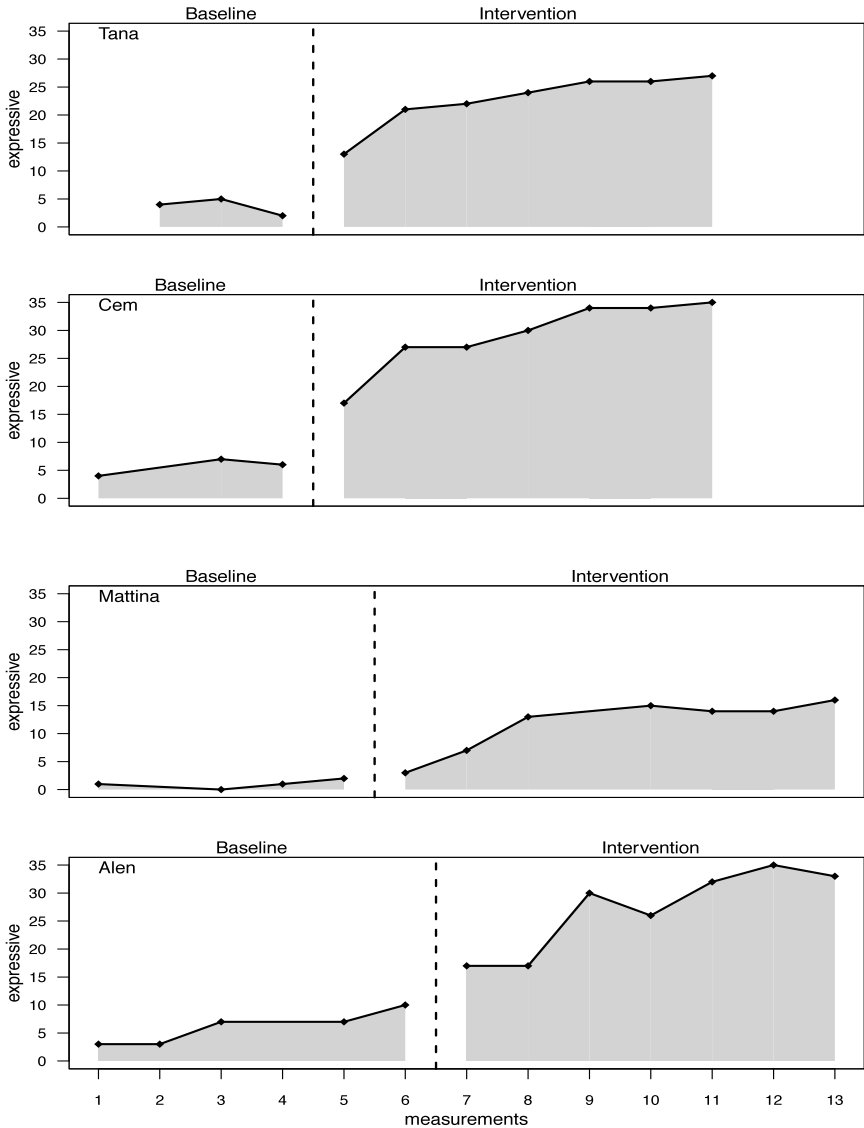
Figure 1. **Amount of Known Words Expressively**

Table 3. *Overlap Indices for Expressive Vocabulary*

	NAP	PEM	Tau-U	*p*
Tana	100.00	100.00	0.76	<.001
Cem	100.00	100.00	0.71	<.01
Mattina	100.00	100.00	0.53	<.05
Alen	100.00	100.00	0.55	<.01

Note. NAP = nonoverlap of all pairs; PEM = percentage exceeding the median.

Table 4. *Regression Analysis for Expressive Vocabulary (Level 2)*

	Phase B	*SE*	*t*	*p*
Intercept	2.048	3.534	0.579	.56
Trend	0.731	0.631	1.158	.26
Level	8.292	2.177	3.808	<.001
Slope	1.410	0.718	1.965	<.05

Reading

With regard to the visual vocabulary, strong increases from Phase A to Phase B were also found across all subjects, with Alen already showing relatively high values at baseline, although a negative trend emerged. Here too level effects can be observed for all students, including Mattina, who showed a very steep increase in reading at the end of Phase B. Mattina also showed the strongest percentage increase from Phase A to Phase B. As expected, Alen showed the lowest increase, but the maximum value in Phase B was 30.00.

