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WHAT DO THESES AND DISSERTATIONS TELL US ABOUT LEARNING DISABILITIES?

(Review Article)

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Abstract

The purpose of this study was to descriptively analyze theses and dissertations written "on learning disabilities. In line with this purpose, keywords such as "specific learning disability", "specific learning disorder", "learning disability", "reading impairment", "reading disability", "dyslexia", "writing impairment", "writing disability", "dysgraphia", "mathematics impairment", "mathematics disability" and "dyscalculia" were used for the review. The search including the studies published in 2020 put forth 31 master's theses and 20 Ph.D. However, due to the official restrictions on the studies, the full texts of one master's thesis and one Ph.D. thesis could not be downloaded. According to the findings, the first master's thesis was published in 1996, whereas the first Ph.D. dissertation was published in 1998. Written by students from different graduate schools and different departments, these theses and dissertations were gathered around four skill areas. According to the number of theses and dissertations, these skills were reading, mathematics, writing, and science, respectively. Although the increase in the number of the studies written on the subject from different disciplines especially in recent years is considered positive, it is noteworthy that there is no content knowledge in the aforementioned studies conducted outside the special education departments taking into consideration the academic language used and how the study problems are addressed. The theses and dissertations were also explored in terms of participant types, data collection tools, validity-reliability works related to data analysis, and study results. The findings were discussed in the context of developments in the field of special education.

Keywords: learning disabilities, theses, dissertations, reading disability, writing disability, mathematics disability

1. INTRODUCTION

Learning disability (LD), the etiology of which we have limited knowledge, was first introduced by Morgan (1896) as congenital word blindness. Morgan argued that these children's health status did not differ from their typically developing (TG) peers but had difficulties in reading and writing. However, with the studies carried out in the following years, there has been a significant increase in our knowledge of LD. So much so that in the first half of the 20th century, there were no signs distinguishing specific LD stemming from social, cultural, and environmental deprivation or limitations from LD (Hinshelwood, 1907, 1911; Ford, 1928). Later, studies revealed that specific LD is not caused by the stated deprivations (Bateman, 1965; Kirk & Bateman, 1962; Werner & Strauss, 1941). Along with

these, the basic propositions put forward by Morgan (1896) have been supported by the studies carried out to date and have preserved their validity.

The 1960s became the golden age in terms of the emergence of LD as a field, and this has contributed to the increase in social consciousness and awareness in special education (Melekoğlu, 2017). These years coincide with the first use of the term "learning disability" in its current usage. In these years, LD was defined as the slowness, disorder, or developmental delay experienced in the acquisition of speech, language, and academic skills stemming from dysfunctions in the brain, emotional disorders, and behavioral disorders (Kirk & Bateman, 1962). Based on the definition of LD that is widely used today, LD refers to the disability experienced in acquiring basic academic skills independent of age, intelligence score, and education factors for six months or longer that negatively affect school achievement and daily life activities (Kring, Johnson, Davison, & Neale, 2015).

The examination of the causes of LD reveals that we cannot talk about the existence of a single factor related to the source of the disability. Studies on the subfields of LD show that some neurological factors and sensory deficiencies may be associated with learning problems (Fletcher & Grigorenko, 2017; Lyon, 1995). Brain monitoring studies carried out together with advances in technology indicate the existence of differences in children with LD (Eden et al., 1996). In addition, genetic transition, prenatal environmental factors, and exposure to harmful substances are also shown among the causes of LD. Despite all this, LD still has many unknowns.

It is possible to say that LD constitutes the greatest majority among students with disabilities in terms of prevalence. So much so that, according to a report published in 2020, a very high proportion of all individuals with special needs, such as 33%, was made up of individuals diagnosed with LD. This percentage indicates a rate of 3.5% in the general population (Hussar et al., 2020).

In terms of diagnosing LD, it is possible to say that the diagnosis of individuals with LD is more difficult and complex compared to other individuals with special needs. However, according to the Diagnostic and Statistical Manual of Mental Disorders, which is frequently used in the literature and published by the American Psychiatric Association in 2013, there are four basic criteria for the diagnosis of LD. These criteria are:

A. Difficulty in learning and using academic skills in at least one subject (reading, writing, or mathematics) for at least six months despite interventions for the difficulties.

B. The affected academic skills are substantially and quantifiably below those expected for the individual’s chronological age, and negatively affect academic, occupational performance, or daily life activities, as confirmed by individually administered standardized achievement tests and comprehensive clinical evaluations. For individuals age 17 years and older, a documented history of LD may be substituted for the standardized assessment.

C. Although LD starts at school-age years, it may not fully manifest itself until the negatively affected academic skills exceeds the individual’s limited capacity.

D. LD is not explained by intellectual disabilities, hearing or visual impairment, other mental or neurological disorders, psychosocial problems, lack of academic proficiency in the language of the school, or lack of adequate educational instruction.

Finally, there are three types of prevalent learning disabilities. The first of these, impairment in reading, manifests itself with difficulties in the accuracy of word reading, reading speed and fluency, and reading comprehension. The second of these, impairment in mathematics, manifests itself with difficulties in number sense, memorization of arithmetic

facts, correct and fluent calculation, and mathematical reasoning. The third one, impairment in written expression, manifests itself with difficulty in spelling accuracy, grammar and punctuation accuracy, and clarity and organization of written expression. In addition, each of these impairments can be seen separately in individuals. However, it is also possible for individuals to have more than one impairment (APA, 2013; Pierangelo & Giuliani, 2006).

Considering that it is the most crowded group among all disability groups, it is obvious that scientific studies carried out with students diagnosed with LD are important. Furthermore, LD may manifest itself in different areas. Thus, studies on each of these areas are also important in order to get the desired output from the interventions. Also, in order for the studies to be conducted to have sufficient results in terms of quality and quantity, the current situation should be determined. As in other disability groups, developments in the United States are leading the field in LD. However, the studies carried out in our country are at a considerable level. Postgraduate studies, a part of these studies, make significant contributions to the field. Based on all these, it is believed that this study will be beneficial in terms of both determining where we are in the field of LD and what kind of momentum we are in in the national context, as well as guiding the course of future research. In this context, the present study aimed to explore the theses and dissertations done, including the year 2020.

