I READ TO YOU, AND YOU RELAX: INTERACTIVE TEACHER READ-ALOUDS OF PICTURE BOOKS IN THE UNDERGRADUATE FOREIGN LANGUAGE CLASSROOM

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I am submitting herewith a dissertation written by Mareike Geyer entitled "I READ TO YOU, AND YOU RELAX: INTERACTIVE TEACHER READ-ALOUDS OF PICTURE BOOKS IN THE UNDERGRADUATE FOREIGN LANGUAGE CLASSROOM." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in German.

Thorsten Huth, Major Professor

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(Original signatures are on file with official student records.)
I READ TO YOU, AND YOU RELAX:
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UNDERGRADUATE
FOREIGN LANGUAGE CLASSROOM

A Dissertation Presented for the
Doctor of Philosophy
Degree
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DEDICATION

*I can do all things through Christ who strengthens me.*

Philippians 4:13

To my Lord and Savior Jesus Christ—it was for You I started this PhD journey, and it was through You I finished it!
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ABSTRACT

Research Area: This dissertation investigates interactive teacher read-alouds of picture books in the undergraduate foreign language classroom. It focused on reading comprehension and read-aloud enjoyment.

Study Design: The study was conducted in four in-person German language classes at a U.S. university. It consisted of six weekly read-alouds interventions that took place over the time span of 7 weeks. During the interventions, one German picture book was read interactively to the students.

Data Collection Instruments: Reading comprehension was measured with a pre-test and a post-test and read-aloud enjoyment was measured with a pre-intervention survey and a post-intervention survey.

Results: The findings showed that reading comprehension did not increase on the group level, but stayed level. Nevertheless, increase of reading comprehension occurred for individual participants. In terms of read-aloud enjoyment, it was found that all participants were read to in school in the past, only a few were read to in a foreign language class prior to this study. The data show that the interventions evoked enjoyment, and participants even perceived improvements in their language skills because of the interventions.

Conclusions: The data suggest that, even in higher education, interactive teacher read-alouds of picture books have the potential to affect foreign language learning positively and do foster students’ enjoyment, an important element for successful learning. Thus, this pedagogical method should be considered by language educators as a relevant and useful classroom tool.
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CHAPTER 1

INTRODUCTION

Reading picture books aloud - elementary school teachers do it, parents do it, and sometimes older siblings read to their younger brother or sister. But why do they do that and what makes it so popular? Many people view reading aloud as an activity that fosters language and literacy learning and offers pleasurable bonding time. These are two main reasons why teachers and families engage in this type of reading. But what is it in the picture book read-alouds that improve the language and literacy of children? Research in the area of first language learning and read-alouds exists. It indeed indicates benefits of picture book read-alouds such as language and literacy learning. When looking at it from a foreign language teaching perspective, this brings up the following question: Could reading a picture book out loud also foster second and foreign language learning?

Research has been done on picture book read-alouds at home and as a classroom practice in the past (Duncan, 2021). Especially its benefits on children’s first language and literacy development and learning success were explored in depth. Scholars have investigated picture book read-alouds in first languages (henceforth L1) in different settings such as at home (Bus et al., 1995; Dowdall et al., 2020; McCormick, 1983; Moerk, 1985; Mol et al., 2008; Ninio & Bruner, 1978; Scarborough & Dobrich, 1994) and in educational settings such as in preschool, kindergarten, elementary, middle and high school (Beck & McKeown, 2001; Klesius & Griffith, 1996; Marchessault & Larwin, 2013; McGee & Schickedanz, 2007; Morrow & Smith, 1990; Wiseman, 2011). Some research has also addressed read-alouds in contexts of learning or teaching a second and foreign language (henceforth L2), at home and in educational contexts: at
home (Farver et al., 2013; Kalia & Reese, 2009; Lau & Richardson, 2021) and in school (Amer, 1997; Giroir, 2015; Hickman et al., 2004; Senawati et al., 2021).

The majority of research in this area has focused on picture book read-alouds at home, in elementary and secondary education, and in L2 classrooms. However, only few scholars have explored picture book read-alouds in connection to foreign language learning in higher education (Khodabakhshi & Lagos, 1993; Sun, 2010, 2020a). A possible reason for the dearth of research in that area could be the general assumption that reading picture books out loud is a method only appropriate for children and young adults. It is indeed the case that, often, picture books are written for children (Aikman, 1995; Bloem & Padak, 1996). They deal with the everyday lives of children, e.g., the first day in school or the first time at the dentist. Reading aloud such a picture book to undergraduate students would likely not be successful. It might rob them of the interest and motivation to participate in such read-alouds since the story does not reflect their everyday lives and topics in which they are interested. However, there are some picture books that can be used in the undergraduate classroom. The key is to use content, topics, and imagery that are age-appropriate and have the potential so that adult readers identify with the content more readily. Furthermore, picture books represent artistic objects to enjoy and from which to learn, regardless of age (Bishop & Hickman, 1992). Furthermore, the interaction between the pictures and text is what draws readers to them, no matter what age (Giorgis, 2015). Therefore, picture books and reading them out loud to undergraduate students might be viewed as a potentially helpful medium and method to nurture not only meaningful discussions and learning in the undergraduate classroom, but also enjoyment.

Specifically in the L2 classroom, picture books have the potential to support language learning. They offer human, social context, and through context, numerous opportunities for
language practice and learning arise. Learners can learn the language through the text and visuals and apply it by discussing the story and images. The visuals may help narrow the gap between little understanding and more understanding. In this way, imagery and text in combination might support understanding overall and ease the cognitive load. Furthermore, the combination of imagery and text may have a psychological and emotional effect. It may make L2 learners feel less overwhelmed than they likely would be if they read a longer L2 text without the support of imagery. In sum, picture books and reading them out loud could be viewed as a useful method to promote learning in undergraduate L2 classes, in terms of language learning and in terms of providing favorable affective conditions.

This study investigates both aspects empirically. For one, it aims at measuring the potential effects of interactive picture book read-alouds on language learning (specifically reading comprehension) over time. Second, it aims at investigating the potential psychological and emotional effects (specifically read-aloud enjoyment) that read-alouds may have. Accordingly, the research questions for this study are as follows:

1. Do interactive picture book read-alouds in the undergraduate foreign language classroom improve participants’ reading comprehension?

2. Do interactive picture book read-alouds in the undergraduate foreign language classroom create L2 read-aloud enjoyment in students?

To address these research questions, this study measures reading comprehension with a pre- and a post-test before and after conducting interactive picture book read-alouds in class for several weeks. The reading comprehension tests are based on the Common European Framework of Reference for Languages (CEFR) proficiency standards (Council of Europe, 2020). To measure L2 read-aloud enjoyment before and after conducting interactive picture book read-
alouds, this study utilizes a pre- and a post-intervention survey that targets self-perceptions of study participants.

Overall, this study is grounded on two pedagogical convictions. For one, I believe that it is crucial to evoke an interest for reading in second or foreign language students so they can become lifelong readers in the L2 they are learning. Reading to them can nurture that interest. Furthermore, I am convinced that enjoyment as it may be brought about by reading out loud to learners positively influences learning in general, and language learning in particular. Enjoyment might reduce fears and anxiety, lowering what in second language acquisition research is known as the affective filter (Krashen, 1985). If there are fewer stressors, students are more likely to learn the language better.

Below, I first provide definitions of the terms and concepts central for this study, namely the terms picture book, interactive read-alouds, and interactive picture book read-alouds. Then, I provide an in-depth review of research on interactive read-alouds of picture book in various settings, including at home and in education, in contexts of L1 and L2 learning. I move on to narrow down the focus of this study and its specific research questions against the backdrop of the existing research. I conclude this introductory chapter with a brief overview of Chapters 2, 3, 4, and 5.

1.1 Terms and Definitions: Interactive Picture Book Read-Alouds

Picture Book

Picture books are often used for doing interactive teacher read-alouds. They offer numerous opportunities for conversations, vivid pictures and visuals, and often relatively simple
language geared toward younger readers. Thus, in terms of providing context and less complex linguistic material, these types of books can be viewed as a promising medium to engage foreign language learners. Learners can learn the language through the contexts jointly created by text and visuals and by discussing the story and images with the instructor and each other.

One important differentiation concerns the terms illustrated book and picture book. At times, illustrated books and picture books are seen as the same type of book (Bird & Yokota, 2017). But it is the connection of the pictures and the text that distinguishes the two types of books from each other. Bird and Yokota (2017) explain that an illustrated book includes visuals and text, but that without the visuals, the text is still fully comprehensible. Visuals are added to attract the reader’s eye, but are not needed for understanding. A picture book, according to Nikolajeva (2006), also contains images and text, but the major difference is that the images and the text work in concert. Unlike in illustrated books, text and images in picture books are tightly interdependent to support comprehension (Nikolajeva, 2006). Text and images may interrelate in different ways: symmetry/correlating, complementing, enhancing, counterpointing, or contradicting (Nikolajeva & Scott, 2000). Driggs Wolfenbarger and Sipe (2007) elaborate further: “1) symmetry—the words and pictures are on equal footing; 2) complementary—each provides information; 3) enhancement—each extends the meaning of the other; 4) counterpoint—words and pictures tell different stories; and 5) contradiction—beyond different narratives, the words and pictures seem to assert the opposite of each other” (p. 274). In these ways, the reader has to engage their mind in search for meaning, and it is this engagement that affects comprehension.

It is commonly assumed that the images in a picture book support the reader in making sense of the story. Neurocognitive research supports that idea. Research in this area has focused
on what happens in the brain as a person is being read to when using a picture book. Hutton et al. (2019) measured children’s brain activity via fMRI scans while the children engaged in the following activities: listening to a story, listening to story and seeing its pictures, and watching an animated video of the story. Hutton et al. investigated in the study if the way a story was presented to preschool-age children had an influence on processing that is responsible for attention, visualization and perception, and language. The results showed that the brains were most active when children were listening to a story and seeing its pictures. In addition, the findings indicated that there may be a “reduced strain on the language network using illustration and imagery” (Hutton et al., 2019, p. 580). Wolf (2018) comments on other studies by Hutton and his colleagues:

Hutton’s group has shown how active the young brain is when it listens to stories and engages with the mother over all the things that happen to big red dogs and runaway bunnies and monkeys. Significant changes appear to occur not only in the regions of the brain underlying the receptive aspects of language, which enhance learning the meanings of words, but also in regions underlying the expressive aspects of language learning, which enable children to articulate new words and thought. (p. 130)

Therefore, from a neurocognitive research perspective, visuals in a picture book may be viewed as a mechanism to lighten the cognitive load for the brain. This would free up resources that can be used for language learning. The interplay of text, image, and interaction with those who are reading seems to engage a variety of processes that are highly relevant for language learning. This is another reason why it is reasonable to assume that interactive teacher read-alouds using picture books (rather than illustrated books) might be a useful tool to foster the learning of an L2 in educational settings.
**Interactive Read-Alouds**

I now turn toward the notion of *interaction*. In the research literature on interactive teacher read-alouds in general, it seems to be taken for granted that teacher read-alouds are inherently interactive. This assumption appears to be so pervasive that, often, the adjective ‘interactive’ is not even included in referring to this reading method. It is simply left out, leaving it as the term ‘read-aloud’. This makes a clear definition of what then a ‘read-aloud’ (i.e., without interaction) difficult. Often, interaction is part of many processes during read-alouds sessions, be it in or outside of classrooms. According to Barrentine (1996a), in class the interaction can happen before, after or during the read-alouds, and between the instructor and the students or between students.

Slay and Morton (2020) discuss this dilemma. They point out the different terms used in the literature for this instructional reading method, connecting them to the different teaching goals that instructors may pursue. They state:

As a pedagogical practice, reading aloud may take various forms according to the instructor’s teaching objective; consequently, the terms reading aloud, read-alouds, interactive read alouds, and shared reading are often used interchangeably in the literature. For purposes of this article, reading aloud is an overarching term describing the general practice of reading a text aloud to students for instructional purposes. Whereas reading aloud is the action, read-alouds is the activity meant to describe reading aloud as a pedagogical practice. Interactive read-alouds and shared reading are terms sometimes used synonymously in literacy education according to the teacher’s instructional purpose. For example, teachers may pause to ask pre-planned questions during an interactive read-aloud while students listen to their teacher read a text aloud to
them; as opposed to students reading aloud a common text with their teacher in a shared reading experience in which the teacher leads the class in a choral reading of some or all parts of a familiar text to reinforce reading concepts. For purposes of this article, these four terms coincide as aspects of reading texts aloud in an educational setting. (p. 64–65)

Here, the authors highlight that in the literature the term *reading aloud* is often used as an umbrella term that describes a specific instructional reading method. But the execution of this method may well differ depending on the teaching goals at hand. Consequently, the term for the method may change. However, Klesius and Griffith (1996) do not use the terms interchangeably. For them, shared reading is not considered interactive per se since it does not have the conversational focus that an interactive read-aloud has.

*Interactive Picture Book Read-Alouds*

I decided to use and define the term *interactive picture book read-aloud*, including the adjective ‘interactive’. For the purposes of this study, I use the term *interactive picture book read-aloud* in the sense that a teacher reads a picture book out loud to students and includes a variety of interactions with the students as the reading happens (Barrentine, 1996a). In other words, during interactive read-alouds, the instructor involves the students interactively in discussions about the story and about literacy skills before, during, and after the readings (Barrentine, 1996a; McClure and Fullerton, 2017). In some contexts, this is also known as *dialogic reading* (Dickinson et al., 2012; Whitehurst, 1992).

Both non-interactive and interactive read-alouds are most commonly done in home settings in which caretakers often read picture books to their children. Non-interactive and interactive read-alouds are also often utilized in elementary and secondary schools, when
teachers read stories or picture books to their students. In higher education, instructors may occasionally read a picture book out loud to students in their first language, for example, in teacher preparation classes (Ceprano, 2010; Freeman et al., 2011; Shaw et al., 2007; Slay & Morton, 2020). However, and particularly in contexts in which foreign language learning is the explicit focus, interactive picture book read-alouds remain rare in higher education (Sun, 2020a).

The role of the teacher as the reader in class is important when discussing the pedagogical goals of interactive picture book read-alouds, particularly in L2 classes. In L2 classes, emotions can affect the learning process. The *affective filter hypothesis* (Krashen, 1985) is a notion in second language acquisition research that states that a low affective filter on the part of learners generally benefits language learning. Negative feelings or even anxiety may hinder language learning. Reading exercises in L2 classes in which students read out loud are common classroom activities. However, they have the potential to create stress and anxiety in some students who read out loud. However, when the teacher reads, students are under no pressure to produce the L2 in front of others. Thus, from the outset, interactive picture book read-alouds may well be useful to lower students’ affective filter and thus, support L2 learning.

It is possible that interactive picture book read-alouds even result in positive emotions in students. Research has explored students’ perceived enjoyment as a response to interactive read-alouds in educational L1 contexts, including in elementary school (Hall & Williams, 2010; Ledger & Merga, 2018), middle school (Clark & Andreasen, 2014), and higher education (Freeman et al., 2011). Teachers’ perspectives on the method have also been investigated (Albright & Ariail, 2005; Conradi Smith et al., 2022; Merga & Ledger, 2019). However, research on students in higher education, to my knowledge, is underrepresented in that research field that focuses mostly on elementary teachers in training (Freeman et al., 2011). Similarly, only little
research has been done in terms of higher education students who take foreign language classes and are asked to report on L2 read-aloud enjoyment. To my knowledge, only two studies investigated that topic and were done by Dhaif (1990) and Sun (2020a). Notably, Dhaif’s study was not interactive and looked at the notion of preference (rather than enjoyment) in the sense that students preferred the teacher to read out loud over doing the reading themselves. In Sun’s study, enjoyment was neither specifically defined nor specifically targeted. Sun simply explored students’ general perception of interactive teacher read-alouds with a qualitative survey, and students’ responses indicated that they enjoyed the experience.

My study utilizes a definition of L2 read-aloud enjoyment that is partly based on Dewaele and MacIntyre’s (2016) definition of Foreign Language Enjoyment. According to Dewaele and MacIntyre (2016), Foreign Language Enjoyment can be defined as an emotion that is triggered by the successful completion of a language activity or task that involved hardships, but at the same time had personal significance to a learner. The definition of L2 read-aloud enjoyment I apply here, describes the feeling of delight and comfort when a teacher reads a text in the L2 out loud. It does not necessarily involve the need to meet personal (or other’s) expectations, or the need to make efforts, or the need to perform, as it all would be the case for Foreign Language Enjoyment according to Dewaele and MacIntyre (2016). L2 read-aloud enjoyment may happen when learners are put in a position to relax, as the teacher is doing the reading for them, and they can sit back and enjoy being read to.

There are specific goals and steps involved when doing interactive picture book read-alouds as a pedagogical practice in a L1 (McClure & Fullerton, 2017; Sun, 2020a). According to McClure and Fullerton (2017), the goals for such read-alouds in an L1 are that:

1. Students encounter different reading material.
2. Students hear adults read out loud who are experienced in reading and in the first language.
3. Students learn about ways to understand texts and to discuss it with others.
4. Students use complex thinking.
5. Teachers scaffold a skill that the students then can use on their own when they read a text by themselves.

In education, the term *scaffolding* describes the structuring of activities and their succession, in which each activity builds on each other (Brandl, 2008).

Interactive picture book read-alouds commonly follow a two-step structure: First, teachers show a new skill that needs to be learned, and second, students practice that skill (McClure & Fullerton, 2017). Sun (2020a) specifies those steps, stating “teachers read the text, model their thinking aloud, highlight strategy use, engage students in guided practice, and support learning as students share their own thinking and understanding in whole-class conversations” (p. 509). In other words, in a first step, teachers provide oral and written input when reading aloud and showing the text to the students. They provide necessary explanations or showcase vocabulary that is needed to understand the text better. They may also show students a specific literacy skill that is in focus, including visual skills (i.e., engagement with and discussions about pictures in books). In a second step, students apply said literacy skill in collaboration with other students and with the outside help of the teachers while working with classmates.

Even though the goals and steps just reviewed were developed for interactive picture book read-alouds in L1 contexts, it is easy to see the potential of these goals and steps for the L2 classroom. The following points seem particularly important: Learners see a number of texts in the target language, and that lets them encounter new words and sentence structure – their
reading and writing skills are trained. Learners also hear the target language spoken when the teacher reads a story to them – they practice listening comprehension. They learn the meaning of new words and of whole texts written in the target language – learners train their reading skills. They see images that support the text – learners learn to connect text and images to make sense of contextual cues. They communicate in the target language as they discuss meaning – learners practice their speaking skills. Furthermore, teachers impart literacy skills to students that they then can apply on their own. Last, interactive teacher read-alouds may provide a non-threatening, enjoyable experience for the students. In sum, interactive teacher read-alouds seem to have great potential as an instructional technique for L2 classrooms, addressing all four L2 language skills (listening, reading, speaking, and writing), allowing for imparting specific L2 literacy skills, and may effectively lower the affective filter of students.

1.2 Research on Interactive Picture Book Read-Alouds in Different Contexts

I now review the available research on interactive picture book read-alouds in L1 and L2 settings and their use at home and in educational institutions. It is noteworthy that the distribution of studies across these settings and contexts is not even. The vast majority of studies focus on L1 home and school settings. Far fewer studies have been done in L2 home settings, and the least number of studies have focused on L2 learning in higher education settings. Overall, this line of research reports a variety of benefits of interactive picture book read-alouds. The findings suggest that, as a pedagogical practice, it fosters language development, increases vocabulary knowledge, supports the acquisition of speaking (e.g., pronunciation and grammar), listening, reading, writing skills (in L1, L2, in elementary, secondary and higher education), and
may even bring about general academic success. Some studies note benefits for the learning process over time, others make pedagogical recommendations.

1.2.1 Interactive Picture Book Read-Alouds at Home Using the L1

Extensive research has focused on interactive picture book read-alouds in the L1 in the home setting. This research was conducted by scholars (Barone et al. 2019; Bus et al., 1995; Cochran-Smith, 1986; Dowdall et al., 2020; McCormick, 1983; Moerk, 1985; Mol et al., 2008; Ninio & Bruner, 1978; Scarborough & Dobrich, 1994; Sénéchal et al., 2008; Sénéchal & LeFevre, 2002; Snow & Goldfield, 1983; Teale, 1981; Whitehurst et al., 1988), pediatricians (Needlman & Silverstein, 2004) and neuroscientists (Horowitz-Kraus et al., 2017).

At home, parents read picture books to their children in their L1 (Mol et al., 2008). When reading picture books in the L1, the books are mainly utilized to strengthen the bonds between parents and children (Scarborough & Dobrich, 1994) and to foster language development (Moreillon, 2017). Usually, the picture books that a family reads are written in the first language of the family. Reading picture books may become a frequent and sometimes a daily activity in a family. Young children look at them in their free time and/or read picture books on their own when old enough to read, and/or parents read a picture book aloud to them before bedtime. Wolf (2018) describes experiences of interactive picture book read-alouds at home in the following way:

All of these earliest experiences provide the ideal beginnings of the reading life: first and foremost, human interaction and its association with touch and feeling; second, the development of shared attention through shared gaze and gentle directives; and third,
daily exposure to new words and new concepts as they reappear every day like magic in the same place on the same page. (p. 132)

In other words, reading picture books out loud to children has a positive effect on the interpersonal, the emotional, and the physical level. Also, the caregiver and the child look at a picture book together, discuss together, and therefore, bond. Lastly, the child is able to broaden the vocabulary and gain understanding of novel ideas. Overall, interactive picture book read-alouds affect the child’s interpersonal, physical, intellectual, and linguistic state.

Ninio and Bruner (1978) studied longitudinally the labeling behavior of an infant (8-18 months) during picture book read-alouds done by the mother. They discovered that the read-alouds resembled a conversational dialogue. The child completed the act of labeling due to the fact that it had learned the order and the routine of the conversational dialogue. Further, it was found that the mother adapted her behavior as the infant grew older. According to Cochran-Smith (1984), this study is among the first studies that revealed the interactions between a parent and a child during picture book read-alouds.

McCormick (1983) reviewed 12 studies about read-alouds involving preschool children (3-6 years old; at home and in the classroom). She concluded that this method positively affected preschool children’s development of their language, their interest in reading, being equipped for school, reading achievement, their reading preferences, and social attitudes. Whitehurst et al. (1988) investigated in a longitudinal study the relationship between mother-child picture book reading and the development of language and its influence on the latter. The children were of the age of 21-35 months. They found out that the way of reading (e.g., asking open-ended questions, recasting, expanding, praising, etc.) positively affected the development of the L1. Mol et al. (2008) discovered in their meta-analysis of 16 studies on dialogic book reading at home in the L1
that when parents used conversation and interaction, the children’s expressive vocabulary increased. The authors highlighted that interaction and conversations between parent and child during dialogic book reading are necessary for spoken language development. Further, children who reached ages 2 and 3 years gained more from the dialogic book reading than older children who were four and five years old. Dowdall et al.’s (2020) meta-analysis of 19 studies on interactive picture book read-alouds at home in the L1 suggested that spoken language and listening skills of children age 6-10 improved when the reading adult had been coached thoroughly on the method in a group setting. This did not depend on how old the child was and what type of education the adult had received. The skill of the adult to execute an interactive read-alouds also improved.

In sum, the use of interactive picture book read-alouds in the L1 at home has shown to have many positive effects on the development and literacy learning of a child. They naturally consist of conversations between the parent and the infant. They positively influence a preschooler’s language and reading development, interest in reading, reading preferences, and social attitudes. In addition, the way the read-alouds are done influence L1 learning. When done in a conversational and interactive manner, they support a child’s vocabulary growth and, the younger the child is, the more beneficial the read-alouds will generally be for the child. Lastly, interactive picture book read-alouds foster speaking and listening in the L1, regardless of the age of the child.

1.2.2 Interactive Picture Book Read-Alouds in Educational Settings Using the L1

Extensive research has focused on interactive teacher read-alouds of picture books in the L1 in educational settings; often in preschool (Bus et al., 1995; McCormick, 1983; McGee &

Especially in elementary schools, picture books and the reading of them aloud by a teacher to the class is very common and a widespread activity (Pantaleo, 2007). But the interactive reading of picture books aloud by the teacher (or silent reading by students on their own) can also still take place in middle school (Albright & Ariail, 2005). At school, picture books are often utilized to foster first language development and to facilitate literacy development in an engaging and enjoyable way (Albright & Ariail, 2005). Routinely, the language of the picture books used in elementary and middle schools is the dominant language in a country (e.g., English in the U.S.).

McCormick (1977) summarized the research of 13 studies about read-alouds with school-age children. She concluded that reading aloud to children in school positively influences their performance in reading, being interested in reading, and the development in their language. Mol and Bus (2011) discovered in their meta-analysis of 99 studies about print exposure from the first years of life until young adulthood (from 2 to 21 years old) a connection between such an exposure and elements of reading. The more print exposure a child has, the more their reading abilities improve. They also found that shared reading fosters comprehension development and technical reading skills as well as the skills of speaking, reading, and spelling for readers.

Elley’s (1989) study reported on two combined studies to see if reading stories aloud in elementary school increases vocabulary acquisition in the first English language. For the first
study, instructors read one story book to 7-year-old children three times over the span of a week, without word explanations. The results showed that students acquired new vocabulary from the read-alouds, and that the contextual environment and the visuals supported that acquisition. The second study was divided into two experimental groups and one control group. In the experimental groups, instructors read two books to 8-year-old children, each book three times over the span of a week. One group heard it with word explanations for the first book, but not for the second book. The other group heard it without word explanation for the first book, but not for the second book. The control group was not read aloud to at all. The results showed that the children acquired more vocabulary with word explanations, and the acquisition was permanent.

Beck and McKeown (2001) combined interactive picture book read-alouds with the method *Text Talk* to foster meaning making in kindergarten and in first grade classes. They observed that the students who experienced that combination were able to make meaning from story texts alone. Santoro et al. (2008) presented a study with a treatment group and a control group on the effect of read-alouds in first grade in terms of comprehension, vocabulary, and content teaching. The results showed that read-alouds that included work on text structure, discussions that focused on the text, and vocabulary work were beneficial for comprehension and vocabulary learning. Mol and Bus (2011) also found in their meta-analysis that comprehension improved, over the years, when learners are being read aloud to.

Much less research on interactive picture books read-alouds has been conducted in higher education. Undergraduate courses that focus on teacher education may include interactive picture book read-alouds in the L1 to familiarize future teachers with this instructional method (Freeman et al., 2011). The teacher reads a picture book out loud to the students in the L1 in teacher preparation classes (Ceprano, 2010; Freeman et al., 2011; Shaw et al., 2007; Slay & Morton,
Slay and Morton (2020) did a study with pre-service teachers. They used interactive picture book read-alouds to foster multiculturalism and writing to prepare pre-service teachers for applying this method in their future teaching positions. This helped with their development of teacher identity, pedagogy, and empathy. Also, participants realized the usefulness of read-alouds for writing instruction.

