

ABSTRACT

ASSESSING THE EFFICACY OF REPEATED READING IN HEBREW AS A SECOND LANGUAGE

The purpose of this study was to assess the efficacy of using repeated reading (LaBerge & Samuels, 1974; Samuels, 1979) to improve Hebrew reading fluency (speed and accuracy) for students in grades 1-3 in a Jewish day school in suburban New York City. This study examined to what extent repeated reading impacts students' fluency after using the technique for a period of 6 weeks. The repeated reading intervention in this study was teacher-led and includes three parts: teacher modeling fluent reading, student read-aloud with immediate feedback from the teacher, and student reading independently. The study was quantitative in nature with a quasi-experimental pre-test/post-test design frequently used in similar educational research. Students' Hebrew reading fluency was measured using MaDYK (Mivchan Dynami Shel Yecholot Kriah), a Hebrew reading fluency instrument that measures both reading accuracy and speed (1st through 3rd grade measure originally studied in Goldberg, Weinberger, Goodman, & Ross, 2010). The data was analyzed by comparing students' baseline MaDYK scores with their MaDYK scores after using the repeated reading intervention for 6 weeks. Pre- and post-intervention assessments allowed researchers to determine whether repeated reading is an effective method to help students improve their Hebrew reading skills. In addition, students found to be at risk for reading challenges after receiving the intervention were given more intensive fluency instruction and practice. Results from this study may help our school and other similar Jewish day schools to evaluate the role of more systematic teaching of reading fluency within the Hebrew language curriculum and an approach towards ongoing benchmark and progress-monitoring assessments.

ASSESSING THE EFFICACY OF REPEATED READING
IN HEBREW AS A SECOND LANGUAGE

by
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DEFINITION OF TERMS

At-risk students

Students who performed below benchmarks on the MaDYK assessment

Chalav U'Dvash

Innovative Hebrew language instruction program from the Jewish Agency

<http://education.jed.macam.ac.il/article/1262>

Chumash

The *Torah* or the Five Books of Moses, a sacred Jewish text

Curriculum-Based Measurement (CBM)

Method to assess student progress to determine whether instructional materials are aligned with curriculum. CBM is used to aid teachers and administrators in formulating data-driven instructional decisions (Tucker, 1987)

DIBELS

A curriculum-based “set of procedures and measures for assessing the acquisition of early literacy skills. They are designed to be short (one minute) fluency measures used to regularly monitor the development of early literacy and early reading skills” (Retrieved from <https://dibels.uoregon.edu/assessment/dibels>).

iTalAM

Curriculum in Hebrew language and Jewish heritage <https://info.italam.org/>

L1 and L2

L1 is defined as a student’s first, or native language; in this study: English. L2 is the second language the student learns; in this study: Hebrew.

MaDYK

Mivchan Dinami shel Y'cholot Kriah. A curriculum-based measure for Hebrew reading fluency modeled after DIBELS (see above).

Nikud–

In Hebrew, *nikud* is the system of diacritical marks that appear above, below, and inside Hebrew letters that represent vowels or distinguish between alternative pronunciations of letters. These markings provide phonological information about pronunciation and meaning that aid beginning readers in acquiring the language.

Reading accuracy

Percentage of words read correctly out of the total number of words read.

Reading rate

The number of words read correctly per minute

Repeated reading

The repeated reading instructional strategy was developed by Samuels (LaBerge & Samuels, 1974; Samuels, 1979) and includes students reading short text (usually 2-5 times) until they achieve a predetermined level of mastery (as cited by Kunh & Stahl, 2003). In this study the repeated reading intervention implementation includes: teacher modeling fluent reading, student read aloud and get immediate feedback from the teacher and student read independently.

Tanakh

An acronym for *Torah*, *Nevi'im*, and *Ketuvim*, the 24 canonical books of the Jewish bible

WPM

Words read correctly per minute; a temporal measure of fluency

ABSTRACT

ASSESSING THE EFFICACY OF REPEATED READING IN HEBREW AS A SECOND LANGUAGE

The purpose of this study was to assess the efficacy of using repeated reading (LaBerge & Samuels, 1974; Samuels, 1979) to improve Hebrew reading fluency (speed and accuracy) for students in grades 1-3 in a Jewish day school in suburban New York City. This study examined to what extent repeated reading impacts students' fluency after using the technique for a period of 6 weeks. The repeated reading intervention in this study was teacher-led and includes three parts: teacher modeling fluent reading, student read-aloud with immediate feedback from the teacher, and student reading independently. The study was quantitative in nature with a quasi-experimental pre-test/post-test design frequently used in similar educational research. Students' Hebrew reading fluency was measured using MaDYK (Mivchan Dynami Shel Yecholot Kriah), a Hebrew reading fluency instrument that measures both reading accuracy and speed (1st through 3rd grade measure originally studied in Goldberg, Weinberger, Goodman, & Ross, 2010). The data was analyzed by comparing students' baseline MaDYK scores with their MaDYK scores after using the repeated reading intervention for 6 weeks. Pre- and post-intervention assessments allowed researchers to determine whether repeated reading is an effective method to help students improve their Hebrew reading skills. In addition, students found to be at risk for reading challenges after receiving the intervention were given more intensive fluency instruction and practice. Results from this study may help our school and other similar Jewish day schools to evaluate the role of more systematic teaching of reading fluency within the Hebrew language curriculum and an approach towards ongoing benchmark and progress-monitoring assessments.

SECTION I: THE STUDY PROBLEM

Jewish day schools have the unique characteristic of emphasizing both Jewish literacy and Hebrew proficiency. In these settings, Hebrew is taught as both classical Hebrew and modern Hebrew. Classical Hebrew is used when studying religious texts, such as the prayer book and *Tanakh*, and rabbinic works, including biblical, mishnaic and medieval Hebrew texts and commentaries. Modern Hebrew is taught as a contemporary, living language that serves as a rich medium for communication (Pomson & Wertheimer, 2017). Indeed, learning Hebrew as a second language (L2) opens many doors for day school students, allowing them to access Jewish texts in the original form and communicate with Jews in their communities, as well as worldwide. However, when Jewish day school students have difficulty learning to read Hebrew, they feel socially excluded and often exhibit behavioral challenges as a result (Goldberg, 2005a, 2005b).

After teaching Hebrew at a Jewish day school for 17 years, and now as an administrator reflecting on students' Hebrew language learning, it has become clear to me that there is a gap between what we teach and what students learn. In our Jewish day school settings, we spend hours of instruction teaching Hebrew language skills, yet the percentage of students mastering Hebrew reading remains relatively low. It wasn't until I attended a conference session about the role of Hebrew language in Jewish day schools that I realized that the Hebrew instructional challenges facing my school were part of a larger systemic issue prevalent in Jewish day schools across the country.

In January 2017, I began a reflective process with the Hebrew teachers and school educational leadership at the private, suburban Jewish day school at which I am principal. Our

aim was to discover how to improve our students' Hebrew reading skills. We understood that we needed to standardize how we gathered data about Hebrew reading in order to take a baseline metric and measure our improvement. Simultaneously, I embarked on a journey to explore which reading interventions might be the most helpful to close the gap that existed in our students' Hebrew reading proficiency. I saw a need to improve Hebrew reading in the early grades and to create a foundation for students so they can read more fluently. I then learned about the standardized Hebrew fluency assessment tool called MaDYK (1st grade measure originally studied in Goldberg, Weinberger, Goodman, & Ross, 2010). This measure is used to give Hebrew educators data about students' reading and better reflects students' true Hebrew literacy achievement than typical classroom testing. After much research, I decided to explore implementing repeated reading (LaBerge & Samuels, 1974; Samuels, 1979) in Hebrew as a second language. I hypothesized that adding this intervention to Hebrew instruction would greatly improve students' Hebrew reading fluency.

When I performed this study in my school, I had several goals in mind. The primary aim was to collect quantitative data about our students' Hebrew reading performance and identify their instructional needs, so that we could provide effective reading interventions to bridge the gap. I also wanted to obtain valuable information about the effectiveness of our Hebrew curriculum as a whole based on standardized data from the MaDYK assessment. Using real-world student data could help teachers in tailoring reading methods and interventions that will lead to higher student achievement.

To further our objectives, it made sense to embed professional development into the process. Initially, I was concerned about our teachers' buy-in to introducing new teaching techniques into Hebrew language instruction. However, I found that using our own student's

data and actively involving the teachers in a Professional Learning Community (PLC) empowered our teachers to take ownership of the process and start changing the way they teach Hebrew reading. This process can give teachers the tools to effectively evaluate their teaching and implement changes that will positively impact students' learning. Another significant added value of this process is creating a collaborative and supportive learning environment where teachers take responsibility for students' learning and actively maximize their students' success.

The purpose of this study is to create an environment where all students develop reading fluency in Hebrew, and non-fluent readers are identified and given appropriate fluency instruction. The proposed research will assess the efficacy of repeated reading (LaBerge & Samuels, 1974; Samuels, 1979) in fostering reading fluency skills (speed and accuracy) in Hebrew as a second language among first, second, and third grade students. It will also consider the potential benefits of adding more explicit and systematic reading fluency instruction into the day school curriculum by using repeated reading (LaBerge & Samuels, 1974; Samuels, 1979) to practice fluency. The MaDYK fluency measures were used to identify at risk students and will yield the data needed for planning differentiated fluency instruction.

SECTION II:

LITERATURE REVIEW

Development of Early Literacy Skills

The process of literacy begins at birth and develops in the child's very early years, long before children start attending school. Literacy development is a complex process, representing many different skills and experiences (August & Shanahan, 2006). The reading process includes several steps: phonemic awareness, letter naming, building vocabulary and word study. All of these are important skills integral for children to develop in order to become successful, avid readers.

The National Reading Panel (NRP, 2000, p. 2-2) describes phonemic awareness as “the ability to focus on and manipulate phonemes in spoken words”. The NRP noted that reading and spelling development are strongly connected to phonemic awareness instruction. Developing phonemic awareness was found to be an important skill in the reading process. The Panel found that strong phonemic awareness skills lead to better reading achievement.

Developing phonological awareness in early readers is often required for the growth of decoding skills and can improve the reader's ability to read (Armbruster, Lehr, & Osborn, 2006; National Early Literacy Panel, 2008). As discussed by both the National Reading Panel (NRP, 2000) and the National Early Literacy Panel (NELP, 2008), phonological awareness is an important part of reading development. Students' mastery of this skill can help predict later development of decoding, comprehension and spelling skills. The development of phonological awareness, letter-naming capabilities and new vocabulary provides young learners a greater chance to become successful readers (Callaghan & Madelaine, 2012). As a result, early stages of reading instruction should include activities that allow students to practice print-to-sound

decoding and to learn about the letters and the sounds connected to each (Kuhn, Schwanenflugel, & Meisinger, 2010; Wolf, 2016).

Letter naming is a fundamental component of phonological awareness. When young readers name each letter, they are learning to make a connection between the letter they see and say and the sound that that letter makes. As the students gain an understanding of the relationship between the names and sounds of letters, they discover the alphabetic principle and how it all relates to the text they are reading (Armbruster et al., 2006; NRP, 2000, 2-34; NELP, 2008; Wolf, 2016). Another key element of early reading education is word study. Word study supports students in developing phonological awareness and decoding skills. Word study activities, such as word sorting, help students to understand the sub-parts of words and recognize letter and word patterns. Students can then apply this understanding when spelling known and new words (Armbruster et al; NRP, 2000; Pikulski & Chard, 2005). Learning vocabulary is an additional factor in gaining reading mastery. Vocabulary instruction in young children includes learning how to read sight words and using decoding to figure out new words. The NRP (2000) mentions the need for teaching vocabulary before the text is read and exposing students to vocabulary in multiple ways. Vocabulary is valuable when taught in a rich context and while students are active and engaged. When instructing vocabulary, teachers should use text with controlled vocabulary to make sure students understand what they are reading.

In order for schools to create an environment where young students on all reading levels can become good readers, educators need to understand the predictors of literacy development, and learn how to design effective literacy instruction to attain them. Effective reading instruction for students in early grades needs to include: learning how to decode words, understanding letter-sound relationships, and practicing reading. These proven strategies will

allow students to gain sight words, develop fluency, and increase vocabulary in order to better understand the texts they read (Goldstein, 2011).

Additional information on the sequential nature of reading development emerges from the 2011 thesis by Camisha H. Williams. Williams (2011) wrote that the first skill learned in the reading process is understanding how to sound out the letters that make words, which leads to the development of phonics skills. Practicing phonics at an early age helps prepare the reader for later fluency. Once the reader is fluent, the focus shifts to making meaning and text comprehension (Paris & Stahl, 2005). When readers are able to master key reading skills, they are then ready to apply these skills to a wide variety of texts (Bukowiecki, 2007).