Table 5. *Descriptive Data for Words Read Correctly*

	N(A)	N(B)	*M*(A)SD	*M*(B) SD	Max A	Max B	MBD
Tana	4	7	3.67(0.58)	18.00(3.70)	4.00	23.00	390,46%
Cem	4	7	6.00(0.00))	18.57(5.00)	6.00	25.00	209,50%
Mattina	5	8	2.00(1.63)	15.00(5.66)	4.00	24.00	650%
Alen	6	7	21.60(1.52)	28.57(1.81)	23.00	30.00	32,27%

Note. N = measurements; A = Phase A; B = Phase B; *M* = mean; *SD* = standard deviation; MBD = mean baseline difference.
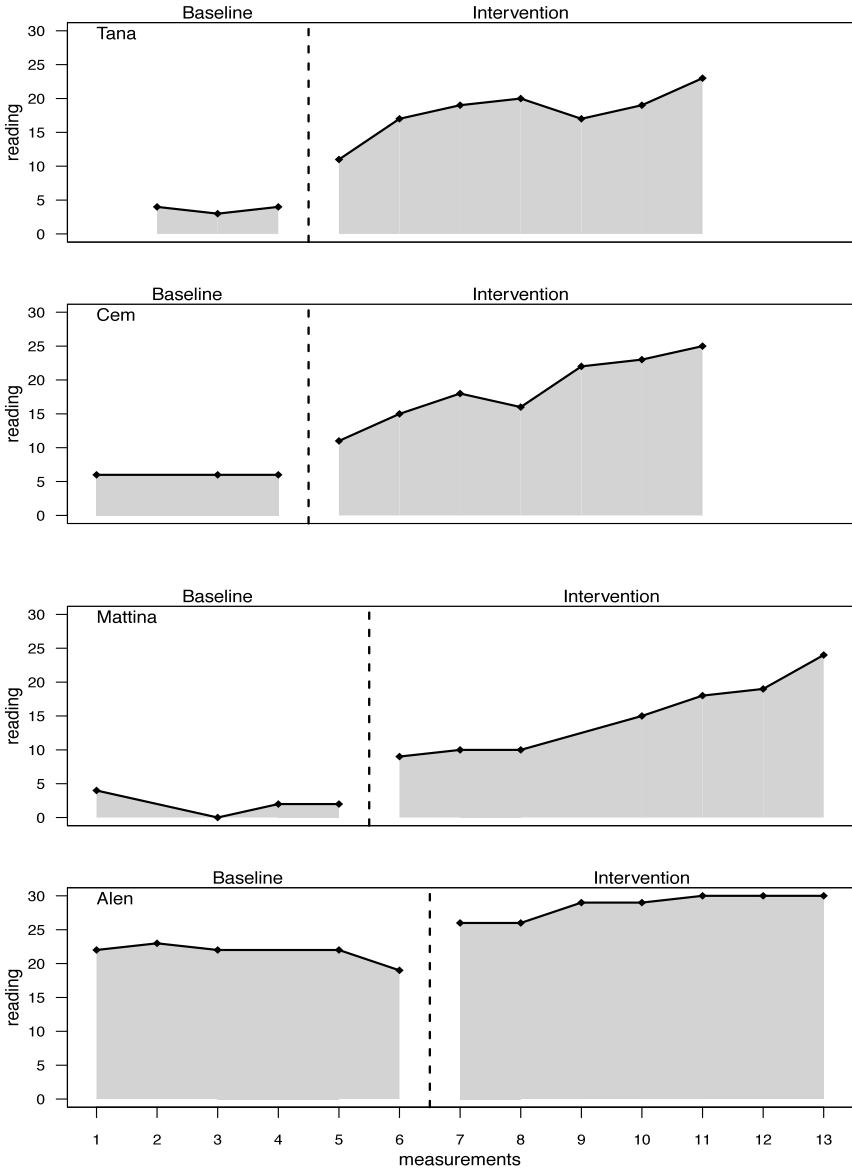
Figure 2. **Amount of Words Read Correctly**

All subjects showed a large change of 0.62–0.73 in Tau-U scores, with Tana and Mattina having the lowest scores. However, all values are considered statistically significant ($p < .01$). The analyses for the NAP and PEM showed the highest possible change across all students. The regression analysis displayed a statistically significant negative trend in Phase A ($p < .05$), as well as a statistically significant level effect ($p < .001$) and slope effect ($p < .001$), with a beta coefficient of 2.454.

