# The Impact of Qualified Children's Books on Students' Ability to Use Cognitive Functions[1]

# Nitelikli Çocuk Kitaplarının Öğrencilerin Bilişsel İşlevleri Kullanma Düzeylerine Etkisi

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**ABSTRACT.** Bu Qualified children's books are high-qualified learning materials constructed in accordance with children's development levels. This study attempted to investigate the impacts of qualified children's books on children's skills such as explaining, comparing, interpreting, exemplifying, classifying, summarizing, and inferring. To this end, a pretest–posttest model was employed in the present study with two groups each of which consisted of 25 students in 2015 spring semester. The Test on the Use of Cognitive Competencies, comprising 25 questions, was employed to determine the cognitive skills of the experimental and control group students. In the end, a posttest was administered to both the experimental and control groups. Data were analyzed using a one-way ANOVA, t-test, arithmetic mean, and standard deviation techniques. In light of the research findings, this study offers some suggestions for parents, teachers, and school administrators regarding the selection of quality children's books.
**Keywords.** Cognitive Function, Inference, Reading Comprehension, Reflective Thinking

**ÖZ.** Nitelikli çocuk kitapları çocuğun gelişimine uygun yapılandırılan nitelikli öğrenme araçlarıdır. Bu çalışmada nitelikli çocuk kitaplarının çocuğun açıklama, karşılaştırma, yorumlama, örneklendirme, sınıflama, özetleme, sonuç çıkarma becerilerine etkisi araştırılmıştır. Bu amaçla araştırma ön-test son-test modeline göre desenlenmiştir. Araştırma, 2015 bahar döneminde biri deney diğeri kontrol grubu olmak üzere 25'er kişilik iki grup üzerinde gerçekleştirilmiştir. Deney ve kontrol grubundaki öğrencilerin bilişsel becerilerini belirlemek için, 25 soruluk "Bilişsel Yeterlikleri Kullanma Testi" kullanılmıştır. Uygulamanın sonunda hem deney hem de kontrol gruplarına son-test uygulanmıştır. Verilerin çözümlenmesinde One-Way ANOVA, t-test, aritmetik ortalama, standart sapma teknikleri kullanılmıştır. Elde edilen bulgular çerçevesinde nitelikli çocuk kitabı seçimine ilişkin anne-babalara, öğretmenlere ve okul yöneticilerine bazı önerilerde bulunulmuştur.
**Anahtar Sözcükler.** Bilişsel İşlev, Çıkarım, Nitelikli Çocuk Kitapları, Okuduğunu Anlama, Yansıtıcı Düşünce

## ÖZET

*Amaç ve Önem:* Çocuğun bilişsel temelli yeterlikleri kullanabilmesi kendisi için hazırlanan kitapların uygunluğuna bağlıdır. Çocuk kitaplarında yer alan tanımlama, neden sonuç, karşılaştırma ve benzeri öğeler, bir çocuğun okuma anlama başarımını (performans) ve anımsamasını farklılaştırmaktadır. Bu öngörüden hareketle nitelikli çocuk kitabı ölçütlerine uygun seçilen bir dizi kitabın okutulduğu deney grubunun bilişsel işlevlerini (yorumlama, örneklendirme, sınıflama, özetleme, sonuç çıkarma, karşılaştırma ve açıklama yönünden) kullanma düzeyleri ile kontrol grubunun bu bilişsel işlevleri kullanma düzeyleri arasında anlamlı bir farkın olup olmadığı araştırılmıştır.

*Yöntem:* Araştırma, ortaokul 6. sınıflarda "Nitelikli çocuk kitaplarının öğrencilerin bilişsel yeterliklerini kullanma düzeylerine etkisini" belirlenmesi amacıyla yapılmıştır. Bu amaçla ön test ve son test modeline dayalı etkinlik temelli uygulamaya yer verilmiştir. Çalışma 12 haftalık bir uygulama sürecini kapsamıştır. Deney grubu öğrencileri için nitelikli çocuk kitapları ölçütüne uygun 6 kitaplık okuma dosyası oluşturulmuştur. Kontrol grubunda ise, kitap seçimi öğrencilerin kendi tercihine bırakılmıştır. Deney grubundaki okuma dosyasında yer alan her kitabın içeriği yorumlama, örneklendirme, sınıflama, özetleme, sonuç çıkarma, karşılaştırma, açıklama ve sorgulamayı içeren öğretim etkinliklerine dönüştürülmüş, öğrencilerden bu etkinlikleri yapmaları istenmiştir. Araştırmacılar tarafından 25 maddelik bir test geliştirilmiştir. Test kapsamında öğrencilerin

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"yorumlama", "örneklendirme", "sınıflama", "özetleme", "sonuç çıkarma", "karşılaştırma" ve "açıklama" bilişsel yeterliklerini yoklayıcı nitelikte sorulara verilmiştir.