Recent research by Share and Bar-On (2017) suggests that Hebrew reading develops in a similarly sequential fashion. Share and Bar-On's (2017) model of Hebrew reading development emphasizes three phases paralleling the first three grades of lower elementary school. In Phase 1 or 1st grade, reading instruction introduces phonological spelling and making word sounds using letter and vowel combinations. Students use *nikud*, Hebrew's relatively simple vowel system, to gain reading accuracy on a letter-by-letter level (Share, 2017; Share & Bar-On, 2017). In Phase 2 or 2nd grade, the emphasis is on orthographic processing, that is, using the Hebrew coding system to be able to identify more words and master reading accuracy on a word-level basis. By Phase 3 or 3rd grade, readers are able to automatically recognize words and incorporate context allowing them to better comprehend the meaning of text. At this point, reading transitions from the pointed Hebrew of grades 1 and 2, to the unpointed Hebrew used by experienced readers. According to Share and Bar-On (2017), transition to unpointed Hebrew might negatively impact students' fluency development, especially for struggling readers.

Reading Fluency

The National Reading Panel (NRP, 2000) describes fluent readers as “learners that can read text with speed, accuracy, and proper expression” (p.3-1). Reading fluency is a complex process that includes several smaller steps, including: automatic reading, speed, and understanding the relationships between letters and sounds (Grabe, 2009; Hudson, Pullen, Lane & Torgesen, 2009). Since the NRP advocated that educators focus on fluency as an essential skill to improve reading, reading fluency has become a main focus of reading instruction in English as a first language (L1) setting. It has been studied and presented in the educational literature as an important component of L1 reading curricula and instruction for early readers (Allington, 2006; Kuhn et al., 2010; Kuhn & Stahl, 2003; NRP, 2000; Rasinski, 2012, 2014). However, while educators were aware of the importance of fluency instruction in developing good readers, there has been little or no change to English reading instruction techniques for young students. (Armbruster et al., 2006 ; Pikulski & Chard, 2005; Rasinski, 2012, 2014)

In order to change reading instruction in the classroom, educators needed to gain a more nuanced understanding of the reading process and how changing their instruction could support more students becoming better readers. Reading fluency instruction for learners for which English is their first language (L1) starts when young readers begin to recognize and identify words. They next develop the ability to read passages and until they gain automaticity. Only then are they able to learn vocabulary and improve their comprehension, which is the entire purpose of reading instruction (Grabe, 2009; Kuhn et al., 2006; Rasinski, 2012, 2014).

In her white paper, “Developing Fluent Reading”, Hasbrouck (2010) states that systematic fluency instruction is needed in order for students to develop reading fluency. In her estimation, reading fluency is acquired in a stepwise process. The first step is for students to be

able to decode accurately. With practice, their reading rate increases and as a result, they are able to read more complex texts. Students who are able to read fluently can better comprehend the text they are reading. Understanding the relationships between reading accuracy and fluency and their effect on comprehension can guide educators in designing fluency instruction.

Based on these findings, effective reading instruction for young readers should include time that is dedicated to teaching word identification and decoding. Teachers need to provide more classroom opportunities to practice reading accuracy so that students can achieve better reading fluency (Pikulski & Chard, 2005; Snow, Burns, & Griffin, 1998; Wolf, 2016). A systematic approach to fluency instruction supports students' development as skillful, proficient, and motivated readers. In other words, fluency instruction that promotes both accuracy and automaticity will lead to students' reading with expression and greater comprehension (Grabe, 2009; Kuhn & Stahl, 2003; NICHD, 2000; Rasinski, 2012, 2014; Wolf & Katzir-Cohen, 2001).

Gaining Fluency in a Second Language (L2)

There exists another subset of research related to reading fluency in environments where English is taught as a second language (ESL). These studies focus on how to define and measure reading fluency for L2 students at different ages and levels in order to bring them up to grade level with their L1 peers. Grabe (2009) describes a fluent English L2 reader as one who has the ability to "read rapidly with ease and accuracy, and with appropriate expression and phrasing" (p. 291). These studies also investigated how L2 English reading fluency develops as compared to L1 reading fluency (Allen, 2016; Grabe & Stoller, 2011; Lems, 2012; Taguchi, Gorsuch, Lems, & Rosszell, 2016; Taguchi, Gorsuch, Takayasu-Maass & Snipp, 2012).

While there is copious research on the efficacy of using reading interventions on reading fluency in first language settings (L1) from grades K-12, research on the efficacy of reading interventions to promote fluency in second language (L2) settings has been limited to high school and higher education (Taguchi et al., 2016). Additionally, much of the existing literature discusses the relationship between reading fluency and reading comprehension in high school and college level L2 learners, and in most cases was conducted using ESL students (Chang, 2012; Chang & Millett, 2013; Cohen, 2011; Taguchi, 1997; Taguchi & Gorsuch, 2002; Taguchi, Takayasu-Maass, & Gorsuch, 2004). Although this research is valid, the paradigm studied is in sharp contrast to the Jewish day school setting where English is taught as first language (L1) and Hebrew is taught as a second language (L2). In this setting, both languages are taught at an early age and at the same time (Pomson & Wertheimer, 2017).

In a 2012 study, Jeon examined oral reading fluency for L2 high school students from South Korea for which Korean was their primary language (L1) and English was L2. Jeon's (2012) study found that oral reading fluency and silent reading comprehension may be related to L2 proficiency levels, indicating that oral reading is more strongly correlated with reading comprehension when used with older, more advanced learners than it is for younger, less proficient L2 learners. A similar recommendation to separate instruction goals for reading fluency versus comprehension was supported by the NRP (2000). Results from a study by Jiang, Sawaki, and Sabatini (2012) of adult Chinese EFL students supported Jeon's findings. Jiang et al. (2012) demonstrated that efficiency of word recognition has less impact on comprehension than reading fluency does. In other words, reading fluency had a greater impact on adult students' comprehension of L2 text than their ability to accurately read isolated words did. In

short, at all grade levels, students learning a second language experience challenges with developing reading fluency (Grabe, 2009).

In order for readers at different levels to become fluent, researchers recommend that L2 reading programs should include dedicated time for teaching the components of reading fluency, as well as time for students to develop their ability to read fluently and understand written text (Gorsuch & Taguchi, 2009). Instruction in L2 settings should focus on word configuration, finding suitable texts, and providing time for hands-on reading practice (Cohen, 2011; Chang & Millett, 2013; Taguchi et al., 2016). Other conditions helpful in developing L2 reading fluency include: exposing students to a variety of appropriate texts, providing teacher training, and including opportunities for students to listen to fluent models such as a teacher skilled in the language or high quality audio or video recordings (Allen, 2016; Chang & Millett, 2013; Jeon, 2012; Taguchi et al., 2016).

Hebrew Language (L2) Instruction in Jewish Day Schools

For the majority of students in the Jewish day school system in the United States, English is taught as L1 and Hebrew as L2. As such, the research gap in investigating teaching L2 fluency in early childhood education presented a challenge in how to improve the teaching of Hebrew in yeshivot and Jewish day schools. Until recently, Hebrew reading fluency had received very limited attention from Jewish day school educators. To bridge this gap, Goldberg et al. (2010) undertook to develop a means of assessing Jewish day school students' L2 Hebrew language fluency. Based on their study, the Hebrew reading measure MaDYK was developed to assess students' Hebrew reading fluency achievement in order to inform the design of effective Hebrew reading instruction. However, it is important to note that Goldberg et al. (2010)

described effective L2 Hebrew reading instruction as including learning how to decode words, read fluently, and comprehend Hebrew texts.

As discussed by Shimon and Peerless (2005) and presented in a comprehensive study by Pomson and Wertheimer (2017), teaching Hebrew in the modern age has two unique elements: it is both a heritage language and a language of communication. Jewish day schools serve as an incubator for Hebrew language learning to promote Jewish religious and cultural literacy, as well as for everyday communication. Zisenwine (1997) reflected on the strong connection between language, culture and Jewish identity. He wrote that teaching Hebrew language and literature in Jewish day schools has an important role in developing students' religious identification and literary tradition and can help form their Jewish identity.

Students in Jewish day schools are expected to establish strong foundations in Hebrew literacy skills in the early grades so that they will be able to understand modern and ancient Hebrew texts, make deep personal connections, and enjoy their reading. In order to efficiently understand the text, students must be able to easily recognize words and phrases and read them accurately and fluently (Hudson, Lane, & Pullen, 2005; Perfetti & Stafura, 2014; Saltzman, 2019; Wolf, 2016). Non-fluent readers have greater challenges with developing meaning and understanding Modern Hebrew texts, *Tanakh* and other Jewish texts (Saltzman, 2019).

Most Jewish day schools begin formal Hebrew reading instruction in the first grade. In the school that participated in this study, students were exposed to the foundations of the Hebrew language in kindergarten by listening to songs, learning how to form simple sentences, and starting to identify the Hebrew letters and sounds (Share, 2017). Beginning in the first grade, Hebrew reading is taught using a “systematic phonic-emphasis method” where the unit of instruction is “an integral CV syllable block (termed a /*tsruf*/ ‘combination’) consisting of a

consonant letter with a small (diacritic-like) vowel sign underneath” (Share, 2017, p. 156). These diacritical vowel signs, termed *nikud*, are mainly printed in texts for beginning readers (whether children or new immigrants), as they are most helpful for those learning to read and write Hebrew for the first time (Ravid, 2005). *Nikud* is also frequently used in Jewish religious texts, especially Bible and liturgy, in order for readers to learn to pronounce the words accurately.

Our school follows the *Chalav U’Dvash* language acquisition program for beginning language learners. Developed by the Jewish Agency for Israel, *Chalav U’Dvash* incorporates a broad range of developmentally appropriate activities and interactive teaching aids emphasizing conversational Hebrew. The main purpose of this program is to allow students to become comfortable with speaking Hebrew in simple sentences and, at the same time, learn basic Hebrew language patterns, syntax and common vocabulary. Additionally, the teachers follow the iTalAM program (<https://info.italam.org/>), a curricular approach that holds that language is acquired through exposure to a variety of stimuli including vocabulary, songs, religious texts, and modern Hebrew writings. The iTalam reading approach includes exposure to vocabulary and reading whole words while supporting accuracy and fluency. Researcher Esther Geva (2006) pointed out that in an environment where your students are learning both English (L1) and Hebrew (L2), it is important to understand the “universal” framework. Geva (2006) wrote:

According to this framework, the same underlying cognitive and linguistic component skills that are crucial for learning to read and spell in monolingual or L1 children (for example, phonemic awareness, speed of processing, visual processes) contribute across diverse languages and writing systems. This also means that these skills influence the development of literacy skills in L2 and bilingual contexts. (p.1)

The Significance of Fluency

Pikulski and Chard (2005) noted that students must become fluent readers before they can achieve a high level of text comprehension. Readers on all levels should be exposed to written text and must practice independent reading in order to improve their sight word recognition, as well as decoding skills (Cunningham, Perry, & Stanovich, 2001). Gaining fluency in the early grades is critical, since weak fluency skills negatively impact students' reading pace, accuracy, and comprehension and reduce their ability to enjoy the text they are reading. Lack of fluency affects comprehension: struggling students focus their cognitive energy and attention on decoding tasks and, as a result, have limited resources available for text comprehension (Rasinski, Rikli & Johnston, 2009). Studies have shown that students who read fluently experience greater pleasure and success while reading, and are, therefore, more likely to read more, perpetuating a positive feedback cycle. Conversely, students who are not fluent readers tend to avoid reading because their reading is slow and laborious, which leads them to read even less (Allington, 2006).

A major step towards understanding best practices in teaching reading comes from the work of the National Reading Panel (NRP). The U.S. National Institutes of Health and the U.S. Department of Education established the NRP to evaluate existing research in reading education and find the most effective ways to teach reading to young children. The Panel's report (NRP, 2000) discussed the important role that fluency plays in the reading process and identified the three major components of fluency: reading words accurately, recognizing words automatically, and using prosody appropriately. Accuracy is the reader's ability to sufficiently convert letters into sounds (Ellery, 2009). Automaticity is the stage of skill acquisition marked by fast, unconscious, accurate, stable cognitive processing (Allen, 2016). Prosody includes various

aspects of expressive oral reading, such as “intonation, emphasis, rate, and the regularly recurring patterns of language” (Kuhn et al., 2006).