2. METHODOLOGY

2.1. Study Design

The present study employed the descriptive content analysis method since it offers information on theses and dissertations written in the field of LD. This method is a systematic way to descriptively assess the results of research on any given subject (Çalık & Sözbilir, 2014).

2.2. Data Collection and Analysis

In the study, which examined the theses and dissertations written on LD, a search was conducted in the Council of Higher Education (CHE) database in order to collect data using the keywords of “specific learning disability”, “specific learning disorder”, “learning disability”, “reading impairment”, “reading disability”, “dyslexia”, “writing impairment”, “writing disability”, “dysgraphia”, “mathematics impairment”, “mathematics disability” and “dyscalculia”. The search came up with 119 theses and dissertations. These theses and dissertations were examined by the authors according to the following criteria using document analysis. The criteria determined for the studies to be examined in the study were as follows: a) must be conducted in Turkey and published between 1996-2020, b) must include reading, writing, reading comprehension, and mathematics skills, c) must be conducted with students, and d) must contain at least one of the keywords.

Based on the criteria made by the authors, 30 Master’s theses and 19 Ph.D. dissertations were included in the study after the keyword search. 94 studies were not included in the study since they did not meet the determined criteria and two studies were also not included since only their abstracts were published. As a result of the examination, it was decided to discuss the studies in three basic categories: qualitative studies, quantitative studies, and experimental studies. Qualitative studies refer to studies employing research methods in which qualitative data collection techniques are used to put forth the current situation, whereas quantitative studies refer to studies employing research methods in which quantitative data collection techniques are used. Studies examining the effect of any intervention applied are called experimental studies (Yıldırım & Şimşek, 2011). After the categories were formed, the studies were shared among the authors and they conducted the analyses individually.

2.3. Reliability

In order to ensure that the study's objectivity, a coding list was formed by the authors. This list is presented in the tables under the Findings. Thirty-five percent of the data (17 studies) in the study, which used content analysis, were analyzed independently by the first and the second author to ensure reliability. To calculate the reliability of the study, the intercoder reliability formula ((Agreement/Agreement+Disagreement) X 100) was used and values in the range of 89-95% were found.

3. FİNDİNGS AND INTERPRETATİON

The reviews made based on the determined criteria, 49 theses and dissertations conducted between 1996-2020 on the academic skills of students diagnosed with LD were found. The fact that there were so few studies on LD in the aforementioned 23-year period and the fact that the majority of the studies (n = 30) were published in 2014 and after put forth our country's position in the field of LD. Thirty of these studies were master's theses, whereas 19 of them were Ph.D. dissertations. In terms of the research methods used in these studies, the majority of the studies (n = 25) were quantitative studies, followed by experimental studies (n = 16). The least conducted studies were qualitative studies (n = 8). It is noteworthy that the studies conducted were mostly about reading skills (n = 32), followed by numerical reasoning and reasoning skills (n = 14), while writing skills (n = 3) were very few. The majority of the studies (n = 23) were conducted by students in the Department of Special Education. However, there were also studies conducted on LD by students in the Elementary School Education (n = 15), Curriculum Development (n = 2), Health Sciences (n = 2), Mathematics (n = 1), Turkish Language (n = 1), Guidance and Psychological Counseling (1), Computer and Instructional Technologies (1), Business Administration (n = 1), Cognitive Sciences (1), and Philosophy (1). Another issue that drew attention in the findings was that the majority of the studies (n = 21) were conducted with students at risk, and 18 studies were conducted with students diagnosed with LD. Ten studies compared students with LD with their TD peers. Findings regarding the study are presented in three categories.

3.1. Findings Regarding the Qualitative Studies

The examination of theses and dissertations on LD published between 1996-2019 that employed the qualitative research method revealed 25 studies, four of which were Ph.D. dissertations. The evaluations made based on the determined criteria are presented in Table 1.

According to Table 1, the study participants in most of the theses and dissertations were students at risk (n = 10). Some of these studies compared students with LD with their TD peers (n = 10), and only a few studies worked with students with LD (n = 4).

In terms of the study subjects, studies mostly explored students' reading performance according to various variables (Arabacı, 2017; Baydık, 2002; Ceylan, 2016; Demirtaş, 2016; Demirtaş, 2017; Günayar Şenel, 1998; Seçkin, 2012; Sürgen, 2019; Yurdakal, 2014). There were fives studies on reading comprehension skills (Acat, 1996; Delimehmet-Dada, 2017; Gökdemir, 2020; Karcıoğlu, 2020; Sanır, 2017), whereas there were two studies in which writing skills were examined according to various variables (Bahap Kudret, 2016; Öztürk, 2017). In terms of numerical skills, there were studies examining mathematical performances according to various variables (Altındağ Kapak, 2014; Çelikağ, 2015; Ekşi Border, 2020; Kurtça, 2016; Özkut, 2011; Ünal, 2017) and science education (Aracı, 2019; Emir, 2019; Usta-Yılmaz, 2018).

The examination of the data collection tools used in the studies reavaled that more than one data collection tool was used. The studies mostly used tests as data collection tools (Acat, 1996; Altındağ Kumaş, 2014; Arabacı, 2017; Aracı, 2019; Bahap Kudret, 2016; Ceylan,

2016; Çalikağa, 2015; Delimehmet Dada, 2017; Demirtaş; 2016; Demirtaş, 2017; Ekşi Sınır, 2020; Emir, 2019; Gökdemir, 2020; Günayar-Şenel, 1998; Kurtça, 2016; Özkut, 2011; Öztürk, 2017; Sanır, 2017; Sürgen, 2019; Usta-Yılmaz, 2018; Ünal, 2017; Yurdakal, 2014). The studies that used tests were followed by studies that used rubrics (Arabacı, 2017; Bahap Kudret, 2016; Ceylan, 2016; Emir, 2019; Karcıoğlu, 2020; Sanır, 2017; Seçkin, 2012). Only a few studies used word lists and cards (Baydık, 2002; Delimehmet Dada, 2017; Demirtaş, 2017; Seçkin, 2012).