Table 6. *Overlap Indices for Words Read Correctly*

	NAP	PEM	Tau-U	*p*
Tana	100.00	100.00	0.62	<.01
Cem	100.00	100.00	0.73	<.01
Mattina	100.00	100.00	0.63	<.01
Alen	100.00	100.00	0.72	<.01

Note. NAP = nonoverlap of all pairs; PEM = percentage exceeding the median.

Table 7. *Regression Analysis for Words Read Correctly (Level 2)*

	Phase B	*SE*	*t*	*p*
Intercept	11.049	3.673	3.008	<.01
Trend	-0.790	0.365	1-2.167	<.05
Level	5.847	1.252	4.669	<.001
Slope	2.454	0.414	5.930	<.001

DISCUSSION

Main Findings

German L2 students face tremendous obstacles as they try to acquire sufficient German vocabulary and reading skills to succeed academically. In cases where they also experience serious learning and behavior problems, the challenges often seem insurmountable. The purpose of this single-case study was to present a method using a self-designed multimodal storytelling intervention that can effectively train expressive vocabulary and sight-word reading simultaneously in a very short time for adolescents with severe learning and behavioral difficulties.

With regard to the first dependent variable, expressive vocabulary, three of the participants showed enormously strong increases after the start of the storytelling intervention. Mattina, who started with the lowest baseline data, also demonstrated an increase, although not as rapid as the others. She did, however, demonstrate the highest improvements in percentage terms under the MBD. Tana, Cem, and Alen showed a leveling effect, which means that they all seemed to respond immediately to the intervention. Tana and Cem benefited the most. Mattina and Alen showed moderate effects. Mattina reached the lowest percentile rank in the German vocabulary screening, which might indicate that she had a harder time remembering words overall.

For the second dependent variable, sight-word reading, all students showed an increase from Phase A to Phase B. The increase was especially strong for Tana, Cem, and Mattina. Alen already had relatively high values in Phase A, which means that a rapid increase was not possible due to the ceiling effect. Accordingly, he also demonstrated the smallest percentage increase from Phase A to Phase B. Alen also seemed to show a negative trend at the baseline, which could indicate decreasing motivation because L2 learning is highly correlated with motivation (Grey et al., 2015). Because the variables were not addressed at the baseline, he might have been frustrated. Mattina showed the strongest increase with respect to MBD. In terms of effect sizes, Tana and Mattina benefited the least from the treatment. However, all effects can be considered strong.

Overall, the results align with findings from other studies on vocabulary learning (Barwasser et al., 2020; Bisson et al., 2013; Johnson & Mayer, 2009; Knaak et al., 2021; Peker et al., 2018; Peters, 2014) and memorization of sight vocabulary (Lee & Yoon, 2017; Stevens et al., 2017). The intervention seems to be suitable for both variables, with no clear difference in effectiveness between them. Overall, it is impressive that in such a short time (three times a week over five weeks), both variables could be effectively improved in students with several educational challenges.

Limitations

The promising findings of our research need to be considered alongside a number of limitations. First of all, we conducted a single-case study with only four participants, which makes generalization of the results difficult. However, the advantage of single-case studies is that they enable assessment of individuals and their responses to an intervention and, therefore, enable us to better adapt and optimize interventions.

Another issue is the limited number of measurement time points, mainly due to the COVID-19 pandemic. Nevertheless, even in a short period with only a few sessions, an increase in both dependent variables could be seen. That is, the intervention is time-efficient, which is very important for schools, as there

is often not enough time outside of the standard curriculum to embed time-consuming interventions in the classroom.

Methodologically, the baseline with three measurement times could be criticized, because at least five measurement times per phase are recommended. According to Kratochwill et al. (2013), however, three measurements meet single-case design standards with reservations. In addition, it is often not possible to extend the baseline phase to the recommended length due to time constraints at schools.

Furthermore, we evaluated the benefits of a multicomponent intervention, and it is not possible to determine exactly which components had what effect; that is, it is not possible to say to what extent the flashcards alone, storytelling, and self-graphing contributed to the improvements in both dependent variables. However, the intention was not to determine the individual mechanisms of action, because it is a simple and easy-to-use intervention as a method package, which seems to work in this form.