In order for teachers to understand reading development, it is also helpful to understand the simple view of reading by Gough and Tunmer (1986). Gough and Tunmer created a formula that includes decoding and understanding the meaning of words as key skills in reading comprehension development. According to this formula, reading comprehension can be predicted by measuring the students’ decoding level and listening comprehension skills (Gough & Tunmer, 1986). Catts and Kamhi (1999) used this simple view of reading to guide their reading interventions. They classified struggling readers into two groups: one group included students who struggle in word recognition or decoding and the other group included students who exhibit difficulties in comprehension. Once the teacher determines whether the reader is struggling in decoding, word comprehension, or both, they can respond by designing targeted instruction or by choosing an intervention to address the particular challenge that the student is experiencing (Hoover & Gough, 1990).

Ehri (1999) presented a model of decoding language with four sequential stages. In the first stage, students identify words by their context and surroundings. In the second stage, students begin to identify more of a word’s letters (especially the first and last letters of a word) and start to make connections between letters and sounds. In the third stage, students “sound out” words – decoding words by making full connections of letters and sounds. In the last stage, students are able to read words automatically. Ehri (2005) emphasizes the significance of students learning letter sounds and spelling patterns as a tool for word recognition, as through “sight words” (p.168). As their reading skills develop, students can use this information to help them identify words (Ehri, 2005).

Fluency and Hebrew

Concerning the case of Hebrew reading fluency, Wolf and Katzir-Cohen's (2001) definition includes not only accurate, fluent, reading, but also other processes such as: vocabulary (words used in a language), morphology (forms of words) and syntax (arrangement of words into sentences). Syntax, vocabulary, the ability to read both pointed (vowelized; with *nikud*) and unpointed (unvowelized; without *nikud*) Hebrew words, and familiarity with Hebrew orthography are reliable predictors of reading fluency development (Katzir, Schiff, & Kim, 2012; Shechter, Lipka, & Katzir, 2018; Wolf & Katzir-Cohen, 2001). Accurate and fluent reading follows students' improvement in these predictor areas. Therefore, understanding their impact on Hebrew reading fluency development can help teachers design instruction and implement interventions to support fluency development in early elementary grades.

Share (2008) researched reading disabilities and noted that reading difficulties in Hebrew appear to be more uniquely associated with reading speed and not accuracy (as in English). Shany and Share (2011) expanded this approach and studied Hebrew reading rate and accuracy for students with reading disabilities. They noted that students that struggled with their reading rate read slowly, but accurately, while students that struggled with accuracy lacked phonological awareness and morphological knowledge. Shany and Share (2011) suggested that students in each sub-group would benefit most from an instruction plan individualized to address their distinct reading challenges.

A key point in understanding the reading acquisition process in any language is that language morphology and orthography are factors that influence reading development (Share, 2008). Share and Bar-On (2017) report that beginning Hebrew readers rely on a combination of the CV unit, vowels (*nikud*) and pronunciation (in particular, emphasis on the word ending) in

order to decode Hebrew text. For example, the Hebrew word גדול - ga-do-l (meaning big or large) is made up of two CV units *ga* and *do* and the isolated consonant *l*. Beginner readers combine the three units together by using what Share and Bar-On (2017, p. 447) describe “as *kriya metzarefet* (literally, ‘joining up’ or ‘combining’ reading)”. The *nikud* of the long *o* vowel sound in the CV unit *do* cues the reader to stress the last part of the word, rather than the first. The *nikud* differentiates ga-do-l from its unpointed root word GDL whose pronunciation, and therefore meaning, is ambiguous when taken out of context. As students continue to develop their Hebrew reading skills, they rely less on vowels and use their understanding of Hebrew language pattern cues (Shany, Bar-On & Katzir, 2011; Shany & Share, 2011). In the last stage of reading acquisition, students make the difficult transition between reading pointed and unpointed Hebrew. At this critical juncture, students’ reading accuracy and fluency rely on how well they are prepared to navigate this transition. In this phase, students are “expanding their lexico-morpho-orthographic knowledge” (Share & Bar-On, 2017, p. 449) in order to increase their accuracy and fluency.

Reading Hebrew As a Second Language (L2)

The participants in this study attend a Jewish day school where English and Hebrew are taught concurrently beginning in kindergarten. Most participants are English speaking, with English as their primary language at home. As in most Jewish day schools, English is taught as a first language (L1) and Hebrew is taught as a second language (L2). In order to design instruction that addresses the needs of our students, it is important to understand Hebrew reading structure, as well as the linguistic and orthographic differences between English and Hebrew. According to Share and Levin (1999), the Hebrew language follows a unique orthographic

system that includes 22 alphabetic consonants and 7 diacritical vowels, and a morphological system that consist of 2- and 3-letter root words plus patterns that can be added to the root. Word pattern can include vowels or consonants and vowels. For example: the root א.כ.ל (eat) some word patterns that can be added: אוֹכֵל (verb- male-present tense), אוֹכְלִים (verb-plural-present tense, אָכַל (verb-male-past tens) לְאָכּוֹל (infinitive- to eat) אוֹכֵל (food). In contrast, English follows an orthography typical of the Indo-European languages, which includes 26 alphabetic letters and follows a complex orthographic cipher (Geva & Siegel, 2000). Geva and Siegel (2000) also explain that English letters are mapped to more than 36 phonemes and the value of some phonemes can be determined by considering more than one letter.

According to Levin, Patel, Margalit, & Barad (2002), there are three key linguistic and orthographic differences between Hebrew and English: their letter-name phonological structure, the link between letter name and sound, and the frequency of letter names in words. Hebrew letter names are complex and follow both “monosyllabic CVC form such as *b* (*Bet*) or a bisyllabic CVCVC form such as *g* (*Gimel*)” (Levin et al., 2002, p.272). Most of the Hebrew letter names follow the monosyllabic CVC form. The rest follow the bisyllabic CVCVC form and “split into two patterns CaCεC (e.g., *Lamed*) or CaCiC (e.g., *Tsadik*” (p.272). English letter names, on the other hand, follow a simple monosyllabic structure. They include 12 consonant–vowel (CV) forms in which “eight of them the final vowel is /i/ (e.g., /bi/, /di/)” and 8 vowel–consonant (VC) forms in which “six of them the initial vowel is /ε/ (e.g., /εl/, /εm/)” (Levin et al., 2002, p.271). The link between letter names and their sounds is another difference between these two languages. In Hebrew, letter names include one or more consonants and the letter sound is the first consonant in each letter’s name (*Gi-mel/ Da-let*). The English letters, on the other hand, include one consonant that usually implies the letter name (*Bi/Ci/Di*). Finally, given

these structures, knowing the letter names in English, might support students' awareness in linking oral to written words. For example: Big, Bin, Bill, Bid and Pin, Pig, Pin, Pick.

In Hebrew on the other hand, knowing the letter name is not always helpful since the Hebrew letter names are longer, and have limited frequency. For example: *כַּפְּכַר* and *מְזֻשְׁלָה*

Another important distinction between these two languages is the contribution of orthographic consistency in Hebrew versus English on reading development. Katzir et al. (2012) looked at the linguistic features of the Hebrew language and its influence on reading fluency. Unlike English vowels which consist of distinct letters of the alphabet, Hebrew vowels are primarily represented by diacritical marks called *nekudot* that are added below, above and next to the letter. Grasping this vowel system is important for beginner readers as they first learn how to read Hebrew (Shimron, 2006; Katzir et al., 2012). Katzir et al. (2012) describe Hebrew orthographic design as following a consistent (shallow) classification in which a single vowelized letter represents a syllable of both consonants and vowels. This differs from English, which has an inconsistent (deep) orthography in which each letter represents a phoneme and groupings of letters form a syllable. Thus, learning how to divide words into syllables can help students to read Hebrew more accurately (Shimron, 2006; Goodman, 2007).

Katzir et al. (2012) compared word reading accuracy and fluency in a cross linguistic study for Hebrew- and English-speaking fourth grade students, while taking into consideration the role of phonological awareness and vocabulary knowledge in predicting word reading in both languages. The study found that while Hebrew-speaking students got higher scores in reading accuracy, English-speaking students scored higher in reading fluency. These findings are connected to the different orthographic structures of the two languages: vowelized Hebrew has a shallow, transparent orthography, while English has a deep, opaque orthography. Vocabulary

size contributes to word reading only in English, while phonological awareness was a consistent predictor of word reading in both languages (Katzir et al., 2012). This indicates that verbal abilities play a unique role in language acquisition for languages with inconsistent orthographies such as English.

Maayan Tadmor-Troyansky (2019) studied the development of phonological awareness of the Hebrew writing system. Her findings concurred with prior research (Katzir et al., 2012; Shechter et al., 2018) illustrating the role of developmental factors in processes of Hebrew language acquisition. In the early elementary grades, the ability to identify the Hebrew letters and vowel signs, as well as the CV (tseruf), plays an important role in reading development. Knowing the letters and the vowels can support students when decoding and reading unfamiliar words. However, as their reading becomes more fluent in later elementary grades, students' morpho-ortho-graphic knowledge plays a more critical role in their reading development.

A study by Goodman (2007) investigated whether students' ability to break words down into individual sounds was supported by English's (L1) and Hebrew's (L2) natural orthographic structure and if different word-identification strategies were transferable from one language to the other. Similar to Katzir et al. (2012), Goodman (2007) also found that, overall, the students read English (L1) more fluently than Hebrew (L2). In English, students were able to apply more phonetic strategies like: identifying beginning, middle and end sounds, sounding out words, counting how many sounds in a word, and blending sounds into words. Students employed these strategies when reading passages for the first time or when they reached an unfamiliar word in the text. Students also used "sounding out" to figure out how to correctly pronounce the word. In Hebrew, using the "sounding out" strategy led to students vocalizing word segments that were not fluent or meaningful. Goodman (2007) suggested that these findings could be helpful for

teachers of Hebrew as a second language, since it contributes to their understanding of Hebrew reading instruction and steers them towards more effective teaching strategies.

Studies in English reading fluency emphasize the importance of phonological awareness, vocabulary, and word reading to the development of fluency (Allington, 2006; Katzir et al., 2012; Kuhn et al., 2010; Kuhn & Stahl, 2003; NRP, 2000; Rasinski, 2014; Wolf & Katzir-Cohen, 2001). On the other hand, findings on Hebrew reading accuracy and fluency support a language-specific developmental approach where patterns of fluency acquisition change depending on the child's phase of reading development (Katzir et al., 2012; Shechter et al., 2018).

In a 2018 study, Shechter et al. researched components that might play a role in predicting word reading fluency in first and third grade Hebrew-speaking (L1) students. Their main finding was that vocabulary played an important role in predicting word fluency among first graders. By 3rd grade, vocabulary was no longer a significant predictor of student fluency. For Hebrew speaking students in this age group, phonological and morphological awareness were found to be stronger predictors of reading fluency than vocabulary study. These findings can contribute to a more effective fluency instruction based on the phases of reading acquisition. Shechter et al. (2018) found that in first and third grades, naming speed (retrieving names and symbols) was the main predictor of word reading fluency. Other factors, such as vocabulary size and phonological and morphological awareness, were found to be inconsistent predictors of fluency depending on the stage of the reading development. Based on their interpretation, first graders rely more on whole words to decode text, while third graders use phonemes and morphemes. These phases will be discussed in more detail in the subsequent section.

The research discussed above identifies several differences between the structure of the English and Hebrew languages, as well as the mechanisms by which English and Hebrew language learning takes place. These distinctions will inform and influence the choice of assessment tools in the present study. They will also be taken into account in the choice of repeated reading as the intervention implemented in this study. Per Katzir et al. (2012) and Shechter et al., vocabulary is a good predictor of Hebrew fluency for early readers. Unlike in English, in Hebrew, practicing saying words as whole units (morphemes) was found to be a more effective strategy than “sounding out” words phoneme-by-phoneme. Both of the key study parameters: the selection of MaDYK as the assessment tool to measure students’ Hebrew reading fluency, as well as the decision to use repeated reading as the study intervention, were based on this foundational relationship between semantic knowledge and verbal processing in Hebrew reading acquisition.

Measuring Fluency

In order to assess whether a student has attained fluency in any language, the key components of accuracy, automaticity, and prosody must be measured. Schools often use curriculum-based measures (CBM) to obtain evidence of students’ reading fluency, speed, and accuracy skills. These measures are also used to identify students who require more support and intervention (Fuchs, 2004; Gravois & Gickling, 2008). One popular standardized reading fluency measure used to monitor English reading progress in early childhood classrooms is the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) assessment. DIBELS are one-minute fluency tests administered to individuals or small groups of beginning readers at various intervals throughout the school year. The DIBELS measures include screenings for letter

naming, initial sounds, phonemic segmentation, nonsense words, word reading fluency and oral reading fluency. These measures are designed to collect data from short-term reading skills assessments three times each year in order to track students' reading skills progress and help predict their long-term reading success. The data collected gives teachers information about which students have gaps in their literacy skills development and might be at risk for reading challenges. Analyzing the data can guide teachers in choosing interventions to improve students' reading skills.