**Bulgular:** Bilişsel yeterliklerini kullanma düzeyleri açısından deneysel işlem öncesi deney ve kontrol gruplarının bilişsel becerilerini kullanma düzeyleri bakımından aralarında istatistiksel olarak anlamlı bir fark yoktur. Deneysel işlem sonrası nitelikli çocuk kitapları okuyan deney grubu öğrencileri ile okuduğu kitabı kendi tercih eden kontrol grubu öğrencileri arasında bilişsel becerilerini kullanma düzeyleri arasında farklılığın olup olmadığını belirlemek için tek yönlü varyans analizi yapılmıştır. Varyans analiz sonucu deney ve kontrol grupları arasında (F; p=.05) önem düzeyinde fark olduğu görülmektedir. Farkın kaynağını belirlemek için t testi yapılmıştır. Metinlerle ilgili "örnekler verme" (p<.000), "karşılaştırmalar yapma (p<.003)", "sonuç çıkarma" (p<.001), "metni yorumlama" (p<.000) ", özetleme (p<.008), "açıklama" (p< .000) ve "sınıflama" (p< .02) yapma düzeylerinin istatistiksel olarak (p<.05 önem düzeyinde) deney grubu lehine farklı olduğu görülmektedir.

**Tartışma ve Sonuç:** Okuma-anlama sürecinde nitelikli çocuk kitaplarının içeriğindeki bilgilerin yapılandırılış biçimi, çocuğun zihinsel olarak kendisini disipline etmesine, benzeri durumlarda bilişsel becerilerini doğru ve etkin kullanmasına katkı getirmektedir. Deney grubundaki öğrencilerin bilişsel becerilerini kontrol grubundaki öğrencilerden daha iyi kullanmaları, okunan metinlerin çocuklardaki bilişsel süreçlerin gelişmesinde önemli bir işlevi olmasına bağlanarak açıklanabilir. Çünkü, yazınsal değeri, estetik bütünlüğü olan metinler "gözlemleme", "karşılaştırma", "sınıflandırma", "düşünme", "eleştirme", "uygulama" ve "eleştirme" yapma olanakları yaratarak çocuklarda düşünme ile ilgili bazı temel işlemlerin gelişmesine katkı sağlamaktadır. Eğitim öğretim sürecinde nitelikli çocuk kitaplarına gereksinim vardır. Bu gereksinimlerin giderilmesi için şu önlemlerin alınması önerilebilir: Milli Eğitim Bakanlığı ve üniversiteler işbirliği yaparak, bilimsel kurullar oluşturarak çocukların psiko-sosyal gelişimi ve içinde yaşadıkları kültürel değerlere uygunluk açısından çocuk kitapları inceletebilir; Kültür Bakanlığı nitelikli çocuk kitapları ölçütlerini, bu ölçütlere uygun eserler listesini kamuoyu ile paylaşabilir. Çocuk kitabı yazarlarının çocukların gelişim dönemlerini, deneyimlerini ve içinde bulundukları kültürel yaşantıyı ve kültürel yaşantıları içinde kullandıkları söz dağarcığını çözümleyerek, olay örgüsünü ve iletilerini bu sözcükler üzerine kurmaları sağlanabilir. Çocukların, nitelikli çocuk kitaplarını okuma anlamasında "örnekler verme", "karşılaştırmalar", "sonuç çıkarma", "metni yorumlama", "özetleme", "açıklama" ve "sınıflama" yapma gibi bilişsel etkinliklerle bilişsel gelişimleri hızlandırılabilir.