In sum, the use of interactive picture book read-alouds in the L1 in various educational settings has shown to have many positive effects on performance in reading, reading skill, being interested in reading, development in language, speaking and spelling as well as fostering writing skills in the L1. In addition, they support meaning making and foster comprehension and vocabulary learning. Overall, it can be said that the utility of teachers reading picture books out loud in an L1 has been well established for elementary and secondary education, and to a lesser degree, in higher education.

1.2.3 Interactive Picture Book Read-Alouds at Home Learning a L2

In the context of home, interactive picture book read-alouds can also be in a L2 (Farver et al., 2013; Lau & Richardson, 2021). This can happen if the official or the dominant language of the country in which the family lives is different from the language a family speaks at home. Several studies have focused on interactive picture book read-alouds in the L2 in a home setting (Chow et al., 2010; Dixon, 2011; Farver et al., 2013; Lau & Richardson, 2021).

Lau and Richards (2021) conducted a home literacy environment study in Hong Kong, studying 149 children (3-6 years old) who experienced the L2 at home and in school. They examined aspects of L2 vocabulary (English), including knowing letters, phonological awareness, and the ability to read words. The authors found that receptive vocabulary and
reading improved when the children engaged in the L2 (English) during shared reading and storytelling. L2 learners’ receptive vocabulary and their increased knowledge of letters and spelling was particularly affected. Further activities that involved play and media promoted receptive vocabulary, though no significant connection to phonological awareness could be found. Mol et al. (2008) found that not only receptive skills, but also expressive skills may improve in the L2 when doing interactive picture book read-alouds at home. In sum, interactive picture book read-alouds in the L2 in home settings appear to foster L2 receptive vocabulary, expressive abilities in the L2, and reading skills overall.

1.2.4 Interactive Picture Book Read-Alouds in Educational Settings Learning a L2

In schools, interactive picture book read-alouds may also be done in a L2 to facilitate the learning of a second language. Interactive picture book read-alouds in a L2 classroom aim to have students “use and practice new language by making meaningful text-to-self and text-to-world connections, allowing for deeper processing of the new language and deeper understanding of the ideas connected to that language” (Giroir et al., 2015, p. 640). In other words, students are enabled to apply the L2 on different levels. Thus, interactive picture book read-alouds offer opportunities to utilize and practice the target language, and may therefore, be useful even for young adult learners or adult learners.

Studies focusing on learners of the English language (ELL) / of English as a second language (ESL) and of English as a foreign language (EFL) were conducted in kindergarten (Cole et al., 2017; Fitton et al., 2018), elementary school (Cole et al., 2017; Fitton et al., 2018; Giroir et al., 2015; Hickman et al., 2004; Senawati et al., 2021), middle school (Amer, 1997; Fitton et al., 2018; Sun, 2020b) and high school (Rahimi & Farjadnia, 2019; Sandy & Mukti,
2020). In the following, I discuss studies and reviews in which the language taught was L2 English.

Giroir et al. (2015) worked on an elementary school read-alouds project to improve English language learners’ (ELL/ESL) vocabulary acquisition and comprehension. In terms of students’ learning, it was found that students were very committed and interested in the tasks during the read-alouds. The participating teachers noticed their overdoing of teacher talk during the read-alouds, and that interactions between students for vocabulary and text work should be done more often. Teachers furthermore noticed that the read-alouds gave them opportunities to help ESL students more efficiently and how important book choice is. Senawati et al. (2021) examined literary materials on read-alouds in English as a foreign language (EFL) classrooms for young learners. In terms of learning benefits, they found that read-alouds supported vocabulary learning, facilitated pronunciation, and fostered comprehension. In addition, they improved competencies in listening, reading, and speaking. Furthermore, students were more motivated to read and practiced to think critically.

Cole et al. (2017) reviewed 24 studies on the use of interactive read-alouds in the context of English language learners (ELL) in elementary school and provided pedagogical recommendations. They found that choice of books, eliciting background knowledge from students, and settling on a purpose for the read-alouds are essential. Also, the findings showed that in order to foster language learning, verbal interactions between the teacher and the students should take place during the read-alouds. In addition, new words should be taught before, during and after the reading. Especially after the reading, students should complete activities that practice those new words. Also, the selected books should contain authentic representation of
cultures. Lastly, it was recommended that teachers work together with experts in the area of English language learning and with the families of the English language learning students.

In sum, the existing research on using interactive picture book read-alouds for L2 learning in school suggests that it can foster vocabulary learning and may heighten students’ commitment and interest in the tasks during the read-alouds. Furthermore, it improves listening, reading, speaking, comprehension, and pronunciation. In addition, students appear to be more motivated to read and practice to think critically. At the same time, this review also shows that conducting interactive picture book read-alouds requires that teachers prepare conscientiously, including appropriate book choice, vocabulary instruction, and using external sources in order for those read-alouds to be effective for L2 learners.

1.2.5 Interactive Picture Book Read-Alouds and Higher Education

Only a very small number of scholars have specifically looked at interactive picture book read-alouds in adult L2 education, and all these studies were done in ESL and EFL settings (Dhaif, 1990; Khodabakhshi & Lagos, 1993; Rahimi & Farjadnia, 2019; Smallwood, 1992; Sun, 2020a). Khodabakhshi and Lagos (1993) read children’s literature to ESL college students, but it was non-interactive. This study suggested that teacher read-alouds may help students to be more willing to communicate in the target language, read more texts, and express themselves more in writing in the target language. Also, they found that students gain insight into the L2 culture if the books are from the culture where the language is spoken. The benefits for L2 learning, as it is the case in home settings or with younger learners in elementary or secondary education, seem to apply to all skills involved in mastering a foreign language.
Dhaif (1990) investigated improvement in reading comprehension and read-aloud preference in 140 EFL university students when being read aloud to. The students came from different university departments. However, the passages read were from textbooks (not picture books), and the process of reading aloud was not interactive. In the first part of the study, students were asked to read three passages silently and then answer multiple-choice comprehension questions. In the second part of the study, the researcher read out loud three different passages and students read along quietly. Here, students were prompted to correct intentional misreading of words by the researcher and were asked to repeat words from the text that the researcher wanted them to repeat verbally. Afterwards, students answered the same multiple-choice comprehension questions on the passages. No vocabulary explanations were given at any point and there was no focus in talking about the content. The study showed that reading comprehension improved as a result. In addition, students expressed that they preferred the researcher read-aloud over having to read themselves. Some participants expressed that the read-aloud helped them to comprehend the text better. This finding is interesting as it showed that even though the read aloud was not interactive and did not involve pictures, it still was found to be effective in terms of reading comprehension.

Sun’s (2020a) study is the only study I know that focuses on interactive picture book read-alouds in language classes in higher education and their effects on language learning and student perceptions. Sun investigated students’ word inferences ability as well as perceptions of read-alouds of EFL students at a university in Taiwan when doing interactive picture book read-alouds. The results showed that the word inference ability of the students improved due to the read-alouds, and students also enjoyed the read-alouds. They also created an anxiety-free learning space and a moment for students to relax and not having to perform. Yet, Sun also
stated that not everyone liked the method. Some students were not sure about this method in the context of undergraduate education. To collect data, Sun used a pre- and post-test design for word inferencing and a post-questionnaire for student perceptions. For the former, individual interviews were held and involved the evaluation of inferencing skills by having participants read a book and share thought processes and ways of inferencing as they read. For student perceptions of read-alouds, the questionnaire was structured according to a 5-point Likert scale. It included statements regarding the read-alouds events, the technique for inferencing, reading engagement and reassurance, and an open-end question about the method of interactive picture book read-alouds. To my knowledge, this study is the only study so far that examined read-aloud perceptions in the context of L2 learning. Thus, more research needs to be done on this topic, in particular on L2 read-aloud enjoyment. This is what my study sets out to do.

In sum, in higher education, interactive teacher read-alouds of L2 picture books provide insights into the L2 culture if the books are from the culture where the language is spoken. Furthermore, interactive picture book read-alouds support L2 word inferencing skills and positive emotions. Overall, interactive picture book read-alouds appear to have the potential to help students to develop various L2 skills, regardless of age, and even in higher education. These potentials await validation by further research. Research that investigates to what extent this method may affect all foreign language skills and affective aspects that are favorable for foreign language learning at the college level, ideally across a variety of world languages. My study answers this call with a project on German as a foreign language in higher education by focusing on reading comprehension and read-aloud enjoyment.
1.3 Focus of Study and Conclusion

Overall, reviewing the body of research on reading picture books out loud in interactive ways shows that this method may bring about early school success and influences the learning of an L1 or an L2 positively, both at home and in school. However, we do not know much about the use of interactive teacher read-alouds of picture books in higher education based on adult learners who are learning a L2. What the existing research suggests is much potential to use this instructional technique, as it seems to have the potential to foster all aspects and skills of L2 learning. However, the only known study to-date (i.e., Sun, 2020a) reports its findings based on tracing the effect of interactive picture book read-alouds to word inferencing skills and perceptions of read-alouds in an EFL context.

To address this gap and to expand the existing research, my study focuses on reading comprehension and read-aloud enjoyment with a focus on German as a foreign language as it is taught at the college level in the U.S. The research questions this study seeks to address are:

1. Do interactive picture book read-alouds in the undergraduate foreign language classroom improve participants’ reading comprehension?
2. Do interactive picture book read-alouds in the undergraduate foreign language classroom create L2 read-aloud enjoyment in students?

The study follows a common pre- and post-test structure in which a pedagogical intervention (i.e., repeated sessions with interactive picture book read-alouds) is preceded and followed by data collection. Reading comprehension is measured by means of a reading comprehension test, enjoyment is measured with a self-report survey. Both are administered pre- and post-intervention in several sections of a college-level German as a foreign language class.
The following chapters describe the data collection procedures in more depth, present and analyze the data, and discuss the results and their implications. In Chapter 2, I discuss the methodology for the data collection in this study. First, I provide information on participants, recruitment, and IRB procedures. Then, I elaborate on designing the interactive picture book read-alouds and describe the tests, surveys, and procedures. Next, I explain the evolution of the study and challenges during the data collection.

In Chapter 3, I focus on reading comprehension and conduct both a quantitative and a qualitative analysis of the pre- and post-tests that targeted participants’ reading comprehension. First, I analyze the data on the group level and then the data of individual participants. The data suggest that some participants benefited from the interactive picture book read-alouds conducted in class with better scores in their post-tests. But participants’ reading comprehension on the group level did not increase. In the second part of Chapter 3, I discuss the individual data sets of three selected participants that show patterns that are insightful beyond the quantitative analysis.

In Chapter 4, I concentrate on L2 read-aloud enjoyment and analyze the results from the pre- and post-intervention surveys that were administered. First, I report on the experience of participants with L1 and L2 read-alouds in general before the interventions. Next, I analyze the level of enjoyment participants reported they felt during the interventions as well as the level of perceived language improvement that participants expressed after the interventions. Overall, participants enjoyed the interactive picture book read-alouds and attributed positive learning experiences and perceived levels of improved L2 skills to them.

In Chapter 5, I briefly recap the main parts of this study and discuss the results. I then elaborate on limitations, discuss how my results relate to the findings in this research area overall, and consider implications for future research.
CHAPTER 2

METHODOLOGY

This study examines L2 reading comprehension and its short-term development before and after conducting interactive picture book read-alouds (henceforth read-alouds). Furthermore, it investigates whether this instructional method produces enjoyment for participants. In this chapter, I focus on the data collection procedures and instruments that produced the data set for my study. I also elaborate on institutional and administrative challenges that my study encountered. Considerable efforts were made by everybody involved in the German lower division program to create the best possible conditions for recruiting participants for this study. Yet, recruitment proved to be challenging and the data set that resulted from these efforts ended up being much smaller than anticipated. As a result, this study contrasts with most quantitative and/or qualitative studies on read-alouds as a pedagogical practice in terms of the size of its data set. Despite that limitation, the data I collected for this study yielded relevant and interesting results.

To measure reading comprehension, researchers have utilized experimental study designs with treatment and control groups (Santoro et al., 2008; Sun, 2020a, 2020b), and some studies additionally utilized a pre-/post-test design (May, 1986; Sun, 2020b). The use of treatment and control groups allows a comparison and therefore, a more precise answer to whether or not a treatment had an effect on a behavior. The pre- and post-test design makes it possible for the researcher to tell if the treatment had an impact and did so during a given span of time. For reading comprehension, some pre- and post-test studies included written texts with multiple-choice comprehension items (Amer, 1997; Dhaif, 1990). In pre- and post-test studies, the texts and questions used can either be identical (Sun, 2020a) or, alternatively, feature differed pre- and
post-tests (Santos, 1987). Using identical texts has the advantage of detecting very specific impacts due to a treatment (e.g., the acquisition of selected vocabulary that occur in the text). Providing different texts has the advantage of seeing an influence of a treatment on a broader scale (e.g., reading comprehension in general and for various texts).

Studies that included a research focus on measuring participants’ emotions, administered surveys or questionnaires after the interventions (Freeman et al., 2011; Sun, 2020a) or conducted interviews afterwards (Hall & Williams, 2010; Ledger & Merga, 2018). Surveys or questionnaires are beneficial in the sense that they are a more tangible medium (e.g., paper or electronic), relatively easy to administer, and answers are ready to be analyzed once submitted. Thus, they are useful instruments for studies with time limitations. In addition, surveys and questionnaires are very practical for research on the quantitative level. Studies using questionnaires either had open-ended questions (Freeman et al., 2011) or Likert scale multiple-choice questions (Sun, 2020a). For open-ended questions, participants are able to provide more detailed answers with information they could not give for multiple-choice questions. This is useful for qualitative purposes. For multiple-choice questions, the questions are pre-set (e.g., Yes, No, Not applicable) and participants select the most fitting answer. This allows for a faster completion of a survey or questionnaire and is helpful for quantitative purposes, but it can limit the collection of qualitative information. In contrast, interviews can yield very insightful results since they offer space for participants to explain, correct, or elaborate. As such, interviews are very valuable for qualitative research. However, they require more time as interviews need to be set up, conducted, recorded, and transcribed.

Given the timeline of my study, I opted for a mix of quantitative and qualitative data collection instruments. This study utilizes an overall pre- and post-test study design with a
treatment group (but without a control group, see discussion below). The study measures language learning (specifically reading comprehension) with a reading comprehension test administered before and after the interventions (the read-alouds). In order to better observe any change in reading comprehension, the pre-test and the post-test was identical. In addition, the reading comprehension questions were set up in a multiple-choice fashion to allow for a quantitative analysis of reading comprehension in statistical terms. Concerning the emotions that may potentially be affected by the read-alouds (i.e., enjoyment), I concluded that I could evaluate that best with one pre-intervention survey and one post-intervention survey. In order to gain the most insightful responses, those surveys featured a mix of multiple-choice questions and open-ended questions in the pre-intervention and post-intervention surveys, respectively. This allows for qualitative feedback on the topic of enjoyment from the participants beyond the terms set by the researcher.

Below, I first provide information on the participants of my study, describe the recruitment process including IRB and consent procedures as well as the procedures for administering tests and surveys. I outline the process of data collection and its challenges; a first, but discontinued attempt at data collection in the fall of 2022, and finally, the data collection procedures during the spring semester of 2023. This produced my data set. Given its impact on my recruitment pool and the design of my study, I describe the specific institutional and administrative difficulties with which the data collection for this study had to contend and the necessary adjustments that were made in response.

2.1 Participants, Recruitment, and IRB Procedures

The participants of the study were undergraduate students recruited from four second year German classes at a university located in the Southern part of the U.S. The sections of these
courses were taught by four different instructors in the spring semester of 2023. Each class met separately and in-person for 50 minutes three times a week (Monday, Wednesday, Friday) for 15 weeks. The language level was 4th semester German, approximately proficient standard A1 (cf. Council of Europe, 2020).

Overall, from a recruitment pool of 70 students, 15 students participated. Before the interventions, 15 participants completed the pre-test on reading comprehension and the pre-intervention survey. However, only 12 out of those 15 also completed the post-test on reading comprehension and the post-intervention survey after the interventions. Unfortunately, from those 12, one participant only took the pre-test on reading comprehension and the pre-intervention survey. Another participant only completed the post-test on reading comprehension and the post-intervention survey. Therefore, 10 complete sets were usable for an analysis.

IRB approval was needed for my study. It qualifies as human subjects research involving a vulnerable population (i.e., students). Thus, an application to the IRB was submitted before the beginning of my study (please refer to the Figure A1–A7 for the complete IRB application package as it was approved). This included documents such as the consent statement with information on the study, a recruitment script, email texts, a pre-test on reading comprehension, a post-test on reading comprehension, a pre-intervention survey, and a post-intervention survey. The study was approved before the beginning of the study. Documentation of informed consent occurred if a participant completed the tests and intervention surveys.

One week before the first intervention, I visited the German classes in which this study was done in-person to recruit. In each class, I made an announcement to the students about the study by reading a written recruitment script. I displayed the recruitment script in a PowerPoint
presentation via the class projector while I was reading the script. This way, students could follow along as I read. Next, I answered questions from the students in regard to the study. After the recruitment visit, on the same day, I sent a first email to all instructors along with the pdf file of the consent statement. I asked the instructors to send out this first email to the email addresses of their students in their respective courses along with the pdf file of the consent statement. This first email contained information about the study, how to participate, how to consent, the first link to the pre-test and the pre-intervention survey, and a due date by which both should be completed (ca. 1 week after they had received this first email). The link led to the consent statement first, and after consenting, to the actual pre-test, and then to the pre-intervention survey. I sent out several email reminders to the instructors who forwarded them to the students. The emails reminded students about my study, how to participate, how to consent, about the first link and the due date.

After the last read-aloud, on the same day, I asked the instructors to send out a second email to their students. This second email had information on the study, how to participate if consented at the beginning of the semester, the second link to the post-test and the post-intervention survey, and a due date by which both should be completed (ca. 1 week after they had received this email). The link led to the post-test straightaway, and then to the post-intervention survey. Again, I sent out several email reminders to the instructors who forwarded them to the students.

2.2 Designing the Interactive Picture Book Read-Alouds

The study as a whole consisted of three parts. First, participants who consented completed the pre-test and the pre-intervention survey. Those were completed online and outside of the class time. Second, in all four classes, I implemented six read-alouds for 50 minutes on a
Monday class session, once a week, over the span of 7 weeks (3 weeks before spring break and 3 weeks after spring break). I read with the students interactively the German picture book *Die Umami-Bande* (Wurm & Ortega, 2022). Third, and after the last read-aloud, participants who had consented at the beginning of the semester completed the post-test and the post-intervention survey. Those, too, were completed online and outside of class time. The first part and the third part were done only by students who were willing to participate by completing the tests and the intervention surveys. The second part was done with all students since the read-alouds comprised a regular instructional activity of the class.

The German picture book *Die Umami-Bande* (Wurm & Ortega, 2022) that I read to the students had an appropriate language level and contained text and images that worked together to support comprehension. The book tells the story of three children from different language and culture backgrounds who get to know each other and form a friendship. I selected this particular German picture book, on the one hand, because the visuals were bright and colorful, and the style of illustration was remarkable. The illustrations invited visual explorations as well as comparisons between text and pictures for better understanding. In addition, the ratio of pictures and text was balanced. All this made reading this book very appealing. On the other hand, I chose this book because it focused on multilingualism and I saw it as a great fit for the class in which I used it. Further, the book discussed topics such as making friends and learning a new language. I expected that undergraduate foreign language students would be able to relate to those topics and be willing to participate in the in-class discussions developed for the read-alouds interventions.

The classroom read-alouds interventions followed a recurrent chronological structure of several distinct phases (see Figure 1). I adapted these from Sun (2020a) who conducted
1st Phase: Explaining the Focus Strategy of Reading Comprehension
2nd Phase: Activating Background Knowledge of the Topic
3rd Phase: Modeling Strategy Use and Providing Practice as the Story Unfolds
4th Phase: Extending Comprehension by Bringing Big Ideas to the Surface

**Figure 1: Four Phases of Interactive Picture Book Read-Alouds** *Note.* Information in Figure 1 was taken from Sun, 2020a, p. 511–513 and adapted for readability.
a read-alouds study to measure word inferencing skills and emotions. As can be seen in Figure 1, a read-aloud begins with Phase 1 in which a focus strategy is explained to students that helps with reading comprehension (There were three strategies in total. I discuss them below.). In Phase 2, background knowledge is activated by having students describe the cover of the book, discussing the English translation of the German title, and having students answer a prompt that connects the story to the students’ personal lives. In Phase 3, the focus strategy introduced in Phase 1 is modeled by applying it to pages of a chapter of the book. After that, students have the opportunity to practice that focus strategy on subsequent pages of that chapter. In Phase 4, students extend their comprehension by bringing “big ideas” to the surface. This means that students connect what they read in the chapter to their personal lives.

All six read-alouds were structured in this way, with only minor alterations depending on whether or not a read-aloud was introducing a focus strategy or practicing a focus strategy. Below, I provide a description of the 1st read-aloud session as an illustrative example (for the description of each of the six read-alouds, please refer to the Appendix Figure A8).

1st phase:

- I introduced the strategy of Predicting through illustrations. For this strategy, I followed a plan with three steps and used a think-aloud approach (see Figure 2):

  1. I looked at the illustrations and tried to guess aloud what happens in the text based on the observation of the illustrations.
  2. I read the text out loud.
  3. With the information from the observations and the text, I thought aloud what happens in the text. Later on, in the 3rd phase, students practiced these steps, except for the second
**Einen illustrierten Text besser verstehen → Hypothesen bilden**

### Strategie 1: Illustrationen checken

<table>
<thead>
<tr>
<th>Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Illustrationen checken: Was passiert hier?</td>
</tr>
<tr>
<td>2. Text lesen</td>
</tr>
<tr>
<td>3. Hier passiert ...</td>
</tr>
</tbody>
</table>

**SCRIPT**

1. *Hier ist ein Plan* wie man Illustrationen checken kann.
2. Zuerst checkt man die *Illustrationen* und fragt sich „Was passiert hier?“
3. Dann liest man den *Text*.
4. Als letztes denkt man „Okay, hier passiert ...“
5. *Alles klar?*

**Figure 2: Screenshot of PowerPoint Slide for Strategy Explanation including Teacher Script**
step of reading the text out loud. That was always done my me.

2nd phase:

- Students and I discussed the book cover based on questions I had provided. This phase was only done once, namely when starting the book.

3rd phase:

- I modeled the strategy from the 1st phase using the first page of the first chapter we were about to read. For the second step, I read that page to the students out loud (see Figure 3).

- I modeled the strategy again using the second and third page of that chapter. For the second step, I read those pages to the students out loud.

- Students practiced the strategy using the fourth and fifth page of that chapter, with my assistance. For the second step, I read those pages out loud (see Figure 4).

- Students practiced the strategy again, now using the sixth and seventh page (the last two pages of that chapter), still with my assistance. For the second step, I read those pages out loud.

- Students talked to each other in pairs to discuss what happened in that chapter.

- As a class activity, we played the online game tool KAHOOT!. For this, students used an electronic device, accessed the KAHOOT! website, and answered prepared multiple-choice questions (see Figure 5).

- Students were given a short summary of what was read in the chapter. (The last three activities ensured a comprehension check before having students deal more closely with an aspect of the plot and a topic of that chapter. This would follow in the 4th phase. Those three activities appear in every of the six read-alouds.)
<table>
<thead>
<tr>
<th></th>
<th>Plan für Illustrationen checken</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Illustrationen checken:</td>
</tr>
<tr>
<td></td>
<td>Was passiert hier?</td>
</tr>
<tr>
<td>2.</td>
<td>Text lesen.</td>
</tr>
<tr>
<td>3.</td>
<td>Hier passiert ...</td>
</tr>
</tbody>
</table>


Figure 3: Screenshot of PowerPoint Slide for Modeling the Strategy
Die Klasse geht durch den Plan und ich lese vor

<table>
<thead>
<tr>
<th>Plan</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
</tbody>
</table>

In der Zwischenzeit sind die Pommes fertig. Geris Mama füllt die Teller und streut geriebenen Schafskäse darüber.

„Bei euch ist auch überall Schafskäse dabei“, meint Max lachend. Er kostet vorlängig „Mmm, das schmeckt fast so gut wie mit Ketchup.“

„Es freut mich, dass dir unser Essen schmeckt“, sagt Geris Mama.

„Der Schafskäse mit den Kartoffeln, der schmeckt so …“

„Umami!“, verwirrt findet Geris Mama den Satz des Jungen. Max fragt lachend „Umami? Ist das auch bulgarisch?“

Geris Mama erklärt „Nein, umami beschreibt, wie ein Essen schmeckt. Es gibt süß, sauer, salzig, bitter und eben auch umami.“

„Umami? Klingt wie Oh, Mami, das merke ich mir!“, ruft Geri. „Und weil es sich wie Mami anhört, ist es bestimmt yummy, also lecker.“

Die Kinder lassen sich das Essen gut schmecken. Als Max nicht mehr kann, sagt er: „Danke, merci und Bludo-Dingsbums, jetzt bin ich satt!“

„Bis zum nächsten Bissch über wir, Keinasp (blagodarno) zu sagen“, meint Geri.

„Ja, genau. Aber nur, wenn es dann wieder diese leckeren Pommes gibt“, antwortet Max.

Figure 4: Screenshot of PowerPoint Slide for Student Practice of Strategy
Figure 5: Screenshot of a Multiple-Choice Question in KAHOOT! as seen on Classroom Screen
4th phase:

- Based on a prompt, students wrote an individual reflection on an aspect of the plot of the chapter in the learning management system of the course (see Figure 6).
- Based on another prompt, with a partner or as a group, students discussed a topic of the just read chapter. That topic or an extension of it was connected to what had been covered in the textbook during that time (see Figure 7).
- Students reported their answers from the discussion and the responses were collected on the white board.
- I ended the 4th phase, and the entire read-aloud was finished for that day.

In the above-provided description, we see the four phases as applied by Sun (2020a). In addition, we see that those phases embed a number of activities. All six read-alouds were constructed in this phase-and-activities structure. The activities for the 1st, 3rd, and 5th read-aloud were: whole class listens to my reading, partner discussion about the content of the chapter just read, whole class plays the online game KAHOOT! to check comprehension, whole class reads a summary of the just read chapter, individual writing of a reflection on an aspect of the plot using the learning management system, partner or group discussion on a topic of the just read chapter, and whole class reports their answers from the discussion. In the 2nd, 4th and 6th read-aloud, in addition to engaging in the above-mentioned activities, the whole class engages in reading a summary of a prior chapter at the beginning of a new read-aloud, reviews a strategy, and then applies that strategy multiple times. Note: Phase 2 only happened in the 1st read-aloud, since we need to discuss the title page only once.
Individuell: Die Handlung im Buch – Neue Dinge (7 Min.)