The examination of the studies in terms of the validity and reliability of the data collection tools and data analysis revealed that there were studies stating that both the data collection tools and data analysis were valid and reliable (Delimehmet Dada, 2017; Demirtaş, 2017; Kurtça, 2016; Sanır, 2017; Seçkin, 2012; Sürgen, 2019). However, most of the studies included information revealing validity and reliability works conducted in only one category. The number of studies that provided information only on the validity and reliability of the data collection tools (Acat, 1996; Çelikağ, 2015; Gökdemir, 2020; Özkut, 2011; Öztürk, 2017; Yurdakal, 2014) was higher than the number of studies that provided information only on the validity and reliability of data analyses (Altındağ-Kumaş, 2014; Bahap Kudret, 2016; Ceylan, 2016) is seen to be more. Furthermore, there were studies that did not provide any information on the validity and reliability of both data collection tools and data analysis (Arabacı, 2017; Aracı, 2019; Baydık, 2002; Demirtaş, 2016; Ekşi Sınır, 2020; Emir, 2019; Karcıoğlu, 2020; Usta-Yılmaz, 2018; Ünal, 2017).

Examination of the study findings revealed that there were significant differences between students with LD or students with reading faiure and their TD peers (Arabacı, 2017; Baydık, 2002; Ceylan, 2016; Delimehmet-Dada, 2017; Demirtaş, 2016; Demirtaş, 2017; Ekşi-Sınır, 2020; Gökdemir, 2020; Günayar-Şenel, 1998; Karcıoğlu, 2020; Seçkin, 2012; Sürgen, 2019; Yurdakal, 2014). The studies that were conducted on strategies used in reading comprehension skills determined that the strategies used in these studies improved the reading skills of students with LD (Acat, 1996; Sanır, 2017). There were significant differences between the groups in studies comparing students with LD or students with writing failure their TD peers (Bahap-Kudret, 2016; Öztürk, 2017). The studies comparing the numerical calculation skills of students with LD with their TG peers put forth that there were significant differences between the numerical calculation skills of students with LD and their TG peers (Altındağ-Kumaş, 2014; Çelikağ, 2015; Özkut, 2011; Ünal, 2017). Furthermore, in the scale development study for numerical calculation skills, the scale developed was found to be valid and reliable (Kurtça, 2016). Finally, the various guides used in teaching the science learning objectives to students with LD using the determined methods were found effective in teaching the science learning objectives to these students (Aracı, 2019; Emir, 2019; Usta-Yılmaz, 2018).

Table 1. *Quantitative Research*

Author, Year	GraduateSchool	Department	Participant	Purpose	Tool	Tool Validity	Tool Reliability	Analysis Validity	Analysis Reliability	Results
M. Bahaddin Acat, 1996	Graduate School of Social Sciences	Department of Curriculum Development in Elementary Education	AR	Determining the relationship between 4th graders' reading disabilities and their reading comprehension skill performances.	Test and Observation Form	Present	Present	NIG	NIG	It was determined that there was a significant relationship between 4th graders' reading comprehension skill performances and their reading disabilities, that the most common reading error was unnecessary pausing, and that there was a high level of relationship between the reading comprehension skill and reading strategy use.
Hatice Günayar Şenel, 1998*	Graduate School of Social Sciences	Department of Curriculum Development in Elementary Education	AR	Comparing students with reading disabilities and their TD peers in terms of reading, reading comprehension, reading speed, and error types	Tests	NIG	NIG	NIG	NIG	It was stated that compared to their TD peers, students with reading disabilities made more errors and the diversity of error types was greater although the error types were similar in both groups.
Berrin Baydık, 2002*	Graduate School of Educational Sciences	Department of Special Education	AR	Comparing the word reading strategies of students with reading disabilities and students with no disabilities	Word Lists	NIG	NIG	NIG	NIG	It was expressed that students with no reading disabilities used holistic and phonological strategies, whereas those with reading disabilities used only phonological strategies.
Çağlar Özkut, 2011	Graduate School of Educational Sciences	Department of Special Education	AR	Examining the relationship between students' mathematics performance and mathematics disability	Test	Present	Present	NIG	NIG	It was revealed that there was a significant relationship between the 1st, 2nd, and 3rd grade students' scores on tests about LD and their scores on mathematics knowledge and that this relationship explained .65, .60, and .63 the total variance, respectively.

Table 1. *(cont.)*

Author, Year	Graduate School	Department	Participant	Purpose	Tool	Tool Validity	Tool Reliability	Analysis Validity	Analysis Reliability	Results
Şaziye Seçkin, 2012	Graduate School of Educational Sciences	Department of Special Education	AR	Comparing the reading speed, reading accuracy, error frequency, and prosodic reading characteristics of 3rd grade students with reading disabilities and their TD peers	Rubric and Control List	Present	Present	Present	Present	It was determined that compared to the students with reading, TD students' reading accuracy was higher, they were more successful in fluent reading and their reading errors were less.
İbrahim Halil Yurdakal, 2014	Graduate School of Educational Sciences	Department of Elementary Education	Teacher and LD	Determining classroom teachers' perceptions, practices, and knowledge levels towards students with reading disabilities	Rubric and SSIF	Present	Present	Present	NIG	It was determined that classroom teachers had adequate knowledge about reading disabilities although they had different opinions about the practices and that the students with reading disabilities were not satisfied with their teachers' educational practices.
Özlem Altındağ Kumaş, 2014	Graduate School of Educational Sciences	Department of Special Education	TD and LD	Examining the operation performances of 90 3rd grade TD students, students with mathematics disabilities, and students with LD in addition and subtraction operations	Question Form and Survey	Present	Present	Present	Present	It was revealed that compared to TD students, the operation solving times of students with LD and students with mathematics disabilities in written and verbal operations were longer, they had lower operational accuracy, and made more and similar mistakes, that teachers could not identify student mistakes correctly and that there was no significant difference in operation performances according to sex.