Recommendations for Future Research

As further recommendations, the sample could be increased to include more students with specific characteristics to see how universally the storytelling intervention may be used. In addition, one could look at other dependent variables, such as writing and reading comprehension. Also, researchers could consider adopting a group design to increase the sample size and to compare storytelling with other interventions. Based on the experiences gained from the COVID-19 pandemic and the increasing importance of digitalization in schools, the storytelling intervention could be digitalized and made available to schools and students in the form of an app. In this way, teachers and students would also have access to the intervention if, for example, schools had to close and change to distance learning.

CONCLUSION

In summary, the simple storytelling method presented here can effectively help secondary-level students with German as an L2 who have learning and behavioral difficulties in expressive vocabulary and sight word reading in a very short time. Thus, the study contributes to the literature by showing that even severely struggling L2 students can learn a language if appropriate methods are used, including adapting them to the students' everyday lives and, thus, arouse their interest and motivation. Overall, this is an effective way to narrow the gap between groups of students differing in terms of school performance and provide all students with the opportunity for a fair and equal education.

REFERENCES

Abbasian, G.-R., & Ghorbanpour, E. (2016). The effect of flash card-based instruction on vocabulary learning by EFL learners. *International Journal of Humanities and Cultural Studies,* 1929–1938.

Adwani, P., & Shrivastava, S. (2017). Analysis of factors affecting second language Acquisition. *International Journal of Social Sciences and Management*, *4*(3), 158–164. https://doi.org/10.3126/ijssm.v4i3.17247

Al-Mansour, S., & Al-Shorman, R. A. (2011). The effect of teachers' storytelling aloud on the reading comprehension of Saudi elementary stage students. *Journal of King Saud University. Language and Translation*, *23*(2), 69–76. https://doi.org/10.1016/j.jksult.2011.04.001

Amiryousefi, M., & Ketabi, S. (2011). Mnemonic instruction: A way to boost vocabulary learning and recall. *Journal of Language Teaching and Research*, *2*(1), 178–182. https://doi.org/10.4304/jltr.2.1.178-182

Anjomshoa, L., & Sadighi, F. (2015). The importance of motivation in second language acquisition. *International Journal on Studies in English Language and Literature*, *3*(2), 126–137.

Barwasser, A., Knaak, T., & Grünke, M. (2020). The effects of a multicomponent storytelling intervention on the vocabulary recognition of struggling English as a foreign language learners with learning disabilities. *Insight Into Learning Disabilities*, *17*(1), 35–53.

Bishara, S., & Kaplan, S. (2016). Executive functioning and figurative language comprehension in learning disabilities. *World Journal of Education*, *6*(2), 20–32. https://doi.org/10.5430/wje.v6n2p20

Bisson, M., van Heuven, W. B., Conklin, K., & Tunney, R. J. (2013). Incidental acquisition of foreign language vocabulary through brief multi modal exposure. *PLoS ONE*, *8*(4), 1–7. https://doi.org/10.1371/journal.pone.0060912

Bisson, M. J., van Heuven, W. J. B., Conklin, K., & Tunney, R. J. (2014). The role of repeated exposure to multimodal input in incidental acquisition of foreign language vocabulary. *Language Learning*, *64*(4), 855–877. https://doi.org/10.1111/lang.12085

Brady, N. C., Storkel, H. L., Bushnell, P., Barker, R. M., Saunders, K., Daniels, D., & Fleming, K. (2015). Investigating a multimodal intervention for children with limited expressive vocabularies associated with autism. *American Journal of Speech-Language Pathology*, *24*(3), 438–459. https://doi.org/10.1044/2015_AJSLP-14-0093

Burr, E., Haas, E., & Ferriere, K. (2015). *Identifying and supporting English learner students with learning disabilities: Key issues in the literature and state practice.* U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory West. https://files.eric.ed.gov/fulltext/ED558163.pdf

Butler, K. (2020). The value of direct instruction for at-risk-students. *Journal of Education and Development*, *4*(2), 10–16. https://doi.org/10.20849/jed.v4i2.741

Campbell, J. M. (2003). Efficacy of behavioral interventions for reducing problem behavior in persons with autism: A quantitative synthesis of single-subject research. *Research in Developmental Disabilities*, *24*(2), 120–138. https://doi.org/10.1016/S08914222(03)00014-3

Chow, J. C., & Wehby, J. H. (2018). Associations between language and problem behavior: a systematic review and correlational meta-analysis. *Educational Psychology Review*, *30*, 61–82. https://doi.org/10.1007/s10648-016-9385-z

