

An Investigation into Illustrations in English Course Books in a Turkish Context

Ahmet BASAL *

Yildiz Technical University, Turkey

Kıymet Merve CELEN

Yildiz Technical University, Turkey

Halime KAYA

Yildiz Technical University, Turkey

Şeyma Nur BOĞAZ

Yildiz Technical University, Turkey

Received: 8 December 2015 / Revised: 28 January 2016 / Accepted: 7 February 2016

Abstract

In language classrooms all over the world, textbooks are the most dominant teaching and learning materials. In these books, illustrations occupy a prominent place in teaching and learning processes. This qualitative study aims to investigate the frequency of occurrence and functions of illustrations in English course books. Four course books (5th, 6th 7th, and 8th grades) approved by the Ministry of National Education in Turkey were analyzed. In this qualitative research, content analysis was used as the research technique. In the analysis, Levin's 1981 typology including five categories in terms of the functions of illustrations (decorational, representational, organizational, interpretational, and transformational) was employed. Based on the results, it was found that most of the illustrations in four books were subsumed under the category of representational function. The results also showed that the books were mostly lacking transformational, interpretational, and organizational illustrations. This is considered a serious drawback of the books in terms of content-related illustrations since they make abstract concepts more memorable, enhance the recall of details of texts, and facilitate students' comprehension. The study also provides recommendations for the use of illustrations in English language course books.

Keywords: English course books, Functions of illustrations, Illustrations, Material development.

Introduction

Illustrations are essential elements in any language course book. Olshansky (2008) claimed that "Pictures [Illustrations] provide a universal language. They speak equally to

* ✉ Ahmet BAŞAL, Yıldız Technical University, Foreign Languages Education Department, Istanbul, Turkey. Phone: +90 212 4834877 E-mail: ahmetbasal@gmail.com

native speakers, to those learning English as a second language... Pictures are our first language. It offers a language we all intuitively understand" (Preface section, para.1). In compliance with the needs of the "visual world" of today, illustrations should be able to "serve as valuable teaching tools, bringing to the eye what otherwise can only be imagined" (Evans, Watson & Willows, 1987, p. 86). Indeed, the fact that illustrations are valuable tools for conveying one's message is not a new idea. Starting from the very old ages, humans have communicated with visual elements (Domin, 2007) irrespective of their artistic quality. Paintings helped storytellers by carrying the role of "adjunct aids" to what they narrated during the ancient times, and similar forms, namely, illustrations have become a component of print materials such as storybooks in the modern age (Carney & Levin, 2002). In addition to the storybooks, which are predominantly used with young learners, textbooks designed for students almost all levels of education starting from kindergarten to graduate levels also incorporate illustrations.

Course materials "play a key role in language education" (Basal, 2013, p.11) in teaching and learning processes. Without illustrations, "presenting learning materials merely through textual information may not lead to efficient learning demanded by the excessive amount of information" (Kuzu, Akbulut & Şahin, 2007, p.8). Moreover, "even when the text is comprehensible without a picture, pictures can support the comprehension process in many ways" (Molitor, Ballstaedt & Mandl, 1989, p.16). Çakır (2015) also claims that "in order to create a meaningful learning atmosphere and to offer *a comprehensible input*, word and pictures need to be presented simultaneously" (p.71). In a study conducted by Teele (1995) with the use of the inventory developed by the researcher based on the Multiple Intelligence Theory of Howard Gardner, all of the 26 participants of the study were visual and kinesthetic learners, showing the importance of illustrations in teaching and learning processes. When benefitted from visualization, our minds comprehend the gist fast (Laitinen, 2014). In this context, illustrations can be considered important educational and communicative tools and their frequency of occurrence and to what function these occurrences serve can give practitioners useful insight into how they best identify, classify, and modify them for their instructional purposes. To this end, this study aims to investigate the frequency with which the illustrations occur in English course books and the functions they serve.

Literature Review

Students' encounters with language in their daily lives are laden with audial and visual input (Domin, 2007). The availability of such input has facilitative effects on communication both for non-native and native speakers of a given language by enabling the speakers to fully understand the context in which the communication occurs and interpret the message accordingly. When used in course books, illustrations may thus serve a similar purpose, and the benefits of such an inclusion can be twofold: guidance for students and use of authentic sources. Hewings's (1991) definition of the term 'illustration' in a teaching material covers any input except for text such as "drawings, cartoons, photographs, flow charts, pie charts, graphs, and tables" (p. 237).

There is a parallelism between the effectiveness of illustrations used in textbooks and the overall effectiveness of the whole textbook that is made up of such illustrations and illustrations make text information concentrated, compact/concise, concrete, coherent, comprehensible, correspondent, codable, and collective (Levin & Mayer, 1993). One should not, however, equate the use of illustrations with effective teaching or learning since illustrations function only as intermediary input on their own. As Woodward (1993) suggests, illustrations do not guarantee textbook or lesson quality and student motivation all the time. The quality of illustrations as well as how they are used in relation with the text are among the several criteria which determine their effectiveness in the language

classroom. For example, according to Hewings (1991), graphs, tables, and charts are among the many graphic representations that are used in ‘information transfer’ activities in ESL and EFL classrooms; however, the actual form of these representations where the information is placed might sometimes be confusing for the students. In addition to the format-related difficulties, attitudes towards visual elements might have an effect on the instructional process. For example, Skorge (2008) doubts if the illustrations always work towards their ultimate capabilities by arguing that instead of promoting language instruction, the illustrations are “viewed as fulfilling design-related requirements” (p. 267).