Table 1. *(cont.)*

Author, Year	Graduate School	Department	Participant	Purpose	Tool	Tool Validity	Tool Reliability	Analysis Validity	Analysis Reliability	Results
İpek Çelikağ, 2015	Graduate School of Health Sciences	Department of Physşology	TD and LD	Comparing number operation performances of students with mathematics LD (dyscalculia) with their TD peers.	Test, Scale and Survey	Present	Present	NIG	NIG	It was found that students with mathematics LD (dyscalculia) had a negative significant difference in their mathematical skills compared to their TD peers and that the response and accuracy rates of students with dyscalculia in computerized tests did not differ from their TD peers.
Halil Öztürk, 2017	Graduate School of Health Sciences	Department of Special Education	TD and LD	Comparing written expression skills of students with LD with their TD peers.	Scale	Present	Present	NIG	NIG	It was determined that the written expressions of students with LD differed significantly from TD students and that the writing anxiety levels of students with LD were higher than those of TD students.
V. Emre Kurtça, 2016	Graduate School of Educational Sciences	Department of Special Education	AR	Developing a valid and reliable achievement test for screening the risk of mathematics disability of TD elementary school students	Test	Present	Present	Present	Present	The Mathematics Achievement Test developed to screen the risk of mathematics disability of 1st-4th grade TD elementary school students was found to be valid and reliable.
Mustafa Ceylan, 2016	Graduate School of Educational Sciences	Department of Special Education	AR	Examining the reading fluency of stories and informative texts of 4th grade students with reading failure	Rubric	NIG	NIG	Present	Present	It was determined that the participating students' reading speed was higher while reading informative texts, that their reading accuracy did not differ according to the text type, and that they made more reading errors while reading informative texts.

Table 1. *(cont.)*

Author, Year	Graduate School	Department	Participant	Purpose	Tool	Tool Validity	Tool Reliability	Analysis Validity	Analysis Reliability	Results
Gonca Demirtaş, 2016	Graduate School of Educational Sciences	Department of Elementary Education	AR and Teacher	Exploring the school behaviors and academic achievements of 4th grade students with reading disabilities	SSIF and Test	NIG	NIG	NIG	NIG	It was revealed that the participating students had low achievement and had experienced problems such as appropriate behavior in and out of the classroom, adaptation to the school environment, and learning activities.
Zeynep Bahap Kudret, 2016*	Graduate School of Educational Sciences	Department of Special Education	TD	Examining the relationship between reading comprehension, summarization, morpheme knowledge/syntax, and vocabulary	Rubric	NIG	NIG	Present	Present	It was found that there were significant and positive relationships in the reading comprehension and the content dimension of the summarization skill and between vocabulary and morpheme knowledge/syntax skills.
Gülperi Arabacı, 2017	Graduate School of Educational Sciences	Department of Special Education	TD and LD	Investigating the relationship between reading fluency and reading comprehension skills of 4th grade students with LD and their TG peers	SSIF, Rubric ve Question Form	NIG	NIG	NIG	NIG	It was put forth that the scores of students with LD from accurate reading, reading comprehension, reading speed, and prosody skills were significantly lower than the scores of TD students.
Şenay Delimehmet Dada, 2017	Graduate School of Educational Sciences	Department of Special Education	TD and LD	Comparing the vocabulary performance and reading comprehension skills of TD 3rd and 4th grade students and students with LD	Test and Inventory	Present	Present	Present	Present	It was determined that the vocabulary and reading comprehension performances of the TG students were better than the students with LD.

Table 1. *(cont.)*

Author, Year	GraduateSchool	Department	Participant	Purpose	Tool	Tool Validity	Tool Reliability	Analysis Validity	Analysis Reliability	Results
Ç. Pınar Demirtaş, 2017	Graduate School of Educational Sciences	Department of Special Education	AR	Examining the relationship between working memory, phonological awareness, word reading, and rapid naming performances of students who were stated to have reading disabilities in 1st grade	Test and Scale	Present	Present	Present	Present	It was stated that students with reading disabilities differed negatively in their working memory, phonological awareness, word reading, and rapid naming skills compared to their TD peers and that they read both meaningful and meaningless words slower and more incorrectly.
İ. Hakkı Ünal, 2017	Graduate School of Health Sciences	Department of Business Administration	AR Adult	Examining the academic achievement levels in the mathematics and accounting courses of undergraduate students majoring in accounting in terms of dyscalculia and different intelligence components	Test	NIG	NIG	NIG	NIG	It was put forth that participants' accounting achievement was not affected by the differences in the scores of dyscalculia disposition or intelligence components, and that there was no significant difference.
Hanifi Sanır, 2017*	Graduate School of Educational Sciences	Department of Special Education	TD and LD	Exploring the relationship between prior knowledge use, intrinsic motivation, reading speed and strategy use, and reading comprehension skills performances of students with LD and their TG peers	Text, Tests	Present	Present	Present	Present	It was concluded that internal reading, motivation, reading comprehension, reading speed, and reading strategy use skills indirectly predicted each other.

Table 1. *(cont.)*

Author, Year	GraduateSchool	Department	Participant	Purpose	Tool	Tool Validity	Tool Reliability	Analysis Validity	Analysis Reliability	Results
H. Usta Yılmaz, 2018	Graduate School of Educational Sciences	Department of Elementary Education	LD	Developing a science experiment guide for middle school students with LD about the "Matter and Change" learning domain and examining its effect on students	Test	NIG	NIG	NIG	NIG	A significant difference was found between the pretest and posttest scores of the test developed for the "Matter and Change" learning domain guide formed and applied for students with LD in favor of their posttest scores.
Nefize Aracı, 2019	Graduate School of Educational Sciences	Department of Special Education	LD	Investigating the effect of keyword strategy used in the teaching of elementary school science concepts on students with LD	Test	NIG	NIG	NIG	NIG	It was found that the keyword strategy contributed positively to the learning of science concepts in students with LD, maintained its effectiveness in the 6th week following the intervention, and the students in the experimental group reported positive opinions about the strategy.
M. İrem Emir, 2019	Graduate School of Educational Sciences	Department of Elementary Education	LD	Developing a science experiment guide for middle school students with LD about the "Physical Phenomena" learning domain and examining its effect on students	Test and SI	NIG	NIG	Present	Present	It was revealed that students with LD had difficulty in defining concepts such as flexibility, conductivity, and friction from the "Physical Phenomena" learning domain and that they performed more successfully in expressing their thoughts with drawing compared to writing.