## INTRODUCTION

### Cognitive Development

Cognition is a process whereby the students receive external stimuli via their sense organs, analyze them, think about them, draw inferences from them, reconstruct their previous experiences by using them, and construct new experiences based on them. Cognitive development refers to the changes occurring in the mental skills and competencies of a child over time (Norton, 1999: 18). This change involves the internalization, transformation, and use of routines, ideas and skills that are learned socially, from more competent partners (Green, Condy, & Chigona, 2012, cited in Meadow, 1993: 238). Throughout this process, although cognition occurs via activities such as perception, understanding, and recalling; metacognition makes students think about their own perception, understanding, recalling, and other similar mental processes (Garner, & Alexander, 1989). Thus, cognition and metacognition exert an effort to perceive and understand the external world and employ more complex ways of thinking (İrkin, 2012). Learning develops hierarchically, from low cognitive skills such as knowledge and comprehension to more complex high-level cognitive skills, including application, analysis, synthesis, and evaluation (Cizek, Webb, & Kalohn, 1993). Thus, learning is the attempt to incorporate new stimuli in a particular schema into cognition via "conflict", "accommodation" and "assimilation" (Senemoğlu, 2013). The linguistic equivalent of every schema created in cognition is a concept. Conceptualization refers to the students' cognitively perceiving the stimuli, noticing the similarities and differences between the stimuli perceived, selecting and categorically reclassifying them. According to Piaget, any new thing that comes to the cognition

creates an imbalance in the cognition. Balance to the cognition is restored through assimilation and accommodation processes.

Bruner divides the cognitive development into three stages: enactive, iconic, and symbolic. In the enactive stage, children mostly use their sense organs to learn by doing and experiencing. Thus, the most easily understood messages are activities (Bruner, 1968). During the iconic stage, visual memory comes to the forefront in children. Children envisage objects as they perceive them. Therefore, pictures and photos are used in teaching to make it easier for them to envisage and learn (Erden & Akman, 1997; Senemoğlu, 2013). Finally, written symbols are used in teaching once children are capable of understanding and using symbols. According to Bruner, children can learn any information at any age if it is presented in an order from action to symbolization according to the characteristics of children's development stages (Bruner, 1968).

### Reading Comprehension

For children, reading is both an affective and a cognitive activity consisting of different components, such as seeing, paying attention, focusing, perceiving, remembering, making sense, synthesizing, analyzing, interpreting, and vocalizing (Karatay, 2010: 459). Reading comprehension, on the other hand, is a complex cognitive effort whereby children construct meaning by associating their previous knowledge with the information provided in the text (Spiro & Myers, 1984: 490; Anderson & Pearson, 1984: 255). Naturally, children reading books need to employ various cognitive actions, such as interacting with different information sources provided in the books and understanding and comprehending what is read. Interaction with information sources occurs from letter to letter, from word to word, from sentence to sentence, from paragraph to paragraph, and from text to text. Interaction extends from the whole to the part, the part to the whole, and the text to the text. Thus, reading includes a multifaceted articulation for coding. In the articulation process, cognition fulfills functions such as storing the foreknowledge of students, receiving the new information provided in the book, recording such information systematically, associating new information with foreknowledge, and creating a schema by using the information in a particular context. Memory, general memory, and metacognition play active roles in the effective functioning of this process.

Memory recalls the information stored in the memory. Memory management detects the problems emerging in the general memory, configures the problems, recalls the required information from the memory, and puts new information, questions, and problems in appropriate places in the memory (Veenman, van Hout-Wolters, & Afflerbach, 2006:5; Choo, 2002:23-56). Metacognition, on the other hand, manages the reading depth based on the information and understanding obtained or achieved in this process. While doing all that, it receives information that differs from the current information temporarily. It explains this situation and creates schemas to justify it.

A child's reading comprehension is affected by many factors, including his/her verbal language development level (e.g., Dickinson & Snow, 1987; Snow, Barnes, Chandler, Goodman, & Hemphill, 1991), his/her foreknowledge about the text (Kintsch, 1998; van Oostendorp & Goldman, 1999), his/her interest in the content of the text (Morrow & Gambrell, 2001), and his/her fluency in recognizing words. In addition, it is affected by sustaining the attention to obtain information from the text, controlling the process, and spreading the attention on information sources while focusing on creating differences in comprehension (Barkley, 1990).