The success of the DIBELS assessments for English language literacy led researchers to apply the same strategy to measuring Hebrew language literacy. The development of early Hebrew reading skills parallels the development of early English literacy skills for beginning readers for whom English is a first language (Armbruster et al., 2006; NRP, 2000). Goldberg et al. (2010) wrote that early Hebrew reading instruction must include decoding accuracy, fluency and reading comprehension, and that, over time, students should be expected to show progress in all three areas. To answer the need for a more research-based and accurate Hebrew reading fluency measure, they developed the Mivchan Dinami shel Y'cholot Kriah (MaDYK), a CBM assessment tool for Hebrew language. MaDYK is a set of short and simple one-minute Hebrew reading fluency assessments modeled after DIBELS. Like DIBELS, the MaDYK indicators were developed to assess students' progress toward accurate and fluent Hebrew reading that will lead to improve students' ability to understand the texts they read.

Reading Interventions

Once a school begins to employ ongoing CBM assessment tools such as DIBELS and MaDYK to identify struggling readers, they must have a strategy to address the achievement

gaps identified. There are several reading fluency interventions that have been found effective for use in the early grades for the majority of readers for which English is their first language (L1). Some examples are: choral reading, readers' theater, paired or partner reading, and repeated reading.

Rasinski (2003) discusses choral reading as a form of assisted reading that allows all students to participate during reading. In choral reading, the teacher models fluent reading by reading text together with the students, either as a whole class or small group. When implementing the choral reading technique, the text that the teacher chooses must be short and at the students' reading level. One shortcoming of choral reading is that teachers are not able to give feedback to individual students when using this intervention.

Readers' theater combines reading practice and performing. The students use expressive text and take turns reading based on their role, just like in a play. When using this intervention, students are engaged and gain confidence (Rasinski, 2003). The challenge of using this method for Hebrew reading practice is finding appropriate texts for young readers. In addition, it is more time-intensive than other intervention methods.

In paired or partner reading, students take turns reading to each other. In most settings, this intervention requires pairing a strong reader with a weak reader. The stronger reader models fluent reading and provides feedback to his/her partner. In order for this intervention to be successful, the teachers need to train the students in giving and getting feedback (Hasbrouck, 2010).

After considering choral reading, readers' theater, and paired reading, I ultimately chose repeated reading as the reading intervention that best fit the needs of my students. Originally developed by Samuels (1979), repeated reading has students read the same short text passage of

50-200 words 2-5 times until they reach a predetermined level of mastery. Repeated reading avoids many of the pitfalls of the other reading interventions: teachers can give feedback to individual students; selecting a text appropriate for young readers is relatively easy; and it does not require much time to train the students in its use. Repeated reading strategies have the potential to improve reading at any grade level and for different group size settings (Hasbrouck, 2010).

In summary, given our findings that showed that all students scored either below or well below standards, it made sense to choose the repeated reading intervention for all students. This gave us a framework to implement this intervention in 3 tiers. Teachers were able to teach the same reading strategy for both the whole class, as well as small groups, and give feedback to individual students based on reading performance. Other strategies that were considered, such as choral reading, reader's theater and paired reading, were not a good match for our purposes. Choral reading as an intervention was missing the ability to give feedback to students and follow up on their progress. The reader's theater intervention did not fit into our second-language setting since it was difficult to find appropriate texts. Lastly, the paired reading intervention was not an appropriate choice since it requires pairing a strong student with a weak student where the strong student provides feedback to his/her partner.

Repeated Reading

Reading fluency is an important goal in both L1 and L2 settings, and not surprisingly, strategies to move students towards fluency have received considerable attention. Repeated reading was identified by the NRP (2000) as a central strategy for improving students' reading fluency skills. Automaticity theory serves as the basis for the repeated reading instructional

model. Automaticity theory states that emerging readers who have not yet developed the ability to read automatically must consciously focus their attention on decoding words and, as a result, have limited ability to understand the text.

Repeated reading, a strategy first proposed by LaBerge and Samuels (1974) and further developed and articulated by Samuels (1979), involves re-reading a specific passage a number of times or until the reader achieves a predetermined criterion (e.g., 40 correct words per minute). By reading the passage over and over, decoding becomes automatic and the student can shift his attention to comprehending the meaning of the passage read. Samuels, (1979) states, “According to the automaticity theory, a fluent reader decodes the text automatically—that is without attention—thus leaving attention free to be used for comprehension” (Samuels, 1979, p. 406). As mentioned above, while developing fluency, young readers need to be taught to read accurately and practice reading in order to improve fluency. Teachers need to include in their lessons opportunities for students to listen to fluent reading and get opportunities to read and re-reading different types of texts (Hasbrouck, 2010).

To help students master the components of reading fluency (accuracy, automaticity and prosody), students are often provided assistance such as teacher modeling or recorded audio as they work through their repeated reading sessions. Theories of automatic processing play an important role in both cognitive models of second language acquisition and our current understanding of reading fluency (LaBerge & Samuels, 1974; Segalowitz, 2003). In addition, good readers are able to use different reading strategies to better understand the text they are reading (Gorsuch & Taguchi, 2010; Taguchi, Gorsuch & Sasamoto, 2006). Automaticity in reading includes speed and accuracy. Students should be able to understand the connections between letter patterns and words. Automaticity also increases the availability and occurrence of

word and letter unit representations in long-term memory (La Berge & Samuels, 1974). A beginning reader is not able to read automatically and therefore has little attention to devote to understanding what they are reading. When young readers are dysfluent, they read slowly and have a hard time comprehending text. According to automaticity theory, reading is considered fluent when the reader is applying skills both quickly and attentively (Logan, 1997).

The efficacy of repeated reading has mainly been studied in the English as L1 environment. Data shows that repeated reading is effective in fostering both reading fluency and reading comprehension (NRP, 2000). Research on the efficacy of repeated reading in an L2 setting is very limited and focuses primarily on the high school level and above. Evidence on comprehension improvement is inconsistent, despite some findings that repeated reading is effective in developing fluency (Allen, 2016; Chang & Millett, 2013; Gorsuch & Taguchi, 2008, 2010; Taguchi et al., 2004). Recommendations from these studies suggest that, in order for students to make steady progress, educators teaching in L2 settings should include ongoing fluency instruction activities and make sure to provide adequate time for practice.

Taguchi et al. (2004) compared the effect of repeated reading versus extensive reading on reading fluency. Extensive reading is a technique where the reader selects the text based on interest in order to gain information or read for pleasure. The idea behind extensive reading is that since the text is their choice, the student will be more vested in the text and more motivated to comprehend it. Both interventions yielded roughly equivalent results. Each was found to be effective in improving reading speed and fluency and in encouraging students to take an active part in different reading activities. They also suggested that in order for repeated reading to be an effective intervention, teachers need to use it consistently and systematically. Additionally, they observed that when repeated reading is used with foreign and second language learners, their

fluency increased during every session and during the overall time that the students used this intervention.

An additional open-ended, post-reading analysis of 30 young adult English as a foreign language (EFL) learners was conducted in Vietnam using the repeated reading intervention for 11 weeks (Gorsuch & Taguchi, 2008). Data from this study showed that when repeated reading was used with foreign language students in which Vietnamese was L1 and English was L2, it had a clear positive effect on their L2 reading fluency. Also, the authors recommend that reading lessons include instruction on how to accurately recognize words, as improving word recognition skills enhance automaticity and fluency.

The following studies are examples of the use of repeated reading in different settings over different periods and times. A study by Hapstak and Tracey (2007) tested the effects of assisted repeated reading on a diverse group of early elementary students. In this study, repeated reading was used with 4 first grade students from different educational settings. Students used echo and repeated reading over eight weeks and each session was between 10 and 15 minutes long for a total of 80-120 minutes per student for the duration of the study. Findings from this study showed positive effects on fluency when using these interventions.

Gorsuch, Taguchi, and Umehara (2015) studied the effect of using repeated reading (silent and with audio) on reading fluency for American students learning Japanese (L2). The students practiced Japanese characters, decoding and comprehension strategies to improve fluency. Participants in this study (n=14) were tested at the beginning and end of their Spring 2012 semester. During the semester, students used the repeated reading intervention twice a week for 20 minutes for a total of 460 minutes per student over a 12-week period. The authors concluded that repeated reading was effective when used by these students.

Horowitz-Kraus, Cicchino, Amiel, Holland, and Breznitz (2014) tested the effectiveness of using a computerized reading acceleration program on reading fluency amongst 89 students who had reading difficulties. This study had testing sites in both Israel and the U.S., so the reading acceleration program was administered in Hebrew (L1) for 61% of the sample and in English (L1) for 39% of the sample. Horowitz et al.'s (2014) study demonstrated that, after 4 weeks of using a reading acceleration program, all students showed improvement in their reading fluency skills, however Hebrew-speaking students' gains were greater. Findings from these studies provide evidence for positive outcomes when using repeated reading as a fluency intervention.

Implementing Repeated Reading

In this study, we based our fluency intervention on the Read Naturally program, a research-based approach of teacher-modeled repeated reading and progress monitoring (Hasbrouck, 2010). The school adopted the repeated reading strategy (LaBerge & Samuels, 1974; Samuels, 1979) in three sequential steps: 1) students listened to a fluent model (teacher reading), 2) students read aloud to teacher and got feedback, if needed, and 3) independent practice. When students in a second language setting (L2) read aloud, they develop an interest in the text and improve their self-confidence (Cohen, 2011). In addition, reading the material repeatedly fosters an environment in which students become active readers thereby allowing them to develop automaticity (LaBerge & Samuels, 1974; Samuels, 1979). Finally, it is important to use reading materials that are part of the school's curriculum because this gives students the incentive and motivation to continue practicing. Wolf and Katzir-Cohen (2001),

looked at several fluency studies and shared that using repeated reading intensively and over time, can lead to expanded gains of most students' working sight words.

The current study focused on using repeated reading (LaBerge & Samuels, 1974; Samuels, 1979) to develop students' reading accuracy and automaticity when reading a Hebrew text in a Jewish day school setting. The students practiced reading more frequently and systematically and reread the same text several times. By reading every day, they were able to identify more words, develop automaticity and gain reading fluency. As Rasinski (2012) states, "It is not enough for readers to read the words in text accurately—they need to read the words automatically". Kunh and Stahl (2003) share that using repeated reading allows readers to develop familiarity with printed text and helps them move from identifying words to reading text rapidly, accurately and with appropriate expression. Gaining reading fluency will, in turn, help students improve their reading comprehension as they spend less of their energy on decoding texts and more of it on understanding them (Cohen, 2011). It is critical that these interventions take place in the early grades, since, as students get older and they need to read more complex texts, acquiring fluency becomes that much harder. Over time, using the repeated reading intervention will lead students to become proficient readers. In this study, practice was conducted using both Modern Hebrew texts as well as passages from the classical biblical text, the *Chumash*. Using texts that are part of their normal curriculum will help motivate reluctant readers to participate in the exercises.

Assessment of the Five Basic Early Literacy Skills

Assessing early literacy skills is important in order to identify struggling students and to provide them with appropriate interventions. Valencia, Smith, Recce, Li, Wixson and Newman (2010) investigated multiple models of oral reading fluency assessment. As a follow-up to

multiple local and national efforts to improve reading instruction, educators started to explore intervention models for struggling readers. These recommendations were consistent with the findings of the NRP (2000) that instruction should support fluent readers to read with speed, accuracy and proper expression. Students who do not become fluent readers have difficulty understanding text.

Theresa Deeney (2010) discussed the effectiveness of one-minute fluency measures, such as DIBELS and MaDYK. She highlighted the importance of using these tools to understand struggling readers and to improve instruction. While she found that using one-minute fluency measures reliably identify students at risk of reading challenges, she emphasized how important it is to give a clear definition of reading fluency, and to determine which components are being assessed. Deeney (2010) found that CBM can help teachers identify students who have not fully developed reading accuracy and speed, and suggests that it is important for teachers to understand why students are not fluent and the effects of instruction time on students' reading. She also included a discussion presented by Pikulski and Chard (2005) on a "deeper" view of fluency. This view suggests that the process of acquiring fluency includes early reading skills (e.g. letter and word recognition) and begins well before students can directly demonstrate their ability to read fluently. Deeney (2010) found that while the DIBELS and other CBM can be useful, convenient, and reliable tools to gauge student progress towards grade-level criteria, they provide limited information on the roots of reading disfluency necessary to help struggling learners improve.