Note: NIG =No Information Given, *=Ph.D. Dissertation, LD = Learning Disability, TDG= Typically Developing, AR= At Risk, SSIF= Semi-Structured Interview Form

Table 1. *(cont.)*

Author, Year	GraduateSchool	Department	Participant	Purpose	Tool	Tool Validity	Tool Reliability	Analysis Validity	Analysis Reliability	Results
Diğdem Sürgen, 2019	Graduate School of Educational Sciences	Department of Educational Sciences Education	TD and LD	Comparing the performances of 3rd grade TD students and students with LD in terms of their working memory, rapid naming, word reading, and phonological awareness skills	Test	Present	Present	Present	Present	It was determined that students with LD showed lower performance than their peers in all the variables and that the differences between groups were the greatest in the variables of phonological awareness, phonological memory, phonological short-term memory, and number naming speed.
Gülce Ekşi Sınır, 2020	Graduate School of Educational Sciences	Department of Guidance and Psychological Counseling	TD and LD	Comparing the executive functions, attention skills, and problem-solving skills of students aged 9-13 with and without special LD	Tests and Forms	NIG	NIG	NIG	NIG	It was found that the significant difference in attention, executive function, and problem-solving skills performances of students with LD compared to their TD peers was not affected by the variables of sex and grade level, but affected by diagnosis and parents' education levels
Mert Gökdemir, 2020	Graduate School of Educational Sciences	Department of Special Education	LD	Examining the performances of students with LD regarding their reading speed, correct reading, and reading comprehension skills and determining the performance of the students in this group at the class and age level	Tests and Forms	Present	Present	NIG	NIG	It was found that students with LD were not able to perform as expected at the chronological age and grade level in reading comprehension, correct reading, and reading speed skills.
Rabia Karcıoğlu, 2020	Graduate School of Health Sciences	Department of Otorhinolaryngology	TD and LD	Comparing the reading comprehension of children with and without dyslexia in two different text types	Texts and Tests	NIG	NIG	NIG	NIG	It was concluded that text presentation affected reading comprehension in children with dyslexia.

3.2. Findings Regarding the Qualitative Studies

The examination of theses and dissertations that employed the qualitative research method in the field of LD revealed eight Master's theses and four Ph.D. dissertations, published between 2016 and 2020. The evaluations made based on the determined criteria are presented in Table 2.

According to Table 2, four of the studies were conducted with TD students (Sağlam, 2019; Şen, 2016; Türkmenoğlu, 2016; Uygun, 2019) and four of them were conducted with students with LD (Güven Akdeniz, 2018; Kaşdemir, 2020; Koç, 2018; Sözen , 2017).

There were studies conducted to determine the reading skills of students with LD (Sağlam, 2019; Şen, 2016; Türkmenoğlu, 2016), reveal reading comprehension skills (Kaşdemir, 2020; Sözen, 2017), determine numerical calculation skills (Güven-Akdeniz, 2018) and increase numerical calculation skills (Koç, 2018; Uygun, 2019).

The examination of the data collection tools in these studies put forth that some of them used only semi-structured interview forms (Güven Akdeniz, 2018; Koç, 2018), and some of them used various scales and forms in addition to using semi-structured interview forms (Kaşdemir, 2020; Sözen, 2017; Şen, 2016; Sağlam, 2019; Türkmenoğlu, 2016; Uygun, 2019).

The studies' validity and reliability of the data collection tools and data analysis were also examined. Some studies provided information on the validity and reliability of both the data collection tools and data analysis (Güven Akdeniz, 2018; Uygun, 2019), whereas there were studies that provided information only on the validity and reliability of the data analysis (Sözen, 2017; Türkmenoğlu, 2018). Furthermore, there were studies that did not provide any information on the validity and reliability of both the data collection tools and data analysis (Kaşdemir, 2020; Sağlam, 2019; Şen, 2016).

The studies that aimed to determine the reading fluency and reading comprehension skills of students with LD or reading failure (Sağlam, 2019; Sözen, 2017; Türkmenoğlu, 2016) achieved their desired results. In the study (Şen, 2016), which aimed to improve the reading fluency of students with reading failure, the reading fluency of the participating students increased with the method used. The study on the attainment of mathematics concepts by students with LD (Guven Akdeniz, 2018; Kaşdemir, 2020; Koç, 2018; Uygun, 2019) also taught the desired learning objectives to students.

Table 2. *Quantitative Studies*

Author, Year	Graduate School	Department	Participant	Purpose	Tool	Tool Validity	Tool Reliability	Analysis Validity	Analysis Reliability	Results
Mustafa Türkmenoğlu, 2016	Graduate School of Educational Sciences	Department of Elementary Education	AR	Using the peer teaching method with 4th grade students with reading disabilities to overcome the difficulties they experience and determining the effectiveness of the method	SSIF, Scale and Form	NIG	NIG	Present	Present	It was determined that the peer teaching method used in the study positively affected students' reading comprehension and reading fluency skills, and positively contributed to their cognitive, sensory, and social development.
Nilay Şen, 2016*	Graduate School of Educational Sciences	Department of Turkish Education	AR	Giving special accelerated reading training to the first-year middle schoolers and testing the effectiveness of the education given	Form and Test	NIG	NIG	NIG	NIG	It was found that the reading speed of each student who was subjected to the training and the reading speed of the student group who did not receive the training differed significantly in a positive way
Nurhüda Sözen, 2017*	Graduate School of Educational Sciences	Department of Elementary Education	LD	Using the guided reading method in the development of reading comprehension skills of students with LD and examining the effectiveness of the method	Test and texts	NIG	NIG	Present	Present	It was concluded that the guided reading method applied in the study affected the reading comprehension skill performance of the students positively.
Beyza Koç, 2018*	Graduate School of Educational Sciences	Department of Elementary Education	LD	Teaching the addition operation with the help of scenario	SSIF	Present	Present	Present	Present	It was revealed that scenario showed 90% success in addition without carry and with carry.