Ciullo, S., Ortiz, M. B., Al Otaiba, S., & Lane, K. L. (2016). Advanced reading comprehension expectations in secondary school: considerations for students with emotional or behavior disorders. *Journal of Disability Policy Studies*, *27*(1), 54–64. https://doi.org/10.1177/1044207315604365

Coltheart, M., Rastle, K., Perry. C., Langdon, R., & Ziegler, J. (2001). DRC. A dual route cascades model of visual word recognition and reading aloud. *Psychological Review*, *108*(1), 204–256. https://doi.org/10.1037/0033-295X.108.1.204

De Vos, J. F., Schriefers, H., Nivard, M. G., & Lemhöfer, K. (2018). A meta-analysis and meta-regression of incidental second language word learning from spoken input. *Language Learning*, *68*(4), 906–941. https://doi.org/10.1111/lang.12296

Ehri, L. C. (2005). Development of sight word reading: Phases and findings. In M. J. Snowling & C. Hulme (Eds.), *Blackwell handbooks of developmental psychology. The science of reading: A handbook* (pp. 135–154). Blackwell Publishing. https://doi.org/10.1002/9780470757642.ch8

Ellis, R., Loewen, S., Elder, C., Erlam, R., Philp, J., & Reinders, H. (2009). *Implicit and explicit knowledge in second language learning, testing and teaching*. Multilingual Matters. https://doi.org/10.21832/9781847691767-004

Feng, Y., & Webb, S. (2020). Learning vocabulary through reading, listening and viewing. Which mode of input is most effective? *Studies in Second Language Acquisition*, *42*(3), 499–523. https://doi.org/10.1017/S0272263119000494

Fjortoft, A., McLaughlin, T. F., Derby, K. M., Everson, M., & Johnson, K. (2014). The effects of two direct instruction teaching procedures to teach basic skills to two students with disabilities. *Multidisciplinary Journal of Education Psychology*, *4*(2), 1–32. https://doi.org/10.4471/remie.2014.09

Fraher, C., Jones, K., Caniglia, C., Crowell, G., Hastings, K., & Zumwalt, K. (2019). Effectiveness of direct instruction flashcards on sight word identification for a high school student with a specific learning Disability. *Insights Into Learning Disabilities*, *16*, 37–44.

Grey, S., Williams, J. N., & Rebuschat, P. (2015). Individual differences in incidental language learning: The role of learning styles, personality, and working memory. *Learning and Individual Differences*, *38*, 44–53. https://doi.org/10.1016/j.lindif.2015.01.019

Grünke, M., & Cavendish, W. (2016). Learning disabilities around the globe. *Learning Disabilities: A Contemporary Journal, 14*(1), 1–8.

Haager, D., & Osipova, A. V. (2017). Enhancing academic instruction for adolescent English language learners with or at risk for learning disabilities. *Insights Into Learning Disabilities*, *14*(1), 7–26. https://files.eric.ed.gov/fulltext/EJ1165739.pdf

Hacking, J., & Tschirner, E. (2017). The contribution of vocabulary knowledge to reading proficiency: The case of college Russian. *Foreign Language Annals*, *50*(3), 500–518. https://doi.org/10.1111/FLAN.12282

Harju-Luukkainen, H., McElvany, N., & Stang, J. (2020). *Monitoring student achievement in the 21st century. European policy perspectives and assessment strategies*. Springer. https://doi.org/10.1007/978-3-030-38969-7

Hemmati, F., Gholamrezapour, Z., & Hessamy, G. (2015). The effects of teachers' storytelling and reading story aloud on the listening comprehension of Iranian EFL learners. *Theory and Practice in Language Studies*, *5*(7), 1482–1488. https://doi.org/10.17507/tpls.0507.22

Hirsch, S. E., Ennis, R. P., & McDaniel, S. C. (2013). Student self-graphing as a strategy to increase teacher effectiveness and student motivation. *Beyond Behavior*, *22*(3), 31–39. https://doi.org/10.1177/107429561302200305

Hollo, A., Wehby, J. H., & Oliver, R. M. (2014). Unidentified language deficits in children with emotional and behavioral disorders: A meta-analysis. *Exceptional Children*, *80*(2), 169–186. https://doi.org/10.1177/001440291408000203

Huang, H. (2006). The effects of storytelling on EFL young learners' reading comprehension and word recall. *English Teaching & Learning*, *30*, 51–74.