This is for practice and marked for completion as part of your grade.

In Canvas -> Assignments -> Read-Aloud No. 1

Max besucht Geri und lernt ein bulgarisches Gericht kennen.
Er lernt auch bulgarische Wörter und das bulgarische Alphabet kennen.
Im Park erzählen sich Geri und Max gegenseitig etwas über ihre Großeltern und dass sie vermissen.
Sie erfahren also beide neue Dinge übereinander.

1. Beantworten Sie die Fragen. Schreiben Sie auf Deutsch.
   (Schreiben Sie über eine Situation, über die Sie auch gern schreiben möchten.)

   a.) Können Sie sich an eine Situation erinnern, in der Sie jemanden besucht haben und etwas Neues gegessen haben?
   b.) Welche Zutaten hatte das Gericht?
      (Definition von Gericht: ein Essen und Definition von Zutaten: alle Dinge im Gericht)
   c.) Hat Ihnen das Gericht geschmeckt oder nicht? Warum?

2. Reichen Sie Ihre Antworten auf Canvas ein.

Figure 6: Screenshot of PowerPoint Slide with Prompt for Individual Written Reflection
Arbeit zu zweit: Ein Thema im Buch – Verschiedene Identitäten (7 Min.)

Sprechen Sie mit einer anderen Person, beantworten Sie die Fragen und machen Sie Notizen:


1. Welche Sprachen sprechen die Personen, die dir wichtig sind (deine Familie, deine Freunde, etc.)?

2. Woher kommt deine Familie?

3. Sind deine Eltern/Großeltern/Urgroßeltern in eine andere Stadt/einen anderen Staat/ein anderes Land gezogen?

Figure 7: Screenshot of PowerPoint Slide with Prompt for Partner/Group Discussion
When doing the read-alouds in class, I used PowerPoint presentations that included scans of the pages of the book as well as instructions for the interactions and activities. As I read out loud, I showed students the pages via the class projector. I had prepared all the prompts in German for all the activities beforehand. For my KAHOOT! activities, I had prepared German questions about each chapter and multiple-choice questions and answers in German on the KAHOOT! website (www.kahoot.com).

As mentioned above, I introduced a total of three focus strategies to improve reading comprehension during the read-alouds. Those were: (a) predicting through illustrations, (b) predicting through words, and (c) summarizing. They were adapted from Duke et al. (2011) who suggest these and other strategies for exploring texts in class systematically. Predicting through illustrations is a strategy that offers students a tool to make sense of a text by first focusing on illustrations. Before reading the text, students look at the respective illustrations and, based on those, make predictions about the text content. Then, they read the text and with the support of the illustrations and the text work on comprehending the text. Predicting through words encourages students to scan the text and find words they already know before they read the text thoroughly. Afterwards, based on those words (and sometimes on the illustrations too since these two strategies tend to overlap), students work on making sense of the text content. Summarizing is a post-reading strategy in which students check the illustrations and look for words they know in the text as well as their connection to select text passages, and try to summarize what happens in those passages.

All three strategies are somewhat interconnected in that all use a combination of illustrations and text as a springboard to understand written material better. Given the relatively short time span of 7 weeks of the interventions and the necessity for students to practice the
strategies, I introduced only three strategies. In the 1st, 3rd and 5th read-aloud, during the 1st phase, one of those three strategies was introduced, always through the means of three steps. However, the second of those three steps, the reading aloud, was always done by me. The strategies were practiced in the 3rd phase.

2.3 Tests, Surveys, and Procedures

Participants completed a pre-test on reading comprehension before the interventions and a post-test on reading comprehension after the interventions. The pre-test and the post-test each consisted of two texts in German and a number of multiple-choice questions in German that checked comprehension. Both tests were identical. Due to the length, the tests used cannot be shown here (but are available in the Appendix Figure A5). For the content of the tests, I chose material from a reader from the German textbook publisher Klett (Rusch, 2017). It was created for the A1 level, the approximate language level of the participants of those four courses. It consisted of a story plot in German in chapter-style with illustrations. It also included corresponding reading comprehension exercises about those chapters at the end of the reader. I selected two of the chapters from this reader and its comprehension questions as my reading comprehension tests.

Furthermore, participants filled out a pre-intervention survey and a post-intervention survey. They were designed to target participants’ L2 read-aloud enjoyment. They consisted of multiple-choice questions with three-item-answers (Yes, No, I do not know), similar to Likert scale questions, as well as open-ended questions. Figure 8 shows a list of the questions that were asked in the pre-intervention survey. The multiple-choice questions target past experiences with read-alouds in L1 and L2, enjoyment during those read-alouds, read-aloud enjoyment when
Multiple-Choice Questions (answered via the three-item-answer Yes, No, I do not know)

Question 1:
Did someone read books to you in your first language(s) when you were a child?

Question 2:
Did someone read books to you in your first language(s) when you were a teenager?

Question 3:
Did someone read books to you in your first language(s) when you were an adult?

Question 4:
Did a sibling read books to you in your first language(s) when you were a child, a teenager or an adult?

Question 5:
Did a teacher read books to you in your first language(s) in school when you were a child, a teenager or an adult?

Question 6:
Did a foreign language teacher read books to you in school when you were a child, a teenager or an adult (in the foreign language the teacher taught you)?

Question 7:
Did you enjoy being read to in your first language(s) at home or in school as a child or a teenager?

Question 8:
Did you enjoy being read to in your first language(s) at home or in school as an adult?

Question 9:
Did you enjoy being read to in a foreign language in school as a child, a teenager or an adult?

Question 10:
Do you like to read books to others in your first language(s)?

Question 11:
Do you like to read books to others in a foreign language?

Question 12:
Would you like German books being read out loud by the teacher during the class time?

Figure 8: List of Questions from the Pre-Intervention Survey
Open-Ended Questions

Question 13:
What did you enjoy about being read to when you were a child, a teenager, or an adult (in your first language(s); at home or in school)? Why?

Question 14:
What did you not enjoy about being read to when you were a child, a teenager, or an adult (in your first language(s); at home or in school)? Why?

Question 15:
What did you enjoy about being read to in a foreign language in school? Why?

Question 16:
What did you not enjoy about being read to in a foreign language in school? Why?

Question 17:
In which grade and school level has a foreign language teacher read books to you?

Figure 8 Continued
reading to others in L1 and L2, enjoyable elements during L1 and L2 read-alouds, and students’ interest in having read-alouds in the current class. The open-ended questions ask for detailed information about enjoyable and non-enjoyable elements of past read-alouds in L1 and L2 contexts and in what grades L2 read-alouds took place. The questions in the pre-intervention survey differ from the questions in the post-intervention survey.

Figure 9 presents a list of the questions that were asked in the post-intervention survey, targeting enjoyment during the read-alouds of the interventions, interest in further read-alouds, read-aloud enjoyment when reading to others in German, and perceived language improvement as a result of the read-alouds. The open-ended questions inquire about enjoyable and non-enjoyable elements during the read-alouds and which language skills participants thought they may have improved in.

I used the online software Qualtrics to collect the data (https://www.qualtrics.com). Qualtrics ensured secure handling, secure storage of the data, and accurate analysis results. With Qualtrics, I created the consent statement and the data collection instruments (tests and surveys), so participants would be able to see and complete those online and outside of class. Participants also had access to a copy of the consent statement through an email the instructors had sent to them. In addition, the tests and intervention surveys were anonymized. Furthermore, the pre- and post-intervention surveys were adaptive and displayed follow-up questions depending on which answers the participants had given just previously.
Multiple-Choice Questions (answered via the three-item-answer Yes, No, I do not know)

Question 1:
Did you enjoy the German book being read out loud by the teacher in class?

Question 2:
Would you like to have more time devoted to German books being read out loud by the teacher in this class and in future German classes?

Question 3:
After being read to in German in class, would you also like to read to others in German now?

Question 4:
Do you think your German has improved because of being read to from a German book in class?

Open-Ended Questions

Question 5:
What did you enjoy about being read to from a German book in class? Why?

Question 6:
What did you not enjoy about being read to from a German book in class? Why?

Question 7:
How do you think your German has improved or changed because of being read to from a German book in class?
Has any of these improved or changed:
Your reading comprehension in German?
Your ability to write in German?
Your ability to speak in German?
Your listening comprehension in German?
Please provide examples.

Figure 9: List of Questions from the Post-Intervention Survey
2.4 Evolution of the Study and Challenges

When designing my data collection instruments in the summer of 2022, I wanted to ensure from the outset that my surveys and tests were easy to understand and not confuse participants. Beatty and Willis (2007) explain a method (cognitive interviewing) to design data collection instruments in which, before conducting a study, the researcher asks a number of people to fill out the survey of a study and to interview those people afterwards to receive feedback on answer formation, their interpretation of meanings of questions when filling out the survey, and information on the people’s answers. While such a formalized approach was not possible in the circumstances, I did seek feedback and ran the first drafts of my surveys and tests informally by students from an online German summer class offered at the university at which my study would take place. I also solicited informal feedback from my dissertation director and English native speaker friends who were outside the university setting. That feedback, however informal, was valuable. I edited a few three-items-answer questions and open-ended questions in regard to phrasing and word choice, and I added a few questions based on the students’ suggestions. In addition, I included a few new open-ended questions to the pre-intervention survey in order to gain consistency in terms of content.

Initially, the study was planned to happen in the fall of 2022. It was to be experimental, involving one treatment group and one control group and with a pre-/post-test design. This study design is preferable because it pinpoints clearly whether or not the interventions of read-alouds would have been the reason for any measurable change in reading comprehension and/or read-aloud enjoyment in the data. The study was supposed to happen in two sections of the same online German classes taught by a colleague. Here, each class met separately and online for 50 minutes three times a week (Monday, Wednesday, Friday). The language level was 4th semester
German. This is approximately proficient standard A1 (cf. Council of Europe, 2020). The participants from one class would serve as the treatment group (undergoing the interventions), those from the other class would serve as the control group (not undergoing the interventions).

After finalizing the surveys and tests during the summer of 2022, I created the L2 read-alouds for the treatment group. They were scheduled for 30 minutes at the beginning of every Monday class session (one read-aloud had to be done on a Wednesday), once a week, over the span of the following 12 weeks. I planned to read with the students interactively the German picture book *Der kleine Eisbär und der Angsthase* (de Beer, 1992/2011). The other class as the control group was not supposed to undergo the interventions. Instead of the interventions, the control group was supposed to follow the regular syllabus and the textbook activities that were normally provided for this class at this university.

However, during the fall semester of 2022, this first run of my study experienced a number of challenges. After IRB approval, I conducted the recruitment, consent process, pre-test and pre-intervention survey process, and began the read-alouds as planned. But after the 5th read-aloud, it became apparent that the book *Der kleine Eisbär und der Angsthase* (de Beer, 1992/2011) that I had started to read in the treatment group was perceived by participants as too easy in terms of the language level and furthermore, as not age-appropriate. This reduced students’ engagement during the read-alouds. Moreover, only a very small number of students in the treatment group as well as in the control group had in fact consented to participate in the study. Not having enough participants and not being able to collect sufficient data for the study, I put the study on hold for that fall semester after consulting with my dissertation director.

I started the planning of another run of the study in the spring semester of 2023, but in an adjusted format. Because the recruitment in the fall 2022 turned out to produce very few
participants, I decided to conduct a study that only involved treatment groups and no control groups. This would maximize the number of students exposed to the read-alouds and produce more data overall. Furthermore, I switched the study to an in-person setting (rather than in an online course) to ensure better engagement of participants. I planned to conduct the study in four instead of two classes, and shortened the study from 12 to 6 weeks, with now 50-minute read-alouds as a substitute for the 30-minute read-alouds. This way, I did not lose as much instructional time as a change of 12 to 6 weeks might have suggested because the total instructional time was not reduced by much. However, the time span in which potential increases in language learning over time for students would be possible did shorten from 12 to 7 weeks. This shortening of the time of the interventions span made my study different from other studies. Those mostly had longer interventions phases, for instance 10 weeks (Sun, 2020b), 12 weeks (May, 1986) or 15 weeks (Santoro et al., 2008).

Furthermore, I selected a different book that was more fitting to the language level of the students and also more appealing for undergraduate students in its topics. As noted above, I used the German picture book *Die Umami-Bande* (Wurm & Ortega, 2022) that dealt with multilingualism and topics such as friendship and language learning. Lastly, the read-alouds were embedded better in the syllabus structure of the four courses, and my read-alouds content was more coordinated with the content and assignment structure of the courses this time. This ensured adhering to the IRB standards while also ensuring that the courses could still run smoothly and according to their objectives. This was all done in close consultation with IRB, the language program director, the course manager, and the instructors.

At that particular point in the evolution of my study, enrollment for foreign language classes had declined significantly compared to prior semesters. This was due to the Business
School lifting their foreign language requirement. This happened during the spring of 2022. Therefore, each of the four classes in which I ended up conducting my study was only 15–20 students strong. To provide context for enrollment numbers, while in the spring of 2022, the program offered six sections of GERM 212 with an enrollment cap of 25 students, in the spring of 2023, four sections of that course were offered with an enrollment cap of 20 students. All in all, in spring 2022, 119 students were enrolled in GERM 212 and in spring 2023, only 70 students were enrolled. This amounts to a reduction by 41% of my recruitment pool, ultimately leading to a much smaller data set than could have been anticipated.

2.5 Conclusion

The data collection procedures of my study focus on two measurable aspects of conducting read-alouds in class over a time span of 7 weeks: (a) language learning, specifically reading comprehension; and (b) perception of enjoyment by participants. Despite every effort made, the data that was collected resulted in a small data set. Nonetheless, and with the limitations of a smaller data set, the data set that I was able to assemble allowed a number of different analyses. For reading comprehension, I was able to conduct a quantitative analysis. For read-aloud enjoyment, I was able to do a quantitative and a qualitative analysis. While limited in scope, these provide a valuable perspective on pedagogical and curricular questions about the effectiveness and use of read-alouds in higher education L2 classes.

In Chapters 3 and 4, I compare the data from the pre- and post-tests on reading comprehension and the pre- and post-intervention surveys on read-aloud enjoyment within the treatment groups. The data was analyzed by using the software IBM SPSS (Version 29). In Chapter 3, for the quantitative analysis of the reading comprehension tests, I conducted a
statistical t-test and descriptive statistics, both on the group level. In addition, I went beyond the group level and analyzed the data of individual participants and commented on individual cases. In Chapter 4, for the quantitative analysis of the intervention surveys, I performed a statistical analysis on the multiple-choice questions. For the open-ended questions of the intervention surveys, I carried out a qualitative analysis. This enabled me to see what individual participants felt about read-alouds and what kinds of themes emerged from the qualitative feedback on the surveys.

The constraints on any quantitative analyses of this small data set are a function of its size. This limitation of size has to be remembered when drawing any and all conclusions from these analyses. Overall, the quantitative analysis in Chapter 3 is inconclusive on offering a perspective on the gains of participants in terms of language learning. However, the pre- and post-intervention surveys showed clearer results and proved useful to consider the potential benefits of read-alouds as an instructional method in higher education L2 classes.
CHAPTER 3
ANALYSIS: READING COMPREHENSION

My overall question for this study was twofold. On the one hand, I was seeking for answers on what impact the method of read-alouds in L2 classrooms may have on participants’ L2 reading comprehension. On the other hand, I was looking for answers on what impact the method of read-alouds in L2 classrooms may have on participants’ read-aloud enjoyment. This chapter focuses on the first part of the question, namely on the impact that this reading method may have on L2 reading comprehension.

As explained in Chapter 2, this study used a pre-/post-test design. Before the first classroom intervention happened, participants completed the pre-test. Its first part contained the reading comprehension part. That part consisted of two texts in German. Each text listed reading comprehension exercises at the end of each text involving statements. The two texts and the statements were identical in the pre-test and in the post-test. For the first text, statements needed to be checked for correctness (right or wrong) (8 statements). For the second text, the statements needed to be put in the correct order (order 2-7) (6 statements). This meant that participants were asked to respond to 14 statements in total in the reading comprehension part in the pre- and in the post-test. The interventions took place in the time frame of 7 weeks, with one intervention per week on six consecutive Mondays (and a week of spring break half-way in between). After the last intervention took place, the participants completed the post-test. This pre-/post-test design will guide the data analysis in this chapter.

Below, I first describe and interpret the data on the group level, using a paired sample t-test and descriptive statistics. Secondly, I describe and interpret the pre- and post-test data of individual participants based on further descriptive statistics. Combining the group analysis with
an analysis of individual participants in this way turned out to be essential for better understanding the results the data seemed to yield. As we will see, the quantitative analysis of the pre- and post-test reading comprehension data shows:

1. No statistically significant higher numbers in post-tests on the group level.
2. Slightly lower numbers in the post-tests on the group level overall.
3. Both higher and lower numbers in post-test data for individual participants.

Thus, while the post-test data do not show significant improvement in reading comprehension on the group level, some data points indicate improvements for some individual participants. I conclude the chapter by discussing these results and their implications.

**3.1 Reading Comprehension: Group Level**

As described in Chapter 2, the sample size for this data set was relatively small. All in all, a total of 15 participants completed the pre-test and 12 participants completed the post-test. Theoretically, the data of 12 participants could have been used for the analysis in this chapter. However, out of these 12 participants, one participant took the pre-test only and one participant took the post-test only. Therefore, a data of 10 participants who completed both the pre- and the post-test was left for analysis.

Overall, a paired samples t-test was carried out to determine if the mean pre-test and mean post-test differed, indicating if there was a significant change in reading comprehension. After that, I completed descriptive statistics (minimum, maximum, mean, and standard deviation) to see the range of scores in both tests. Additionally, descriptive statistics (minimum, maximum, mean, and standard deviation) were performed to look at how long it took the participants to complete the tests. Finally, descriptive statistics (count and percentage) were run
for each question to examine which questions participants answered correctly for both pre-test and post-test. These data were analyzed, and the analyses was reported. All analyses were done using IBM SPSS (Version 29) using an alpha of 0.05.

I begin with the data that resulted from carrying out the paired sample t-test and its statistical significance. It shows if the mean of the pre-test and mean of the post-test differed and indicates whether or not there was a significant change in reading comprehension on the group level. The actual mean of the pre-test and mean of the post-test will be reported later. Subsequently, it will be possible to see if there was a difference and if this difference created significant change in reading comprehension in general. Table 1 shows the data. It lists, from left to right, the significance between the pre- and the post-test means of scores.

As can be seen in Table 1, the data show $t = .068$, $df = 9$, and $p = 0.948$. The number of significance ($p$) shows the statistical significance of the means of scores, so to see whether or not there was a significant change in reading comprehension on the group level. A level that normally indicates significance (meaning, a method or interventions created a change) is at or below $.05 (<= .05)$. By and large, these data reveal that the significance level in this study was $p = .948$. Therefore, the data suggest that there is no statistical significance because the significance level is greater than .05. Therefore, the comparison of pre- and post-test scores does not indicate a change in reading comprehension on the group level that is statistically significant. In other words, it is reasonable to conclude that participants’ reading comprehension stayed level in the time frame of this study.

After reporting the statistical significance, I want to discuss the data of the first descriptive statistics test in regard to the scores and the means. They reveal the minimum and
Table 1: Statistical Significance of Means of Scores

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<tr>
<td>Pair 1</td>
<td>.068</td>
<td>9</td>
<td>.948</td>
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<td></td>
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</tr>
<tr>
<td>Comprehension</td>
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maximum scores reached and their means and standard deviations in the pre- and post-test.
Subsequently, we will be able to see the range of scores reached and how the scores vary. Table 2 shows the data. It lists, for both the pre-test and the post-test, the number of participants (N), minimum score, maximum score, mean and standard deviations of the mean.

As seen in Table 2, 10 participants completed the pre-test, and the pre-test had a minimum score of 3 and a maximum score of 13. Here, the mean of scores was 7.10 with a standard deviation of 3.67. 10 participants also took the post-test, and the post-test had a minimum score of 0.00 and a maximum score of 14. The mean of scores was 7.00 with a standard deviation of 4.40.

Comparing those numbers, we see that for both tests the data show a range of scores, and that the scores vary; in the pre-test the range is 3 to 13 and in the post-test the range is 0 to 14. We also notice that there is a score decline from 3 in the pre-test to 0 in the post-test and a score growth from 13 in the pre-test to 14 in the post-test. Moreover, we can observe that the mean of score is higher in the pre-test than the mean of score in the post-test. The difference of the score is 0.1. Taken as a whole, the data show that the scores vary, and that scores went up and down. In addition, the mean score in the pre-test is higher than the mean score in the post-test, and there is a small difference between the mean of score in the pre-test and the mean of the score in the post-test.

Thus, the data indicate that the interventions had an influence on the reading comprehension of some participants and not for others. The reason for this is that the scores varied, and while some increased in value, others decreased. The scores varied from 3 to 13 in the pre-test and from 0 to 14 in the post-test. Scores grew from 13 to 14 and scores declined from 3 to 0. Furthermore, the data suggest that, since the mean score in the pre-test is higher than the
Table 2: Scores Reached in the Pre-Test and the Post-Test

<table>
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<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
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<tr>
<td>T Pre Reading Comprehension</td>
<td>10</td>
<td>3.00</td>
<td>13.00</td>
<td>7.10</td>
<td>3.67</td>
</tr>
<tr>
<td>T Post Reading Comprehension</td>
<td>10</td>
<td>0.00</td>
<td>14.00</td>
<td>7.00</td>
<td>4.40</td>
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</table>
mean score in the post-test and because the difference between those two mean scores is fairly small (0.1), the mean score did not rise significantly on the group level. This implies that reading comprehension on the group level does not seem to have improved significantly, although interventions appear to have had an influence on the reading comprehension of some individual participants.

In sum, the data on the scores and the means, in combination with the data of the statistical significance of score means, suggest that, since there is no statistical significance of score means, the read-alouds did not create a change in reading comprehension that was statistically significant. Thus, reading comprehension stayed level over time. In addition, reading comprehension also did not improve significantly since the mean score did not rise greatly, but in fact even, and surprisingly, slightly decreased (from 3 to 0). However, this decrease is not statistically significant.

This brings up a number of questions: How is such a slight decrease possible? Is this slight decrease significant on the group level and eventually in terms of the overall outcome of this study? I will consider possible answers to these questions in the conclusion of this chapter.

Nonetheless, the observation on the slight decrease leads me to another interesting point about this overall analysis of the scores. Based on the scores, this analysis does not make it clear how many score points participants went up or went down within that 0-14 range. In addition, those scores do not show whether or not the participants had chosen correct answers for statements in the post-test which they had wrong in the pre-test. This could indicate an increase in reading comprehension. Neither do they show whether or not participants had chosen wrong answers for statements in the post-test which they had correct in the pre-test. Likewise, that
could imply a decrease in reading comprehension. Further, the scores do not reveal how many participants had chosen correct answers or wrong answers for statements in the post-test.

However, we can find that missing information if we look closer at each participant individually, their scores, and their data of the statements from the pre- and the post-test. This way, we will be able to tell the amount of score points that participants went up and down, which particular participant had changed their answers from correct to incorrect in the post-test, and how many participants did so. But most importantly, in doing an individual analysis like this, we are able to find out if the interventions had an impact on the reading comprehension of specific participants.

One last item remains to be discussed in this section about data on the group level. I want to consider the time spent on tests as a factor that might affect the results. The data on time were gained through the second descriptive statistics test. They represent the time that participants needed to complete the pre- and the post-test. Based on this measure, it may be possible to see connections between scores reached and time spent. That could be helpful for interpreting the fact that, contrary to my expectation, there was no significant increase of reading comprehension on the group level and perhaps even the fact that reading comprehension stayed level overall.

Table 3 displays the data of time. It lists, for both tests, number of participants (N), minimum and maximum time, mean and standard deviation of time.

As can be seen in Table 3, 10 participants took the pre-test, and for the pre-test, the minimum time was 5.85 and the maximum time was 60.08. The mean of the time here was 19.62 with a standard deviation of 18.51. 10 participants also completed the post-test, and for the post-test, the minimum time was 2.40 and the maximum time was 27.22. The mean of the time here
Table 3: Time Spent on Pre-Test and Post-Test

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time pre-test</td>
<td>10</td>
<td>5.85</td>
<td>60.08</td>
<td>19.62</td>
<td>18.51</td>
</tr>
<tr>
<td>Time post-test</td>
<td>10</td>
<td>2.40</td>
<td>27.22</td>
<td>11.44</td>
<td>8.18</td>
</tr>
</tbody>
</table>
was 11.44 with a standard deviation of 8.18. When we compare these data, we see that the times vary, and that participants spent less time on the post-test than on the pre-test. Some participants completed the pre-test in only a few minutes (= or > 5.85 minutes) and some participants completed it in about an hour (= or < 60.08 minutes). In addition, several participants needed just a few minutes (= or > 2.40 minutes) to take the post-test and others spent nearly half an hour (= or < 27.22 minutes) on the post-test.

Is there a relationship between time spent and scores reached? Does the time spent on both tests have an impact on the scores of individual participants? Since this overall analysis on the group level is not able to provide answers to these questions, I will look at a few selected participants in the second part of this chapter. Those participants also present certain patterns that are interesting in regard to the above-mentioned results of a no significant increase in reading comprehension, reading comprehension staying level, and a slight decrease in reading comprehension.

To summarize the overall analysis of the data on reading comprehension on the group level taken from the pre- and the post-test, we note the following:

1. There was no statistical significance of the mean scores, indicating that the method used in this study did not create a change in reading comprehension on the group level. Thus, reading comprehension stayed level.

2. The mean score did not rise significantly on the group level, suggesting that reading comprehension did not significantly increase on the group level.

3. The scores varied and scores both increased and decreased on the group level, and even a slight decrease was observable.
4. The amount of time to complete the pre-test and the post-test, respectively, varied and overall, participants spent less time on the post-test than on the pre-test.

   It was surprising to me that the post-test scores did not show a significant increase of scores on the group level. I expected that participants would increase their reading comprehension over time, particularly because the interventions trained reading abilities specifically. In addition, other studies on this method had shown improvement in reading comprehension. However, in the context of this study, no significant increase over time was manifest.

   All this brings up a number of questions: Even if the results were not statistically significant on the group level, is it possible that perhaps some individual participants’ pre- and post-test scores increased? How many correct and wrong answers were chosen for each text and for each test? Did some participants’ post-test scores increase, stay level, or decrease equally in both texts and in comparison to the pre-test and the post-test? Is there a relationship between time spent and scores reached on each test for individual participants? I will pursue these questions in the next section.

3.2 Reading Comprehension: Individual Participants

   In order to pursue these above stated questions, I now analyze the data on the level of individual participants. After all, I would like to see if there are any indications in the data that individual participants benefited from the interventions in any way. The purpose of this study was to find out if a new instructional method – read-alouds – actually does what I expected it to do: produce measurable increases in L2 reading competency on some level. Since on the group
level, it seems there are no statistical indicators for any gains (even some lower numbers altogether), it is interesting to see what the data can tell us about the individual level.