Table 2. *(cont.)*

Author, Year	Graduate School	Department	Participant	Purpose	Tool	Tool Validity	Tool Reliability	Analysis Validity	Analysis Reliability	Results
Dilşad Güven Akdeniz, 2018*	Graduate School of Educational Sciences	Department of Elementary Education	LD	Determining the learning roadmaps of the students with LD regarding the concept of length	SSIF	Present	Present	Present	Present	It was stated that students with LD were able to fulfill the specified teaching objectives.
Özlem Sağlam, 2019	Graduate School of Educational Sciences	Department of Elementary Education	AR	Determining the effectiveness of repeated reading and reverberant reading methods, which support children's reading skills	SSIF and Test	NIG	NIG	NIG	NIG	It was revealed that there was a decrease in the reading errors of the students and an increase in their reading comprehension percentages as a result of the works done with the repetitive and reverberant reading methods.
Neşe Uygun, 2019*	Graduate School of Educational Sciences	Department of Elementary Education	AR	Teaching the "Numbers" learning domain with a support education program	SSIF and Test	Present	Present	Present	Present	It was stated that the participants had a success rate of 82.5% in the learning objectives.
Beyhan Kaşdemir, 2020	Graduate School of Educational Sciences	Department of Elementary Education	LD	Improving the reading comprehension skills of a 4th grade student with LD using the PESOE strategy	Worksheets and narrative texts	NIG	NIG	NIG	NIG	It was revealed that strategy showed 90% success in addition without carry and with carry.

Note: NIG =No Information Given, *=Ph.D. Dissertation, LD = Learning Disability, TDG= Typically Developing, AR= At Risk, SSIF= Semi-Structured Interview Form

3.3. Findings Regarding Experimental Studies

The examination of theses and dissertations that employed the experimental research method in the field of LD revealed six Master's theses and 10 Ph.D. dissertations, published between 2014 and 2019. The evaluations made based on the determined criteria are presented in Table 3.

According to Table 4, 13 of the studies were conducted with students with LD (Balıkçı, 2020; Doğmaz, 2016; Görgün, 2018; Karamuklu, 2018; Kınıklı, 2019; Öğülmüş, 2018 Özbek, 2014; Özbek, 2019; Özer-Şanal, 2020 ; Urfalıoğlu-Eroğlu, 2020), six of them were conducted with at risk students (Akın, 2020; Kuruyer, 2014; Küçükköy, 2020; Mutlu, 2016; Sirem, 2020; Şahin, 2018). The majority of the participants were 10 years old and under (Akın, 2020; Balıkçı, 2020; Görgün, 2018; Karamuklu, 2018; Kınıklı, 2019; Kuruyer,2014; Küçükköy, 2020; Mutlu, 2016; Özbek, 2014; Özbek , 2019; Sirem, 2020; Şahin, 2018; Urfalıoğlu-Eroğlu, 2020), two studies (Doğmaz, 2016; Özer-Şanal, 2020) had participants between the ages of 10-14, and one study (Öğülmüş, 2018) had participants between the ages of 8-13.

In terms of the study subjects, there were studies aimed to increase the reading and reading comprehension skills of students with LD or reading failure (Akın, 2020; Balıkçı, 2020; Görgün, 2018; Kınıklı, 2019; Kuruyer, 2014; Küçükköy, 2020; Özbek, 2014; Özbek, 2019; Özer-Şanal, 2020; Urfalıoğlu-Eroğlu, 2020), for teaching literacy skills (Karamuklu, 2018; Şahin, 2018), for increasing writing skills (Öğülmüş, 2018) and for numerical calculation skills (Doğmaz, 2016; Mutlu, 2016).

In terms of the study designs, the majority of the studies employed the single subject experimental design (Balıkçı, 2020; Görgün, 2018; Karamuklu, 2018; Kınıklı, 2019; Kuruyer, 2014; Mutlu, 2016; Özbek, 2014; Özbek 2019; Özer-Şanal, 2020), whereas some of them employed the pretest-posttest control group experimental design (Akın, 2020; Doğmaz, 2016; Küçükköy, 2020; Öğülmüş, 2018; Sirem, 2020; Şahin, 2018; Urfalıoğlu Eroğlu, 2020).

The studies' validity and reliability of the data collection tools and data analysis were also examined. Most of the studies provided information on the validity and reliability of both the data collection tools and data analysis (Akın, 2020; Balıkçı, 2020; Görgün, 2018; Karamuklu, 2018; Kuruyer, 2014; Öğülmüş, 2018; Özbek, 2014; Özbek, 2019; Özer-Şanal, 2020; Sirem, 2020; Şahin, 2018), whereas some of the studies did not provide information on the validity and reliability of the data collection tools and data analysis (Doğmaz, 2016; Kınıklı, 2019; Küçükköy, 2020; Mutlu, 2016; Urfalıoğlu-Eroğlu, 2020.

The examination of the study results revealed that the programs aimed at improving the reading fluency of students with LD or with reading failure were effective (Akın, 2020; Balıkçı, 2020; Görgün, 2018; Kuruyer, 2014; Küçükköy, 2020; Öğülmüş, 2018; Özbek, 2014; Özbek, 2019; Özer-Şanal, 2020; Sirem, 2020; Urfalıoğlu-Eroğlu, 2020), methods used in teaching literacy were effective (Karamuklu, 2018; Şahin, 2018), programs for numerical calculation skills were effective (Doğmaz, 2016; Mutlu, 2016) and the program for improving writing skills (Öğülmüş, 2018) was effective.