Huitema, B. E., & McKean, J. W. (2000). Design specification issues in time-series intervention models. *Educational and Psychological Measurement, 60*(1), 38–58. https://doi.org/10.1177/00131640021970358

Hulstijn, J. (2005). Theoretical and empirical issues in the study of implicit and explicit second-language learning: Introduction. *Studies in Second Language Acquisition, 27*(2), 129–140. https://doi.org/10.1017/S0272263105050084

International Organization for Migration (IOM). (2019). *World migration report 2020.* https://publications.iom.int/system/files/pdf/wmr_2020.pdf https://doi.org/10.18356/b1710e30-en

Isphording, I., & Otten, S. (2014). Linguistic barriers in the destination language acquisition of immigrants. *Journal of Economic Behavior & Organization, 105*, 30–50. https://doi.org/10.1016/j.jebo.2014.03.027

Johnson, C. I., & Mayer, R. E. (2009). A testing effect with multimedia learning. *Journal of Educational Psychology, 101*(3), 621–629. https://doi.org/10.1037/a0015183

Kim, M. (2010). The effects of storytelling on adult English language learners. *Linguistic Research, 27*(3), 447–473. https://doi.org/10.17250/khisli.27.3.201012.004

Kitzinger, A. (2020, December 11). *METACOM.* https://www.metacom-symbole.de

Knaak, T., Grünke, M., & Barwasser, A. (2021). Enhancing vocabulary recognition in English Foreign Learners with and without learning disability. The effects of a multi-component storytelling intervention approach. *Learning Disabilities: A Contemporary Journal, 19*(1), 1–18.

Kratochwill, T. R., Hitchcock, J., Horner, R. H., Levin, J. R., Odom, S. L., Rindskopf, D. M., & Shadish, W. R. (2013). Single-case intervention research design standards. *Remedial and Special Education, 34*(1), 26–38. http://doi.org/10.1177/0741932512452794

Landrum, R. E., Brakke, K., & McCarthy, M. A. (2019). The pedagogical power of storytelling. *Scholarship of Teaching and Learning in Psychology, 5*(3), 247–253. https://doi.org/10.1037/stl0000152

Ledford, J. R., & Gast, D. L. (2018). *Single case research methodology: Applications in special education and behavioral sciences.* Routledge. https://doi. org/10.4324/9781315150666

Lee, J., & Yoon, S. Y. (2017). The effects of repeated reading on reading fluency for students with reading disabilities: A meta-analysis. *Journal of Learning Disabilities, 50*(2), 213–224. https://doi.org/10.1177/0022219415605194

Li, S., Tao, S., Joshi, R. M., & Xu, Q. (2017). Second-language reading difficulties among native Chinese-speaking students learning to read English: The roles of native- and second-language skills. *Reading Research Quarterly, 53*(4), 1–19. https://doi.org/10.1002/rrq.204

Lin, G. (2018). Modeling the relationship of metacognitive knowledge, L1 reading ability, L2 language proficiency and L2 reading. *Reading in a Foreign Language, 30*(2), 209–231. http://nflrc.hawaii.edu/rfl

Liu, J. (2004). Effects of comic strips on L2 learners' reading comprehension. *TESOL Quarterly, 38*(2), 225–243. https://doi.org/10.2307/3588379

Lopes-Murphy, S. A. (2020). Contention between English as a second language and special education services for emergent bilinguals with disabilities. *Latin American Journal of Content & Language Integrated Learning, 13*(1), 43–56. https://doi.org/10.5294/laclil.2020.13.1.3

Ma, H. H. (2006). An alternative method for quantitative synthesis of single subject researches: Percentage of data points exceeding the median. *Behavior Modification, 30*(5), 598–617. https://doi.org/10.1177/0145445504272974

Maag, J. W. (2019). Meta-analysis and quality of self-monitoring behavior interventions with children and adolescents. *International Journal of Education*, *11*(1), 40–67. https://doi.org/10.5296/ije.v11i1.14580

Macdonald, S. J., Deacon, L., & Merchant, J. (2016). "Too far gone": Dyslexia, homelessness, and pathways to drug use and dependency. *Insights Into Learning Disabilities*, *13*(2), 117–134. https://files.eric.ed.gov/fulltext/EJ1122799.pdf

Mackey, A., & Sachs, R. (2012). Older learners in SLA research: A first look at working memory, feedback, and L2 development. *Language Learning*, *62*(3), 704–740. https://doi.org/10.1111/j.1467-9922.2011.00649.x