The essence of comprehension is the capability to mentally connect the different events in the text to one another (Trabasso & van den Broek, 1984). The plot of the text can be linked to many causes; however, the most important link is the one with causality (Graesser, Singer, & Trabasso, 1994; van den Broek, 1997). In addition, comprehension tasks should contain a balanced number of information retrieval questions, straightforward inference questions, and more advanced questions that require justification of inferences and interpretations (Zimmermann & Smit, 2014). Meaning is constructed in the interaction between reader and text, in the context of a particular reading experience. Reading implies that readers bring with them and apply a repertoire of knowledge, skills, cognitive and metacognitive strategies during reading (Staden & Bosker, 2014). Understanding, interpreting, explaining, and summarizing—when required—a text are the cognitive indicators of comprehension. Adapting the information inferred from texts to an event or a problem situation,

dividing the information into constituents during such adaptation, establishing connections between constituents, and generating new solutions and creating new messages about the problem situation based on the foregoing are all actions performed by the cognition. Making decisions by reviewing the discourses and actions employed to analyze an event based on particular criteria and standards is an indicator of reflective thinking in the cognition.

### Qualified Children's Books

Children's books are sets of sentences and phrases formed by adults and connected to one another in order to create meaning via a common topic or related sub-topics. A series of constructions, such as listing, putting in order, comparing, finding similarities and contrasts, determining cause and effect relationships, solving problems, and defining and describing problems, are employed while arranging messages in children's books. If the authors of such books pay attention to the above-mentioned characteristics, messages accomplish their objectives more easily.

The coherence, consistency, acceptability, contingency, informativity, and intertextuality (Keçik & Uzun, 2003: 11) of the content of a children's book not only determine the quality of the book but also affect the fulfillment of related functions by the cognition. The most important factor influences the comprehension of the meaning of a text is consistency (Kintsch & Vipond, 1979; van Dijk & Kintsch, 1983). Another factor is the semantic/logical coherence of the texts in the text. The linguistic, grammatical, and semantic/logical coherence of the texts in children's books gives many clues to children (Keçik & Uzun, 2003: 11). The consistency of the ideas provided in texts and their degree of association with one another cause a difference in the comprehension of the text (Meyer, 1975). Images are employed to increase the consistency of the messages in qualified children's books. The consistency of a children's book is enhanced by the images provided in the book, the people depicted in such images, and references and clues about names and place definitions. The representation of the information in the text contributes to the construction of mental consistency (Goldman, Varma, & Sharp, 1999).

The images take the messages offered in the texts beyond the texts, introducing such competences as establishing time, space, characters, and historical background in the plot, highlighting the facts, developing characters by demonstrating actions and behaviors, developing the current theme, providing alternative opinions, seeing more than what is presented in the text, and creating new stories (Hall 1990; Fang, 1996; Corrigana & Surber, 2010).

Any book content whereby children can use their cognitive functions effectively should be suitable for children's language and meaning universe; should enable children to learn by hearing, recognize by seeing, learn what they do not hear by seeing, establish a connection between what they hear and what they see, and think on them (Alpay, 1987); and should make topics, events, characters, and feelings contribute to children's personal development in mental, emotional, social, and moral respects. Thus, the qualified children's books chosen for children to read should be arranged based on the consideration of children. Qualified children's books are visual and written tools whereby children witness the interpretation of events, phenomena, and situations from the point of view of an artist. Considering such basic functions of books as providing children with an eagerness for and habit of reading by opening the doors of literature to them by enabling them to acquire language awareness and consciousness, it is evident that they are the educational tools influencing children's development process (Sever, 2013: 32).

Learning materials suitable for the learning of children are supplied by parents and adults. Children's books are one of such materials. These books contribute to the language development, cognitive development, and social development of children as much as they are suitable for their interests, learning needs, language usage levels, and meaning universes. Skilled authors prepare the themes of children's books based on children's world of perception. The books taking into account children's world of perception help them think logically, distinguish right from wrong, and find their own truths. This is because; the authors of these books address and exemplify the problems in life and solutions of such problems from the perspective of an artist. The children who experience the books having these qualifications learn in the natural learning environment, notice their own learning capabilities, have self-confidence, appreciate themselves, enjoy their lives, and become individuals beneficial to the society they live in. When parents prefer qualified children's books for

their children, they invest in the future of their children who are the social capital of both themselves and the country.