Table 3. *Experimental Studies*

Author, Year	Participants			Intervention	Purpose	Method	Validity & Reliability		Results
	Diagnosis	Age	Sex				Analysis Validity	Analysis Reliability	
Hayriye Gül Kuruyer, 2014*	AR	10 Years	4 Females 4 Males	Enriched reading program	Using an enriched reading program and determining the effect of the program on the cognitive processes and neural structures of students with reading disabilities	Single subject experimental design	Present	Present	It was stated that the program applied in the study contributed positively to the elimination of the reading difficulties experienced by the students.
Ahmet Bilal Özbek, 2014	LD	8-9 Years	1 Female 2 Males	Tablet computer	Examining the effectiveness of the use of tablet computers in the development of reading fluency of 2nd and 3rd grade students with LD and determining the student and teacher opinions on the subject	Single subject experimental design	Present	Present	It was determined that the tablet computer-assisted treatment program improved the reading fluency of the students with LD, students had positive opinions about the application, and parents of the students believed the application was successful.
Sıla Doğmaz, 2016	LD	10-14 Years	15 Females 4 Males	Diagram program	Determining the effectiveness of diagram method used with elementary and middle school students with LD on their mathematical problem-solving skill performances	Pretest-posttest Ön test - son test CGED	NIG	NIG	It was found that the mathematical problem-solving skill performances of the students using the diagram method differed significantly from the students in the control group, they could generalize this method to different problems, and the student and teacher views on the use of diagrams in mathematical problem solving were positive.
Yılmaz Mutlu, 2016*	AR	8 Years	1 Female 2 Males	Computer-aided instruction material	Using computer-aided materials with students with LD and examining the effects of it on their number perception skill performance	Single subject experimental design	NIG	NIG	It was revealed that the use of computer-assisted materials with students with LD improved their counting skills and their problem-solving speed and contributed positively to improving the addition operation.

Table 3. *(Cont.)*

Author,Year	Participants			Intervention	Purpose	Method	Validity & Reliability		Results
	Diagnosis	Age	Sex				Analysis Validity	Analysis Reliability	
Ferhat Şahin, 2018	AR	8,9,10 Years	18 Females 12 Males	Multimedia material	Examining the effectiveness of multimedia teaching materials on 2nd, 3rd and 4th grade students with reading and writing disabilities	Pretest-posttest Ön test - son test CGED	Present	Present	It was found that there was a significant increase in the reading and writing process, reading and writing skills, and reading and writing speeds after the application in both the experimental and control groups.
Emine Seçil Karamuklu, 2018	LD	8-10 Years	6 Males	Instruction program	Comparing the effectiveness of sound-based sentence method and sentence (analysis) methods on students with LD	Single subject experimental design	Present	Present	It was determined that the sentence analysis method was more effective than the sound-based sentence method with students with LD in reading and writing letters, syllables, words, and sentences.
Bora Görgün, 2018*	LD	8 Years	2 Females 3 Males	RFCSEP programı	Examining the effect of RFCSEP program on fluent reading and reading comprehension skills of 2nd, 3rd, and 4th grade students with LD	Single subject experimental design	Present	Present	It was stated that RFCSEP had a positive effect on the number of correct words read, reading percentage, and reading comprehension scores.
Kürşat Öğülmüş, 2018*	ÖLD	9-13 Years	NIG (10 EG, 13 CG)	POW + C-SPACE Strategy Package	Examining the effect of POW + C-SPACE Strategy on the story writing skills of students with LD	Pretest-posttest Ön test - son test CGED	Present	Present	It was determined that the POW + C-SPACE strategy contributed positively to the story writing skills of students with LD.
Mehmet Abdullah Kınıklı, 2019	LD	8 Years	2 Females 1 Male	Reading comprehension strategy instruction	Examining the effect of repeated echo-reading strategy on reading comprehension skills and language development of students with LD	Single subject experimental design	NIG	NIG	It was determined that the echo-reading strategy contributed positively to the reading comprehension skill performance of students with LD.
Ahmet Bilal Özbek, 2019*	LD	10 Years	1 Female 3 Males	Reading comprehension strategy instruction	Examining the effect of strategy teaching software developed to support the reading comprehension performances of students with LD	Single subject experimental design	Present	Present	It was concluded that the use of strategy teaching software with students with LD made a positive contribution to their reading comprehension skill performances.

Table 3. *(Cont.)*

Author, Years	Participants			Material	Purpose	Method	Validity & Reliability		Results
	Diagnosis	Age	Sex				Analysis Validity	Analysis Reliability	
Seda Özer Şanal, 2020*	LD	13 Years	1 Female 2 Males	E-book including fables	Developing an e-book with animation content and testing its effectiveness on reading comprehension, accurate reading, and reading speed of students with LD	Single subject experimental design	Present	Present	It was stated that the e-book developed increased the reading comprehension, accurate reading, and reading speed performances of students with LD.
Özge Sultan Balıkçı, 2020	LD	9-10 Years	2 Females 3 Males	Word cards, scales, reading texts	To evaluate the effects of the program (OGEP) developed to support reading skills on the reading skills of students with SLD	Single subject experimental design	Present	Present	It was shown that the OGEP program had a positive effect on the fluent reading skills of students with LD.
Günat Urfalıoğlu-Eroğlu, 2020	LD	8 Years	30 Students	Auto Train Brain education program	Examining the effect of the program developed based on the neurofeedback and multi-sensory principles on reading comprehension skills of children with LD	Pretest-posttest Ön test - son test CGED	NIG	NIG	It has been stated that Auto Train Brain education contributed more to reading comprehension than special education
Ulviye Akın, 2020*	AR	8 Years	NIG	Reading texts	Examining the effect of Reading Skills Intervention Package (RSIP) on reading fluency and reading comprehension levels of students with LD risk	Pretest-posttest Ön test - son test CGED	Present	Present	It was revealed that the reading fluency and reading comprehension skills of the group in which RSIP was applied improved.
Özgür Sirem, 2020*	AR	9 Years	3 Females 3 Males	Reading texts and scales	Developing the Reading Support Program (RSP) and testing the effectiveness of it on students with LD	Pretest-posttest Ön test - son test CGED	Present	Present	It was stated that the developed program not only improved students' fluent reading and reading comprehension skills but also increased their reading motivation and caused a change in their attitude.