Another benefit of administering the DIBELS is that it gives the teacher an opportunity to hear students read aloud. Listening to students read provides teachers with critical information about students' reading development. In addition, one-minute fluency measures provide

information that can help teachers understand how students approach a grade-level text. Collecting data by recording the errors as students read can help teachers understand how each student is applying reading skills, including alphabetic knowledge and word patterns, and which skills require remediation. DIBELS approaches fluency in terms of accuracy and automaticity in word recognition in order to predict the level of risk for reading failure. These one-minute assessment texts are designed to determine whether students are able to read accurately and quickly. As Hall (2006) points out, word recognition is important because in order for these early literacy skills to be useful, they must be automatic.

The DIBELS measure includes sub-tests that should be administered three times during the school year. The recommended sub-tests are used to measure a young reader's skills in three areas: phonemic awareness, alphabetical print principle, and fluency (Good, Simmons, & Kame'enui, 2001). Using this measure allows the school to collect data on individual students, as well as assess school-wide performance. Coyne, Kame'enui, and Simmons (2004) studied the potential of using the data from DIBELS to improve instruction and plan interventions. They wrote, "By analyzing trends across students, classrooms, and grades, schools can identify the strengths and weaknesses of their school wide reading practices" (Coyne et al., 2004, p. 234). They also advocate designing reading instructional models that include clear goals, intermittent assessments, and appropriate interventions as students learn how to read. Using such a model will help all students make progress and will also address the needs of struggling readers.

Echols (2010) studied the efficacy of using DIBELS as a predictor of reading achievement. His study describes the five recommended DIBELS sub-tests given to students in grades kindergarten through third grade. These sub-tests include: "Letter Naming Fluency, Initial Sounds Fluency, Phoneme Segmentation, Nonsense Word Fluency, and Oral Reading

Fluency” (Echols, 2010, p. 24). The Letter Naming Fluency measure is given in kindergarten through mid-first grade. The students are asked to identify random letters (upper- and lower-case) in one minute. To assess phonemic awareness, students are given the Initial Sounds Fluency assessment. The Initial Sounds Fluency measures the child's ability to identify initial sounds when listening to spoken words. The student is asked to point to the picture that starts with a stimulus sound. The teacher reads a list of words and scores the correct number of initial sounds the student can identify in one minute. Another measure is the nonsense Word Fluency (NWF) is the measure connected to the alphabetic principle. This sub-test includes identifying words that generally follow a consonant-vowel-consonant pattern to examine the student's ability to generate letter sounds out of context.

The DIBELS Oral Reading Fluency (DORF) measure assesses the number of words in a predetermined unfamiliar text read correctly by the student in one minute. The student is asked to read a grade-level text while the assessor records various data, including words read correctly, errors, and errors corrected after three seconds. The median score of the words read correctly from three texts is determining the student reading performance. The scores determine if the reader needs core, strategic or intensive support (Good & Kaminski, 2002).

A parallel Hebrew literacy skills measure is MaDYK. The measure was designed to address the challenge of standardizing Hebrew reading instruction in Jewish day schools. Like the DIBELS, the development of a CBM for Hebrew reading meant better understanding of the Hebrew reading process and implementation of reading interventions. Goldberg et al. (2010) share the process of developing the MaDYK Hebrew reading measure. They reflected on the pilot implementation of this standardized measure and its potential impact on Hebrew reading instruction in Jewish day schools that concurrently teach both Hebrew and English reading in the

early grades. Implementing this measure with young readers gives schools tools to reflect on the most appropriate school-wide reading instruction while also providing specific information about individual students. By analyzing the data, schools will be able to identify struggling students and plan for targeted interventions to improve their fluency.

The MaDYK measure includes Hebrew Reading Fluency assessments. The students are given three unfamiliar, grade-level texts and asked to read each for 1 minute. While the student is reading, the teacher collects data by recording on a scoring sheet the number of words that were read correctly, number of errors, and the total number of words read. The data is entered into the MaDYK pilot database in order to get a report on the student's accuracy and fluency as measured in words per minute (WPM) levels. The results help identify those students who meet benchmarks, are at-risk for reading issues, or are currently exhibiting reading challenges (Goldberg et al., 2010). Since 2010, Goldberg has developed additional 1st grade, 2nd grade, and 3rd grade MaDYK measures for benchmark assessment and progress monitoring.

In summary, in both first language (L1) and second language (L2) classroom settings, a fluent reader should be able to read words accurately and automatically, without spending time on decoding, and with expression that enhances text comprehension. Since the main goal of reading instruction is to increase the students' understanding of text, it is important for educators to understand the connection between each part of this process. Based on the research, reading fluency plays a key role in developing successful readers (NELP, 2008; NRP, 2000). The literature also supports teaching reading fluency explicitly and using assessments to monitor students' progress. In both L1 and L2 classrooms, assessing reading skills and identifying struggling students is important for providing effective reading interventions.

The current study used repeated reading (LaBerge & Samuels, 1974; Samuels, 1979) as an intervention to improve Hebrew (L2) reading fluency for students struggling in meeting their grade level benchmarks in the Jewish day school setting. Repeated reading (LaBerge & Samuels, 1974; Samuels, 1979) was selected as the study intervention since research has found that it effectively aids students in developing reading fluency—both accuracy and pace—in L1 and L2 settings. Implementation of the repeated reading intervention (LaBerge & Samuels, 1974; Samuels, 1979) in this study included: teacher model fluent text, teacher-guided read aloud and independent practice. Struggling students were identified based on the MaDYK Hebrew reading measure. MaDYK was also used to assess students' progress throughout the course of the study.

SECTION III

RESEARCH QUESTIONS & HYPOTHESES

Research Questions

The purpose of this study is to assess the impact of using repeated reading (using a modeling and/or feedback component) on Hebrew as a second language (L2) reading fluency for Jewish day school students in grades 1 to 3 based on data gathered through MaDYK.

1. Is repeated reading effective in increasing Hebrew (L2) Reading Fluency (WPM and accuracy) for students in grades 1 to 3?
2. To what extent, if any, does repeated reading increase fluency (WPM and accuracy) for Hebrew (L2) readers in early elementary grades?

Hypotheses

Based on the literature review cited in this study, I hypothesized that:

1. Student reading fluency (WPM and accuracy) will improve for all students in grades 1-3 after using repeated reading in our Hebrew (L2) language classes. Additionally, students will be exposed to fluent reading models, have opportunities to practice reading, and get feedback from teachers which will all contribute to improving their reading fluency.
2. Student reading fluency will improve to the extent that they will move to a higher MaDYK status group. The MaDYK measure uses the following three status groups to identify how individual students compare to grade-level benchmarks: well-below standard, below standard, and at or above standard. I hypothesized that student fluency scores will increase, so that they qualify for a higher status group.

SECTION IV

RESEARCH METHODOLOGY

Study Design

This study utilized a quasi-experimental pre-test/post-test design. Sagor (2005, p. 7) describes the use of this type of experiment in an educational setting. The learning process often requires teachers to use new instructional models, interventions and strategies. As a result, teachers are often involved in undocumented quasi-experimental research.

Setting

This quantitative design was used to explore whether there is improvement in reading speed and accuracy for students in grades 1 to 3 at a Jewish Day School in suburban NY who scored below the benchmark based on the MaDYK Hebrew measure. The Hebrew reading curriculum in the early elementary grades systematically teaches Hebrew letters and vowels, words, sentences, and eventually, short passages. The students encounter Hebrew text in a few settings daily, although they only read silently or aloud infrequently throughout these lessons: one hour of Hebrew language class, an hour of Yahadut (Judaic and Bible studies) and 30 min of Tefillah (Hebrew prayer).

Hebrew instruction in all three grades includes the introduction of skills and some dedicated time for practice and mastery. By the end of first grade, most students are expected to be able to read a short Hebrew paragraph accurately and fluently and to be able to answer simple comprehension questions. A typical Hebrew language lesson starts with a simple Hebrew conversation followed by a 'hook' such as a picture, a song, a phrase or a guiding question related to the text being taught. Teachers in first grade focus on reviewing the letters and vowel

sounds and practice reading words correctly, while in the second and third grades, the emphasis shifts to comprehension of longer texts and expanding students vocabulary. Some students read aloud during the lesson, while others listen to their peers reading. Teachers then assign tasks related to the text that include: vocabulary, reading practice and comprehension activities. Most classes end with assigning homework that includes both reading practice and vocabulary practice.

Up until the 2017-2018 school year, our school used an internal Hebrew reading accuracy and comprehension assessment created by a team of teachers based on our Hebrew instruction resources. We found that most students had some difficulty in Hebrew reading accuracy and/or fluency, but we were not able to successfully identify the source of the problem. The current study was born of our desire to more accurately assess students' Hebrew reading mastery in order to provide evidence-based interventions to better help students to succeed.

Study Participants & Procedures

The sample in this study consists of 161 ($n=161$) students: 54 first grade students, 56 second grade students, and 51 third grade students. Study participant counts and percentages by grade and gender are listed in Table 1, below.

Table 1.***Study Participant Demographics***

Grade	<i>n</i>	%	Girls (<i>n</i>)	Girls (%)	Boys (<i>n</i>)	Boys (%)
1	54	33.5%	24	44.4%	30	55.6%
2	56	34.8%	22	39.3%	34	60.7%
3	51	31.7%	29	56.9%	22	43.1%
Totals	161	100%	75	46.6%	86	53.4%

As a baseline (pre-test), all students' Hebrew reading fluency (reading rate and accuracy) was assessed from January 15 - February 11, 2018 using the MaDYK middle of the year reading measures for their respective grade level. The repeated reading intervention was used with all students over the 6 week period from April 9 - May 18, 2018, three to four times per week. Each session was about 10 minutes long for each group of 4-5 students, so students experienced repeated reading for a total of 180 to 240 minutes over the course of the study. To test the hypothesis that repeated reading is an effective intervention for Hebrew readers that scored at/below and well-below benchmark, the students were reassessed (post-test) from May 21 - June 15, 2018 using the MaDYK end of year reading assessments for their respective grade level. Other studies that administered repeated reading for periods of 4 -12 weeks, showed improvement in students' accuracy and rate (Gorsuch et al., 2015; Hapstak & Tracey, 2006; Horowitz-Kraus et al., 2014)

Instrument

In October 2017, our Hebrew teachers were introduced to the MaDYK (Mivchan Dinami Shel Y'cholot Kriah) screening assessment. They learned how to perform the assessment, how to

score it, and how to use the data gathered from this assessment to gauge the progress of each student and to identify and group at-risk students.

As per the MaDYK administration guide, teachers met with each student 1:1 and followed the standardized procedures for administering the measures. “For each passage, the number of errors is subtracted from the total number of words read in order to obtain the number of words read correctly in one minute” (Goldberg et al., 2010). The data was then entered into the DIBELS.net online database system as part of the MaDYK Pilot. The system automatically calculates the median words read correctly per minute from the data entered for all three passages and places students in one of three categories for fluency and, separately, for accuracy:

- At or Above Benchmark / Likely to Need Core Support
- Below Benchmark / Likely to Need Strategic Support
- Well Below Benchmark / Likely to Need Intensive Support

The data from the MaDYK measure for individual students in first through third grades was compared before and after using the repeated reading intervention. The data collected helped the teachers learn about each student’s progress and provided information about the impact of repeated reading on students’ Hebrew reading fluency in both speed (WPM) and accuracy.

Study Intervention

Based on the information presented in the literature review, the repeated reading intervention (LaBerge & Samuels, 1974; Samuels, 1979) was selected as an appropriate method to improve learners’ reading fluency. The implementation of repeated reading in our school setting included teacher modeling fluent reading, student reading aloud and getting feedback from the teacher as needed, and rereading independently. This method follows Samuel’s (1979)

model where students read, and reread a short text 2-5 times until they achieve a predetermined level of mastery.

The repeated reading model (LaBerge & Samuels, 1974; Samuels, 1979) implemented in this study included both whole-class and small-group settings. The Hebrew teachers read the text aloud and then discussed the vocabulary and the main idea in the text with the students. The goal of modeling fluent reading is to expose students to an exemplar read with proper intonation and expression in order to promote better comprehension of the text. Listening to fluent models can help students achieve the goal of effective reading (Chard et al., 2002; Kuhn et al., 2006; Rasinski, 2003; Rasinski et al., 2009). Students then read the text in small groups and received constructive feedback from the teacher. The teacher's role in this step was to help students to develop fluent reader strategies such as: decoding, expression and phrasing (Kuhn et al., 2006; Rasinski, 2003, 2014). In the last step, students read the text independently three times.