Qualified children's books should make children discuss and criticize (Sever & Aslan, 2008), respect science and art, express their emotions and opinions in a balanced manner, acquire a reading culture, and enable them to be conscious students. Children enrich their learning experiences through the meanings they attribute to the stimuli provided in books. In such an enriching process, they fulfill a series of cognitive functions, including interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining. Children's use of such cognitive competences also depends on the suitability of the books prepared for them. Definitions, cause-and-effect elements, comparisons, etc., included in children's books create a difference in children's reading comprehension performances in addition to their recalling competences (Raymond, 1993). In consideration of the foregoing, the present study investigated the effects of qualified children's books on children's ability to fulfill cognitive functions. In this regard, qualified children's book criteria accepted in the related literature were used to select the qualified children's books to be presented to children. The study searched for any significant differences between the fulfilment levels of cognitive functions (interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining) by the experimental group subjected to a series of books selected based on children's book criteria and the fulfilment levels of such functions by the control group.

## METHOD

### Research Design

The study was conducted in order to determine the effect of qualified children's books on sixth-grade students' ability to use their cognitive competences. To this end, an activity-based approach based on a pretest–posttest model was adopted. The study covered a 12-week period. Before the study was started, a reading file comprising six books was created for the experimental group based on qualified children's book criteria. A reading file was also created for the control group as prescribed by the Ministry of National Education (MEB, 2006). The control group students were free to choose their books. The content of every book in the reading file of the experimental group was converted into teaching activities, including interpreting, exemplifying, classifying, inferring, comparing, explaining, and questioning, and students were asked to perform these activities. Initially, the ability of students in both groups to use cognitive competences such as interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining was determined. The researchers developed a 25-item test containing items aimed at examining these cognitive competences. The study was carried out in middle schools located in the central district of Kırşehir province in order to test the research hypotheses. At the end of the study, the researchers compared the experimental group students' (subjected to qualified children's books) and the control group students' (free to choose the books to read) ability to use these cognitive competences.

### Study Group

The study group was chosen from among the middle school students in the sixth-grade Turkish course through random sampling. An attempt was made to ensure that the students included in the study group had similar characteristics in terms of age, gender, and educational background. While one group was assigned as the experimental group (25 students), the other group was determined to be the control group (25 students). During the selection of students for the experimental group and the control group, the results of the trial exams conducted by the Ministry of National Education in schools and the results of the test developed by the researchers were used as to verify one another. The present study was conducted in accordance with the nature of the teaching process without disrupting the natural course and environment of teaching.

### Development of The Measurement Tool

A test aimed at determining children's competences in using their cognitive functions during the reading comprehension process and involving the functional usage of each concept was developed for use as a measurement tool. Prior to the development of the test, goals and acquisitions concerning the teaching unit were reviewed.

1. Turkish and world children's classics and the Turkish textbook were used to prepare the questions used to determine the children's ability to use their cognitive skills in the reading comprehension process.

2. Fifty-five candidate questions concerning the use of cognitive skills were evaluated in terms of suitability for measuring cognitive competences in reading comprehension by three Turkish course teachers and three faculty members specialized in the fields of assessment and evaluation and program development, Turkish language and literature, and Turkish education. Six questions deemed not to be suitable were removed from the test.

3. The Test on the Use of Cognitive Competencies, comprising 49 questions, was turned into forms A and B and administered to 155 students receiving education in 6 different sections not involved in the experimental or control groups. Non-working items were either removed from the measurement tool or were corrected before being administered. Arithmetic mean, standard deviation, distinctiveness, propcorrect, and reliability prediction calculations were determined in the statistical analyses of the test items. Twenty-five questions whose DISC index (item's ability to differentiate between high and low scoring examinees) was seen to be .30 or higher, and whose propcorrect was seen to be over 45 in the statistical analyses were included in the final form. For the test used, the standard deviation was 5.249, arithmetic mean was 15.723, skewness was -0.622, kurtosis was -0.195, and mean biserial was 0.588. The average difficulty of the measurement tool was 0.62, and its KR-20 reliability was 0.83.