When used in course books, illustrations can work towards fulfilling various functions. According to Levin’s (1981) typology, illustration serve decorative, representational, organizational, interpretational, and transformational functions. Carney and Levin (2002) explain the five functions of illustrations as follows:

decorational pictures simply decorate the page, bearing little or no relationship to the text content....representational pictures mirror part or all of the text content and are by far the most commonly used type of illustration.... Organizational pictures provide a useful structural framework for the text content....Interpretational pictures help to clarify difficult text....transformational pictures include systematic mnemonic (memory enhancing) components that are designed to improve a reader’s recall of text information. (p. 7)

Research on the analysis of illustrations in course books has been dominated by evidence coming from analyses by researchers themselves, insights from users (e.g., students and teachers) and course book developers. Researchers used several foci in their analyses of illustrations as they appear on course books. For example, Evans et al.’s (1987) analysis of textbooks (reading, mathematics, and science) focused on the type, complexity, and location of the illustrations. Hewings (1991) analyzed the illustrations used in three elementary-level course books in five categories: representation of roles (e.g., policeman, criminal), representations of locations/situations (e.g., characters welcoming each other in a ward), representation of topographical space (e.g., rooms of a house), symbolic representations (e.g., speech bubbles, signs), and graphic representations (e.g., graphs, tables, charts).

In an analysis of 701 pictures in four British course books, Hill (2003) found that the pictures depicted actions (29,1%), portraits and interactions (24,4%), places (12 %), and objects (10,1%). A more detailed analysis of two of the course books focused on their functions, which showed that 55% of the illustrations were entirely decorative. The remaining 45% of the illustrations, however, lacked higher level language practice. Hill (2003) therefore concluded that for decorative pictures to account for more than half of the pictures in a course book might be considered as “a great waste of effort on the part of the publisher and a great waste of opportunity for the language learner and teacher” (p. 179).

In a similar study investigating a total of 2265 graphics placed in 15 business English textbooks, Romney and Bell (2012) found that only 27% of the graphics were actually used for instructional purposes while the remaining 73% of the images were used for decorative intentions. When compared with Hill’s (2003) study, this study was more comprehensive in terms of the number of visual elements analyzed but found an even greater ratio of decorative uses of pictures.

It is important here to note that Hill’s (2003) and Romney and Bell’s (2012) analyses included only two categories, namely decorative and instructional, and the criterion used for deciding whether a graphic belonged to either one of the aforementioned categories was the existence of written instructions explaining how to use the graphics. In addition to

the binary categories given previously, some studies have focused on the different degrees of the functions of pictures. Instead of dividing pictures either as content-related or not, Woodward (1993) investigated the varying degrees of content-relatedness and found that the illustrations were used most commonly for content supporting purposes (0.75), which was followed by those which were tangentially content related (0.19), content extending (0.03), and those which were unrelated to the content (0.03).

In another study using multiple categories of functions of illustrations, Romney (2012) designed a survey that changed six of the functional categories (Levin, 1981) into a survey item (e.g., for *representation*; "Does the image make the text material more concrete?") and analyzed three frequently used ELT course books in Japan. The results of the analysis showed that representational images (47%) were the most common type of images used in the course books. Unlike most of the studies mentioned so far, decorative images (18%) ranked the third, preceded by reiterative images (23%).

Özdemir (2007) evaluated a 4th grade English course book with insight coming from students and teachers. Overall, both teachers and students were content with the pictures used in the course books. In other words, they found the pictures attractive, beautiful, and facilitating for the comprehension of the topic and exercise. As an answer to a question asking the strongest aspect of the book, all teachers (N=15) reported that the variety of colors, pictures, and drawings in the course book were among the strengths of the book. One teacher recommended the use of real pictures instead of drawings in the course book to make the visual components more effective.

Most researchers point to the marketing strategies behind the highly non-functional use of illustrations in course books. According to Hill (2003), the prevalence of decorative visuals in ELT course books might indicate that course book developers and publishers prefer the use of charming pictures to cover unoccupied spaces in the course books over activity-related pictures. According to Woodward (1993), the fact that textbooks are supposed to be in line with what the market agrees upon is problematic. Evans et al. (1987) conducted interviews with personnel from varying job positions (e.g., program manager, editor, art director) of nine major educational publishing houses. The interviewees stated that as an effort to address the market demands, illustrations in the new editions of the books were "more visually appealing", "more lively", "more varied", "more colorful", and "more frequent" (p. 89). Assuming that text attractiveness is one aspect that teachers value in their first encounters with a course book, and thereby has an effect on their decisions about whether they are going to use them in their lessons, publishers use pictures abundantly to make course books more charming (Romney, 2012). In effect, the presence of illustrations in a particular textbook is always an important criterion which is also placed in textbook evaluation rubrics (Woodward, 1993).