Table 3. *(Cont.)*

Author, Years	Participants			Material	Purpose	Method	Validity & Reliability		Results
	Diagnosis	Age	Sex				Analysis Validity	Analysis Reliability	
Mehmet Eyüp Küçükköy, 2020	AR	7 Years	NIG	Word cards	Examining the effect of the technique of presenting the words to the students by dividing them into syllables on their reading skills	Pretest-posttest Ön test - son test CGED	NIG	NIG	It was revealed that the syllable division technique accelerated the reading skills of students with reading disabilities and reduced their reading errors.

Note: NIG=No Information Given, *=Ph.D. Dissertation, LD= Learning Disability, AR= At Risk, CGED = Control Group Experimental Design

4. Discussion and Result

The present study explored theses and dissertations done in Turkey with students with LD and put forth the tendencies of these theses and dissertations. The examination of the years of these studies revealed there was a concentration after 2014. It is believed that the department of education of mentally, hearing, visually disabled and the department of gifted education being gathered under the single roof of the department of special education and subdepartments being formed under the main department with the decision taken by CHE in 2016 may be the reason behind this. As a result of this decision, universities like Ankara University and Eskişehir Osmangazi University determined "Learning Disability" as a specialization area of the department of special education. This, in addition to increasing the interest in LD at the undergraduate level, also increased the interest in the subject at the graduate level. Furthermore, the fact that LD has a substantial percentage in the general population and that this ratio is higher today than in the past may be another reason for the concentration after 2014 (Hussar et al., 2020).

It was determined that the majority of the relatively few studies were at the Master's level. This can be explained by the fact that the quotas opened by the universities are higher at Master's level and therefore the number of students at the Ph.D. level is more limited than the number of students at the Master's level. In addition, the examination of the departments these theses and dissertations were from revealed that they were mostly from the department of special education. This was followed by the department of elementary education. This can be explained by the fact that the services provided to children with LD are mostly in these areas. However, although the number of studies conducted in other fields is limited, they are believed to be important in order to provide a high level of benefit to children with LD. In this context, studies to be conducted in different disciplines will make serious contributions to the life quality of children with LD.

In terms of the research methods used in these theses and dissertations, most of the studies were quantitative. They were followed by experimental and qualitative studies, respectively. Due to the nature of scientific research, first of all, the problem or the existing situation should be revealed. Because of this, it is inevitable that the number of descriptive studies pointing to first generation studies is high. Furthermore, most of the studies were done in the field of reading skills. Reading skills were followed by mathematical-numerical reasoning and writing skills, respectively. This can be justified by conducting more intensive research since reading is a prerequisite for many academic skills (Strommen & Mates, 2004; Calhoon, 2005; Güldenoğlu, Kargın, & Miller, 2012). The fact that the majority of individuals with a learning disability are individuals with reading disabilities (Çakıroğlu, 2017) can be given as another reason.

Another important study finding is that more studies were conducted with at-risk children. Similar to many countries, inconsistency theory is also used in the diagnosis of children with LD in our country. Although there have been important developments over the years regarding the diagnostic criteria of LD, it would not be a mistake to say that there are still problems in our country. Especially the low number of trained personnel is one of the important reasons for these problems. Another reason can be cited as the limited knowledge of classroom teachers serving in the basic education period (Saraç & Çolak, 2012; Altun & Uzuner, 2016) and thus problems about recognizing and directing children with LD may be experienced (Çetin, 2019).

According to the findings of the quantitative studies, although there were studies in the field of reading in which the components of reading were discussed, the theses and dissertations mostly focused on the differences between the reading skills of TD children and

children with LD. The findings of the studies showed that the performance of children with LD was more limited compared to their TD peers. In addition, there were similar study findings on numerical calculation skills and writing. This is an expected situation that occurs as a result of low academic skill performance (Kring et al., 2015) due to the nature of LD. However, in all of the comparison studies, although the intelligence section in LD was in the normal and above normal range, information about the intelligence section was not given. However, intelligence is an important factor especially on the academic skills discussed in the present study. Furthermore, in terms of the data collection tools used in the studies, most of the studies did not use standard tools whose validity and reliability works were based on strong statistical analyzes in the evaluation of reading components. This can be explained by the limitation of standard tools for the assessment of academic skills in LD in our country. Yet, it is possible to talk about the existence of studies aimed at solving this problem in recent years (Alatlı, 2020; Ergül et al., 2020).

The examination of the qualitative studies reviewed in the present study put forth that most of them were action studies. Action studies are very demanding studies in terms of design, planning, and implementation. The fact that the majority of these action studies conducted were at the Ph.D. level is also an indication of this situation. The studies examining the effectiveness of intervention programs developed for the field of reading and mathematics concluded that the programs were effective. Such programs for LD, which manifests itself especially with difficulties in academic skills, are believed to be important in order not to open the gap between students with LD and their TD peers. In fact, as seen cumulatively in the present study, although the study does not have strong experimental evidence, children with LD benefit greatly from systematic and controlled intervention studies. In addition to the studies discussed in the present study, it shows how much it is necessary to reflect similar studies to be carried out in the future to the field.

Another finding of the present study was that the number of studies that employed the experimental design was at a substantial level compared to studies that employed other designs. This is pleasing and remarkable for the field, but this also indicates second-generation research. However, third-generation studies, i.e. productivity studies, were not encountered among the theses and dissertations examined. It is very important to increase the diversity of intervention programs in such experimental studies in order to carry out third-generation research. Another striking finding in the experimental studies reviewed is that the majority of the studies employed single-subject experimental designs. The main reason for this is that the special education field is not very suitable for designing research with a pretest-posttest control group experimental design (Gast & Ledford, 2014). Studies showed that the intervention programs used provided significant increases in the reading, writing, and math performances of children with LD. The examination of the content of the intervention programs showed that they included technology-supported programs. The increase in technology-supported academic skills studies conducted with children with LD in recent years (Stetter & Hughes, 2011; Neuman, 2014; Walcott, Marett & Hessel, 2014) shows parallelism with the tendencies with today's educational studies.

As a result, the increase in studies on academic skills of students with LD in Turkey in recent years and especially the existence of intervention studies are promising for the field of LD. Despite this, it can be said that there is a need for studies to support academic skills in the field of LD. In addition, standard measurement tools are needed in terms of the quality of the studies.

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