Maehler, C., & Schuchardt, K. (2016). Working memory in children with specific learning disorders and/or attention deficits. *Learning and Individual Differences*, *49*, 341–347. https://doi.org/10.1016/j.lindif.2016.05.007

Marksteiner, T., Janke, S., & Dickhäuser, O. (2019). Effects of a brief psychological intervention on students' sense of belonging and educational outcomes: The role of students' migration and educational background. *Journal of School Psychology*, *75*, 41–57. https://doi.org/10.1016/j.jsp.2019.06.002

Marulis, L. M., & Neuman, S. B. (2010). The effects of vocabulary intervention on young children's word learning: A meta-analysis. *Review of Educational Research*, *80*(3), 300–335. https://doi.org/10.3102/0034654310377087

Mayer, R. E. (2005). Cognitive theory of multimedia learning. In R. E. Mayer (Ed.), *The Cambridge handbook of multimedia learning* (pp. 31–48). Cambridge University Press. https://doi.org/10.1017/CBO9780511816819.004

McDaniel, S. C., Jolivette, K., & Ennis, R. P. (2013). The effects of self-graphing on oral reading fluency for a student with E/BD within an alternative education school. *Journal of the American Academy of Special Education Professionals*, 69–82. https://files.eric.ed.gov/fulltext/EJ1135723.pdf

Mello, R. (2001). Building bridges: How storytelling influence teachers and student relationships. *The Journal of Higher Education*, *17*(6), 301–307. https://files.eric.ed.gov/fulltext/ED457088.pdf

Moll, K., & Landerl, K. (2010). *SLRT-II: Lese-und Rechtschreibtest; Weiterentwicklung des Salzburger Lese-und Rechtschreibtests (SLRT) [Reading and spelling test; further development of the Salzburg reading and spelling test]*. Huber.

National Institute for Literacy. (2009). *Developing early literacy: Report of the National Early Literacy Panel*. National Center for Family Literacy.

National Institute of Child Health and Human Development (NICHD). (2000). *Report of the National Reading Panel. Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction* (NIH Publication No. 00-4769). U.S. Government Printing Office.

Nelson, M. C., Cordray, D. S., Hulleman, C. S., Darrow, C. L., & Sommer, E. C. (2012). A procedure for assessing intervention fidelity in experiments testing educational and behavioral interventions. *The Journal of Behavioral Health Services & Research*, *39*(4), 374–396. https://doi.org/10.1007/s11414-012-9295-x

Organisation for Economic Co-operation and Development. (2019). *Programme for international students' assessment (PISA). Results from PISA 2018*. https://www.oecd.org/pisa/publications/PISA2018_CN_DEU.pdf

Pae, T. (2018). A simultaneous analysis of relations between L1 and L2 skills in reading and writing. *Reading Research Quarterly*, *54*(1), 109–124. https://doi.org/10.1002/rrq.216.

Paivio, A. (1991). Dual coding theory: Retrospect and current status. *Canadian Journal of Psychology*, *45*(3), 255–287. https://doi.org/10.1037/h0084295

Parker, R. I., Vannest, K. J., Davis, J. L., & Sauber, S. B. (2011). Combining non-overlap and trend for single-case research: Tau-U. *Behavior Therapy, 42*(2), 284–299. https://doi.org/10.1016/j.beth.2010.08.006

Peker, H., Regalla, M., & Cox, D. T. (2018). Teaching and learning vocabulary in context. Examining engagement in three prekindergarten French classrooms. *Foreign Language Annals, 51*(2), 472–483. https://doi.org/10.1111/flan.12338

Perfetti, C., & Stafura, J. (2014). Word knowledge in a theory of reading comprehension. *Scientific Studies of Reading, 18*(1), 22–37. https://doi.org/10.1080/10888438.2013.827687

Peters, E. (2014). The effects of repetition and time of post-test administration on EFL learners' form recall of single words and collocations. *Language Teaching Research, 18*(1), 75–94. https://doi.org/10.1177/1362168813505384

Peters, E., & Webb, S. (2018). Incidental vocabulary acquisition through viewing L2 television and factors that affect learning. *Studies in Second Language Acquisition, 40*(3), 551–577. https://doi.org/10.1017/S0272263117000407

Roney, R. C. (1996). Storytelling in the classroom: Some theoretical thoughts. *Storytelling World, 9*, 7–9.