1. Did individual participants benefit at all, and if yes, to what extent?

2. Is the slight decrease significant on the group level and eventually in terms of the overall outcome of this study?

3. Is there a relationship between scores reached and times spent on each test?

As mentioned in Chapter 2, the pre- and post-tests on reading comprehension were identical. They consisted of two German texts with reading comprehension questions. To address the first question from the list above, I will look at the responses to the statements of the reading comprehension part, separately, for the first text and the second text, overall and individually. In order to answer the second question, I will examine the scores of those participants who had a decrease in reading comprehension and the scores of those participants who had an increase in reading comprehension. For an answer to the third question, I will explore individual scores and times of selected participants. Participants are labeled with the numbers 1-10 and with an abbreviation code, e.g., Participant 1 (P1), Participant 2 (P2), etc.

I concentrate on the first question now. The third descriptive statistics test allowed insights into the statements of the reading comprehension part. It reveals the frequency of chosen answers for the statements in the first text and the second text in the pre-test and in the post-test, meaning which answers were chosen and how often. As a consequence, it is possible to compare the pre- and post-test data to identify any increase or decrease in reading comprehension.
3.2.1 Overall Analysis: First Text

On the level of individual answers, how did the pre- and post-test responses turn out? How did the pre- and post-test responses vary? Can we find any indications for different post-test responses that indicate an increase in reading comprehension? Table 4 provides answers to these questions. It shows, for the pre-test and the post-test, the data for time spent, scores, and chosen answers of each individual participant. Therefore, we can see if there are any indications in the post-test responses that imply an increase in reading comprehension. Data of the pre-test are highlighted in blue, and data of the post-test are highlighted in green.

As can be seen in Table 4, for the first text, the data show: In the pre-test, all 10 participants chose correct and wrong answers. In the post-test, the responses of all 10 participants varied. Some participants had a correct answer on an item in the pre-test as well as on the post-test. Others had a wrong answer in the pre-test as well as in the post-test. Yet, others had a correct answer in the pre-set, but a wrong answer in the post-test, and some exactly the other way around. Here, nine participants stayed with correct answers from the pre-test (all except P3). Also, nine participants stayed with wrong answers from the pre-test (all except P7). Moreover, eight participants chose the correct answer to some statements (all except P3 and P9). They had not chosen the correct answer to those statements in the pre-test. Besides, seven participants chose the wrong answer to some statements (all except P2, P5 and P7). They had chosen the correct answer to those statements in the pre-test. One participant (P3) did not stay with a correct answer and did not choose a correct answer. Another participant (P9) did not choose a correct answer. Yet, another participant (P7) did not stay with a wrong answer and did not choose a wrong answer. Lastly, two other participants (P2 and P5) did not choose a wrong answer.
Table 4: Participants’ Time, Score and Overall Responses to the Statements of First Text and Second Text in Pre-Test and Post-Test

<table>
<thead>
<tr>
<th>PRE-TEST</th>
<th>Participants</th>
<th>Time (in min.)</th>
<th>Score</th>
<th>First text: Eight statements (Task: to correct)</th>
<th>Second text: Six statements (Task: to put in order)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Chose correct answer</td>
<td>Chose wrong answer</td>
</tr>
<tr>
<td>P1</td>
<td></td>
<td>5.85</td>
<td>8.00</td>
<td>5 x</td>
<td>3 x</td>
</tr>
<tr>
<td>P2</td>
<td></td>
<td>6.55</td>
<td>3.00</td>
<td>3 x</td>
<td>5 x</td>
</tr>
<tr>
<td>P3</td>
<td></td>
<td>7.72</td>
<td>3.00</td>
<td>3 x</td>
<td>5 x</td>
</tr>
<tr>
<td>P4</td>
<td></td>
<td>10.70</td>
<td>4.00</td>
<td>4 x</td>
<td>4 x</td>
</tr>
<tr>
<td>P5</td>
<td></td>
<td>10.77</td>
<td>4.00</td>
<td>6 x</td>
<td>2 x</td>
</tr>
<tr>
<td>P6</td>
<td></td>
<td>11.68</td>
<td>10.00</td>
<td>4 x</td>
<td>4 x</td>
</tr>
<tr>
<td>P7</td>
<td></td>
<td>17.80</td>
<td>13.00</td>
<td>7 x</td>
<td>1 x</td>
</tr>
<tr>
<td>P8</td>
<td></td>
<td>18.60</td>
<td>7.00</td>
<td>5 x</td>
<td>3 x</td>
</tr>
<tr>
<td>P9</td>
<td></td>
<td>46.45</td>
<td>12.00</td>
<td>6 x</td>
<td>2 x</td>
</tr>
<tr>
<td>P10</td>
<td></td>
<td>60.08</td>
<td>4.00</td>
<td>3 x</td>
<td>5 x</td>
</tr>
<tr>
<td>POST-TEST</td>
<td>Participants</td>
<td>Time (in min.)</td>
<td>Score</td>
<td>First text: Eight statements (Task: to correct)</td>
<td>Second text: Six statements (Task: to put in order)</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------</td>
<td>----------------</td>
<td>-------</td>
<td>-------------------------------------------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Stayed with correct answer</td>
<td>Stayed with wrong answer</td>
</tr>
<tr>
<td></td>
<td>P1</td>
<td>2.40</td>
<td>5.00</td>
<td>3 x</td>
<td>1 x</td>
</tr>
<tr>
<td></td>
<td>P2</td>
<td>12.23</td>
<td>13.00</td>
<td>3 x</td>
<td>1 x</td>
</tr>
<tr>
<td></td>
<td>P3</td>
<td>2.60</td>
<td>0.00</td>
<td>0 x</td>
<td>5 x</td>
</tr>
<tr>
<td></td>
<td>P4</td>
<td>4.00</td>
<td>4.00</td>
<td>2 x</td>
<td>2 x</td>
</tr>
<tr>
<td></td>
<td>P5</td>
<td>27.22</td>
<td>10.00</td>
<td>6 x</td>
<td>1 x</td>
</tr>
<tr>
<td></td>
<td>P6</td>
<td>6.78</td>
<td>6.00</td>
<td>3 x</td>
<td>2 x</td>
</tr>
<tr>
<td></td>
<td>P7</td>
<td>18.63</td>
<td>14.00</td>
<td>7 x</td>
<td>0 x</td>
</tr>
<tr>
<td></td>
<td>P8</td>
<td>17.32</td>
<td>9.00</td>
<td>4 x</td>
<td>1 x</td>
</tr>
<tr>
<td></td>
<td>P9</td>
<td>15.48</td>
<td>5.00</td>
<td>4 x</td>
<td>2 x</td>
</tr>
<tr>
<td></td>
<td>P10</td>
<td>7.77</td>
<td>4.00</td>
<td>2 x</td>
<td>4 x</td>
</tr>
</tbody>
</table>
Overall, this data show that, in the first text, in the post-test, some participants stayed with correct answers, some stayed with wrong answers, some participants chose correct answers for answers that were wrong in the pre-test, and some participants chose wrong answers for answers that were correct in the pre-test. Also, one participant did not choose a correct answer and two participants did not choose a wrong answer. The data of the first text suggest that the reading comprehension of some participants increased because they did not choose wrong answers in the post-test for answers they had correct in the pre-test (P2, P5, P7). The data also indicate that reading comprehension of a few participants decreased since they did not choose correct answers in the post-test for answers they had wrong in the pre-test (P3 and P9). In sum, for the first text, the interventions seem to have had an influence on the reading comprehension of some participants and did not seem to have had an influence on the reading comprehension of other participants.

3.2.2 Overall Analysis: Second Text

As seen in Table 4, for the second text, the data reveal: In the pre-test, two of the 10 participants (P3, P10) chose a correct answer. The other eight participants did not choose a correct answer, but only wrong answers. In the post-test, however, the responses of all 10 participants differed. They differed in the following ways: some changed their answers from a wrong answer in the pre-test to a different, but still wrong answer in the post-test; some selected the same incorrect answer in both the pre-test and the post-test; others choose a correct answer in the post-test that they had wrong in pre-test; and a few selected a wrong answer in the post-test that they had correct in the pre-test. Here, nine participants changed answer to still another wrong answer (all except P7). Besides, nine participants stayed with the same wrong answer
chosen in the pre-test (all except P2). Additionally, four participants chose the correct answer to some statements (P4, P5, P6, P9). They had not chosen the correct answer to those statements in the pre-test. Also, two participants chose the wrong answer to some statements (P3, P10). They had chosen the correct answer to those statements in the pre-test, but they did not choose a correct answer in the post-test. One participant did not change any answer to still another wrong answer, did not choose correct answer, and did not choose a wrong answer (P7). Another participant did not stay with the same wrong answer chosen in the pre-test, did not choose a correct answer, and did not choose a wrong answer (P2). This participant only changed to still another wrong answer. Further, two participants did not choose a correct answer and also not a wrong answer (P1 and P8). Moreover, one participant did not choose a wrong answer (P4). Finally, two participants did not choose a correct answer (P3 and P10).

In general, the data show that, in the second text, in the post-test, some participants changed answers to still another wrong answer, some stayed with same wrong answers chosen in the pre-test, a few participants chose correct answers and a small number of participants chose wrong answers. Plus, four participants did not choose a wrong answer, and two participants did not choose a correct answer.

Therefore, the data for the second text suggest that reading comprehension of some participants increased only and did not decrease because they did not choose wrong answers in the post-test for answers they had correct in the pre-test (P4, P5, P6, P9). Further, the data indicate that the reading comprehension of a few participants decreased only since they did not choose correct answers in the post-test for answers they had wrong in the pre-test (P3 and P10). Also, the reading comprehension of almost a handful of participants neither increased nor decreased due to not choosing correct answers and wrong answers (P1, P2, P7, P8).
To sum it up: For the second text, it appears that the interventions had an influence on the reading comprehension of some participants and did not have an influence on the reading comprehension of other participants. In addition, the interventions neither had an influence on the reading comprehension of a few participants in terms of increase nor decrease, indicating no change in reading comprehension (i.e., staying level).

3.2.3 Individual Analysis: First Text and Second Text

In this section, I look at three specific participants and their individual responses (Table 4). I will do this because they illustrate individual cases in which some scores increased and some scores decreased, indicating no change in reading comprehension for these participants overall. When discussing those three participants, I will use the data from the individual responses given in Table 4. I present the individual participant’s data in the following order:
1. Time spent on pre- and post-test (reading comprehension part and read-aloud enjoyment part)
2. Scores on reading comprehension in pre-and post-test
3. Responses to the first text and second text in pre-test and the post-test

Participant 2 (P2)

I selected P2 because this participant had the greatest score growth (3 to 13) and did not chose wrong answers in the post-test for answers that were correct in the pre-test, for neither of the two texts. In the post-test, P2 only stayed with correct and wrong answers and changed answers to still another wrong answer. This indicates only an increase in reading comprehension for P2 and no decrease. In highlighting P2, I provide an example for the impact of the interventions on the reading comprehension of individual participants.
1. Time: P2 spent 6.55 minutes on the pre-test and 12.23 minutes on the post-test. When comparing the data, they show that P2 spent more time on the post-test than on the pre-test.

2. Score: P2’s score on reading comprehension in the pre-test was 3.00 and in the post-test, it was 13.00. The data show that P2 gained the higher score in the post-test, after the interventions. This suggests that reading comprehension increased for P2.

3. Responses to the first text in the pre-test: P2 chose correct answers three times and wrong answers five times. Responses to the first text in the post-test: P2 stayed with the correct answer three times, stayed with the wrong answer one time, chose correct answers to answers that were wrong in the pre-test four times and chose wrong answers to answers that were correct in the pre-test zero times. Responses to the second text in the pre-test: P2 chose correct answers zero times and wrong answers six times. Responses to the second text in the post-test: P2 only changed answer to still another wrong answer six times.

   Overall, the data show that, for the first text, in the post-test, P2 stayed with correct answers, stayed with wrong answers, and chose correct answers to answers that were wrong in the pre-test. But staying with correct or wrong answers happened less than choosing correct answers. Moreover, P2 did not chose wrong answers to answers that were correct in the pre-test. For the second text, the data reveal that in the post-test for all answers P2 only changed answers to still another wrong answer. Thus, the data show that P2 had better scores only in the first of the two texts, but not in the second. This is remarkable because, despite the fact that P2 did not at all improve responses in the second text, P2 was the one participant who improved the most.

   I speculate that the reasons why P2 improved the most in the first text, but did not improve in the second text could have two explanations: One reason could be the point distribution. The first text had eight statements, and the second text had six statements. Not
improving much in the second text is not of great consequence because of the small number of points gained. Another reason could be due to the fact that in the first text statements had to be corrected. This task is less complicated and demands not as much of a higher order thinking than putting statements in the correct order as it was the task for the second text. Therefore, improving for the first text is more likely to happen than in the second text.

Participant 3 (P3)

I selected P3 because this participant had the score drop from 3 to 0 and did not, in neither of the two texts, choose correct answers in the post-test for answers that were wrong in the pre-test. This implies that the reading comprehension of P3 just decreased and did not increase. The case of P3 illustrates the result of the slight decrease in reading comprehension that was found earlier.

1. Time: P3 spent 7.72 minutes on the pre-test and 2.60 minutes on the post-test. This data shows that P3 spent less time on the post-test than on the pre-test.

2. Score: P3’s score on reading comprehension in the pre-test was 3.00 and in the post-test, it was 0.00. The data reveal that P3 gained the higher score in the pre-test, before the interventions. This data suggest that reading comprehension for P3 decreased. When comparing the time and score results of P3 with the data of P2, we see that P2 spent longer on the post-test and had a higher score, and P3 spent less time on the post-test and had a lower score. Could the conclusion be drawn from this that when participants spent more time on the post-test that this would result in a higher score? Unfortunately, the data of scores and time do not appear to be in relation with each other. We will see this later when I discuss P10.
3. Responses to the first text in the pre-test: P3 chose correct answers three times and wrong answers five times. Responses to the first text in the post-test: P3 stayed with the correct answer zero times, stayed with the wrong answer five times, chose correct answer for answers that were wrong in the pre-test zero times, and chose wrong answers for answers that were correct in the pre-test three times. Responses to the second text in the pre-test: P3 chose correct answers one time and wrong answers five times. Responses to the second text in the post-test: P3 changed answer to still another wrong answer three times, stayed with the same wrong answer chosen in pre-test two times, chose correct answer for answers that were wrong in the pre-test zero times, and chose wrong answers for answers that were correct in the pre-test one time.

Overall, the data for P3 show that, for the first text, in the post-test, P3 only stayed with wrong answers and chose wrong answers for answers that were correct in the pre-test. P3 did not stay with correct answers and did not choose correct answers for answers that were wrong in the pre-test. For the second text, the data show that this participant changed answers to still another wrong answer, stayed with the same wrong answers chosen in the pre-test, and chose a wrong answer for an answer that was correct in the pre-test. P3 did not chose correct answers for answers that were wrong in the pre-test. Thus, the data imply a decrease in the reading comprehension for P3 since this participant did not increase neither for the first text nor for the second text, it only decreased.

To reiterate, the interventions had no impact on the scores for P3 for the first text and the second text. Also, the choosing of wrong answers happened more for the first text than for the second text. This is fascinating because the task for the second text (a task in which participants had to put statements in a chronological order) appears to be more cognitively demanding. However, P3 displayed the least decrease for the second text. It is also interesting that, in the pre-
test, P3 answered one answer correctly in the second text. In contrast, P2 did not choose any answers correctly for that text. Yet, P2 was the one that increased in reading comprehension and P3 did not. However, here P3 displays comprehension of the second text by answering one answer in the second text correctly, as the only one besides P10. So, this could suggest that P3 had already understood more than P2 in the pre-test. In this context, it is also fascinating that when looking at all the individual responses to the statements in the post-test that, in general, choosing correct answers happened 23 times and choosing wrong answers happened 14 times.

Participant 10 (P10)

I selected P10 because this participant stayed level, according to the score data. Another reason for selecting P10 was that this participant, as we will see, spent more time on the pre-test and less time on the post-test and P10’s reading comprehension stayed level. In contrast, P2 spent more time on the post-test and less time on the pre-test and P2’s reading comprehension increased. Discussing P10 in more detail showcases the finding of staying level on the overall analysis as well as the finding that time is not a factor responsible for the scores.

1. Time: P10 spent 60.08 minutes on the pre-test and 7.77 minutes on the post-test. The data show that P10 spent more time on the pre-test than on the post-test.

2. Score: P10’s score on reading comprehension in the pre-test was 4.00 and in the post-test, it was also 4.00. The data of time and score are intriguing here. P10 spent 60.08 minutes on the pre-test and 7.77 minutes on the post-test, and stayed level. So, P10 spent an hour on the pre-test and less than 10 minutes on the post-test, and the score did not change. In comparison, P2 spent 6.55 minutes on the pre-test and 12.23 minutes on the post-test and the score went up. Further, P3 spend 7.72 minutes on the pre-test and 2.60 minutes on the post-test and the score went down.
This demonstrates that no conclusion can be drawn that time is a factor that is responsible for the scores.

3. Responses to the first text in the pre-test: P10 chose correct answers three times and wrong answers five times. Responses to the first text in the post-test: P10 stayed with the correct answer two times, stayed with the wrong answer four times, chose correct answer one time, and chose wrong answer one time. Responses to the second text in the pre-test: P10 chose correct answers one time and wrong answers five times. Responses to the second text in the post-test: P10 changed answer to still another wrong answer four times, stayed with the same wrong answer chosen in pre-test one time, chose correct answers zero times, and chose wrong answers one time.

Overall, the data for P10 show that, in the first text, in the post-test, P10 stayed with correct answers and wrong answers, and chose a correct answer and chose a wrong answer. In addition, the data show that, in the second text, P10 changed answers to still another wrong answer, stayed with a same wrong answer chosen in the pre-test, and chose a wrong answer. P10 did not choose correct answers. Therefore, the data suggest that scores increased and decreased for P10 for the first text. But for the second text, scores decreased only and did not increase. In sum, the interventions had some impact on the reading comprehension for P10 for the first text since P10 chose one correct answer and one wrong answer. However, it had no impact for the second text because the participant chose a wrong answer and no correct answers. Remarkable here is that, in the pre-test, P10 was the only participant, next to P3, that chose a correct answer for the second text. This indicates that, in the pre-test, P10 had a better understanding of the text than all the other participants (besides P3 who also selected a correct answer).
As we can see, looking at individual participants and their performance on the tests provided interesting additional insights. One participant who shows the pattern of only increased scores, spent a relatively short amount of time on the pre-test, and a relatively long amount of time on the post-test. One participant whose data show the pattern of only decreased scores, spent a relatively short amount of time on the pre-test, and spent an even shorter time on the post-test. Finally, one participant whose data display the pattern of both increased and decreased scores, spent a long time on the pre-test, and a short time on the post-test. Therefore, there seems to be no relationship between scores reached and time spent on the two tests.

3.3 Conclusion

The overall analysis of the data on reading comprehension on the group level taken from the pre- and the post-test revealed the following: There was no statistical significance of the mean scores in the post-test, indicating that the method used in this study did not create a change in reading comprehension on the group level. Overall, reading comprehension appears to have stayed level. Also, the scores displayed some variation, as some scores went up and some went down on the group level, proposing a slight (but statistically negligible) decrease overall. Further, the time spent to complete the pre-test and the post-test varied. Overall, participants spent less time on the post-test than on the pre-test. However, it could not be confirmed if there is a relationship between scores reached and times spent on the tests in general. The analysis of individual participants’ data reflected the overall group data results: some participants’ scores increased, some participants’ scores stayed level, those of some decreased.

Overall, I was most surprised by the finding that participants’ reading comprehension did not significantly increase for the group. This is an interesting finding because due to the research
findings in literature about this reading method so far, I had expected to see a significant increase in scores on the group level, indicating an increase in reading comprehension. But in this study that was not the case. Why? I can only speculate:

1. The phenomenon of the *U-shaped curve* could have influenced that reading comprehension did not increase. In second language acquisition literature, it is well established that language learning is not a linear process. The phenomenon of the U-shaped curve describes this process in which newly learned L2 constructions briefly show a target-like form, then become non-target-like for a while, and eventually re-emerge in a target-like form (Sharwood Smith & Kellerman, 1989). Therefore, it is possible that the overall reading comprehension as I measured it in the context of this study may have followed a U-shaped pattern.

2. The small sample size of this study could have had an effect on the data results. In general, the smaller the sample size, the more erratic the results turn out. For instance, in this study the result of one participant weighs more in the overall results because the sample size is only 10 participants. To contextualize scale: if it was 100 participants, the results of one participant do not weigh nearly as much in the overall results.

3. The function of test-procedure and/or instruments could have had an impact on the collection of the data and did not yield sufficiently representative results. In this study, the way the test was set up was that there was only one link that contained both tests (for reading comprehension *and* for read-aloud enjoyment). This, however, limited the data collection in terms of distinguishing how long participants took for the reading comprehension part only. This is because the time shown would only tell how long participants needed to complete both tests, including the reading comprehension part *and* the read-aloud enjoyment part.
4. The time span of the interventions (i.e., 7 weeks total) could have had an influence. It might have not been long enough for language increase to take place and for language increase to be measured. Thus, this could be a reason why the data demonstrated no increase in reading comprehension.

5. A combination of the above and (possibly) other factors could have been responsible in concert.

I would like to speculate one more time on the role that time may have played. The data indicate that participants spent less time on the post-test than on the pre-test. Reasons for the latter could have been: Participants might have noticed that the first part of the post-test, namely the reading comprehension part including the statements, was the same first part of the pre-test. Therefore, participants might have completed the test faster due to familiarity. In addition, they might have completed it faster because they noticed the repetition and did not feel challenged. The problem with these possible reasons, however, is that this is not for certain. What is known, is, that the way the test was set up restricted the data collection. There was only one link that contained both tests (for reading comprehension and read-aloud enjoyment). But this limited the data collection in terms of identifying how long participants took for the reading comprehension part only.

In conclusion, based on the data, it is reasonable to conclude that the read-alouds did not significantly increase the reading comprehension abilities of the participants in the context of this study, and a number of factors may be responsible for this. The small sample size represents an obvious limitation. Furthermore, administering the tests online may have affected the data. If the data collection design would have included multiple links, the data might have produced even more insightful results on the connection between times and scores. Also, the time span of the
interventions being 6 weeks could have been too short (6 weeks with 1 week of a break). If the interventions had lasted for more weeks, e.g., 12 weeks, the data might have looked different. Lastly, the finding that the decrease was rather small in comparison to the individual increase of reading comprehension indicates that the method used in this study has potential to support reading comprehension. The design of a future study would have to be adapted in light of these points.
CHAPTER 4

ANALYSIS: L2 READ-ALOUD ENJOYMENT

My overall question for this study consisted of two parts. On the one hand, I was looking for answers on what impact the method of read-alouds in L2 classrooms may have on participants’ L2 reading comprehension. On the other hand, I was searching for answers on what impact the method of read-alouds in L2 classrooms may have on participants’ read-aloud enjoyment. This chapter focuses on the second part of the question, namely on the impact that this reading method may have on L2 read-aloud enjoyment.

As explained in Chapter 2, this study used a pre-/post-test design to measure the enjoyment participants experienced in the course of the classroom interventions. The interventions took place in the time frame of 7 weeks. While the pre-test and the post-test measured reading comprehension, they also contained additional surveys that targeted participant perceptions about their read-aloud enjoyment. The pre-intervention survey on read-aloud enjoyment consisted of three-item-answer questions (Yes, No, I do not know) and open-ended questions that I had designed. Questions, for instance, were “Did someone read books to you in your first language(s) when you were a child?”, “Did a foreign language teacher read books to you in school when you were a child, a teenager or an adult (in the foreign language the teacher taught you)?” or “What did you enjoy about being read to when you were a child, a teenager, or an adult (in your first language(s); at home or in school)? Why?” (see Chapter 2 and/or the Appendix Figure A6–A7 for full surveys). The post-intervention survey on read-aloud enjoyment consisted of three-item-answer questions (Yes, No, I do not know) and open-ended questions that I had designed. For example, participants were asked “What did you enjoy about being read to from a German book in class?”, “Would you like to have more time devoted to German books
being read out loud by the teacher in this class and in future German classes?” or “What did you enjoy about being read to from a German book in class? Why?”.

In this chapter, I describe and interpret the survey data targeting read-aloud enjoyment on the group level, using descriptive statistics. Overall, we will see that, even though the data pool was relatively small, the quantitative analysis showed statistically significant results for enjoyment in the post-intervention survey. This indicates that the instructional method of read-alouds was perceived positively by students. The qualitative feedback from participants also indicated that the instructional method of reading out loud in class was viewed by learners as positive. Some even commented it improved various aspects of their language learning in German. Furthermore, we will see that all participants had been read to in their education in the past, but very few were read to in a foreign language class prior to this study.

Below, I first discuss the pre-intervention survey data, focusing on participants’ experience and background with being read to in their lives, both at home and in educational settings, prior to the interventions that were part of this study. Then, I move on to discussing the levels of enjoyment participants reported in regard to their experiences of having been read to prior to this study, and I discuss the levels of enjoyment participants reported in the post-intervention surveys about their experience during the interventions in class. Last, I look at self-reported improvements in language learning by specific participants. In conclusion, I discuss the implications of these results for using read-alouds in foreign language teaching.
4.1 Experience with L1 and L2 Read-Alouds before the Interventions

My study was of a small scale and only produced 10 data sets. Initially a total of 15 in the pre-test, it turned out that 12 out of the 15 participants followed up and did the post-test and post-intervention survey, yet one out of these 12 completed the pre-test and the pre-intervention survey only, and one just took the post-test and post-intervention survey. Thus, 10 was the final data set number, instead of a possible data set of 12. Overall, descriptive statistics were run (count and percentage) to determine which of the three-item-answer questions was answered and with which of the three items (Yes, No, I do not know), for both pre-intervention and post-intervention surveys. Additionally, descriptive statistics (count and percentage) were run to determine which of the open-ended questions were answered and what the answers were, for both the pre- and post-intervention surveys.

Before presenting the results, it needs to be explained that the pre- and post-intervention surveys were adaptive. They adapted to the yes/no responses of the participants. For the pre-intervention survey, if Question 1 or 2 was answered with a ‘Yes’, then Question 7 was displayed. If Question 3 was answered with a ‘Yes’, then Question 8 was displayed, and so on.