In order for the model to be consistent across the three grades, all teachers met for pre-study training. At our meeting, we reviewed the MaDYK assessment results, discussed best ways to group the students and learned about the benefits of repeated reading and the reasons behind the chosen model. Additionally, throughout the duration of the study, teachers had a bi-weekly meeting with the school's Hebrew & Judaic Studies Coordinator to share feedback on the implementation of the model in their classrooms. Finally, the teachers were directed to read an article by Efrat Kotzer (n.d.) from the Center for Educational Technology in Israel to help them understand the significance of reading fluency, the importance of gathering empirical data, and to familiarize them with several useful reading interventions.

After implementing the repeated reading intervention as described above for six weeks, the students were assessed between May 21 and June 15, 2018 using the end of the year MaDYK

assessment. Data from this assessment was used to evaluate the hypothesis that when students are engaged in repeated reading, their reading fluency (accuracy and speed) improves. Data from both measures (pre and post-test) was used to evaluate the hypothesis that young Hebrew (L2) readers receiving intensive repeated reading intervention are more likely to show improvement in their Hebrew reading fluency skills (WPM and accuracy). The quantitative data was collected and analyzed and the results are reported below.

SECTION V

STUDY RESULTS

Oral reading fluency was assessed using the MaDYK measure at two intervals: mid-year (January 15 – February 11, 2018) and year-end (May 21 – June 15, 2018). A total of 162 (n=162) students participated in the study: 55 first grade students (34%), 56-second grade students (35%), and 51 third grade students (32%). Between the mid-year and year-end testing sessions, all students participated in a 6 week assisted repeated reading intervention described above. No students were excluded from the study.

Data for the mid-year and year-end MaDYK assessments were recorded and analyzed using a statistical software package. MaDYK provides two scores per pupil: reading rate, recorded as the number of words read correctly in a 1-minute period (WPM); and accuracy, calculated as a percentage of the number of words read correctly divided by the total number of words (errors and correct) read. As described above, student scores are categorized into one of three statuses: at or above benchmark, below benchmark, and well below benchmark. The median words read correct (MWRC) statuses for grades 1, 2 and 3 at mid-year and year-end are recorded below in Table 2. The median accuracy statuses for grades 1, 2, and 3 at mid-year and year-end are recorded below in Table 3.

Table 2.***Breakdown of Median Word Read Correct Status by Grade at Mid-Year and Year-End***

Grade	Status	N (mid)	% (mid)	N(end)	% (end)
1	Well Below Benchmark	52	96%	46	85%
1	Below Benchmark	2	4%	5	9%
1	At or Above Benchmark	0	--	3	6%
2	Well Below Benchmark	50	90%	47	84%
2	Below Benchmark	3	6%	5	9%
2	At or Above Benchmark	2	4%	4	7%
3	Well Below Benchmark	38	75%	41	80%
3	Below Benchmark	5	11%	4	8%
3	At or Above Benchmark	7	14%	6	12%

Table 3.***Breakdown of Accuracy Status by Grade at Mid-Year and Year-End***

Grade	Status	N (mid)	% (mid)	N(end)	% (end)
1	Well Below Benchmark	49	91%	41	76%
1	Below Benchmark	5	9%	7	13%
1	At or Above Benchmark	0	0%	6	11%
2	Well Below Benchmark	48	86%	31	55%
2	Below Benchmark	5	9%	15	27%
2	At or Above Benchmark	2	4%	10	18%
3	Well Below Benchmark	10	20%	3	6%
3	Below Benchmark	18	35%	5	10%
3	At or Above Benchmark	22	43%	43	84%

Paired samples t-tests were conducted for each grade to determine whether there were significant differences in the increase in words read correct between mid-year and year-end, as well as accuracy scores. For first grade, the median words read correct significantly increased from mid-year to year-end, $t(53)=-8.63$, $p<.001$ and the accuracy score significantly increased as well, $t(53)=-10.81$, $p<.001$. For second grade, the median words read correct significantly increased from mid-year to year-end, $t(54)=-13.00$, $p<.001$ and the accuracy score significantly increased as well, $t(54)=-8.72$, $p<.001$. For third grade, the median words read correct

significantly increased from mid-year to year end, $t(49)=-4.91$, $p<.001$ and the accuracy score significantly increased as well, $t(49)=-5.80$, $p<.001$.

Table 4 and Figures 1 and 2 depict the mean median word read correct score and the mean accuracy scores for each grade at mid-year and year-end.

Table 4.

Mean Median Words Read Correct and Mean Accuracy Scores by Grade at Mid-Year and Year-End

Grade	Mean MWRC (Mid)	Mean MWRC (End)	Mean Accuracy (Mid)	Mean Accuracy (End)
1	3.54	10.9	31.28%	60.22%
2	13.35	21.42	60.53%	78.93%
3	21.10	24.89	90.04%	95.54%

Note. $p < .001$ for all tabulated means

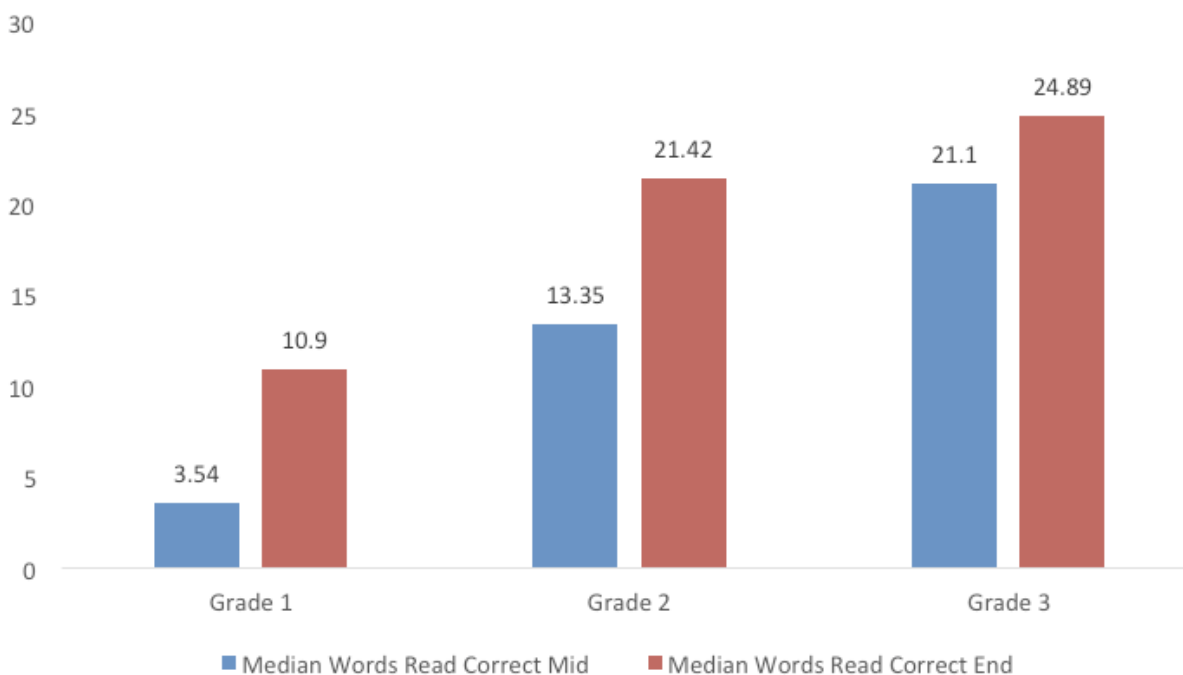


Figure 1. Mean median words read correct score at mid-year and year-end by grade level.

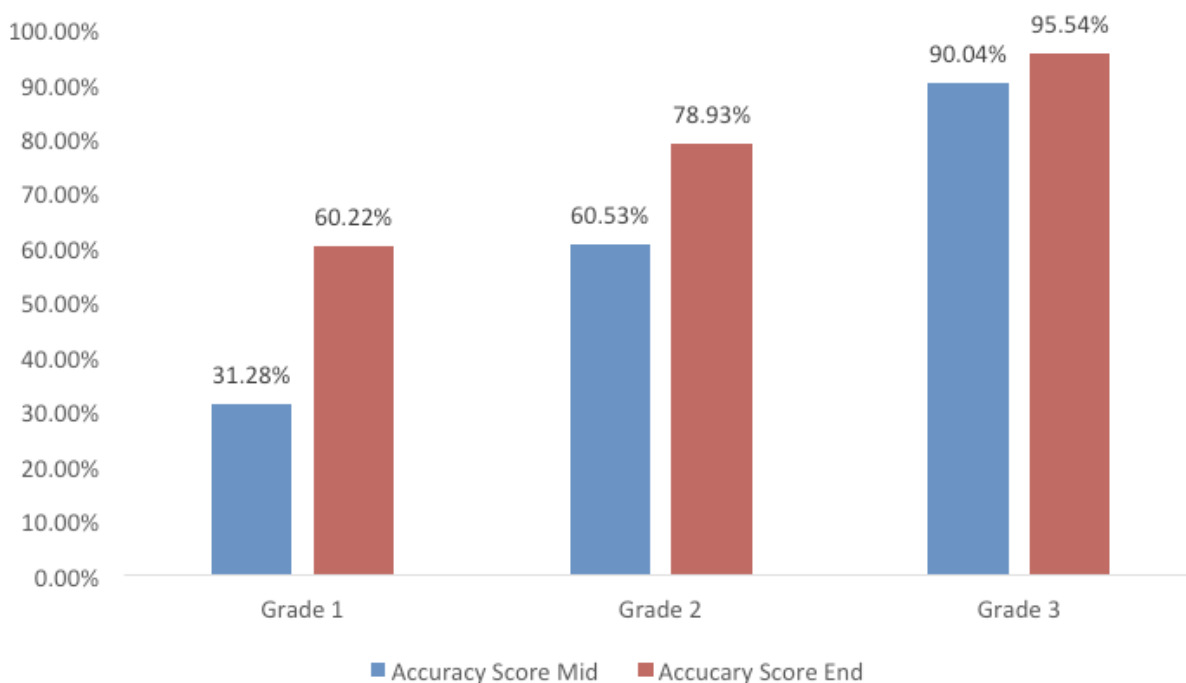


Figure 2. Mean accuracy score at mid-year and year-end by grade level.

Although there were statistically significant increases in both fluency and accuracy for all grades, the question remains whether there was enough progress to shift individual student status from well-below or below benchmark to at or above benchmark. This would not only show that students improved their reading fluency and accuracy, but also that they improved enough to now be reading on a grade-level trajectory.

In order to see how many students changed status on their words to read the correct score from mid-year to year-end, a crosstabs analysis was conducted. The results are depicted in Table 5, below. For first grade, of the 52 students that were “well below” benchmark midyear, one moved to “at or above” benchmark (2%), five (10%) moved to “below” benchmark, and 46 (89%) stayed at “well below” benchmark by year-end. Of the two who were “below” benchmark mid-year, both moved to “at or above” benchmark by year-end.

For second grade, of the 50 who were “well below” benchmark mid-year, one (2%) moved to “at or above” benchmark, three (6%) moved to “below” benchmark, and 46 (92%) stayed at “well below” benchmark by year-end. Of the three who were “below” benchmark, one (33%) moved to “at or above” benchmark, and two (67%) stayed at “below” benchmark by year-end. The two that were “at or above” benchmark midyear stayed “at or above” benchmark by year-end.

For third grade, of the 38 who were “well below” benchmark mid-year, two (5%) moved to “below benchmark” and 36 (95%) stayed at “well below” benchmark by year-end. Of the five who were “below benchmark”, one (20%) moved to “at or above” benchmark, one (20%) stayed at “below” benchmark, and three (60%) moved to “well below” benchmark by year-end. For the seven who were “at or above” benchmark, four (57%) stayed at “at or above” benchmark, one (14%) moved to “below” benchmark, and two (29%) moved to “well below” benchmark (29%) by year-end.

Table 5.*Shift in Median Words Read Correct Status by Grade from Mid-Year to Year-End*

Grade	Midyear Status	At or Above (End)	Below (End)	Well Below (End)
1	At or Above	0	0	0
1	Below	2	0	0
1	Well Below	1	5	46
2	At or Above	2	0	0
2	Below	1	2	0
2	Well Below	1	3	46
3	At or Above	4	1	2
3	Below	1	1	3
3	Well Below	0	2	36

In order to see how many students changed status on their accuracy score from mid-year to year-end, a crosstabs analysis was conducted. The results are depicted in Table 6, below. In the first grade, of the 49 who were “well below” benchmark for accuracy midyear, three (6%) moved to “at or above” benchmark and six (12%) moved to “below” benchmark by year-end. Forty (82%) stayed at “well below” benchmark by year-end. Of the five who were “below” benchmark midyear, three (60%) moved to “at or above” benchmark, one (20%) stayed at “below” benchmark, and one (20%) moved to “well below” benchmark by year-end.