Twenty candidate children's books randomly selected from among children's classics to be presented to the experimental group were graded by 16 Turkish teachers using qualified children's book criteria, and the best six books were selected. These six qualified children's books were expected to contribute to the improvement of the cognitive competences of the children and were read by the children over a 12-week period. During the research process, no guidance was provided on the books to be read in the control group. Details about the quality children's books included in the reading file of the experimental group are as follows:

*The Children's Books the Experimental Group Was Subjected to*

Ak, S. (2013). *Lodos Yolcuları*. Istanbul: Can; Dölek S. (2009). *Yeşil Bayır*. Istanbul: Bilgi; Härtling, P. ( 2012). *Alter John* (*Büyükbaba Taşınıyor)*. (N. Neydim, Çev.). Istanbul: Günışığı; Öner, Ç.( 2013). *Gülibik*. Istanbul: Can; Sertbarut, M. (2013). *Sisin Sakladıkları*. Izmir: Tudem; Yener, M. (2012). *Mavi Zamanlar*. Izmir: Tudem..

The findings of the present study are expected to contribute to the improvement of sensory perception and perceptual memory capacity among students, the comprehension of literary products, and their ability to make sense of the obtained information. In addition, such findings could be make practical contributions to the selection of books suitable for the cognitive development levels of middle school students and for the teaching process in terms of the creation and analysis of the contents of textbooks.

## FINDINGS

Table 1. shows the gender distribution of the students included in the two groups, each of which consisted of 25 members and were considered to be equivalent in terms of their ability to use cognitive competences.

**Table 1.** *The Gender Distribution of the Experimental Group Students and the Control Group Students*

| Gender | Experimental group | | | | | Control group | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Male | | Female | | Total | Male | | Female | | Total |
| | N | % | N | % | .100 | N | % | N | % | .100 |
| | 12 | .48 | 13 | .52 | 25 | 11 | .44 | 14 | .56 | 25 |

The gender distribution was very close in terms of the percentages in the two groups. The average age of the students in both groups was 12.

**Table 2.** *Arithmetic Mean, Standard Deviation, t Values of the Experimental Group's and Control Group's Ability to Use Cognitive Functions According to Pretest Measurements*

| Cognitive functions | Group | Pretest | | | t | p |
|---|---|---|---|---|---|---|
| | | N | $\overline{x}$ | SK | | |
| Exemplifying | Experimental group | 25 | 2.560 | .711 | -1.040 | .304 |
| | Control group | 25 | 2.840 | 1.143 | | |
| Comparing | Experimental group | 25 | 3.0000 | 1.000 | -1.127 | .265 |
| | Control group | 25 | 3.2800 | .737 | | |
| Inferring | Experimental group | 25 | 3.240 | .778 | 1.750 | .086 |
| | Control group | 25 | 2.760 | 1.128 | | |
| Interpreting | Experimental group | 25 | 3.160 | .624 | 1.463 | .150 |
| | Control group | 25 | 2.840 | .898 | | |
| Summarizing | Experimental group | 25 | 2.680 | .556 | .701 | .487 |
| | Control group | 25 | 2.560 | .650 | | |
| Explaining | Experimental group | 25 | 2.160 | .687 | 1.686 | .098 |
| | Control group | 25 | 1.800 | .816 | | |
| Classifying | Experimental group | 25 | 2.000 | .645 | 1.100 | .277 |
| | Control group | 25 | 1.760 | .879 | | |
| **Total** | Experimental group | 25 | 18.720 | 2.389 | 1.091 | .281 |
| | Control group | 25 | 17.840 | 3.249 | | |

The results provided in Table 2. indicate no significant difference between the experimental group's and control group's ability to use cognitive skills such as exemplifying ($p<.0.5$), comparing ($p<.0.5$), inferring ($p<.0.5$), interpreting ($p<.0.5$), summarizing ($p<.0.5$), explaining ($p<.0.5$), and classifying ($p<.0.5$). Thus, it is possible to say that the two groups were equivalent in terms of their use of cognitive skills.

**Table 3.** *One-Way ANOVA Results Concerning the Experimental Group's and Control Group's Ability to Use Cognitive Functions According to Posttest Measurements*