Table 5 shows the results of participants’ responses to the three-item-answer questions of the pre-intervention survey, which of the three-item-answer questions were answered and with which of the three items (Yes, or No, or I do not know). This way, we can find out the number of responses and the type of responses. This makes it possible in the pre-intervention survey to see prior experiences of participants with read-alouds and L2 read-alouds and whether or not enjoyment occurred. Note: For some of the questions, answers were not always recorded for every participant (N/A). This was due to the adaptability of the questions explained above.
Table 5: Participants’ Responses to Three-Item-Answer Questions in the Pre-Intervention Survey

<table>
<thead>
<tr>
<th>PRE-TEST</th>
<th>Participants</th>
<th>Question 1: Did someone read books to you in your first language(s) when you were a child?</th>
<th>Question 2: Did someone read books to you in your first language(s) when you were a teenager?</th>
<th>Question 3: Did someone read books to you in your first language(s) when you were an adult?</th>
<th>Question 4: Did a sibling read books to you in your first language(s) when you were a child, a teenager or an adult?</th>
<th>Question 5: Did a teacher read books to you in your first language(s) in school when you were a child, a teenager or an adult?</th>
<th>Question 6: Did a foreign language teacher read books to you in school when you were a child, a teenager or an adult (in the foreign language the teacher taught you)?</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>P2</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>P3</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>P4</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>P5</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>P6</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>P7</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>P8</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>P9</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>P10</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>I do not know</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>
Table 5 Continued

<table>
<thead>
<tr>
<th>PRE-TEST</th>
<th>Participants</th>
<th>Question 7: Did you enjoy being read to in your first language(s) at home or in school as a child or a teenager?</th>
<th>Question 8: Did you enjoy being read to in your first language(s) at home or in school as an adult?</th>
<th>Question 9: Did you enjoy being read to in a foreign language in school as a child, a teenager or an adult?</th>
<th>Question 10: Do you like to read books to others in your first language(s)?</th>
<th>Question 11: Do you like to read books to others in a foreign language?</th>
<th>Question 12: Would you like German books being read out loud by the teacher during the class time?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P1</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>P2</td>
<td>Yes</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
<td>I do not know</td>
</tr>
<tr>
<td></td>
<td>P3</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>P4</td>
<td>I do not know</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
<td>I do not know</td>
</tr>
<tr>
<td></td>
<td>P5</td>
<td>Yes</td>
<td>N/A</td>
<td>N/A</td>
<td>Yes</td>
<td>I do not know</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>P6</td>
<td>Yes</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>P7</td>
<td>Yes</td>
<td>N/A</td>
<td>N/A</td>
<td>Yes</td>
<td>I do not know</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>P8</td>
<td>Yes</td>
<td>N/A</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>P9</td>
<td>Yes</td>
<td>N/A</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>P10</td>
<td>I do not know</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Overall, these results demonstrate that with regard to read-alouds and L2 read-alouds, the majority of participants experienced having someone read books to them in their first language(s) when they were a child. Only one participant had not been read to in the first language(s) as a child. In addition, the minority was read to in the first language(s) as teenagers, and only one participant was read to as an adult in the first language. Moreover, a few participants were read to in the first language(s) by a sibling as a child, a teenager or an adult. But all participants experienced a read-aloud of a teacher in the first language(s) as children, teenager, or adults. However, only the minority of participants experienced a read-aloud of a teacher in a foreign language as children, teenager, or adults.

With regard to enjoyment, the majority reported having enjoyed the read-alouds in their first language(s) as a child or a teenager, and so did the one participant who was read to as an adult in the first language(s). When it comes to enjoyment of being read to in a foreign language, all the three participants who reported to have experienced those read-alouds, expressed enjoyment. Further, in terms of liking to read to others in the first language(s), only the minority of participants responded to like it. In terms of liking to read to others in the foreign language, too, a few of the participants responded to like it. When being asked if participants would like German books read aloud to them during class time, the majority responded with a ‘Yes’.

Overall, the data in Table 5 suggest that, before the interventions, the majority of participants were familiar with read-alouds in their first language(s) and enjoyed them. Additionally, only a few participants were familiar with read-alouds in a foreign language, and they also enjoyed them. Furthermore, the majority of participants did not like to do read-alouds themselves for others, either in their first language(s) or a foreign language. Last, almost all participants were open to having read-alouds in the target language (German) during class time.
since they responded with a ‘Yes’ for that particular question. In sum, the majority of participants experienced and knew read-alouds in their first language(s) in the past, and those read-alouds evoked enjoyment, a positive feeling. Some were familiar with read-alouds in a foreign language and enjoyed them, too. Thus, it could be inferred that most participants were open toward that type of reading during class time.

4.2 Enjoyment during L1 and L2 Read-Alouds before the Interventions

Now, I present the results of the participants’ responses to the open-ended questions of the pre-intervention survey, which of the open-ended questions were answered, and what the answers were (Table 6). As a consequence, it will be possible to view opinions on read-alouds and L2 read-alouds before implementing the interventions. Note: Answers were not always recorded for every participant (N/A) due to the adaptability of the questions.

Generally, these results show that in regard to read-alouds in first language(s) and the five participants who reported to have liked it either as a child or a teenager or an adult, all of them expressed certain elements they enjoyed. Regarding the L2 read-alouds and the three participants who reported to have liked them either as a child or a teenager or an adult, those stated certain elements they enjoyed, and the time when they were read to in school in a foreign language.

Half of the participants reported that they enjoyed read-alouds in the past, and that they liked the engagement, relaxation, fun, bonding, listening to and enjoying the story that took place because of the read-alouds. Those aspects can be seen as personal benefits. Furthermore, in the past, read-alouds in a foreign language created enjoyment for the few participants who experienced those. Also, the data suggest that such personal benefits in a foreign language
Table 6: Participants’ Responses to Open-Ended Questions in the Pre-Intervention Survey

<table>
<thead>
<tr>
<th>PRE-TEST</th>
<th>Participants</th>
<th>Question 13: What did you enjoy about being read to when you were a child, a teenager, or an adult (in your first language(s); at home or in school)? Why?</th>
<th>Question 14: What did you not enjoy about being read to when you were a child, a teenager, or an adult (in your first language(s); at home or in school)? Why?</th>
<th>Question 15: What did you enjoy about being read to in a foreign language in school? Why?</th>
<th>Question 16: What did you not enjoy about being read to in a foreign language in school? Why?</th>
<th>Question 17: In which grade and school level has a foreign language teacher read books to you?</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>Being able to engage in it in a different way</td>
<td>N/A</td>
<td>it helps you infer meaning and determine pronunciation</td>
<td>N/A</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>P2</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>P3</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>P4</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>P5</td>
<td>I liked the engagement of the teachers and the students. This made reading feel more like a relaxing thing and a fun thing.</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>P6</td>
<td>Having books read to me as a child by my parents was a way for us to bond.</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>----</td>
<td>-------------------------------------------------------------------------</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td></td>
</tr>
<tr>
<td>P7</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>P8</td>
<td>I enjoyed my parents reading to me before bed because it helped put me to sleep</td>
<td>N/A</td>
<td>I enjoyed my teacher reading to me because it helped me understand more of the language</td>
<td>N/A</td>
<td>7th grade first year of German</td>
<td></td>
</tr>
<tr>
<td>P9</td>
<td>I enjoyed just being able to listen and enjoy the story when I was a child rather than trying to focus and understand while reading.</td>
<td>N/A</td>
<td>I enjoys learning how to pronounce words and I liked being able to listen and pick out words to understand the story rather than reading it on my own and being overwhelmed with the words I couldn't read or pronounce</td>
<td>N/A</td>
<td>Highschool 9-12</td>
<td></td>
</tr>
<tr>
<td>P10</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>
were experienced in higher grades because grades 6-12 were reported for when read-alouds in that language were experienced.

In sum, according to the data, read-alouds in first language(s) and a foreign language created enjoyment and personal benefits for most of the participants in the past. Participants reported that they benefited from the read-alouds in the first language(s) because they said they were engaged, relaxed, experienced fun, bonded, listened to and enjoyed the story. Likewise, the participants who encountered read-alouds in a foreign language profited from those readings. They reported that when they were read aloud to in middle school and in high school, they practiced text comprehension, language understanding, pronunciation and listening comprehension that came about because of the read-alouds.

Had I analyzed this data before the first intervention, I would have been even more excited about this study. I would have been reassured and could have assumed that participants would probably enjoy the read-alouds and be motivated to actively participate during the interventions to gain personal benefits.

4.3 Enjoyment during the Interventions

At this point, I turn to discussing the results of the participants’ responses to the three-item-answer questions in the post-intervention survey, which of the three-item-answer questions were answered, and with which of the three items (Yes, or No, or I do not know). This can be seen in Table 7. In so doing, we can tell the number of responses and the type of responses given. Then, we can observe an impact of the read-alouds done in class on L2 read-aloud enjoyment and perceptions of foreign language skills improvement due to the L2 read-alouds. Taken as a
Table 7: Participants’ Responses to Three-Item-Answer Questions in the Post-Intervention Survey

<table>
<thead>
<tr>
<th>POST-TEST</th>
<th>Participants</th>
<th>Question 1: Did you enjoy the German book being read out loud by the teacher in class?</th>
<th>Question 2: Would you like to have more time devoted to German books being read out loud by the teacher in this class and in future German classes?</th>
<th>Question 3: After being read to in German in class, would you also like to read to others in German now?</th>
<th>Question 4: Do you think your German has improved because of being read to from a German book in class?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P1</td>
<td>Yes</td>
<td>I do not know</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>P2</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>I do not know</td>
</tr>
<tr>
<td></td>
<td>P3</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>I do not know</td>
</tr>
<tr>
<td></td>
<td>P4</td>
<td>I do not know</td>
<td>No</td>
<td>No</td>
<td>I do not know</td>
</tr>
<tr>
<td></td>
<td>P5</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>P6</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>P7</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>P8</td>
<td>Yes</td>
<td>I do not know</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>P9</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>I do not know</td>
</tr>
<tr>
<td></td>
<td>P10</td>
<td>Yes</td>
<td>I do not know</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>
whole, these results reveal that the majority of participants enjoyed the read-alouds. Only one participant did not know.

In addition, a large number of participants would have liked to have more time devoted to German books being read out loud by the teacher in this class and in future German classes. One participant would not have liked it, and two participants did not know. Moreover, only a few participants would now, after the read-alouds, like to read to others in the target language, the majority would not, and one participant did not know. With regard to perceptions of foreign language skills improvement due to the read-alouds, the majority was of the opinion that their foreign language skills improved. Four participants did not know.

Based on the data, it is reasonable to conclude that L2 read-aloud enjoyment happened during the read-alouds. This enjoyment may well have prompted the wish of some to experience more L2 read-alouds in the future. An interesting finding here is that one participant (P6) expressed in the pre-test that they did not enjoy the L2 read-alouds. However, after the in-class interventions, they reported in the post-test that they changed their opinion and would like to experience more L2 read-alouds in their German class in the future.

Further, shifts in the post-intervention data are notable. For example, the same number of participants in the pre-intervention survey as in the post-intervention survey did not like to read to others in the foreign language, but in the post-test three participants had changed their opinions (P5, P7, P8). P5 and P7 changed from ‘I do not know’ in the pre-test to ‘Yes’ in the post-test, and P8 changed from ‘Yes’ in the pre-test to ‘I do not know’ in the post-test. In addition, the data indicate that the majority of participants reported that they think their language skills in German had improved because of the L2 read-alouds in which they participated in class.
In short, the read-alouds created L2 read-aloud enjoyment in the majority of participants. Thus, it can be concluded that the interventions seemed successful in that regard. What caused the enjoyment? There are a number of possible reasons. The action of being read to could have evoked a feeling of enjoyment since most participants reported to have liked being read to in their first language(s) in the pre-test. That liking could have transferred over to when being read aloud to in a foreign language. In addition, the interactive part made the read-alouds engaging, and thus, possibly creating enjoyment. Also, concerning the perceptions of improved foreign language skills that the majority of participants reported, it can be inferred that the read-alouds fostered those perceptions. In the next section, we will look at the open-ended questions of the post-intervention survey and participants’ self-reporting on the perceived benefits on their language learning.

4.4 Perceived Language Improvements after the Interventions

Finally, I examine the results of participants’ responses to the open-ended questions of the post-intervention survey, which of the open-ended questions were answered, and what the answers were (see Table 8). This way, we can see what elements were enjoyed during the read-alouds done in class and which foreign language skills were perceived to have improved due to the L2 read-alouds.

The open-ended questions of the pre-intervention survey suggest that, in the past, and prior to this study, read-alouds in their first language(s) created enjoyment for half of the participants. Besides, participants report to have experienced personal benefits because of the read-alouds, including feelings such as engagement, relaxation, fun, bonding, listening to and enjoying the story. The data suggest as well that, in the past, read-alouds in a foreign language
Table 8: Participants’ Responses to Open-Ended Questions in the Post-Intervention Survey

<table>
<thead>
<tr>
<th>POST-TEST</th>
<th>Participants</th>
<th>Question 5: What did you enjoy about being read to from a German book in class? Why?</th>
<th>Question 6: What did you not enjoy about being read to from a German book in class? Why?</th>
<th>Question 7: How do you think your German has improved or changed because of being read to from a German book in class? Has any of these improved or changed: Your reading comprehension in German? Your ability to write in German? Your ability to speak in German? Your listening comprehension in German? Please provide examples.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P1</td>
<td>The combination of all the pictures, text, and context clues made it a lot easier to understand than just reading it by myself.</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>P2</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>P3</td>
<td>I think it was interesting to have something different and a alternate way to practice German.</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>P4</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>P5</td>
<td>I feel like her motions and enthusiasm really helped my engagement in the book and my understanding of the overall plot.</td>
<td>N/A</td>
<td>Reading: yes--i know more words now Writing: probably still the same--I just struggle in general with writing in german. Speaking: yes--listening to her read helped me figure out how to better pronounce things. Listening: Yes</td>
</tr>
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</tr>
<tr>
<td><strong>Table 8 Continued</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>P6</strong></td>
<td><strong>It was easy and interesting.</strong></td>
<td><strong>N/A</strong></td>
<td><strong>Improved vocabulary</strong></td>
<td></td>
</tr>
<tr>
<td><strong>P7</strong></td>
<td><strong>A German book provides a lot of examples of natural language uses and everyday vocabulary that a textbook teaching can never perfectly capture. I felt like I was directly practicing understanding and communicating with German, rather than more abstractly practicing rules and odd specific themes.</strong></td>
<td><strong>N/A</strong></td>
<td><strong>All four improved. Alongside being read to, we discussed what we understood as happening and that helped us understand where and why we had made mistakes. Feedback is critical for learning and BlinkLearning has not really provided any in the past year. I also think that reading and answering difficult questions with basic but complete answers was a helpful exercise.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>P8</strong></td>
<td><strong>I feel that it helped me to deepen my understanding of the language</strong></td>
<td><strong>N/A</strong></td>
<td><strong>My reading and listening comprehension have improved</strong></td>
<td></td>
</tr>
<tr>
<td><strong>P9</strong></td>
<td><strong>I felt that it was easy to understand and I was less overwhelmed than I would have been if I had to read it along because I would only focus on the words I don't know rather than the words I do</strong></td>
<td><strong>N/A</strong></td>
<td><strong>N/A</strong></td>
<td></td>
</tr>
<tr>
<td><strong>P10</strong></td>
<td><strong>I like that it exposed new vocab because I don't know where I would have gotten some of it elsewhere</strong></td>
<td><strong>N/A</strong></td>
<td><strong>I feel like my reading comprehension, writing ability, and listening comprehension all increased. I think the 3 questions near the end each day really helped along with just hearing a native read something that wasn't just the textbook</strong></td>
<td></td>
</tr>
</tbody>
</table>
created enjoyment for those few participants who experienced them. They also report personal benefits such as improved text comprehension, improved language comprehension overall, and improved pronunciation and listening comprehension. Further, participants reported that they experienced those in higher school grades (grades 6-12).

The three-item-answer questions of the post-intervention survey see to suggest that enjoyment happened during the read-alouds in class. In addition, a certain amount of enjoyment seems to have happened, prompting some participants to state that they wished to do more L2 read-alouds in the future. The data suggest also that a perceived improvement in language ability took place because of the read-alouds. The data furthermore suggest that the read-alouds evoked elements that were enjoyed by the majority of participants such as input, understanding, feeling, and method of learning. Plus, they seem to indicate that the majority of participants were able to put the perceived improvements to which they agreed in Question 4 into concrete words and statements. Those revealed that participants felt they improved in terms of reading, listening, speaking, writing, and vocabulary in German.

Overall, these results show that the majority of participants enjoyed many elements of the read-alouds. For two participants no answers were recorded in that regard. None of the participants did not enjoy elements of the read-alouds. Lastly, the results indicate that half of the participants perceived concrete elements of improvements. For five participants no answers were recorded here. To sum it up, the read-alouds created elements that most of the participants enjoyed, and almost all participants expressed perceived language improvement. Participants were sensitive to these changes and concluded that their reading, listening, speaking, writing, and vocabulary knowledge progressed.
4.5 Conclusion

The overall analysis of the results on L2 read-aloud enjoyment can be summarized as follows: In the pre-intervention surveys, the majority of participants reported they experienced read-alouds mostly during childhood, less frequently as teenagers and nearly never as adults. In almost all cases a person other than a sibling did the read-alouds. Most of the read-alouds were done in the participants’ first language(s) and not in a foreign language. All participants experienced read-alouds by a teacher in their first language(s) and only a few participants by a foreign language teacher. The majority liked the read-alouds in their first language(s). Those participants who were read to in a foreign language liked the read-alouds as well. Elements that were enjoyed during read-alouds in first language(s) were engagement, relaxation, fun, bonding, listening to and enjoying the story. Aspects that were enjoyed during foreign language read-alouds were text comprehension, language understanding, pronunciation and listening comprehension. The minority of participants did not like to read to others in either their first language(s) or in a foreign language. Most participants agreed to liking German books read to them during class time in the future.

The post-intervention survey revealed that the majority of participants liked the read-alouds done in class. Most participants wanted to continue read-alouds in German in their German classes. A minority would not like to read to others in German after the read-alouds. Nearly everyone thought their language skills improved. Elements of the read-alouds that were enjoyed by participants were input, understanding, feeling, and method of learning. Almost all participants expressed a change in the skill of reading, listening, speaking, writing, and vocabulary.
These results have interesting implications in regard to the suitability of read-alouds in college-level education, the potential benefits of read-aloud enjoyment in pedagogical terms, and the difference between self-perception about learning gains and actual, measurable language performance. First, the data showed clearly that, in the past, the largest group of participants experienced read-alouds in their first language(s) as children, not very often as teenagers and less often as adults. This tells us that read-alouds are a common practice when children are younger. Furthermore, we learn that read-alouds are often done by people other than siblings e.g., parents, caregivers, etc. since the majority of participants were not read to by their siblings. We can see as well that the practice is very popular in school since all participants reported to having a teacher read to them in school in their first language(s) as children, teenagers, or adults. In contrast, only a few participants experienced read-alouds in a foreign language as children, teenager, or adults. This informs us that read-alouds are not a regular method in the foreign language classroom, neither in elementary, secondary or higher education.

When we look at the results about enjoyment, we discover that that read-alouds are enjoyable events in general for children and teenagers. This is because, before the interventions, nearly everyone enjoyed the read-alouds in their first language(s) as children or teenagers and some participants expressed certain elements they enjoyed. Furthermore, some participants reported that they also experienced (and enjoyed) read-alouds in their foreign language classes in middle school and in high school. And after the interventions, the majority of participants reported that they would like to have German books read aloud to them during class time even on the college level. Thus, even college-level students are open toward read-alouds in higher foreign language education. It indicates that this instructional method offers instructors a relevant pedagogical tool.
Second, L2 read-aloud enjoyment is manifest in the post-test, after the interventions. Here, most of the participants reported that they enjoyed the read-alouds, despite the fact that they were in a foreign language, and not in their first language(s). Furthermore, most of the participants seemed to request more read-alouds when they affirmed that they would have liked to have more time devoted to German books being read out loud by the teacher in this class and in future German classes. In addition, the majority expressed enjoyable elements such as input, understanding, feeling, and method of learning. None of the participants expressed that they did not like anything about being read to in class. A further interesting finding in that context is that one participant who had expressed not to have read-alouds during class in the pre-test (P6), now, after the interventions, had changed opinion and would have liked even more class time spent on L2 read alouds, indicating that they enjoyed the experience and found it valuable for their learning.

Last, it is interesting to note that a large group of the participants expressed perceived language improvements because of the read-alouds. In fact, half of the participants reported improvements in reading, listening, speaking, writing, and vocabulary. For two participants, I was able to verify that their perception about improved reading comprehension was in fact real; I matched up the data with the reading comprehension test (see Chapter 3). I compared the results from the reading comprehension test with the participants’ perceptions that stated improvement in reading comprehension in the post-intervention survey (P5, P7, P8, P10), and only for two participants (P5 and P7) the perceived improvements of reading comprehension matched up with improved reading comprehension scores. How can it be that the perceptions of the other two participants (P8 and P10) did not align with the results from the reading comprehension part? One answer could be that perceptions on learning often times do not align with measured results.
because perceptions are subjective and based on emotions that frequently do not represent the reality. Nevertheless, this last finding is captivating and invites more research in that area.

Ultimately, we can learn from these results that read-alouds can be fitting and enjoyable events for adult foreign language learners. Thus, read-alouds could be beneficial for foreign language learning, since agreeability for a certain pedagogical tool can keep the students’ motivation up and enjoyment can keep the affective filter low. Both allow for effective learning. All this speaks for the use of read-alouds in foreign language classes in higher education.

Altogether, this study revealed that when a teacher reads a picture book out loud interactively in the foreign language, that undergraduate students who are learning that language enjoy being read to in that language. It shows the potential of the method to evoke enjoyment during read-alouds. This may support language learning.
CHAPTER 5
CONCLUSION

Reading out loud to others is something that usually takes place in the home settings. However, in educational settings, including in foreign language courses, and particularly in higher education with adult learners, read-alouds do not seem to happen much. At the same time, many benefits of read-alouds have been reported: Doing interactive picture book read-alouds in the first language at home helps children to develop and gain literacy skills, build vocabulary, and enhance speaking and listening. Interactive picture book read-alouds in the first language in school support children in reading, speaking, spelling and writing as well as making meaning. Interactive picture book read-alouds in the first language in higher education foster identity formation, pedagogy, empathy, and writing skill. When it comes to interactive picture book read-alouds at home learning a L2, they foster second language receptive vocabulary and reading of words. Interactive picture book read-alouds also nurture essential elements of language development in educational settings. Finally, implementing interactive picture book read-alouds in higher education when teaching a L2, helps students in all of their four language skills. Also, students become familiar with the new culture if the books are from the culture where the language is spoken. In addition, interactive picture book read-alouds in this context can positively impact foreign language inferencing skills and create positive emotions.

Reading aloud to others in different settings and at different ages have been shown to be beneficial for language learning. Yet, I wished to gain even more insight into this type of reading. I was interested in a number of questions: If research clearly shows benefits for language development through read-alouds in first language(s), what may the benefits of teacher read-alouds be in the context of L2 learning in higher education? Can reading out loud picture
books be an impactful pedagogical method in that context because those books often contain
simple language and pictures that make it easier to comprehend? Can this be done in higher
education foreign language teaching, even though picture books are often seen as something for
children? Why interactive read-alouds? Can this type of reading foster reading comprehension of
undergraduate foreign language students since research reports that it does so for language
students in elementary and middle school, and in higher education? Can this type of reading
create enjoyment in adult learners despite the assumption that adults are bored when being read
to and especially picture books?

I decided on the two following research questions that I wished to investigate, and that
my study set out to answer:
1. Do interactive picture book read-alouds in the undergraduate foreign language classroom
    improve reading comprehension?
2. Do interactive picture book read-alouds in the undergraduate foreign language classroom
    create L2 read-aloud enjoyment in students?

I decided on those two questions because of a number of reasons. First, I was a graduate
teaching associate teaching German at the university level at that time, and I was interested in
effective pedagogical methods for foreign language teaching in that educational setting. Second,
I was surprised that this method had not been used more often with adult foreign language
learners. Research in the past had reported clearly the many benefits of this method for first
languages and for foreign language learning, including reading comprehension. Third, I doubted
that adult learners would not enjoy read-alouds. Fourth, I was of the opinion that if students
enjoy classroom activities, that this would influence their language learning positively. Doing
research in that area then, would contribute to the field. Lastly, I wanted to draw attention to this
pedagogical method. It had been under-researched in the field of higher education foreign language teaching. Yet, it seemed to have the potential to enhance foreign language teaching greatly at that level.

5.1 Results

The results for Research Question 1 can be summarized as follows: Contrary to expectation, reading comprehension did not increase on the group level. However, it stayed the same, and even a small (though statistically negligible) decrease was evident. When looking at a selected number of individual participants, we saw that reading comprehension increased. Also, the time spent on task turned out to be no factor on scores reached. In addition, participants’ times differed for both the tests and intervention surveys. However, the post-test and post-intervention survey participants finished faster than the pre-test and the pre-intervention survey. Furthermore, the post-test scores showed a variety of results, including scores that increased for some participants, scores that decreased for some participants, and a mix of both for others. Overall, for some participants, reading comprehension increased, for some it decreased, and for some, there was no appreciable change.

In terms of Research Question 2 focusing on L2 read-aloud enjoyment, I discovered: Before the interventions, most participants were exposed to read-alouds in their first language(s), when they were young, and most participants enjoyed them. However, only a few participants experienced read-alouds in a foreign language (in middle and high school), but they, too, enjoyed them. In addition, many participants appreciated certain elements during the read-alouds in the first languages(s) and in a foreign language. Before the interventions, many participants reported not liking to read to others in either L1 or L2 contexts. After the interventions, most participants
reported that they liked the read-alouds and several elements of them. Also, many wanted more read-alouds. Yet, most of the participants were not open to reading to others in German after the interventions. Finally, some participants thought they improved their language skills. However, the data on language learning in Chapter 3 do not bear out that perception, at least not in terms of reading comprehension abilities.

5.2 Limitations

Even though my study investigated an innovative teaching method and yielded insightful results, there were a number of limitations. I conducted the study for the first time in the fall semester of 2022, but the book chosen for the read-alouds turned out not to be suitable for the students. Furthermore, not having enough data from the pre-test and the pre-intervention survey, prompted me to break off the interventions after a few weeks. I attempted to implement the study again in the spring semester of 2023. This time, adjustments had been made in terms of book choice and better integration of interventions into class structure. Nevertheless, at that point enrollment for foreign language classes had gone down significantly, leaving the classes in which I did the interventions with a number of around 15–20 students in each class. Nonetheless, I completed all interventions successfully, but only had a fairly small sample size. This was one of the limitations. As mentioned in a different chapter, the sample size was 10, despite the initial sample size of 15. The size of 10 was rather small. Thus, it made the results likely more erratic compared to a data set with 10 times the participants. A replication of my study with a larger sample size would likely make results more reliable and more generalizable.