Saito, K., Dewaele, J. M., & Hanzawa, K. (2017). A longitudinal investigation of the relationship between motivation and late second language speech learning in classroom settings. *Language and Speech, 60*(4), 614–632. https://doi.org/10.1177/0023830916687793

Sarisahin, S. (2020). Reading comprehension strategies for students with learning disabilities who are emergent bilingual. *Intervention in School and Clinic, 56*(1), 3–12. https://doi.org/10.1177/1053451220910731

Scammacca, N., Roberts, G., Vaughn, S., Edmonds, M., Wexler, J., Reutebuch, C. K., & Torgesen, J. K. (2007). *Interventions for adolescent struggling readers: A meta-analysis with implications for practice.* RMC Research Corporation, Center on Instruction.

Schleppegrell, M., & O'Hallaron, C. (2011). Teaching academic language in L2 secondary settings. *Annual Review of Applied Linguistics, 31*, 3–18. https://doi.org/10.1017/S0267190511000067

Shin, J. (2020). A meta-analysis of the relationship between working memory and second language reading comprehension: Does task type matter? *Applied Psycholinguistics, 41*(4), 873–900. https://doi.org/10.1017/S0142716420000272

Shin, J., Dronjic, V., & Park, B. (2019). The interplay between working memory and background knowledge in L2. *TESOL Quarterly, 53*(2), 320–347. https://doi.org/10.1002/tesq.482

Sparks, R. L. (2012). Individual differences in L2 learning and long-term L1-L2 relationships. *Language Learning, 62*, 5–27. https://doi.org/10.1111/j.1467-9922.2012.00704.x

Sparks, R. L. (2016). Myths about foreign language learning and disabilities. *Foreign Language Annals, 49*(2), 252–270. https://doi.org/10.1111/j.1944-9720.2009.01005.x

Stevens, E. A., Walker, M. A., & Vaughn, S. (2017). The effects of reading fluency interventions on the reading fluency and reading comprehension performance of elementary students with learning disabilities: A synthesis of the research from 2001 to 2014. *Journal of Learning Disabilities, 50*(5), 576–590. https://doi.org/10.1177/0022219416638028

Stiensmeier-Pelster, J., & Otterpohl, N. (2018). Motivation at school and university. In J. Heckhausen & H. Heckhausen (Eds.), *Motivation and action.* Springer. https://doi.org/10.1007/978-3-319-65094-4_18

Stockhard, J., Wood, T. W., Coughlin, C., & Khoury, C. R. (2018). The effectiveness of direct instruction curricula: A meta-analysis of a half century of research. *Review of Educational Research, 88*(4), 479–507. https://doi.org/10.3102/0034654317751919

Sutherland, K. S., & Snyder, A. (2007). Effects of reciprocal peer tutoring and self-graphing on reading fluency and classroom behavior of middle school students with emotional or behavioral disorders. *Journal of Emotional and Behavioral Disorders, 15*(2), 103–118.

https://doi.org/10.1177/10634266070150020101

Uchihara, T., Webb, S., & Yanagisawa, A. (2019). The effects of repetition on incidental vocabulary learning: A meta-analysis or correlation studies. *Language Learning*, *69*(3), 559–599. https://doi.org/10.1111/lang.12343

Volpe, R. J., Casale, G., Mohiyeddini, C., Grosche, M., Hennemann, T., Briesch, A. M., & Daniels, B. (2018). A universal behavioral screener linked to personalized classroom interventions: Psychometric characteristics in a large sample of German schoolchildren. *Journal of School Psychology*, *66*, 25–40. https://doi.org/10.1016/j.jsp.2017.11.003

Webb, S. (2005). Receptive and productive vocabulary learning: The effects of reading and writing on word knowledge. *Studies in Second Language Acquisition*, *27*(1), 33–52. https://doi.org/10.1017/S0272263105050023

Weiß, R. H. (2006). *Grundintelligenztest Skala 2 - Revision (CFT 20-R) mit Wortschatztest und Zahlenfolgentest [Basic Intelligence Test Scale 2 - Revision (CFT 20-R) with vocabulary test and number sequence test]*. Hogrefe.

Young-Scholten, M. (2015). Who are adolescents and adults who develop literacy for the first time in an L2, and why are they of research interest? *Writing Systems Research*, *7*(1), 1–3. https://doi.org/10.1080/17586801.2015.998443

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