| Groups | | Sum of squares | df | Mean square | F | Sig. |
|---|---|---|---|---|---|---|
| Exemplifying | Intergroup | 38.72 | 1 | 38.72 | 53.40 | .000 |
| | In-group | 34.80 | 48 | .725 | | |
| | Total | 73.52 | 49 | | | |
| Comparing | Intergroup | 5.78 | 1 | 5.78 | 9.50 | .003 |
| | In-group | 29.20 | 48 | .608 | | |
| | Total | 34.98 | 49 | | | |
| Inferring | Intergroup | 12.50 | 1 | 12.50 | 12.79 | .001 |
| | In-group | 46.88 | 48 | .977 | | |
| | Total | 59.38 | 49 | | | |
| Interpreting | Intergroup | 18.00 | 1 | 18.00 | 34.72 | .000 |
| | In-group | 24.88 | 48 | .518 | | |
| | Total | 42.88 | 49 | | | |
| Summarizing | Intergroup | 3.38 | 1 | 3.38 | 7.71 | .008 |
| | In-group | 21.04 | 48 | .438 | | |
| | Total | 24.42 | 49 | | | |
| Explaining | Intergroup | 5.12 | 1 | 5.120 | 14.98 | .000 |
| | In-group | 16.40 | 48 | .342 | | |
| | Total | 21.52 | 49 | | | |
| Classifying | Intergroup | 2.42 | 1 | 2.420 | 5.80 | .020 |
| | In-group | 20.00 | 48 | .417 | | |
| | Total | 22.42 | 49 | | | |
| Posttest | Intergroup | 492.98 | 1 | 492.98 | 46.47 | .000 |
| | In-group | 509.20 | 48 | 10.60 | | |
| | Total | 1002.18 | 49 | | | |

A one-way variance analysis was carried out in order to determine whether any difference existed between experimental group students' (reading qualified children's books) and control group

students' (selecting books to read by themselves) in terms of their use of cognitive skills such as exemplifying, comparing, inferring, interpreting, summarizing, explaining, and classifying. According to the variance analysis result, a difference exists between the experimental group and the control group at the .05 significance level (F; $p$=.05). A $t$-test was conducted in order to determine the source of the difference.

**Table 4.** *Arithmetic Mean, Standard Deviation, and t Values Concerning the Experimental Group's and Control Group's Ability to Use Cognitive Functions According to Posttest Measurements*

| Cognitive functions | Groups | N | $\overline{x}$ | S | t | sd | p |
|---|---|---|---|---|---|---|---|
| Exemplifying | Experimental group | 25 | 3.520 | .7141 | 7.308 | 48 | .000 |
| | Control group | 25 | 1.760 | .9695 | | | |
| Comparing | Experimental group | 25 | 3.320 | .6271 | 3.082 | 48 | .003 |
| | Control group | 25 | 2.640 | .9073 | | | |
| Inferring | Experimental group | 25 | 3.680 | .5567 | 3.578 | 48 | .001 |
| | Control group | 25 | 2.680 | 1.281 | | | |
| Interpreting | Experimental group | 25 | 3.920 | .4000 | 5.893 | 48 | 000 |
| | Control group | 25 | 2.720 | .9363 | | | |
| Summarizing | Experimental group | 25 | 2.720 | .4582 | 2.777 | 48 | .008 |
| | Control group | 25 | 2.200 | .8165 | | | |
| Explaining | Experimental group | 25 | 2.680 | .5567 | 3.871 | 48 | .000 |
| | Control group | 25 | 2.040 | .6110 | | | |
| Classifying | Experimental group | 25 | 2.680 | .5567 | 2.410 | 48 | .020 |
| | Control group | 25 | 2.240 | .7234 | | | |
| Total | Experimental group | 25 | 22.560 | 2.1031 | 6.817 | 48 | .000 |
| | Control group | 25 | 16.280 | 4.0979 | | | |

As seen in Table 4., a statistically significant difference (at the $p$<.05 significance level) exists between the experimental group and the control group, in favor of the former, in terms of the ability to use the cognitive skills of exemplifying ($p$<.000), comparing ($p$<.003), inferring ($p$<.001), interpreting ($p$<.000), summarizing ($p$<.008), explaining ($p$<.000), and classifying ($p$<.02). Thus, it can be said that the experimental group students subjected to qualified children's books used the exemplifying, comparing, inferring, interpreting, summarizing, explaining, and classifying skills on the texts read more effectively than the control group students.

## DISCUSSION AND CONCLUSION

Children need learning materials that can improve their cognitive processes as of the early years of their lives. One of such learning materials is qualified children's books. The qualified children's books which are suitable for children and take into consideration their interests, needs, language and meaning universes are influential on the personality development, social development, language development, and cognitive development of children. Qualified children's books function as controlled stimuli in order for children to use their cognitive skills efficiently. The manner of construction of the information included in qualified children's books in the reading comprehension process enables children to discipline themselves mentally and use their cognitive skills properly and efficiently in similar conditions. Arrangements in the content allow children to manifest their skills of making intertextual comparisons and set their thinking strategies in motion. Comparing the events in the stories with other dimensions of the stories is one of children's most important thinking strategies in reading (Rasinski & Padak, 2000).