Another limitation was the time span of all the interventions. For my study, the interventions took place over the range of 7 weeks (including 1 week of break). The choice of
this time span was due to logistical matters in the classes in which the interventions were implemented. The study needed to be successfully embedded into four in-person undergraduate German courses. At the same time, it needed to ensure that those courses still ran as smoothly as possible following their syllabi and course objectives. Repeating this study with a time span of 12 weeks or even an entire semester of 15 weeks could yield more insightful results on the impact of such read-alouds on foreign language reading comprehension. This is because the longer the time span, the better a change can be observed.

As a means for comparison, Santoro et al.’s (2008) study lasted for 15 weeks and yielded a change in comprehension and vocabulary learning in first grade students. The read-alouds were done daily in the first language and included strategies to improve comprehension. In Sun’s study (2020a), the read-alouds took place six times over the course of a term and the data of 24 students suggested that inferencing skills and positive emotions were fostered (The article does not make it clear if the read-alouds happened weekly or biweekly.). Elley’s (1989) two-folded read-alouds study included 157 participants in the first experiment and 178 participants in the second experiment. Each experiment took seven days and indicated vocabulary acquisition through the read-alouds.

A last limitation was the design to collect the data. As explained in Chapter 2, for each of the test and the intervention-survey participants received one link that provided access to both the reading comprehension test and the read-aloud enjoyment intervention-survey. This, on the one hand, helped in terms of organization and not overwhelming participants with too many links. It could have been confusing and possibly impacting participants to not complete the tests and intervention surveys at all. On the other hand, this decision hindered a more accurate analysis concerning the time spent on the reading comprehension test and scores reached. In the
future, the design of the data collection for this type of study may be reconsidered in order to have more definite results on time and scores.

5.3 Discussion

How do the results of my study connect to studies in the field of adult foreign language learning? I begin with the results from the reading comprehension tests. My study showed no significant growth in the mean score for all participants, pointing to no growth in reading comprehension for all participations. No statistical significance implied that the interventions did not generate a change in reading comprehension for all participants, and that it remained level. These findings on the group level are in contrast to the findings by Mol and Bus (2011), Santoro et al. (2008), and Senawati et al. (2021). Those researchers found that reading comprehension increased through read-alouds. In my study, it did not. Nevertheless, my finding that the scores of some individual participants did increase could be supported by the research.

The results of the L2 read-aloud enjoyment intervention-surveys showed that the majority of participants experienced read-alouds in their first language(s) as children, not very often as teenagers, and less often as adults. This tells us that read-alouds are a common practice when children are younger. We see that reflected in previous studies. Here, studies were often done with the following age groups: in preschool (Bus et al., 1995; McCormick, 1983; McGee & Schickedanz, 2007), kindergarten (Beck & McKeown, 2001; Kindle, 2009; Klesius & Griffith, 1996; McGee & Schickedanz, 2007; Mol & Bus, 2011; Morrow & Smith, 1990; Wiseman, 2011), elementary school (Barrentine, 1996b; Beck & McKeown, 2001; Fisher et al., 2004; Kindle, 2009; McCormick, 1977; Mol & Bus, 2011; Morrow & Smith, 1990; Santoro et al., 2008), and middle school (Fisher et al., 2004; Marchessault & Larwin, 2013; Mol & Bus, 2011).
These studies could either indicate that read-alouds are often done in those grades in general or seen as most fitting to study and/or implement in those contexts. Nonetheless, my finding of it being a common practice when children are younger aligns with former research.

The result that only the minority of participants experienced L2 read-alouds in foreign language classes seems to align with the presented literature and was not surprising. We have seen that just a moderate number of studies has been done in the area of second and some in foreign language learning, implying the limited use of read-alouds in those settings. Interestingly, these studies were not done specifically in L2 classrooms in which languages other than English were taught. ESL and EFL studies were done in kindergarten (Cole et al., 2017; Fitton et al., 2018), elementary school (Cole et al., 2017; Fitton et al., 2018; Giroir et al., 2015; Hickman et al., 2004; Senawati et al., 2021), middle school (Amer, 1997; Fitton et al., 2018; Sun, 2020b) and high school (Rahimi & Farjadnia, 2019; Sandy & Mukti, 2020). Based on my data, my finding suggests that read-alouds are not a common practice in L2 classroom (other than ELL/ESL), neither in elementary, secondary or higher education. This, however, needs to be investigated more. Besides, the findings that the majority of participants reported having enjoyed the read-alouds in the foreign language and five of those expressed certain enjoyable elements align with the findings in Sun’s (2020a) study.

Lastly, my findings that the majority, before the interventions, did not like to read to others in the first language(s) and in a foreign language and, after the interventions, still did not like to read out loud in a foreign language cannot be aligned with other studies. This is because the discussed research does not seem to have explored the issue of enjoyment in connection to reading aloud to others in first language(s) and foreign language in higher education. This suggests that more research is necessary in this area.
Some of my findings supported former research. Even though my findings did not show a significant increase of reading comprehension on the group level, my findings do support that reading comprehension can increase for individuals through the use of read-alouds. Second, my survey-data reflected that teacher read-alouds seem to be a common practice in class when children are younger. This means that students in higher education are used to them, and thus, potentially open to engaging with them once more. Also, my survey results aligned with the overall finding in the field that adult foreign language learners can and often do enjoy read-alouds and/or elements of them in higher education.

My study showed that there was no change in reading comprehension given the scores. Yet, participants reported improvement in that area. Even though this was not seen in the scores, was an improvement observable in class? While I was doing the read-alouds in class, I noticed that students utilized the strategies to improve reading comprehension. That does not reflect an improvement of students in reading comprehension per se, but it does indicate that students were able to utilize the strategies taught during the read-alouds. This eventually might show its fruits, at a later point, in the development of students’ reading competencies. When applying the strategies repeatedly, students might feel more comfortable comprehending a text and possibly understanding a text better. That would be seen, for instance, when they are answering comprehension questions or when they are able to summarize a text more accurately.

Some instructors may be concerned about the potential risk of infantilizing students through the use of picture books. Picture books are generally considered more suitable for children than for adults. Thus, when doing interactive teacher read-alouds of picture books with adult learners in the foreign language classroom, some students might not be open toward that method. In order to motivate students to participate, it is important that instructors themselves are
convinced of the method and show enthusiasm about the picture book they are going to read aloud to students. Enthusiasm can be contagious and make students curious about the picture book. Also, if instructors choose a picture book that contains content, topics and images that can be discussed with adult learners, students might see the relevance and the positive impact picture books can have on their language learning.

At this point, I would like to provide some recommendations for higher education foreign language instructors to implement read-alouds successfully. When wishing to do read-alouds, it is helpful to ask yourself a number of questions:

1. What type of picture book might be interesting to my students? Giving students a choice of a number of books could be valuable here and offers students agency of their learning.
2. Are the images supportive of the text?
3. Are the language level and sentence structure matching the level and skills of my students?
4. Do I like the book myself and am I excited to share it with my students?
5. Are the topics discussed in the book appropriate and will students feel comfortable talking about them?
6. Does the book cover topics that connect to material from the textbook used in class or themes discussed?
7. What literacy strategies would I like to teach?
8. What activities are fitting? (Individual, partner or group work; type of skill practiced, etc.)
9. Which parts of the story do I want to read when?

Before doing a first read-aloud, it is helpful for instructors to practice reading the text out loud a number of times. Try to read with clear articulation, pronunciation, and variation. If multiple characters appear in the story, read those in different voices. Also, spend some time looking at
the illustrations beforehand. Is there something surprising or interesting that you want to point out to your students? These recommendations will help making read-alouds an engaging experience for all involved.

5.4 Future Research

Overall, given the dearth of studies in adult foreign language education and interactive picture book read-alouds, more research is needed on read-alouds in general. My study, along with the studies of Sun (2020a) and Dhaif (1990), investigated certain elements (reading comprehension and perceptions of interactive picture book read-alouds), but much more studies are needed on different language skills, and across world languages. This way, foreign language educators in higher education are able to make informed decisions on the use of the pedagogical method of interactive picture book read-alouds. Further, the limitations of my study prompt the following questions: If my sample size is larger, can I expect the same results in terms of whether the scores on reading comprehension may increase, stay level, or decrease? How is reading comprehension impacted if the time span of the interventions is longer than 7 weeks? In other words, are more longitudinal studies needed to address my research questions? Is there a correlation between time spent on task and scores reached if the design to collect the data is different?

Specifically, I suggest studies that investigate the use of interactive picture book read-alouds in elementary, secondary or higher education foreign language classrooms that teach languages different from ELL/ESL. As cited above, studies have been done often with ESL and some with EFL populations. However, studies that address explicitly L2 classrooms in which languages other than English were taught seem rare. I also call for read-aloud studies with
multiple texts and a pre-test and post-test design because neither my study nor former research utilized these aspects. Further, it would be enriching to learn if young listeners of read-alouds become persons that like to read to others. In term of language skills, future studies could measure the acquisition of vocabulary (knowledge and spelling) and a change in writing skills (grammar). Also, impacts on listening comprehension (pronunciation) could be researched in this context. Moreover, scholars could investigate how interactive teacher read-alouds of picture books influence speaking skills (fluency and sentence structure).

In closing, should instructors in higher education foreign language classes consider using interactive picture book read-alouds in their classrooms? My answer is yes. However, I am also aware that it is not doable in every lesson and requires additional preparation time. Still, I invite instructors to consider this pedagogical method and read picture books to their students interactively, often. Even though my data on language learning was inconclusive due to challenging limitations (short time span, small data pool, and no reading comprehension increase), my data on the emotional effect of this instructional method was encouraging. Participants enjoyed the interactive picture book read-alouds. Liking an instructional method and feeling that it is good for oneself is important for learning. This suggests that incorporating interactive picture book read-alouds appears to be beneficial overall, given the findings of previous studies.
REFERENCES


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https://doi.org/10.1007/s10643-010-0426-9


APPENDIX

UTK Knoxville Main Campus IRB Application (Version 1.3)

1.0 General Information

* Please enter the full title of your study.

Interactive Teacher Read-Alouds of Picture Books in the Undergraduate German Language Classroom and Their Effects on Foreign Language Reading Comprehension and Read-Aloud Enjoyment

* Please enter a working title up to 15 characters:

L2 read-alouds
Working Title

2.0 Add departments

2.1 * List all departments and affiliate institutions associated with this study/project. Please select the PI's home department as the primary department for this study (after it is not pre-selected)

<table>
<thead>
<tr>
<th>Is Primary?</th>
<th>Department Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑</td>
<td>UTK - College of Arts &amp; Sciences - Modern Foreign Languages</td>
</tr>
</tbody>
</table>

3.0 * Assign key study/project personnel (KSP) access to the project

3.1 * Please add a Principal Investigator for the study. If this is a student project your faculty advisor should be listed as the Principal Investigator:

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Huth, Thorsten</td>
<td>Principal Investigator</td>
</tr>
</tbody>
</table>

3.2 If applicable, add additional investigators (collaborators from outside the institution should be listed in section (1200) Site Information and not here):

Add any Co-Investigators, Sub-Investigators, or Co-PIs here: If this is a student project, list the student as a Co-Investigator, Sub-Investigator, or Co-PI

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geyer, Mareike</td>
<td>Co-PI</td>
</tr>
</tbody>
</table>

b) Research Support Staff

Figure A1: IRB Application
3.3 Please add a Study Contact: Students must include their advisor as well as themselves in this section.

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
<th>Training Record</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geyer, Mareike</td>
<td>Study Contact</td>
<td>View Training Record</td>
</tr>
<tr>
<td>Huth, Thorsten</td>
<td>Study Contact</td>
<td>View Training Record</td>
</tr>
</tbody>
</table>

If applicable, list student Co-Investigators or Sub-Investigators here.

3.4 Select the Department Review Chair (DRC) and Department Head:

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
<th>Training Record</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camo, Luis C</td>
<td>Department Chair</td>
<td>View Training Record</td>
</tr>
<tr>
<td>Hao, Yen-Chen</td>
<td>Department Review Chair</td>
<td>View Training Record</td>
</tr>
</tbody>
</table>

Add the name of the individual authorized to approve and sign off on this protocol from your Department (e.g., the Department Review Chair, Dean, and/or Division Chief).

4.0 (300) UTK IRB Submission

4.1 Project Classification: Indicate whether this is a faculty project or a student project. REVISED 03/15/2022

☐ Faculty Project
☒ Student Project
☐ Other

4.2 Please indicate the correct status of this submission:

☒ I am requesting initial approval for research.
☒ I am registering research that was originally approved on paper by the UTK IRB. (Do not select this option unless instructed to do so by the IRB.)
☒ I am submitting my research in accord with an IRB Authorization Agreement. I am requesting to use an external IRB.
☒ I am registering an Exempt study that will be or has been reviewed by an external IRB.

5.0 (415) UTK Key Project Study Contact Information

5.1 Please "add a new row" and provide the requested information below for all of the following individuals:

☒ Principal Investigator (listed in 3.1)
☒ All investigators and research support staff listed in 3.2
☒ Project Contact listed in 3.3 (if not already included above)
☒ Faculty Advisor listed in 3.4

Figure A1 Continued
6.0 **(417) UTK Key Study Personnel (KSP) Credentials**

6.1 Please “add a new row” and provide the credentials and ROLES for all of the following individuals (Examples include John Smith, PhD - statistician; Mary Jones, graduate research assistant - recruitment)

- Principal Investigator (listed in 3.1)
- All investigators and research support staff listed in 3.2
- Project Contact listed in 3.3 (if not already included above)

Note: Investigators must specify their relevant qualifications and those of other investigators involved in this project to perform the proposed research. Include qualifications of personnel working on portions of the research where special training, certification, or licensing is required for the performance of their tasks. Experience and expertise is required when involving participants classified as vulnerable, such as children, pregnant women, prisoners, cognitively impaired or institutionalized individuals.

<table>
<thead>
<tr>
<th>KSP Name</th>
<th>KSP Credentials and Roles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Huth, Thorsten</td>
<td>PhD-Principal Investigator</td>
</tr>
<tr>
<td>Geyer, Mareike</td>
<td>PhD candidate-Co-Investigator</td>
</tr>
</tbody>
</table>

7.0 **(420) Review Board Routing Questions**

7.1 * Additional Research Compliance

* Select all of the following items that apply to this study.

- [ ] Human-derived materials (cells, cell line(s), tissue, blood, other body fluids, etc)
- [ ] A device will be studied and evaluated including validation testing, in vitro diagnostic testing, etc.
- [ ] Exposure to X-rays and other machine-produced ionizing radiation solely for research purposes
- [ ] Radioactive Materials
- [ ] Potential Biological Hazards (viruses, recombinant DNA, etc.)
- [ ] Chemical Hazards (poisons, explosives, reagents, flammables, carcinogens, etc.)
- [ ] Research involves Animal Subjects
- [ ] A drug and/or biologic is being administered and evaluated as part of the study/project procedures
- [x] Not Applicable

Figure A1 Continued
### 8.0 (468) Funding Source

8.1 * Is there a funding source associated with the study/project?  
- [ ] Yes  
- [ ] No

### 9.0 (470) Funding Source

9.1 Please identify all funding sources (awarded, submitted or pending) supporting this study. Support can be in the form of equipment or device provided at no cost. If you have more than one sponsor in any category, click "Add" to create a new section for each sponsor. Your grant proposal must be submitted with this IRB application. An incomplete application may delay approval of your IRB application. When you are prompted to attach additional study documents, upload your proposal.

<table>
<thead>
<tr>
<th>Sponsor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal</td>
</tr>
<tr>
<td>Foreign</td>
</tr>
<tr>
<td>Private Company</td>
</tr>
<tr>
<td>TN State Government</td>
</tr>
<tr>
<td>Non-TN Government</td>
</tr>
<tr>
<td>Medical Center or University</td>
</tr>
<tr>
<td>Not-for-Profit Organization</td>
</tr>
</tbody>
</table>

9.2 Describe how the entities above are providing funding (For example, "X University, who is the prime awardee on an NIH grant, is subcontracting part of the funded research to UT." "X company is providing a device at no charge so UT will conduct a validity study on the device;" "X organization is paying UT to conduct this study," etc.)

Language Resource Center provided funding ($500) to help defray the design cost of a Canvas reading module for the German undergraduate course that undergoes intervention.

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Figure A1 Continued
10.0 (475) Contract Information

10.1 * Select the office or institution that is processing the grant or contract for this study/project. If there is no grant or contract for this study/project, enter "Not Applicable."

Other

* If you selected "Other," please list the office or institution that is processing the grant or contract for this study/project:

Language Resource Center, UTK

10.2 * Where is the project/proposal in the funding process?

☐ Not submitted (seeking IRB approval as first step)
☐ Submitted but not awarded
☒ Awarded

* Is the proposal title different from this IRB project application?

☐ Yes
☒ No

Please provide the information requested below (if applicable). If you do not know the information, contact the office processing the contract/grant. If there is no assigned number (e.g., proposal has not been submitted yet) enter N/A.

* Cayuse SP Proposal Number

N/A

Sponsor Award Number

Cayuse Award Number

* UT or UTIA Account Number

N/A

11.0 (485) Study/Project Information

11.1 * Are you requesting Full Board, Expedited or Exempt review by the IRB?

☐ Full Board
☒ Expedited
☐ Exempt
☐ Not Sure

12.0 (701) Define "Expedited" and Minimal Risk

12.1 Research that may qualify for Expedited review must present no more than minimal risk to participants. By answering the following questions, you will assist the IRB in determining if your proposal will be granted an Expedited Review. Expedited Review procedures may not be used for classified research involving human participants.

Figure A1 Continued
12.2 * Please select the applicable risk level that the research activities present to participants:

- The research activities present no more than minimal risk to participants
- The research activities present more than minimal risk to participants

12.3 * Please indicate the Expedited category/ies that apply to your study:

- CATEGORY 1(B): Clinical studies of medical devices for which an investigational device exemption application is not required or the medical device is cleared/approved for marketing and the medical device is being used in accordance with its cleared/approved labeling.
- CATEGORY 2: Collection of blood samples by finger stick, heel stick, ear stick, or venipuncture (healthy non-pregnant adults 110 lbs or more, no more than 550mL in 8 weeks and no collection more than 2x a week OR other adults and children not exceeding the lesser of 50 ml or 3 mL per kg in an 8 week period and no collection more than 2x a week)
- CATEGORY 3: Prospective collection of biological specimens for research purposes by noninvasive means
- CATEGORY 4: Collection of data through noninvasive procedures (not involving general anesthesia or sedation) routinely employed in clinical practice, excluding procedures involving x-rays or microwaves. Where medical devices are employed, they must be cleared/approved for marketing
- CATEGORY 5: Research involving materials (data, documents, records, or specimens) that have been collected, or will be collected solely for nonresearch purposes (such as teaching, or internal evaluation, or medical treatment or diagnosis) OR research involving existing information or specimens that were previously collected for research purposes—provided they were not collected for the currently proposed research.
- CATEGORY 6: Collection of data from voice, video, digital, or image recordings made for research purposes
- CATEGORY 7: Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies

13.0 (925) Study/Project Synopsis

13.1 * Click on the bar below and provide a synopsis of the research study addressing the following FOUR items USING these numbered subheadings. Please be sure to use language that is understandable to a layperson whose primary expertise is not in your field of study. Please be sure to provide enough detail that the IRB understands clearly what you propose to do, with whom, and why.

1. Purpose/Objectives of the Study
2. Study Population (including any inclusion/exclusion criteria)
3. Study Procedures
   - describe all interactions/interventions occurring after the participants consent, including sequence of events, data collection methods, time required and setting/location in which they will occur, and/or
   - describe the procedures that are planned for the secondary use of identifiable information and/or identifiable biospecimens.
4. Planned Analyses

1. Purpose/Objectives of the Study
My study sets out to investigate two aspects:

1.) I am going to study measurable L2 learning (reading comprehension) over time as a result of interactive teacher read-alouds of a picture book in L2, with linguistic data, and
2.) I am also going to study measurable psychological and emotional effects (read-aloud enjoyment/during L2 read-alouds; henceforth L2 read-aloud enjoyment) as a result of interactive teacher read-alouds of a picture book in L2.

2. Study Population (including any inclusion/exclusion criteria)

The participants for the study are undergraduate students from 4 similar German classes at the University of Tennessee, Knoxville, that colleagues teach in the Spring semester of 2023.

Each class meets separately and in person for 50 minutes three times a week (Monday, Wednesday, Friday) as required by the university. Each class usually has 20-25 students, 20 is the maximum number of students to enroll for a undergraduate course and thus recruitment for the study is feasible. The language level is 4th semester German (intermediate level).

Participants from all classes represent the treatment group which undergoes the intervention.

I will not teach the classes that represent the treatment groups. Colleague of mine are the instructors of record for these courses. I will only join the class for doing the recruitment and the read-alouds.

3. Study Procedure

Intervention after participants consent:
The intervention consists of three parts. Parts one and three are done only with students who are willing to participate by completing the surveys. Part two is done with all students in the treatment group since it is a regular instructional activity.

First part:
Participants who consented complete the pre-survey. The pre-survey of the treatment group consists of two parts, namely about reading comprehension and L2 read-aloud enjoyment. The surveys are completed online and outside of the class time.

Second part:
I do 6 interactive read-alouds for 50 minutes once a week, over the span of the following 6 weeks. I read with the students interactively the German picture book Die Unami-Bande [The Unami Clique] by Roswitha Wurm, Zvetelina Ortega, and Carolin Meyering.

Third part:
After all the read-alouds, participants who consented complete the post-survey. The post-survey of the treatment group consists of two parts, namely about reading comprehension and L2 read-aloud enjoyment. The surveys are completed online and outside of the class time.

Data collection methods:

Figure A1 Continued
Measurement instruments for reading comprehension are one pre-survey and one post-survey. They are identical. The survey is three chapters from a Klett DAF reader and corresponding reading comprehension exercises provided in the reader for those chapters (See https://www.klett-usa.com/supplements/readers/c-2941). The reader is created for the A1 level.

Measurement instruments on L2 read-aloud enjoyment are one pre-survey and one post-survey on L2 read-aloud enjoyment. They are designed by me and include questions that are answered via three answer items (Yes, No, I do not know) and open ended questions.

For the data collection, I use the software Qualtrics. Qualtrics enables me to create the instruments needed for my study, it ensures secure handling, secure storage of the data and accurate analysis results. With Qualtrics I have created the consent statement and the data collection instruments (the surveys): one pre-survey (The pre-survey of the treatment group consists of two parts, namely about reading comprehension and L2 read-aloud enjoyment) and one post-test (The pre-survey of the treatment group consists of two parts, namely about reading comprehension and L2 read-aloud enjoyment).

The participants consent by completing the the consent statement and willingly filling out the surveys.
All are completed online outside of class time.

Students will self-identify by accessing the surveys themselves. I will join the class and make a verbal announcement about the study. I will be reading a recruitment script (that I created). Via emails the instructors will then provide to the students in all classes an explanatory text on how to complete the consent statement and surveys along with the consent statement link and survey links. There will be a first email (after recruitment), two reminder emails, and a second email (after last read-aloud in treatment group) and two reminder emails (I have created all of those emails).

I worked with OIT to setup the Qualtrics surveys that participants assign themselves a code at the beginning of each survey (that will be the same for each survey). I provided instructions at the beginning of each survey on how the code is created. Also, I worked with OIT to set up Qualtrics so that it does not collect IP addresses and location data when participants fill out the consent statement and surveys, meaning that all surveys including the consent statement were anonymized. They were also set that the responses are counted as incomplete after a year, not a week (default). The consent statement will now be at the beginning of the first survey (as the first block in the survey) so students are directed to the pre-survey after consenting. It was also recommended by OIT that there is only one pre- and one post-survey for the treatment group that each consist of two parts (first part about reading comprehension and second part about read-aloud enjoyment). This way, there is only one link for the pre-survey (that leads them first to the consent statement) and only one link for the post-survey. I followed that recommendation and merged the two pre-surveys (reading comprehension and read-aloud enjoyment) into one pre-survey and merged the two post-surveys (reading comprehension and read-aloud enjoyment) into one post-survey.

Time required:

The intervention that consists of 6 interactive read-alouds of one German picture book will take place over the span of 6 weeks.

Figure A1 Continued
The time required for participants to complete the consent statement and the pre-survey will take place before the intervention. The post-survey will take place after the last read-aloud. They are given about one week to complete the consent statement and pre-survey and about one week complete the post-survey (2 weeks total).

Setting/location in which they will occur:

The study setting is 4 similar German classes at the University of Tennessee, Knoxville. The colleagues will teach in the Spring semester of 2023. Each class meets separately and in person for 50 minutes three times a week (Monday, Wednesday, Friday) as required by the university.

4. Planned Analyses

After the intervention and data collection, I compare the data from the pre- and post-surveys on read-aloud enjoyment within the treatment group from participants who completed the surveys.

The data will be analyzed by applying t-tests using the software called Statistical Package for the Social Science (SPSS). T-tests are statistic tests then reveal whether or not results of a study can be concluded as generalizable and having statistical significance. I compare the data from the pre- and post-survey on L2 read-aloud enjoyment within the treatment group using paired-sample t-tests (Dörnyei, 2007).

References:

14.0 (1075) Background & Current Status of Work in the Field

14.1 Please provide a summary description of work in your field that should provide—to a lay audience—a scientific rationale for your study.

Many people view reading books aloud as an activity that fosters language and literacy learning and offers pleasurable bonding time. These are two main reasons why families and teachers engage in this type of reading. But what is it in the read-alouds that improve the language and literacy of children? Unfortunately, not much research has been done on that particular subfield of read-alouds to answer this question. Some findings, however, do exist in the area of first language learning and read-alouds and confirm benefits of read-alouds on language and literacy learning. When looking at it from an foreign language teaching perspective, this brings up two questions: Could reading-aloud also foster second and foreign language learning? Is there any research in that area?

Research has been done on the topic of read-alouds in the past. Especially its benefits on children’s language and literacy development and learning success was explored in depth.
Scholars have investigated read-alouds in different settings such as at home (Bus et al., 1995; Doudall et al., 2020; McCormick, 1983; Moerk, 1995; Mal et al., 2008; Ninio & Bruner, 1978; Scarborough & Dobrich, 1994), and in school, covering kindergarten, preschool, elementary, middle and high school levels (Beck & McKeown, 2001; Kirsch & Griffith, 1996; Marchessault & Larvin, 2013; McGee & Schickedanz, 2007; Morrow & Smith, 1990; Wiseman, 2011). In both settings read-alouds were also examined when learning or teaching a second and foreign language at home (Farver et al., 2013; Kalia & Reese, 2003; Lau & Richardson, 2021) and in school (Amer, 1997; Giroir, 2015; Hickman et al., 2004; Saravati et al., 2021).