For second grade, of the 48 who were “well below” benchmark midyear for accuracy, four (8%) moved to “at or above” benchmark, 14 (29%) moved to “below” benchmark, and 30 (63%) stayed at “well below” benchmark by year-end. Of the five who were “below”

benchmark midyear, four (80%) moved to “at or above” benchmark, and one (20%) stayed at “below” benchmark by year-end. Of the two who were “at or above” benchmark for accuracy midyear, they both stayed (100%) “at or above” benchmark for accuracy at the year-end.

For third grade, of those 10 who were “well below” benchmark for accuracy midyear, five (50%) moved to “at or above” benchmark, two (20%) moved to “below” benchmark, and three (30%) stayed at “well below” benchmark by year-end. Of the 18 who were “below” benchmark midyear, 15 (83%) moved to “at or above” benchmark and three (17%) stayed at “below” benchmark by year-end. Of the 22 who were “at or above benchmark” midyear, they all stayed “at or above” benchmark by year-end.

Table 6.

Shift in Accuracy Status by Grade from Mid-Year to Year-End

Grade	Midyear Status	At or Above (End)	Below (End)	Well Below (End)
1	At or Above	0	0	0
1	Below	3	1	1
1	Well Below	3	6	40
2	At/Above	2	0	0
2	Below	4	1	0
2	Well Below	4	14	30
3	At/Above	1	0	0
3	Below	15	3	0
3	Well Below	5	2	3

SECTION VI

DISCUSSION

This chapter will include an overview of the study and a discussion of the data with regard to assessing the efficacy of the repeated reading intervention (LaBerge & Samuels, 1974; Samuels, 1979) on Hebrew (L2) reading fluency in grades 1 through 3 in a Jewish day school setting. It will also include a discussion of the limitations of the study and anticipated contributions of the study to the field of Hebrew reading (L2) fluency instruction

Study Overview

This study assessed the efficacy of using repeated reading (LaBerge & Samuels, 1974; Samuels, 1979) to promote Hebrew reading fluency in grades 1 through 3 (34% of the students were in 1st grade, 35 in 2nd grade and 32% in 3rd grade) in a Jewish day school where Hebrew is taught as a second language (L2). The quasi-experimental pre-test/post-test design, a model often used in educational settings to assess adequacy of an intervention or a strategy (Sagor, 2005, p. 7), aimed to demonstrate whether using repeated reading could improve students' reading fluency (accuracy and speed, WPM). Overall, a significant improvement in reading accuracy and fluency was shown for most students.

The final design of this study was guided by understanding the significance of fluency in both the first (L1) and second (L2) language classroom settings. Reading fluency plays a major role in students' reaching the pinnacle of reading mastery: reading comprehension (Grabe, 2009; Kuhn et al., 2006; Rasinski, 2014; Saltzman, 2019). Reading fluency was highlighted by the National Reading Panel (NRP, 2000) as a critical skill in reading development in a first language (L1) setting. Studies following the Panel supported the significance of adding fluency instruction

to the reading curricula for young readers (Allington, 2006; Kuhn et al., 2010; Kuhn & Stahl, 2003; Rasinski, 2014). Despite these findings, there has been little or no change to English reading instruction techniques for young students (Armbruster et al., 2006; Pikulski & Chard, 2005; Rasinski, 2014).

The model used in this study was influenced by other studies in first language (L1) settings that assess the use of repeated reading (LaBerge & Samuels, 1974; Samuels, 1979) in primary grades. This teacher-assisted model included: teachers modeling fluent reading, students reading aloud while getting feedback from the teacher, and concluded with students rereading the text independently a few times. As mentioned in this study's literature review, in order for young readers to develop fluency, they must be taught how to read accurately and get adequate opportunities to practice reading aloud. Additionally, teachers need to include in their lessons opportunities for students to both listen to fluent reading and to read and re-read different types of texts themselves (Hasbrouck, 2010).

Another helpful strategy to assist students in mastering the components of reading fluency (accuracy, automaticity and prosody) is to provide support such as teacher modeling or recorded audio as they work through their repeated reading sessions. After using a similar model with struggling students, Kuhn & Stahl (2003) shared that using an assisted approach to repeated reading is found to be effective. Also, daily reading practice allowed students to develop familiarity with the text and helped them identify words, so they were able to read more accurately and at a faster pace (Kuhn & Stahl, 2003; Hasbrouck, 2010).

The repeated reading intervention was also used in previous studies in a second language (L2) setting. Data from these studies showed the benefits of listening to fluent reading modelled with expression by a teacher and how this technique improved students' understanding of text.

Teachers implementing this model guided students to decode the words accurately, read with expression, and use appropriate phrasing.

Using curriculum-based measures (CBM) to show evidence of students' reading fluency, speed, and accuracy skills was an important basis for this study, since it helped identify students who require more support and interventions (Fuchs, 2004; Gravois & Gickling, 2008). One standardized reading fluency measure referenced in this study's literature review is the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) assessment. DIBELS is used to monitor English reading progress in early childhood classrooms by collecting data from short-term reading skills assessments three times each year.

The current study used a CBM entitled *Mivchan Dinami shel Y'cholot Kriah* (MaDYK) that applies the same strategy as DIBELS to measure Hebrew language literacy. Using MaDYK in this study helped assess students' progress toward accurate and fluent Hebrew reading and identify students at-risk for reading issues, or currently exhibiting reading challenges (Goldberg et al., 2010). The MaDYK measure was used as a pre- and post-intervention assessment tool to show the impact on reading accuracy and fluency after using the repeated reading intervention for six weeks. To my knowledge, there are no equivalent studies on using repeated reading to improve Hebrew reading fluency in a Jewish day school setting where English (L1) and Hebrew (L2) are both taught in the early elementary grades.

Results from this study showed that there was a significant increase in both median words read correctly and accuracy scores from mid-year to year-end after using the repeated reading intervention for six weeks. During the six week period, the students got an average of 200 minutes of repeated reading intervention delivered in twenty 10-minute sessions. These findings are consistent with other studies that found that repeated reading is effective in developing

reading fluency in an L2 setting (Allen, 2016; Chang & Millett, 2013; Gorsuch & Taguchi, 2008, 2010; Taguchi et al., 2004).

Allen (2016) reported a 14% increase in WPM from 130 WPM to 150 WPM after implementing the Read Naturally (assisted repeated reading web-based intervention) program for six months (90 hours) for a single adult use case. In a study of college students learning English (L2), Gorsuch & Taguchi (2008) reported that after 16 sessions over an 11-week period, fluency between the first and last repeated reading session increased on average by 55 WPM or 33%. Gorsuch and Taguchi's subsequent study (2010) showed a similar positive increase in reading fluency after 16 sessions of approximately 35 mins each, or 560 minutes per student. Chang and Millett (2013) found that the repeated reading group increased 45- 47 wpm or 45%- 46% after implementing the intervention twice a week over 11 weeks (22 sessions). All of the above studies were conducted with university students or adults, rather than elementary school students, so the results aren't directly comparable. Nevertheless, data from the current study showed an increase in reading fluency after using repeated reading for 6 weeks. Students' reading fluency increased from 3.54 WPM to 10.9 WPM, a 65% gain in grade 1, from 13.35 WPM to 21.42 WPM, a 38% gain in grade 2 and from 21.10 WPM to 24.89 WPM, a 16% gain in grade 3.

Although there was a significant increase in both median words read correct and accuracy scores from mid-year to year-end, the MaDYK "status" of the students didn't change much. That is because, at the midyear benchmark when the study commenced, the majority of students were at the very low end of the "well below" spectrum. For first grade, of the 52 students that were "well below" benchmark midyear, one moved to "at or above" benchmark (2%), five (10%) moved to "below" benchmark, and 46 (89%) stayed at well below benchmark by year-end. For second grade, of the 50 who were "well below" benchmark mid-year, one (2%) moved to "at or

above” benchmark, three (6%) moved to “below” benchmark, and 46 (92%) stayed at “well below” benchmark by year-end. For third grade, of the 38 who were “well below” benchmark mid-year, two (5%) moved to “below benchmark” and 36 (95%) stayed at “well below” benchmark by year-end. Therefore, although student fluency scores increased by several points, they didn't necessarily move to a higher reading status group.

There was a bit more movement in the accuracy scores. In the first grade, of the 49 students who were “well below” benchmark mid-year, three (6%) moved to “at or above” benchmark, six (12%) moved to “below” benchmark, and forty (82%) stayed at “well below” benchmark by year-end. Of the five who were “below” benchmark midyear, three (60%) moved to “at or above” benchmark, one (20%) stayed at “below” benchmark, and one (20%) moved to “well below” benchmark by year-end. In the second grade, of the 48 who were “well below” benchmark for accuracy mid-year, four (8%) moved to “at or above” benchmark, 14 (29%) moved to “below” benchmark, and 30 (63%) stayed at “well below” benchmark by year-end. For third grade, of thee 10 who were “well below” benchmark mid-year, five (50%) moved to “at or above” benchmark, two (20%) moved to “below” benchmark, and three (30%) stayed at “well below” benchmark by year-end.

These findings might be attributed to the way our school approaches Hebrew reading instruction and our teachers' lacking an in-depth understanding of the developmental approach to Hebrew reading education presented by Katzir et al. (2012) and Shechter et al. (2018). Understanding the fundamental Hebrew language processes of vocabulary, morphology and syntax in the context of the sequential phases of Hebrew reading development is key to helping students attain accurate and fluent Hebrew reading in grades 1-3. The unique orthography and morphology systems of the Hebrew language and the role of phonological awareness in

developing accuracy and fluency may have also influenced the study results (Katzir et al., 2012; Share & Levin, 1999; Shechter et al., 2018). Based on the literature review of this study, effective reading instruction for beginning Hebrew readers should include learning and practice of *nikud* (the Hebrew vowel system), learning how to blend letter and vowel sounds, identifying beginning, middle and end of words, and learning how to divide Hebrew words into syllables (Goodman, 2007; Katzir et al., 2012; Shimron, 2006). Learning vocabulary was also shown to be beneficial in building reading fluency (Shechter et al., 2018).

The curricular model used in the school being studied includes the above evidence-based strategies found to be effective in Hebrew reading instruction. Even so, both pre-test and post-test data from the current study showed that most students were struggling with reaching grade level expectations in Hebrew (L2). Based on this information, the school assessed its Hebrew reading curriculum for all students. Many students that scored below grade level in the MaDYK measure were on or above grade level in a similar assessment for English reading. These findings led the school to compare methods of English reading instruction for kindergarten and first grade to those used in Hebrew reading instruction. One key difference was the emphasis on phonics in English reading lessons.

As discussed above in Chapter 1, the differences between Hebrew and English reading fluency are influenced by both consistency and orthography. When studying the differences between English and Hebrew early reading development, vowelized Hebrew orthography follows a “shallow”, completely consistent design while English follows a “deep”, inconsistent orthographic transparency. Several studies assessed the role of phonological awareness as a key skill in developing fluency in both Hebrew and English. These studies found that, in both languages, phonological awareness was an effective predictor of reading development while

vocabulary was an inconsistent predictor (Katzir et al., 2012). Despite these differences, the repeated reading intervention in this study showed positive gains similar to repeated reading studies in English (Allen 2016, Grabe & Stoller, 2011; Lems, 2012; Taguchi & Gorsuch, 2012; Taguchi et al., 2016). The repeated reading intervention (LaBerge & Samuels, 1974; Samuels, 1979) provided students with the opportunity to have ongoing practice in word recognition and the results showed improvement in accuracy and fluency. Still, most students didn't make enough progress to meet grade level expectations.

Data from this study showed that most students from all three grades scored “below” and “well below” grade level standards after taking the pre-intervention test. These findings are aligned with Grabe (2009) who found that students learning a second language at all levels experience challenges with developing reading fluency. This data also led us to choose to use the repeated reading intervention in order to improve our Hebrew reading instruction in grades 1-3.

Using repeated reading allowed our students to have a chance to read more frequently and helped us to develop a systematic approach to fluency practice. This model was supported by Kunh and Stahl (2003) who found that using repeated reading helps students develop familiarity with the printed text, increase their pace from identifying words to reading accurately, read at a faster rate, and read with expression.