The clear, understandable, and plain presentation of messages in children's books and the suitability of such messages for cultural experiences enable the messages to be accepted in children's semantic worlds more easily. Authors' messages expressed in children's books accomplish their objectives when they are accepted in children's cognitive worlds. When children realize the

intentions of the authors in the books they read, they can understand the stories in such books more correctly (Stotsky, 1983). Qualified children's books enable children to efficiently use such cognitive functions as making sense of and transforming the information they obtain from the books they read in their cognitive worlds. Thus, giving information about the text's structure while reading children's books enables children to recognize the information, rearrange the details, recall the information, and make a distinction between important and unimportant information. The provision of such information during book reading supports the strategies readers use to understand the texts (Slater & Graves, 1989; Dole, Duffy, Roehler, & Pearson, 1991).

The images provided in children's books introduce such competences as taking messages beyond the texts; establishing time, space, characters, and historical background in the stories; highlighting the facts in the stories; developing characters by demonstrating actions and behaviors; developing the current topic; providing alternative opinions; taking readers from the information provided in the texts to alternative information; and creating new stories in the stories (Hall, 1990; Fang, 1996).

In the current study, both the experimental and control groups were exposed to activities in which they recalled the texts read, made inferences, and established a connection between inferences and social life. Posttest measurements showed that the students reading qualified children's books were more successful in using classifying, inferring, and explaining skills than the control group students, who selected the books to read themselves. The experimental group students' more efficient use of the classifying, inferring, and explaining skill when reading qualified children's books might have resulted from the fact that such books established a connection between events and social life. According to Burns & Kidd (2010), citing Kintsch (1998) and Kintsch & Kintsch (2005), activities involving skills to recall the text, make inferences from the text, and establish a connection between life and social life should be included for the construction of the information provided in the text in children's minds.

The experimental group students' better use of the exemplifying, comparing, inferring, interpreting, summarizing, explaining, and classifying skills than the control group students can be attributed to the influence of the texts read on the development and improvement of reflective thinking and cognitive processes among children. Texts with a high literary value and a high aesthetic integrity contribute to the development of some basic operations about thinking among children by creating an opportunity to observe, compare, classify, think, criticize, and apply (Dilidüzgün, 2003:9; Norton, 1999:19).

The messages offered in the selected qualified children's books are presented based on children's cultural experiences, which helps children integrate the books they read and consider themselves as part of the events therein. According to Graesser, Singer, & Trabasso (1994), when children perceive many inferences that they routinely generalize during reading as the true information of a similar nature provided in the book for them, they can draw inferences whereby they can classify and generalize the messages.

According to the research findings, children's efforts to access information by reading qualified children's books, store the information, comprehend the information obtained, and transform such information in their cognitive worlds enable them to discipline their cognitive skills and use the cognitive transformation process efficiently. In light of these data, it can be said that the authors of children's books should prepare the messages of these books in accordance with the meaning world of children. The parents who exercise their right to choose a book for their children should use such right based on the development levels of their children, the culture they live in, and universal values. In addition, if they choose books which can improve the high-level cognitive skills of children, both they and their children can make sense of the society and the world they live in. Significant differences are found between experimental groups and control group.

Adults should construct messages according to children. Qualified children's books are needed in the educational process. The educational institutions may establish scientific councils by cooperating with universities, and these councils may examine the children's books to be adopted in terms of their suitability for children's psycho-social development and the cultural values of the society they live in besides its physical features and content., it is safe to say that adults need to

construct their messages by considering the children. Qualified children's books are needed in the educational process. To meet such needs, several measures should be taken.

Furthermore, the Ministry of Culture should publicly announce qualified children's book criteria for authors, teachers, and other adults as well as the list of works meeting such criteria. Children's book authors analyze the development levels of children, their experiences, their cultural experiences, and the vocabulary employed within such cultural experiences to build plots and messages upon such vocabulary. Children's cognitive development can be accelerated through such cognitive activities as exemplifying, comparing, inferring, interpreting, summarizing, explaining, and classifying while reading qualified children's books.

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