Even though many researchers have studied read-alouds at home, in elementary and secondary education, and in foreign language classrooms over the last years, only a few scholars have explored read-alouds in higher education in connection to foreign language learning (Khodabakhshi & Lagos, 1993; Sun, 2010, 2019). A possible reason for the lack of research in that area could be the assumption that reading picture books out loud is a method only appropriate for children and young adults. However, picture books can be used in undergraduate classroom because of the universal topics presented in the stories to which adult readers can still relate (Aikman, 1995; Bishop & Hickman, 1992; Sun, 2015). Specifically, in the foreign language classroom such books can help the learning of the language because they offer numerous opportunities for language practice and conversations due to the simple language and vivid pictures and visuals. Learners can learn the language through the text and visuals and apply it by discussing the story and images. The text in a picture book supports the learner in making sense of the story since the text has words that carry meaning and thus, make a text accessible and comprehensible. Furthermore, the pictures provide context clues and support the text, its meaning and the comprehension of words. Thus, the visuals may help narrow the gap between little understanding and more understanding. Consequently, imagery and text in combination may support understanding overall and ease the cognitive load, and imagery may make second and foreign language (henceforth L2) linguistic materials more suitable to the learner. Furthermore, this combination may have a psychological and emotional effect as it may make L2 learners feel less overwhelmed by a longer L2 text.

Due to the lack of research on read-alouds in higher education in connection to foreign language learning I wish to study L2 reading comprehension and L2 read-aloud enjoyment over time as a result of interactive teacher read-alouds of a picture book in L2 in undergraduate foreign language classrooms.

References


Figure A1 Continued


## 15.0 (1200) Site Information

### 15.1 * Please list all sites where the study will occur, and list the procedures that will take place at each site.

The site is 4 similar German classes (GERM 212) at the University of Tennessee, Knoxville, that colleagues teach in the Spring semester of 2022. Each class meets separately and in person for 50 minutes three times a week (Monday, Wednesday, Friday) as required by the university.

The participants from all classes represent the treatment group which undergoes the intervention. I visit the colleague's German classes in person before the intervention to do the recruitment in all classes (about 5 minutes) and the intervention in all classes (50 minutes for each interactive read-aloud).

The consent statement and the surveys are taken online outside of the class time.

Describe the research setting (e.g. classroom, clinic, laboratory, office, park, personal computer).

The research setting is 4 similar German classes (GERM 212) at the University of Tennessee, Knoxville, that colleagues will teach in the Spring semester of 2022. Each class meets separately

---

Figure A1 Continued
and in person for 30 minutes three times a week (Monday, Wednesday, Friday) as required by the university.

The data collection takes place on the personal devices of the participants through links that lead them to Qualtrics.

The data analysis takes place on my personal laptop.

15.2  * Are any study procedures occurring at non-UTK sites?

- If a project is to be conducted at, or in collaboration with, another university and/or medical facility, documentation of IRB approval from the other institution may be necessary. See https://irb.utk.edu/reliance-agreements/ for more information.
- If a project is to be conducted at, or in collaboration with, a school, agency, business organization, etc., an official letter of support from the institution must be submitted

☐ Yes ☐ No

15.3  * Will non-UTK researchers be engaged with this project? Engaged means they will take part in recruitment, enrollment/consent, data collection, or data analysis.

☐ Yes ☐ No

16.0  (1400) Participant Population

10.1 Number of participants to be accrued by UTK investigators. [This is the total number of participants you expect to consent. For retrospective review of records, include the total number of files you will have access to.]

* Number of participants to be accrued by UTK investigators. [This is the total number of participants you expect to consent. For retrospective review of records, include the total number of files you will have access to.]

100

* Age range of participants:

| 10-25 |

Is any racial/ethnic/gender group excluded?

☐ Yes

☐ No

17.0  (1488) Vulnerable Participants

17.1 * Will the study include any of the following populations, either as participants enrolled into the study or about whom data or specimens are used in the research? Select ALL that apply, for example, if the study investigates elementary students, select both Students and Children (under age 18).

☑ Students

☐ Children (under age 18)

☑ Children (under age 18) Who are Wards of the State

☑ Individuals Who Have a Pre-Existing Relationship with Investigator (e.g., investigator's own students, employees, advisor/advisee, clients, patients, subordinates)

☐ Employees

☐ Non-English Speakers

☑ Individuals with Limited Literacy or Whose Primary Language is Not English

Figure A1 Continued
18.0 (1490) FERPA

18.1 * In order to conduct this research, are you requesting to use documents or materials that contain information protected under the Family Educational Rights & Privacy Act (FERPA) without obtaining the written authorization of the participants? Information protected under FERPA includes, but is not limited to Social Security Number, Student Grades or Academic History, Student Schedule or Course Rosters, Academic Standing, Student ID Number, Student coursework, and Student GPA.

☐ Yes
☐ No

19.0 (1494) Study/Project Duration

19.1 * What is the anticipated duration of a single participant’s participation in the study/project? The information you provide in this section should match the information you provide in the consent form.

8 weeks

19.2 * When do you anticipate that all study activities will have ended and you will close the study with the IRB? (Note: study activities include data analysis.)

05/23/2023

20.0 (1600) Participant Recruitment

20.1 * Will investigators either

1. collect information from participants through intervention or interaction. This would include any contact with people using questionnaires / surveys (online or in person), email, interviews, focus groups, observations, treatment interventions, etc., or
2. obtain consent from individuals for use of their existing* information and/or biospecimens?

☐ Yes
☐ No

Please ensure that you carefully read and respond to all questions in this section. Although the questions sound similar, each question is asking you to provide different information.

20.2 * Please identify the methods/ sources below that will be used to initially identify potential participants. Select all that apply.

☐ Review of records, data sets, databases, etc. (public or private)
Figure A1 Continued

20.3  Please describe how the identification methods selected above will be carried out. Follow the instructions below as applicable to your research.

* Identify any sources to be used.
  * If the investigators already have access to these sources, describe how it is they have that access.
  * If the investigators do not already have access to these sources, describe the procedures to be used to obtain access.
  * If an investigator's own recruitment repository is being used, either provide the IRB number for the approved protocol or, if not approved by the IRB, describe the procedures used to collect and maintain those data for future research recruitment.

I visit the colleagues' German classes (GERM 212) in person before the intervention at the beginning of one class session. In each class, I make the announcement (written script) to the students about the study and answer questions. I show the recruitment script via the class projector, and when I read the script, so students can follow along. This will last about 5 minutes.

20.4  Please select the recruitment methods below that will be used to contact potential participants and inform them about the research. Select all that apply.

* All recruitment materials to be used for this research must be submitted with the IRB application for review and approval. Neglecting to submit these materials will cause a delay in the review and approval of your study.

DIRECT CONTACT METHODS

- Email
- Postal mail
- Telephone calls
- Face-to-face verbal announcements
- Other
- N/A - Direct contact methods will not be used

Please describe other methods of direct contact:

Participants are contacted synchronously during the in-person class time when I visit the classes to announce the study. Thus, the verbal announcement is also done synchronously during the in-person class time.

INDIRECT CONTACT METHODS

- Public Advertisements in public venues (flyers, posters, bulletin boards, newspapers,
20.5 * Please describe how the recruitment methods selected above will be carried out.

- Include information about venues where advertisements will be posted, social media platforms, where and in what context face-to-face verbal announcements will occur, whether oral scripts or written talking points will be used with announcements and telephone calls, etc.
- If different methods will be used for different populations, such as initially contacting parents versus initially contacting their children, describe those differences clearly.

I visit the colleagues' German classes (GERM 212) in person before the intervention at the beginning of one class session. In each class I make the announcement (written script) to the students about the study. I show the recruitment script via the class projector when I read the script so students can follow along.

Students will also be told that their instructors will send one email with the first link after this first visit and one email after the last read-aloud.

Next, I answer questions from the students in regards to the study.

20.0 * Does the recruitment strategy involve contacting individuals multiple times in an effort to enroll them in the study?

☐ Yes
☐ No

Describe the maximum number of contact attempts to be made and how frequently they will occur.

Instructors will send out a reminder email 3-4 days after the first email (after first visit) and a reminder email 1-2 days before the survey completion deadline.

Instructors will also send out a reminder email 3-4 days after the second email (at the end of the semester (after last read-aloud for treatment group) and a reminder email 1-2 days before the survey completion deadline.

20.7 * Will screening procedures be used to determine participant eligibility?

☐ Yes
☐ No

21.0 (2000) Risks & Benefits

21.1 * Describe the possible risks to participants related to the proposed research activities.
Most research has some degree of risk. It is not sufficient to describe risks as “minimal” without identifying the specific risks.

- Consider the risks of possible harm that are mental/emotional, reputational or social, legal, financial or physical. Risks may also be related to participant populations that are vulnerable to undue influence, inability to understand the research, etc.
- Consider risks related to confidentiality and privacy. Be aware of mandatory reporting requirements.
- If the research presents greater than minimal risk to participants, explain why the research question cannot be answered using procedures or populations that involve less risk.

There are no foreseeable risks for the treatment group. The research project focuses on ascertaining the effects of a new way of teaching reading and reading comprehension in a second language. All courses in the German program at UTK, routinely include reading comprehension instruction. The learning opportunities are and remain directly aligned with the learning goals as set by the UTK German program.

21.2 * Describe ways in which these risks will be minimized.

See 21.1

21.3 * Is there potential for direct benefit to the participant?

- A direct benefit is defined as a benefit arising from receiving/experiencing what is being investigated (purpose/aim of the research), typically an intervention.
- Most research does not offer the prospect of direct benefits to research participants.

- Yes  - No

21.4 * Describe the potential benefits to society/scientific field of study. Also, please describe any potential direct or indirect benefits to participants.

The potential benefits to society/scientific field of study is the knowledge gained from this study for language instruction in the future.
Potential indirect benefits to participants are improvement of reading comprehension and the positive experience of read-aloud enjoyment.

22.0 (2800) Privacy and Confidentiality

22.1 Please ensure that you carefully read and respond to all questions in this section. Although the questions sound similar, each question is asking you to provide different information. You will be asked to describe how you will protect:

1. the privacy of individuals, and
2. the confidentiality of information/biospecimens while these are being
   * collected
   * stored
   * transmitted
   * handled at the end of the project.

Please do not copy and paste the same response in multiple items.

22.2 Privacy, in the context of research participation, refers to an individual’s right to control access to their personal information including access to their body (e.g., collection of their biological specimens). Privacy is an individual’s right to control how other people see, touch, or obtain information about them.
Describe what provisions are in place to protect the privacy interests of participants during the recruitment, screening, consent process, and during participation in the research (e.g., interactions, interventions and data collection procedures).

A list of privacy procedures can be seen by clicking on the Help button to the right.

Privacy and confidentiality are given because the data is collected through the software Qualtrics and the surveys are anonymized.

22.3 The remaining items in this section relate to confidentiality. Confidentiality, in the context of research participation, refers to how private information provided by individuals will be protected from disclosure by the investigators. In what format(s) will information and/or materials be collected/obtained for this research (including consent, data, records, etc.)? Select ALL that apply.

- [ ] Paper
- [x] Electronic
  - Recordings, photographs, images in digital/electronic form
  - Recordings, photographs, images in analog forms (e.g., tapes, hard copies)
  - Biospecimens
  - Other, describe below

22.4 Please describe the procedures that will be used to collect/obtain electronic information for this research. Select all that apply, and then describe your detailed plans in the text box. More information, including examples, of these procedures can be seen by clicking on the Help button to the right.

- [x] Web-based survey - Identify the vendor/survey tool to be used and its security safeguards
- [ ] Computer application (not internet-based)
- [ ] Computer application (internet-based)
- [ ] Social media platforms - Identify the platform(s) to be used and its security safeguards
- [ ] Survey/Research service - Identify the vendor, services provided, confidentiality policies, etc.
- [ ] Mobile/Wireless technology - Identify the technology and its security safeguards
- [ ] Access electronic records

* Provide a complete description of the platform/application/tool including product/tool name, host, security measures, encryption, and how collected data will be maintained and stored by the application/tool.

For the data collection of this study, I use the software Qualtrics. Qualtrics enables me to create the consent statement and instruments needed for my study, it ensures secure handling, secure storage of the data and accurate analysis results.

22.5 Please describe how electronic data and research records will be stored and secured. Select all that apply, and then describe your detailed plans in the text box. More information about some of these options can be seen by clicking on the Help button to the right.

- [x] All research information being collected/received will be completely anonymous (no IP addresses, etc.)
- [x] Access is restricted to authorized research personnel
  - Authentication
  - Secure network server
  - Security software is installed and regularly updated for ALL servers, workstations, laptops, and other devices used in this research study
  - Secured Database or Secured File Hosting Site
  - Secure connections (VPN – Virtual Private Network) to communicate with secure network servers

Figure A1 Continued
22.6 Indicate what safeguards will be used for transmitting identifiable information (data, research records, etc.) or identifiable biospecimens among the research team or with others. This refers to any time these will be shared, transferred, transmitted, chipped or otherwise moved from one location to another (including emailing data to yourself or others). Select all that apply and then describe your detailed plans in the text box. More information about some of these options can be seen by clicking on the Help button to the right.

☐ Secure network
☐ Authentication
☐ Secured Database or Secured File Hosting Site
☐ Secured File Sharing Site (e.g., UT Vault)
☐ Secure connections (VPN - Virtual Private Network) to communicate with secure network servers
☐ Encryption
☐ Other (including non-electronic transfer)
☐ None of the above (no identifiable information or biospecimens will be transmitted or shared)

* Provide a detailed description of your plans. Your description should include any coding procedures that will be used, as well as who will have access to the code key, and where it will be stored.

Type "n/a" if not applicable to the study.

n/a

22.8 Describe any other protections to be used. A list of protections can be seen by clicking on the Help button to the right.

Type "n/a" if not applicable to the study.

n/a

22.9 Describe the condition(s) of the study data at all points during the research (when data are collected/received; storage prior to analysis; during analysis; and when analysis is completed). Select all that apply and then describe your detailed plan in the text box.

☐ All information/biospecimen were collected/received without identifiers. To see a list of points considered to be identifiers, click the Help button.
☐ All identifiers will be stripped and the code key, if any, destroyed prior to analysis.
☐ Information/biospecimens are coded and a code key linking identifiers to participants exists, but the research team is prohibited from accessing it.
☐ Information/biospecimens will either include direct identifiers or participants can be re-identified by the researchers.
☐ Other

* Provide a detailed description of your plans.
22.10 Presentations/Publications

- Are there plans to use any potentially identifiable information about participants in publications and/or presentations about this research, and/or
- Is it possible that individual identities could be inferred from the reports that will be published and/or presented?

☐ Yes  ☑ No

22.12 Describe what will happen to the data/biospecimens at the end of the study (when you have completed all research activity including analysis and have submitted a study termination application to the IRB). Note: This question is not asking about research records such as consent documentation and payment logs that investigators are responsible for retaining after completion of the research. A list of examples for disposition of data/biospecimens can be seen by clicking on the Help button to the right.

Anonymous data will be retained.

### 23.0 (3045) Payment

23.1 * Will any type of payment (money, gift card, course credit or other item) be provided to the participant for participation?

☐ Yes  ☑ No

### 24.0 (3300) Conflict of Interest

24.1 * Do you, any of your study personnel, or any of their immediate families, have any conflicts of interest related to conducting this research project? (Please review the UT COI policy for additional details: http://policy.tennessee.edu/fiscal_policy/00125/)

☐ Yes  ☑ No

24.2 * Do any individuals among the key research personnel (including their spouses, parents, and children) have intellectual property rights (patents, trademarks, or copyrights) in the entity being evaluated in the research and received income related to such rights and interests?

☐ Yes: Key study personnel or their spouses, parents, or children do have intellectual property rights related to the entity being evaluated and received income related to such rights and interests.

☐ No: Key study personnel (or their spouses, parents, or children) do not have intellectual property rights related to the entity being evaluated.

☐ Not Applicable.

### 25.0 (3329) Informed Consent

25.1

Figure A1 Continued
* Informed consent is a thorough and ongoing process by which the investigator provides certain required information about the research to the participant. Typically the investigator provides this information in writing (i.e., consent form), and the participant documents the decision to participate in the research by signing the consent form.

The IRB recognizes that there are some instances when obtaining a participant’s signature or conducting an informed consent process is not appropriate due to the nature of the research. The regulations provide a mechanism for waiving or altering consent requirements if the research meets specific criteria.

Check the consent procedures below that apply to your research. Select all that apply.

- Written informed consent will be signed by adult participants who are able to consent for themselves.
- Written informed consent will be signed by legally authorized representatives for adult participants who are not able to consent for themselves. For more information about adults with impaired decision-making capacity, click the Help button.
- Written permission will be signed by parents/guardians for child participants. For more information about parental permission, click the Help button.
- Written assent will be signed by children 7 years of age and older who are participants. For more information about child assent, click the Help button.
- Non-English consent materials will be used in the research. (If applicable to the research, select this item in addition to the other consent procedures to be used).
- A request is being made to WAIVE THE REQUIREMENT TO OBTAIN THE PARTICIPANT’S SIGNATURE (i.e., a waiver of documentation of consent) for some or all participants. A consent process will be conducted and participant consent obtained, but without the participant’s signature. For more information about this waiver and its requirements, click the Help button.
- A request is being made to WAIVE THE CONSENT PROCESS for some or all participants. For more information about this waiver and its requirements, click the Help button.
- A request is being made to OMIT OR ALTER ONE OR MORE ELEMENTS OF CONSENT (i.e., an alteration of consent) for some or all participants. For more information about this waiver and its requirements, click the Help button.

26.0 (3375) Waiver of Documentation of (Signed) Informed Consent

26.1 * Because some or all participants will not provide a written signature as documentation of consent, a waiver of documentation of consent is required. Select the option below that is applicable to the research.

- The research presents no more than minimal risk of harm to participants AND involves no procedures for which written consent is normally required outside of the research.
- Participants or legally authorized representatives are members of a distinct cultural group or community in which signing forms is not the norm, AND the research presents no more than minimal risk of harm to participants AND there is an appropriate alternative mechanism for documenting that informed consent was obtained.
- The only record linking the participant and the research would be the consent document and the principal risk of the study is potential harm resulting from a breach of confidentiality. Each participant will be asked whether the participant wants documentation linking the participant with the research and the participant’s wishes will govern. For guidance on this option, click the Help button.
- None of the above

26.2 * Describe the procedures and/or participant population for which this waiver is being requested.

This waiver is being requested for students completing of surveys related to the intervention.

Figure A1 Continued
The participant population is undergraduate students from 4 similar German classes at the University of Tennessee, Knoxville, that colleagues teach in the Spring semester of 2023.

26.4 * Explain how the research involves no more than minimal risk to the participants.

There are no foreseeable risks for the treatment group. The research project focuses on ascertaining the effects of a new way of teaching reading and reading comprehension in a second language. All courses in the German program at UTK routinely include reading comprehension instruction. The learning opportunities are and remain directly aligned with the learning goals as set by the UTK German program.

26.5 * Explain how the research meets the requirement for involving no procedures for which written consent is normally required outside of the research.

The research meets the requirement for involving no procedures for which written consent is normally required outside of the research because participants are adults in the undergraduate /higher education setting.

20.7 * Describe the mechanism used to ensure the informed consent process takes place. Examples include return of completed study materials to the investigator, documentation in the research file that the consent discussion took place and if there were any issues, and use of a cultural custom specific to the study population.

Documentation of informed consent will occur if a participant completes the survey(s).

20.8 * Explain if participants will be provided with a written statement about the research.

Participants will have access to a copy of the consent statement when instructors send the first email along with .pdf file as an attached file.

27.0 (3440) Consent Process

27.1 * Obtaining informed consent is a process that involves more than obtaining a signature on a form. It is a process of information exchange that may include verbal instructions, question-and-answer sessions, and measures of participant understanding and continues even after completion of the research. Obtaining voluntary informed consent is one of the central protections required by all human subjects research regulations and ethical principles.

Provide a detailed description of the procedures used to seek and obtain informed consent, parent permission and/or child assent. Be sure to include the following information. When addressing the items below, the term “consent” refers also to parental permission, consent by a legal guardian, and assent.

- If the research involves multiple populations (e.g., adults, parents, children) or subgroups within a population that use different consent procedures, address each group separately.
- Identify who will obtain consent (can be identified by role on the research team rather than name)
- Describe the location/setting where consent will be conducted/obtained
- Describe when consent will occur and the timing of the consent process including how you will ensure potential participants have sufficient opportunity to consider the information, discuss it and ask questions before making a decision about participation. Describe any waiting period between the consent conversation and the participant’s decision.

Figure A1 Continued
Describe how you will ensure that potential participants understand the information presented to them before they agree to participate in the study.

If applicable, describe any factors that may interfere or influence obtaining voluntary consent from participants and the procedures used to mitigate these factors.

I visit the colleagues' German classes (GERM 212) in person before the intervention at the beginning of one class session. In each class I make the announcement (written script) to the students about the study and answer questions. I show the recruitment script via the class projector when I read the script so students can follow along. This will last about 5 minutes.

Students are told their instructors will send one email with the first link after this first visit along with a pdf file of the consent statement and one email after last read aloud.

The first email will be after this first visit and contains a link to the consent statement. After consenting (clicking Yes, I wish to participate in the study.) the participants will be lead to the pre-survey. The email also lists a date by which participants are asked to have the consent statement and pre-survey completed (ca. 1 week after they received this email).

The second email will be sent after the last read aloud in the treatment group is done. This email contains a link to the post-survey. The email also lists a date by which participants are asked to have the post-survey completed (ca. 1 week after they received this email).

Next, I answer questions from the students in regards to the study.

### 28.0 (3450) Protected Health Information (PHI)

28.1 * In order to conduct this research, or to identify or recruit potential participants, are you requesting to use SOURCE DOCUMENTS or SOURCE MATERIALS that contain the Protected Health Information of persons without their authorization (or with their limited authorization) AND/OR are you obtaining Protected Health Information of persons without their authorization (or with their limited authorization), such as through telephone screening? Note: Source documents/materials are documents/materials from which you are going to abstract information in order to conduct this research or to identify or recruit potential participants, for example, a patient's medical record.

- Yes, I am requesting to use source documents/materials that contain Protected Health Information (PHI) of persons (living or dead) without their authorization (or with limited or altered authorization) to conduct the study, or to identify or recruit potential participants.
- No, I am not requesting to use source documents/materials that contain Protected Health Information (PHI) of persons (living or dead) without their authorization (or with limited or altered authorization) to conduct the study, or to identify or recruit potential participants.

28.2 * Are you proposing to collect Protected Health Information for research purposes?

- Yes
- No

### 29.0 (100000) Routing for Signatures and Attaching Documents

29.1 The following text box is provided in the event that you need to share additional information with the Review Board.

29.2 After clicking the ”Save and Continue” button, you will advance to the routing form in order to attach any supporting documents (such as consent forms) and to send the submission to the necessary personnel for their signatures. Please Click on "Save and continue..."
Consent for Research Participation

Research Study Title: Effects of picture book read-alouds on language learning
Researcher(s): Mareike Geyer, University of Tennessee, Knoxville
Professor Thorsten Huth, University of Tennessee, Knoxville

Why am I being asked to be in this research study?

We are asking you to be in this research study because you are an undergraduate student learning a language and therefore, you fit our research study criterions. You must be age 18 or older to participate in the study. The information in this consent form is to help you decide if you want to be in this research study. Please take your time reading this form and contact the researcher(s) to ask questions if there is anything you do not understand.

What is this research study about?

The purpose of the research study is to study the effects of picture book read-alouds on language learning.

How long will I be in the research study?

This study will be concluded within 8 weeks during the Spring semester of 2023.

What will happen if I say “Yes, I want to be in this research study”?

If you agree to be in this study, we will ask you to:

- Participation in this study does not result in earning extra credit for this class.
- Once a week, for 50 minutes during class, you will read a picture book with the researcher Mareike Geyer and other classmates and do tasks related to that read-aloud.
- The reading of the picture book is part of the teaching routine and all students will participate.
- Complete 2 online surveys outside of class; 1 before the first read-aloud and 1 after the last read-aloud. Both consist of two parts.
- The 2 online surveys are part of the research procedure and include questions about reading comprehension and read-aloud enjoyment.
- The collection of the data, so your answers in the surveys, is anonymous.

What happens if I say “No, I do not want to be in this research study”?

The read-alouds of the picture book is part of the class and involvement in this activity is part of how this class is taught. Being in this study, which means taking the surveys, is up to you. You can say no now or leave the study later. Either way, your decision won’t affect
your grades, your relationship with your instructors, or your standing with the University of Tennessee.

What happens if I say “Yes” but change my mind later?

Even if you decide to be in the study now, you can change your mind and stop until you submit the surveys. After you submit the surveys, we cannot remove your responses because we will not know which responses came from you.

Are there any possible risks to me?

We don’t know of any risks to you from being in the study that are greater than the risks you encounter in everyday life.

Are there any benefits to being in this research study?

There is a possibility that you may benefit from being in the study, but there is no guarantee that will happen. Possible benefits include improvement of reading comprehension and the positive experience of read-aloud enjoyment.

We hope the knowledge gained from this study will benefit language instruction in the future.

Who can see or use the information collected for this research study?

The surveys are anonymous, and no one will be able to link your responses back to you. No IP addresses or location data will be recorded. Please do not include your name or other information that could be used to identify you in your survey responses. The only persons with access to the data are the researchers Mareike Geyer and Professor Thorsten Huth.

The surveys are taken through the online data collecting software Qualtrics. No registration for Qualtrics is necessary.

Information collected for this study will be published and possibly presented at scientific meetings.

What will happen to my information after this study is over?

We may share research data with other researchers e.g. at conferences, in presentations and/or publications without asking for your consent again, but it will not contain information that could directly identify you because the data is anonymous.

Who can answer my questions about this research study?

If you have questions or concerns about this study, or have experienced a research related problem or injury, contact the researchers, Mareike Geyer, mgeyer1@vols.utk.edu or Professor Thorsten Huth, huth@utk.edu, 865-974-6938.

A copy of this consent statement will be made available by your instructor.

Figure A2 Continued
For questions or concerns about your rights or to speak with someone other than the research team about the study, please contact:

Institutional Review Board
The University of Tennessee, Knoxville
1534 White Avenue
Blount Hall, Room 408
Knoxville, TN 37996-1529
Phone: 865-974-7697
Email: utkirb@utk.edu

Thank you!
My name is Mareike Geyer and I am a doctoral candidate here at UTK.

Under the supervision of my dissertation director Professor Thorsten Huth, I am doing a study on how to teach German this Spring.

The study is on interactive teacher read-alouds.

I want to see the effects on language learning and enjoyment when a teacher reads a picture book aloud.

First, I want to give you more information on what the study looks like:

- This study will be concluded within 8 weeks during this Spring semester of 2023.
- Participation in this study does not result in earning extra credit for this class.
- Once a week, for 50 minutes during class, you will read a picture book with me and other classmates and do tasks related to that read-aloud.
- The reading of the picture book is part of the teaching routine and all students will participate.