By implementing the MaDYK measure with our young readers, the school was able to pinpoint data demonstrating that both administrators and educators needed to take a closer look at the way Hebrew reading instruction was being delivered in all three grades. At mid-year, prior to the study intervention, the breakdown of median word read correctly status showed that the percentage of students that scored “well below” was 96% in 1st grade, 90% in 2nd grade, and 75%

in 3rd grade. At the same point, the breakdown of accuracy status showed that the percentage of students that scored “well-below” was 91% in 1st grade, 86% in 2nd grade, and 20% in 3rd grade. One possible explanation for this data can be the way our Hebrew teachers approach teaching reading, where more time is spent on recognizing words rather than focusing on phonological awareness. This analysis may be connected to findings from a study done by Shechter et al. (2018) on predicting word reading fluency in first and third grade Hebrew-speaking students. The study found that for Hebrew speaking students, vocabulary played a role only with first grade students. As students got to 3rd grade, phonological and morphological awareness became significant in predicting fluency, while vocabulary was not.

The greatest gains in this study in both Hebrew reading fluency and accuracy were in the 1st grade with the mean fluency increasing threefold from mid-year to year-end and mean accuracy increasing 28.94% from mid-year to year-end. In the 2nd grade, the gains were more modest with the mean fluency increasing 1.6 times from mid-year to year-end and mean accuracy increasing 18.4% from mid-year to year-end. The gains in the 3rd grade were even more marginal with the mean fluency increasing 1.18 times from mid-year to year-end and mean accuracy increasing just 5.5% from mid-year to year-end. This trend may be due to the traditional emphasis on teaching and practicing Hebrew vowels and word study throughout grades 1-3. As per Shimron (2006) and Katzir et al. (2012), grasping the vowel system is certainly important to improve the reading skills of beginner readers, especially those in first grade. However, in grades 2 and 3, the instructional emphasis needs to shift to orthographic processing and automaticity in order to promote Hebrew mastery and reading comprehension before students can graduate to reading unpointed text (Share & Bar-On, 2017).

In addition, as mentioned in this study's literature review, recommendations from previous L2 studies (Allen, 2016; Chang & Millett, 2013; Gorsuch & Taguchi, 2008, 2010; Taguchi et al., 2004) highlighted the need for educators teaching in a L2 setting to include ongoing fluency instruction activities and make sure to provide time for practice in order for students to make steady progress. Other studies also suggest that instruction in L2 settings should emphasize word configuration, finding suitable texts, and providing time for hands-on reading practice (Chang & Millett, 2013; Cohen, 2011; Rasinski, 2014; Taguchi et al., 2016).

It is clear that in all three grades, increasing the time teachers dedicate to reading fluency instruction, beyond implementing the repeated reading intervention, is essential to getting more students to meet grade level expectations. In addition, devoting more class time to interventions that emphasize the unique morphology and orthography of the Hebrew language, such as learning how to divide words into syllables may be useful (Shimron, 2006). Finally, more frequent vocabulary practice can also help with reaching this goal (Goodman, 2007).

Based on the studies described above and the findings of the current study, the school concluded that spending more time on teacher-guided repeated reading could lead to improving students' accuracy and fluency. The school also decided to add phonics practice to Hebrew lessons that includes identifying beginning, middle and end of words and teaching students how to divide Hebrew words into syllables. By implementing specific developmentally-appropriate reading strategies such as these we hope to foster further reading gains and help more students to reach grade level expectations.

Understanding the Hebrew reading development model that was developed by Share and Bar-On (2017) led us to conclude that our second grade needs to pour more emphasis on Hebrew decoding and practice identifying words to master accuracy. In third grade, the focus needs to

shift to fluency instruction where students get opportunities to develop automaticity in recognizing words and gaining greater understanding of text. The very low status of our first graders brought home the significance of phonological awareness as a key skill in Hebrew reading development. Thus, we hope to embed more phonological awareness activities into the preschool curriculum to better prepare students entering first grade.

Considering the study results as a whole, implementing repeated reading helped accuracy and fluency of most students overall. However, repeated reading alone is an inadequate solution, since it does not take into consideration the developmental stages of the Hebrew reading process. Moving forward, differentiating the intervention based on the stages of Hebrew reading development has the potential to achieve better outcomes. Following the model described by Share and Bar-On (2017), in the first grade, in addition to repeating reading, the focus should be on phonological awareness practice including: mastering letter names and sounds and spelling-to-sound practice. In second grade, in addition to repeating reading, the focus should be working on identifying more words and mastering reading accuracy with proper *nikud* and pronunciation. In third grade, in addition to repeating reading, the focus should be practicing fluency and phonological awareness practice (Katzir et al., 2012; Shechter et al., 2018). In addition, perhaps other fluency interventions may be implemented, such as: choral reading, Readers Theater and practice of unpointed Hebrew text.

Another important point is to reassess our kindergarten curriculum and make sure that kids are exposed and taught early stages of Hebrew literacy development. As mentioned by Tadmor-Troyansky (2019), it is important to emphasize the logic and simplicity of the Hebrew writing system. Identifying and naming the Hebrew letters and vowels and sounding out the

common CV combinations should be embedded in the preschool curriculum and reinforced in the early elementary grades.

Study Limitations

Despite results that demonstrated significant improvement in students' reading fluency (accuracy and pace) from pre-intervention to post-intervention, this study had a few limitations. First, the study was done in only one Jewish day school location in suburban NY and the duration that the repeated reading intervention was implemented was limited to 6 weeks. It is unknown if the same results could be replicated in other school environments. In addition, due to the study's quasi-experimental design, there was no control group, so it is difficult to discern whether the Hebrew reading fluency (accuracy and WPM) gain was a direct result of the repeated reading intervention or not. It is possible that if, instead of repeated reading, we emphasized other skills found to be effective in developing Hebrew reading fluency, we may have achieved similar gains.

Teachers' experience, previous training, and the diversity of teachers' pedagogical approaches were hard to control and might influence the ability to generalize and maintain the results presented by the data. While all of the teachers were trained together in how to implement repeated reading, each teacher had autonomy to administer the repeated reading intervention in their Hebrew or Judaic Studies classes using either classical or modern Hebrew texts. In addition, after teachers were trained to implement the new reading intervention, there was no way to control the precise implementation methods in the classroom setting due to the teachers' independent execution of the intervention. Therefore, concluding that repeated reading was the reason for student's growth cannot be confirmed. Being that the study was only conducted during the winter and spring (January-June) of the school year, it would also be

interesting to see if the students would have similar gains if the intervention were implemented throughout the entire school year (September-June). Finally, since teachers were dedicating extra time for reading instruction during these months, it is difficult to determine how much this change in reading growth came from implementing repeated reading vs the enhanced awareness of and additional time being dedicated to reading Hebrew.

Some strategies supported by the research include: concentrating on developing phonological awareness, exposing students to a variety of grade level texts, and providing opportunities for students to listen to fluent reading models, whether by teacher or via audio/visual recordings (Allen, 2016; Chang & Millett 2013; Jeon, 2012; Taguchi et al., 2016). If such techniques were incorporated into students' daily Hebrew reading lessons, we may have made similar progress in Hebrew reading accuracy and fluency. Also, during the course of the study, we provided teachers with more comprehensive reading instruction training. This additional training may have been beneficial to the development of reading fluency among students. Given the limitations described above, it is hard to generalize and interpret the data to be effective in other settings.

Significance of the Study

Data from this study served as a catalyst for our school to reflect on our Hebrew language curriculum and instruction methods in grades 1 through 3. It helped us to form a vision for Hebrew reading professional development for our teachers. In order to create a successful environment that provides students on all reading levels with the tools to become good readers, our school recognized that we must transform our Hebrew reading instruction program. Our Hebrew reading curriculum must include teaching students how to decode words and how to

sound out the letters that make words, and allowing students opportunities to practice reading Hebrew regularly. In this way, students can gain more sight words, develop fluency, and increase their vocabulary so that they may better understand the texts they read (Goldstein, 2011; Williams, 2011).

This study's literature review discussed the importance of developing phonological awareness skills in the reading process and mentioned that strong phonological awareness skills lead to better reading achievement (Armbruster et al., 2006; NELP, 2008; NRP, 2000).

Phonemic awareness was described by the NRP as the “the ability to focus on and manipulate phonemes in spoken words” (NRP, 2000, p. 2). The report also noted the strong connection between reading and spelling development to phonemic awareness instruction. Students' mastery of phonological awareness, in general, and phonemic awareness, in particular, can help predict later development of decoding, comprehension and spelling skills. Studies in English reading fluency emphasize the importance of phonological awareness and word reading to the development of fluency (Allington, 2006; Kuhn et al., 2010; Kuhn & Stahl, 2003; NRP, 2000; Rasinski, 2014; Wolf & Katzir-Cohen, 2001). In other studies, phonological awareness was found to be a universal predictor of word reading in both English and Hebrew (Goodman, 2007; Katzir et al., 2012; Shechter et al., 2018). Additional research on the role of phonological awareness in Hebrew as a second language instruction would be valuable.

Additional studies discussed conditions that may be helpful in schools designing programs to help students develop second language (L2) reading fluency. Some of the recommendations include: exposing students to a variety of appropriate texts, providing teacher training, and including opportunities for students to listen to fluent models, such as a teacher

skilled in the language or high quality audio or video recordings. (Allen, 2016; Chang & Millett 2013; Goodman, 2007; Jeon, 2012; Taguchi et al., 2016).

Conclusion

At the beginning of this process, our school was aiming to improve our students' Hebrew reading skills. Teachers learned how to administer the MaDYK, and collect and analyze data in order to better track our students' progress and group students with similar needs. This was essential for our school to improve students' Hebrew reading fluency (WPM and accuracy) and it led to a broader process of understanding best practice for teaching Hebrew reading throughout the curriculum. Both teachers and administrators came to realize how significant it is for Hebrew language (L2) teachers to be trained in understanding the reading process and designing effective reading instruction.

Increased training helps teachers to identify and understand the predictors of reading development and how to design effective literacy instruction in order to improve student achievement (Allington, 2006; Grabe, 2009; Hasbrouck 2010; Kuhn et al., 2006, 2010; Kuhn & Stahl, 2003; NRP, 2000; Rasinski, 2012, 2014). Specific to this study, effective L2 Hebrew reading instruction includes learning how to decode words, read fluently, and comprehend Hebrew texts (Goldberg et al., 2010). During this process, our school administration realized that our teachers are lacking an understanding of how to use Hebrew reading strategies that capitalize on the unique orthography and morphology systems of the Hebrew language. Additionally, it is important for teachers to study the role of phonological awareness in developing both accuracy and fluency (Katzir et al., 2012; Shechter et al., 2018; Share & Levin, 1999).

Before we embarked upon this study, our teachers followed the curriculum and taught Hebrew reading with very little understanding of the Hebrew reading development process and no formal way to define and assess reading fluency. Through the course of this study, the entire faculty grew in our understanding of the foundational principals of Hebrew reading instruction and in our knowledge and application of the stages of Hebrew reading acquisition. Together, we learned about Hebrew reading fluency, how to assess students' reading using standard testing, and how to use the data that we collected to group students with similar difficulties. We learned to tailor our instruction to reflect the data and expanded our toolbox of reading interventions to better address our students' needs. This process gave us the framework and resources to reflect on our Hebrew language instruction process, including other skills of language instruction such as listening, speaking and writing. Our teachers were empowered with the knowledge and skills to more systematically address our students' Hebrew reading development. As a team, we benefited from the opportunity to articulate our shared vision for improving our Hebrew reading instruction and student outcomes. Teachers now better understand the need for collaboration and their own responsibility for professional development focusing on Hebrew reading principles, analyzing student data and implementing reading interventions in a systematic way. As the school leader, I made sure to provide leadership support including allocating resources and budget for providing ongoing support for our teachers.

Further research is needed to address the limitation of this study. I propose that the repeated reading intervention should be combined with other strategies like phonics and vocabulary practice that can improve reading fluency in grades 1-3. Based on Katzir et al. (2012) and Shechter et al.'s (2018) the developmental approach to Hebrew reading acquisition,

the supportive interventions should be distinct and appropriate for each phase of Hebrew reading development. Finally, the interventions should be used for a longer period of time than 6 weeks.

The findings of the current study are consistent with Pomson & Wertheimer's (2017) comprehensive report of Hebrew language teaching in the US that spotlighted the critical need for training Hebrew language teachers in language instruction. This process promises to help Jewish day school students to gain a strong foundation in Hebrew literacy so that they can be able to make deep connections, understand ancient and modern Hebrew texts, and enjoy their reading now and into the future.

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