Now, I want to explain what you do, if you want to participate in the study:

- You complete 2 online surveys outside of class; 1 before the first read-aloud and 1 after the last read-aloud. Both consist of two parts.
- The 2 online surveys are part of the research procedure and include questions about reading comprehension and read-aloud enjoyment.

The surveys are taken through the online data collecting software Qualtrics. No registration for Qualtrics is necessary.

Your answers in those surveys, so the collection of the data, is anonymous.

No one will be able to link your responses back to you.

No IP addresses or location data will be recorded.

The only persons with access to the data are the researchers Mareike Geyer (so I) and Professor Thorsten Huth.

Information collected for this study will be published and possibly presented at scientific meetings.

If you do not wish to participate, this means that you are still participating in the read-alouds as this is regular instructional activity but you do not complete the surveys.

Figure A3: Recruitment Text
If you decide you want to participate in the study:

- You need to consent to participate first.
- You consent by completing the consent statement and willingly filling out the surveys.

You complete the consent statement and consequently all surveys in the following way:

- Your instructor will send you two emails with links that lead you to Qualtrics so you can complete the consent statement and the surveys.
- The first email will be sent to you after this first visit. It will also have attached a pdf file of the content statement for you to keep if you are interested in participating in the study.
- The second email will be sent to you after the last read-aloud.
- You have one week to complete the pre-survey and one week to complete the postsurvey.

If you have questions or concerns about this study, or have experienced a research related problem or injury, contact the researchers, Mareike Geyer, mgeyer1@vols.utk.edu or Professor Thorsten Huth, huth@utk.edu, 865-974-6938.

Thank you!

Any questions?

Figure 3 Continued
First email (to the treatment groups after the recruitment):
Dear [instructors],

Thank you for having me in your classes so I can talk about my study!

Would you please sent the following email to the email addresses of your students from your GERM 212 section (not through an announcement on Canvas!).

I have also attached a pdf file of the consent statement to this email. Could you please attach it to the email that you will be sending to your students.

Thank you very much!

Mareike

Hello students,

My name is Mareike Geyer and I am a doctoral candidate here at UTK.

Under the supervision of my dissertation director Professor Thorsten Huth, I am doing a study on how to teach German this Spring. The study is on interactive teacher read-alouds. I want to see the effects on language learning and enjoyment when a teacher reads a picture book aloud.

I joined your class today, told you about my study and gave an explanation on how you can participate in the study, if you wish to do so, by filling out a consent statement and surveys via links.

This email contains the first link I had mentioned during my visit: One link to the consent statement that will also lead you to the pre-survey (consists of two parts) once you have consented.

You only need to complete the consent statement and the surveys if you wish to participate in the study.

If you do not wish to participate in the study, there is no need to decline the consent statement. No action is required from you if you do not wish to participate in the study.

The surveys are taken through the online data collecting software Qualtrics. No registration for Qualtrics is necessary.

Your answers in those surveys, so the collection of the data, is anonymous. No one will be able to link your responses back to you. No IP addresses or location data will be recorded.

Figure A4: Email Texts (sent to Instructors)
The only persons with access to the data are the researchers Mareike Geyer (so I) and Professor Thorsten Huth.

Information collected for this study will be published and possibly presented at scientific meetings.

If you decide you wish to participate in the study, please follow the steps listed below:

1. You need to consent to participate first.

In order to consent, please click this link below that leads you to the consent statement, read the consent statement, and consent to participate in the study by clicking ‘Yes, I wish to participate in the study.’ below the consent statement.

[Link]

Once you have consented, you will be automatically led to the pre-survey for you to complete.

2. Please complete the pre-survey that consists of two parts.

Please complete the consent statement and the pre-survey within a week from today; by [date].

Please remember: The consent statement needs to be completed before you complete the surveys.

An email with the link to the post-survey (consists of two parts) will be sent to you after the last read-aloud. You will also have one week to complete the post-survey.

Attached is a pdf file of the consent statement for you to keep if you are interested in participating in the study.

If you have questions or concerns about this study, or have experienced a research related problem or injury, contact the researchers, Mareike Geyer, mgeyer1@vols.utk.edu or Professor Thorsten Huth, huth@utk.edu, 865-974-6938.

Thank you!

Sincerely,
Mareike Geyer
Subject line: Reminder Email: Research Study on Effects of Picture Book Read-Alouds on Language Learning

Reminder Email (this goes to the treatment groups 3-4 days after the recruitment/the first email and 1-2 days before the survey completion deadline; it contains the same information as provided in the first email as seen above):

Dear [instructors’ name],

would you please sent the following email to the email addresses of your students your GERM 212 section (not through an announcement on Canvas!) as a reminder. Like last time, I have attached a pdf file of the consent statement to this email. Could you please attach it to the email that you will be sending to your students.

Thank you very much!

Mareike

Figure A4 Continued
Second email (to the treatment groups after the last read-aloud):

Dear [instructors’ name],

would you please sent the following email to the email addresses of your students from your GERM 212 section (not through an announcement on Canvas!).

Thank you very much!

Mareike

Hello students,

My name is Mareike Geyer and I am a doctoral candidate here at UTK.

Under the supervision of my dissertation director Professor Thorsten Huth, I have been doing a study on how to teach German this Spring. At the beginning of the semester, I joined your class and told you about my study.

This email contains the last link I had mentioned during my visit:
One link to the post-survey that consists of two parts.

You only complete the post-survey if you consented to participate in the study at the beginning of the semester.

If you did not consent to participate in the study at the beginning of the semester, no action is required from you.

If you consented to participate in the study at the beginning of the semester, please follow the steps listed below:

1. Please complete the post-survey that consists of two parts.

In order to complete the post-survey, please click the link below that leads you to the post-survey:

[Link]

Please complete the post-survey within a week from today; by [date].

If you have questions or concerns about this study, or have experienced a research related

Figure A4 Continued
problem or injury, contact the researchers, Mareike Geyer, mgeyer1@vols.utk.edu or Professor Thorsten Huth, huth@utk.edu, 865-974-6938.

Thank you!

Sincerely,
Mareike Geyer

Subject line: Reminder Email: Research Study on Effects of Picture Book Read-Alouds on Language Learning

Reminder Email (this goes to the control groups 3-4 days after the last read-aloud/the second email and 1-2 days before the survey completion deadline; it contains the same information as provided in the second email as seen above):

Dear [instructors’ name],

would you please sent the following email to the email addresses of your students from your GERM 212 section (not through an announcement on Canvas!) as a reminder.

Thank you very much!

Mareike

Figure A4 Continued
Block 2

Instructions:
Before filling out this survey, please assign yourself a six digit code.
The survey will be anonymous,
Thank you.

For assigning yourself a six digit code, please follow the steps below,
Please write all the digits in a row, capitalize the letters, leave out spaces, e.g. XY1234.

1. For the first digit: write the last letter of your last name.
2. For the second digit: write the first letter of the city in which you were born.
3. For the third through sixth digit: write the last four numbers of your cell phone number.

Block 3

Instructions:
Please read the following two German texts and answer the questions about the texts.
Thank you.

Block 4

Figure A5: Identical Pre-Test and Post-Test on Reading Comprehension (as displayed online in Qualtrics) Note. The test below was adapted from Einmal Freunde, immer Freunde: Leicht und logisch A1 – Lektüren für Jugendliche, by P. Rusch (1st ed., pp. 12–14, 24–26, 43, 48), 2017, Ernst Klett Sprachen, Stuttgart.

Das Hammer-Konzert!

„Hey, cool! Hast du das gesehen?“ Kolja zeigt auf ein Plakat.
„Was, wo?“, fragt Robbie.
„Da, lies doch!“


Wie? Ich geh doch nicht mit Paul zu einem Konzert. Der ist so blöd. Und hat keine Ahnung von Musik!

Ach so?
Ja, so ist das. Und du musst auch nicht mitkommen. Aber du kannst ja mal ein paar Songs anhören. Willst du sie auf deinem Handy haben?
Mhm, ja, ich kann sie ja wieder löschen8.
Die löschtst du nie mehr! Da bin ich sicher.

Die Musik ist nicht schlecht. Und Robbie geht gern auf Konzerte. Er zeigt Nadja das Plakat, aber sie will nicht mitkommen.

7 Alter: eigentlich: alter Mann, hier: Anrede für Jungen
8 löschen: vom Player oder Computer wegmachen

Figure A5 Continued
„Wäh, der Typ sieht so schmutzig aus. Und die Haare, oh my God! Den mag ich nicht.“


Das ist meine Musik.
I’m a Reggae-man.

Figure A5 Continued

Ein paar Wochen später trifft Kolja Robbie auf dem Weg von der Schule.

☐ Hey Robbie, wie geht’s? Du, ich muss dich etwas fragen. Wir machen ein Fest im Jugendzentrum. Spielst du mit deiner Band?
☐ Ich habe keine Band mehr. Die ’Wild Guitars’ waren doch Kinderkram\(^\text{11}\). Ich mache jetzt Musik. Richtige Musik!

\(^9\) etwas ist schmutzig: man muss es waschen
\(^10\) Ein Hammerl: spitze, super, einfach toll
\(^11\) der Kinderkram: das war dumm, ist vorbei

☐ Vielleicht. Ich muss überlegen\(^\text{12}\).
☐ Mach das. Ihr könnt doch nicht einfach so aufhören\(^\text{13}\). Eine Party zum Schluss muss schon sein. Ich rufe dich morgen an.
☐ Das kannst du gern probieren. Viel Glück!

Robbie grinst\(^\text{14}\). Kolja weiß nicht, warum.

*Figure A5 Continued*
Was weißt du über Kolja, Robbie und das Konzert? Kreuze an: richtig oder falsch?

1. Kolja zeigt Robbie das Plakat für das Konzert. ☒ ☐

2. Paul will nicht zum Konzert mitkommen, deshalb fragt Kolja Robbie.

☐ Richtig  
☐ Falsch

3. Robbie kennt den Sänger und die Band Neun Meilen schon.

☐ Richtig  
☐ Falsch

Figure A5 Continued
4. Kolja gibt Robbie ein paar Songs von *Neun Meilen*.
   - Richtig
   - Falsch

5. Nadja möchte auch zum Konzert kommen, aber Robbie geht lieber allein.
   - Richtig
   - Falsch

6. Robbie findet die Musik und die Texte super.
   - Richtig
   - Falsch

7. Kolja und Robbie sehen sich jeden Tag in der Schule.
   - Richtig
   - Falsch

8. Kolja spielt jetzt auch in der Band *Wild Guitars*.
   - Richtig
   - Falsch

*Figure A5 Continued*
9. Robbie will nicht mehr mit seiner Band *Wild Guitars* spielen.

☐ Richtig
☐ Falsch

**Endlich auf Klassenfahrt**

Im Januar und Februar ist alles wie vor den Weihnachtsferien. Die Stimmung\(^25\) ist oft schlecht, oft gibt es Streit in der Klasse. „Was ist nur los?“, denkt Frau Müller. „Hoffentlich ist die Stimmung auf der Klassenfahrt besser."

Eine Woche vor der Abfahrt bringt Frau Müller das Programm mit in die Klasse.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td><strong>Mo, 19.03.</strong></td>
<td>10:30</td>
<td>Abfahrt von der Schule</td>
</tr>
<tr>
<td></td>
<td>ca. 16:00</td>
<td>Ankunft im Ferienheim Schneekönig, Zimmer einteilen</td>
</tr>
<tr>
<td></td>
<td>18:00</td>
<td>Abendessen</td>
</tr>
<tr>
<td><strong>Di, 20.03.</strong></td>
<td>ab 9:30</td>
<td>Programm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gruppe A Snowboardkurs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gruppe B Skikurs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gruppe C Wanderung im Schnee und fotografieren</td>
</tr>
<tr>
<td><strong>Fr, 23.03.</strong></td>
<td>8:00</td>
<td>Frühstück</td>
</tr>
<tr>
<td></td>
<td>10:00</td>
<td>Abfahrt</td>
</tr>
<tr>
<td></td>
<td>ca. 15:30</td>
<td>Ankunft an der Schule</td>
</tr>
</tbody>
</table>

*Figure A5 Continued*
Endlich ist es so weit. Der Bus fährt los.

Frau Müller nimmt das Mikrofon. „Leute, hört mal zu! Hier habe ich die Liste für die Zimmer. Wir haben Zimmer mit drei und vier Betten. Die Jungs bekommen die Zimmer im ersten Stock, die Mädchen die Zimmer im zweiten.“

Die Stimmung ist schlecht: Die Schüler haben keinen Spaß.

Paul will mit Anton in ein Zimmer.
„Fragen wir noch Kolja?“, fragt Anton.
☐ Nein, auf keinen Fall.
☐ Warum nicht? Kolja ist doch dein Freund.
☐ War, Anton, war! Du kannst ja mit Kolja ins Zimmer, ich nicht.
☐ Ach so, ja dann! Warum eigentlich?
☐ Das ist eine lange Geschichte.
☐ Dann fragen wir doch ...


Endlich kann die Klasse aus dem Bus raus. *Ferienheim Schnee-könig* steht auf dem Haus. Aber wo ist der Schnee?
„Da oben sieht es super aus. Da fahren wir Snowboard.“ Paul zeigt hinauf in die Berge. „Und hier unten lernen die Anfänger26 Skifahren.”
„Ist das alles? So wenig Schnee?” Kolja will Skifahren lernen und er sieht nicht gerade glücklich aus.
„Für Anfänger wie dich ist das gut genug”, sagt Paul und geht weg.

26 der Anfänger: eine Person kann etwas noch nicht, muss es erst lernen

Figure A5 Continued
„Pia, Pia!“ Nadja ist sauer. „Mein Handy geht nicht! Ich kann nicht simsen. So ein Mist! Das kann doch nicht sein!“
Pia lacht ein bisschen und nimmt ihr Handy.
○ Also, mein Handy ist in Ordnung. Du hast aber auch Pech²⁷!
○ Was? Warum geht mein Handy nicht?
■ Willst du Robbie eine SMS schreiben?
Kolja findet seinen Witz gut und lacht. Aber nur er.
„Du bist so blöd. Robbie hat kein Handy mehr, das weißt du doch genau. Und es gibt nicht nur Robbie auf der Welt ...“
Nadja sieht Kolja sehr böse an.
Pia will ein bisschen nett sein.
○ Hm, du kannst vielleicht ein paar SMS von meinem Handy schreiben. Ein paar!
○ Und du liest dann die Antworten? Oder wie?
○ Hej, du musst mein Handy ja nicht nehmen.

Nach dem Abendessen erklärt ein Skilehrer das Programm für den nächsten Tag.
„Die Snowboarder und Skifahrer fahren um 9:30 Uhr auf den Berg.“
„Die Anfänger auch?“, fragt Kolja.
„Klar, alle!“
Kolja zischt²⁸ zu Paul: „Du hast ja keine Ahnung!“

„Und wo machen wir die Wanderung im Schnee?“, möchte Anton wissen.
„Kannst du keinen Schnee zaubern?“, ruft ein Schüler laut.
„Keine Angst“, sagt der Skilehrer, „weiter oben ist genug Schnee.“

²⁷ Pech haben: kein Glück haben
²⁸ zischen: leise, gar nicht freundlich sprechen

Figure A5 Continued
Was passiert? Ordne die Sätze.

1. Vor der Klassenfahrt gibt es oft Streit in der Klasse.

Ein Skilehrer spricht mit den Schülern über das Programm.

☐ 2
☐ 3
☐ 4
☐ 5
☐ 6
☐ 7

Frau Müller bringt das Programm in die Klasse mit. Die Schüler können Ski fahren, snowboarden oder wandern und fotografieren.

☐ 2
☐ 3
☐ 4
☐ 5
☐ 6
☐ 7

Am Montagvormittag fahren sie mit dem Bus los.

☐ 2
☐ 3

Figure A5 Continued
Nadjas Handy geht nicht, sie kann nicht telefonieren oder SMS schreiben. Aber sie darf Pias Handy nehmen.

Neben dem Ferienheim Schneekönig gibt es nur wenig Schnee, aber oben auf den Bergen ist viel Schnee.

Wer ist mit wem in einem Zimmer? Die Schüler diskutieren lange.

Figure A5 Continued
Block 5

Instructions:
Please answer the second part of the survey to the best of your ability.
The survey consists of multiple choice questions
and of open-ended questions.
Thank you.

Did someone read books to you in your first language(s) when you were a child?
- Yes
- No
- I do not know

Did someone read books to you in your first language(s) when you were a teenager?
- Yes
- No
- I do not know

Did someone read books to you in your first language(s) when you were an adult?
- Yes
- No
- I do not know

Did a sibling read books to you in your first language(s) when you were a child, a teenager or an adult?
- Yes
- No
- I do not know

Figure A6: Pre-Intervention Survey (as displayed online in Qualtrics)
Did a teacher read books to you in your first language(s) in school when you were a child, a teenager or an adult?

- Yes
- No
- I do not know

Did a foreign language teacher read books to you in school when you were a child, a teenager or an adult (in the foreign language the teacher taught you)?

- Yes
- No
- I do not know

Did you enjoy being read to in your first language(s) at home or in school as a child or a teenager?

- Yes
- No
- I do not know

Did you enjoy being read to in your first language(s) at home or in school as an adult?

- Yes
- No
- I do not know

Did you enjoy being read to in a foreign language in school as a child, a teenager or an adult?

- Yes
- No
- I do not know

Figure A6 Continued
Do you like to read books to others in your first language(s)?

- Yes
- No
- I do not know

Do you like to read books to others in a foreign language?

- Yes
- No
- I do not know

Would you like German books being read out loud by the teacher during the class time?

- Yes
- No
- I do not know

**Block 6**

What did you enjoy about being read to when you were a child, a teenager, or an adult (in your first language(s); at home or in school)?

Why?

What did you not enjoy about being read to when you were a child, a teenager, or an adult (in your first language(s); at home or in school)?

Why?

Figure A6 Continued
**Figure A6 Continued**
Block 4

**Instructions:**
Please answer the second part of the survey to the best of your ability.
The survey consists of multiple choice questions and of open-ended questions.
Thank you.

Did you enjoy the German book being read out loud by the teacher in class?

- Yes
- No
- I do not know

Would you like to have more time devoted to German books being read out loud by the teacher in this class and in future German classes?

- Yes
- No
- I do not know

After being read to in German in class, would you also like to read to others in German now?

- Yes
- No
- I do not know

Do you think your German has improved because of being read to from a German book in class?

- Yes
- No

**Figure A7: Post-Intervention Survey (as displayed online in Qualtrics)**
173

Figure A7 Continued

Block 5

What did you enjoy about being read to from a German book in class?
Why?

What did you not enjoy about being read to from a German book in class?
Why?

How do you think your German has improved or changed because of being read to from a German book in class? Has any of these improved or changed:
Your reading comprehension in German?
Your ability to write in German?
Your ability to speak in German?
Your listening comprehension in German?
Please provide examples.

Powered by Qualtrics
1st Read-Aloud

1st phase:
1. I introduced the strategy of Predicting through illustrations.

2nd phase:
1. Students and I discussed the book cover and the endpaper (here, the area before the very first page of the book), based on questions I had provided. (This phase was only done once, namely when starting the book.)

3rd phase:
1. I modeled the strategy from the 1st phase using the first two pages of the first chapter we were about to read. I read those page to the students out loud.
2. I modeled the strategy again using the third and fourth page of that chapter. I read those pages to the students out loud.
3. Students practiced the strategy using the fifth and sixth page of that chapter, with my assistance. I read those pages out loud.
4. Students practiced the strategy again, now using the seventh and eight page (the last two pages of that chapter), still with my assistance. I read those pages out loud to the students.
5. Students talked to each other in pairs to discuss what happened in that first chapter.
6. As a class activity, we played the online game tool KAHOOT!.
7. Students were given a short summary of what was read in the first chapter. (The last three activities ensured a comprehension check before having students deal more closely with an aspect of the plot and a topic of that chapter. This would follow in the 4th phase. Those three activities appear in every of the six read-alouds.)

4th phase:
1. Based on a prompt, students wrote an individual reflection on an aspect of the plot of the chapter (done in the learning management system of the course).
2. Based on another prompt, with a partner or as a group, students discussed a topic of the just read chapter. (That topic or an extension of it was connected to what had been covered in the textbook during that time.)
3. Students reported their answers from the discussion and the responses were collected on the white board.
4. I ended the 4th phase, and the entire interactive read-aloud was finished for that day.

Figure A8: Six Read-Aloud Descriptions
2nd Read-Aloud

1st phase:
1. Before the 1st phase, students were given a short summary of what was read during the last read-aloud.
2. Students reviewed the strategy of Predicting through illustrations and its three steps learned during the last read-aloud.

3rd phase:
1. Students applied the strategy to the first two pages of the second chapter we were about to read. I read those pages to the students out loud.
2. Students applied the strategy again, now using the last two page of that chapter. I read those pages out loud to the students.
3. Students applied the strategy to the first two pages of the third chapter of the book. I read those pages to the students out loud.
4. Students applied the strategy again, now using the third and fourth page of that chapter. I read those pages out loud to the students.
5. Students applied the strategy one last time, now to the fifth page. I read that page out loud to the students.
6. Students talked to each other in pairs to discuss what happened in that second and third chapter.
7. As a class activity, we played the online game tool KAHOOT!.
8. Students were given a short summary of what was read in the second and third chapter.

4th phase:
1. Based on a prompt, students wrote an individual reflection on an aspect of the plot of the chapters (done in the learning management system of the course).
2. Based on another prompt, with a partner or as a group, students discussed a topic of the just read chapters. (That topic or an extension of it was connected to what had been covered in the textbook during that time.)
3. Students reported their answers from the discussion and the responses were collected on the white board.
4. I ended the 4th phase, and the entire interactive read-aloud was finished for that day.

Figure A8 Continued
3rd Read-Aloud

1st phase:
1. Before the 1st phase, students were given a short summary of what was read during the last read-aloud.
2. I introduced the strategy of Predicting through words.

3rd phase:
1. I modeled the strategy from the 1st phase using the first page of the fourth chapter we were about to read. I read that page to the students out loud.
2. Students practiced the strategy using the second and third page (the last two pages of that chapter), with my assistance. I read those pages out loud.
3. Students talked to each other in pairs to discuss what happened in that chapter.
4. As a class activity, we played the online game tool KAHOOT!.
5. Students were given a short summary of what was read in the chapter.

4th phase:
1. Based on a prompt, students wrote an individual reflection on an aspect of the plot of the chapter (done in the learning management system of the course).
2. Based on another prompt, with a partner or as a group, students discussed a topic of the just read chapter. (That topic or an extension of it was connected to what had been covered in the textbook during that time.)
3. Students reported their answers from the discussion and the responses were collected on the white board.
4. I ended the 4th phase, and the entire interactive read-aloud was finished for that day.

Figure A8 Continued
4th Read-Aloud

1st phase:
1. Before the 1st phase, students were given a short summary of what was read during the last read-aloud.
2. Students reviewed the strategy of Predicting through words and its three steps learned during the last read-aloud.

3rd phase:
1. Students applied the strategy to the first two pages of the fifth chapter we were about to read. I read those pages to the students out loud.
2. Students applied the strategy again, now using to the third and fourth pages of the fifth chapter we were about to read. I read those pages to the students out loud.
3. Students applied the strategy one last time, now using the fifth page (the last page of that chapter). I read that page out loud to the students.
4. Students talked to each other in pairs to discuss what happened in that fifth chapter.
5. As a class activity, we played the online game tool KAHOOT!.
6. Students were given a short summary of what was read in the fifth chapter.

4th phase:
1. Based on a prompt, students wrote an individual reflection on an aspect of the plot of the chapter (done in the learning management system of the course).
2. Based on another prompt, with a partner or as a group, students discussed a topic of the just read chapter. (That topic or an extension of it was connected to what had been covered in the textbook during that time.)
3. Students reported their answers from the discussion and the responses were collected on the white board.
4. I ended the 4th phase, and the entire interactive read-aloud was finished for that day.

Figure A8 Continued
5th Read-Aloud

1st phase:
2. Before the 1st phase, students were given a short summary of what was read during the last read-aloud.
3. I introduced the strategy of Summarizing passages.

3rd phase:
1. I modeled the strategy from the 1st phase using the first page of the sixth chapter we were about to read. I read that page to the students out loud.
2. I modeled the strategy again using the second page of that chapter. I read that page to the students out loud.
3. Students practiced the strategy using the third and fourth page, with my assistance. I read those pages out loud.
4. Students practiced the strategy again, now using the fifth and sixth page (almost half of that chapter), still with my assistance.
5. Students talked to each other in pairs to discuss what happened in that sixth chapter so far.
6. As a class activity, we played the online game tool KAHOOT!.
7. Students were given a short summary of what was read in the sixth chapter so far.

4th phase:
1. Based on a prompt, students wrote an individual reflection on an aspect of the plot of the chapter (done in the learning management system of the course).
2. Based on another prompt, with a partner or as a group, students discussed a topic of the just read chapter. (That topic or an extension of it was connected to what had been covered in the textbook during that time.)
3. Students reported their answers from the discussion and the responses were collected on the white board.
4. I ended the 4th phase, and the entire interactive read-aloud was finished for that day.

Figure A8 Continued
6th Read-Aloud

1st phase:
1. Before the 1st phase, students were given a short summary of what was read during the last read-aloud.
2. Students reviewed the strategy of Summarizing passages and its three steps learned during the last read-aloud. Since this was the last read-aloud, we also reviewed the two other strategy learned.

3rd phase:
1. Students applied the strategy to the seventh page of the six chapter we were about to read. I read that page to the students out loud.
2. Students applied the strategy again, now using to the eight and nine page (the last two pages of that chapter). I read those pages to the students out loud.
3. Students talked to each other in pairs to discuss what happened in that sixth chapter.
4. As a class activity, we played the online game tool KAHOOT!.
5. Students were given a short summary of what was read in the sixth chapter.

4th phase:
1. Students wrote an individual reflection on an aspect of the plot of the chapter (done in the learning management system of the course).
2. With a partner or as a group, students discussed a topic of the just read chapter. (That topic or an extension of it was connected to what had been covered in the textbook during that time.)
3. Students reported their answers from the discussion and the responses were collected on the white board.
4. Since this was our last read-alouds as a final activity funny moments during out read-alouds were shared and collected.
5. I ended the 4th phase, and the entire interactive read-aloud was finished for that day.

Figure A8 Continued
VITA

Mareike Geyer earned her Bachelor’s degree in Theater from the University of Jamestown (former Jamestown College) in 2009 and a Bachelor’s degree in Theater Education and English Studies (Teaching English as a Foreign Language) from the Leibniz Universität Hannover in 2012. She earned a Master’s degree in German Studies in 2017 and a Master’s degree in Applied Linguistics and Discourse Studies in 2019, both from the University of Connecticut. At the University of Tennessee Knoxville, she pursued a Doctor in Philosophy in the field of German Studies and Applied Linguistics.