Hewings's (1991) study showed how illustrations used in elementary-level course books might be perceived differently by students from different cultural backgrounds. Contrasting findings were uncovered in other studies. For example, in a study investigating whether learners from differing cultural backgrounds diverged in their perceptions of what cartoon-style illustrations depicted, Skorge (2008) found that the learners were not too different from each other in their recounts of the illustrations.

All of the above findings suggest that the strong emphasis on the "visual properties of the visuals" might be one of the main obstacles which prevent authorities from giving due importance for the instructional functions of these illustrations. After all the marketing processes (i.e., stages beginning with the development of the course book and ending with the actual users buying them), it is the teachers who seek ways to go beyond the "first

impressions” given by the illustrations so that their students actually benefit from the presence of these illustrations and facilitate the language learning process.

The motivation behind the use of illustrations, nonlinguistic cues, can be instructional as well as decorative. It is the aim of this paper to investigate the instructional and other uses of illustrations as found in four different grade level ELT course books used in Turkish schools. The following research questions guided the current study:

1. How frequently are illustrations used in 5th, 6th, 7th, and 8th grade English course books?
2. How is the distribution of illustrations for each grade level in terms of their functions?

Method

This study aims to investigate the frequencies and functions of illustrations used in four English course books. To this end, qualitative research design was adopted since it allows to interpretation of the illustrations used in the course books analyzed. Content analysis technique was employed to examine the illustrations in the selected course books. Content analysis is “a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use” (Krippendorff, 2004, p. 18) and uses “a set of procedures to make valid inferences from text” (Weber, 1990, p. 9). In this study, the analysis of the course books in terms of illustrations was limited to the visual content included in these books. The analysis was based on reviewed typology of Levin (1981) including five functions of illustrations as decorative, representational, organizational, interpretational, and transformational. The reason for using Levin’s typology of illustrations was that it is relatively easy to categorize the illustrations and it is also one of the most common tools in the literature for investigating the illustrations in the course books.

Materials

Four English course books (5th, 6th, 7th, and 8th grade) approved by the Ministry of National Education (MoNE) for classroom use in Turkey were investigated in terms of the frequencies of illustrations and their functions. The central rationale for the selection of the books in question was that they are used as the English course books in secondary schools in Turkey at the time of the study. These books were:

- 5th Grade, Ortaokul English 5, Yıldırım Yayınları, (approved by Turkish Education Board in 2013 and stated to be used as a textbook since 2013-2014 academic year)
- 6th Grade, Ortaokul İngilizce 6, Evrensel İletişim Yayınları, (approved by Turkish Education Board in 2014 and started to be used as a textbook since 2014-2015 academic year)
- 7th Grade, Ortaokul Sunshine 7, (Lider Yayınları, approved by Turkish Education Board in 2014 and started to be used as a textbook since 2014-2015 academic year)
- 8th Grade, İlköğretim Unique 8, Atlantik Yayınları, (approved by Turkish Education Board in 2012 and started to be used as a textbook since 2013-2014 academic year)

Data Analysis

Data were acquired from scanning the course books to answer the research questions of the study. Four researchers separately determined the illustrations (pictures) and their functions according to Levin’s 1981 typology of functions of illustrations (decorative, representational, organizational, interpretational and transformational). Then the researchers came together to compare their findings related to the types of illustrations in

the books. They agreed on the functions of 855 illustrations and disagreed on 175 illustrations from a total of 1030 illustrations (See Appendix A for examples of illustrations from the current study and their functions). The reliability between the researchers in terms of the functions of the illustrations was with calculated with the formula $[\text{agreement} / (\text{disagreement} + \text{agreement})] * 100$ (Miles & Huberman, 1994) and was found as 83%, a high reliability. Despite the high reliability, the researchers refined their findings through discussion.

Results

In line with the purpose of this research, findings are presented in terms of two research questions. For the first research question, the frequencies of illustrations that were found in the course books can be seen in Table 1. According to Table 1, all course books include illustrations with varying frequencies. A systematic increase in the number of illustrations can be seen depending on the increase across grade levels, except the third grade. This was a striking finding since the researchers expected to see more illustrations in the lower grades. As is known, the textual density increases as the grade increases. In this respect, a greater number of illustrations was expected for lower grade level course books. The number of illustrations is the highest in the 8th grade ($n=301$) and lowest in the 6th grade ($n= 217$). When the total number of illustrations in four English course books ($n=1030$) is considered, a nearly equal distribution can be seen except the 8th grade. This finding does not provide insights about the purposeful use of illustrations in these books by the developers of the books in question.

Table 1. *Number of illustrations in the course books*

Grade level	Number of illustrations
5th grade	247 (23.9%)
6th grade	217 (21%)
7th grade	265 (25.7%)
8th grade	301 (29.2%)
Total	1030 (100%)

For the second research question, distribution of illustrations in the course books in terms of their functions can be seen in Table 2. According to Table 2, all course books include illustrations in varying numbers, exhibiting a variety functions. As understood from the table, all four course books include illustrations having functions as decorative, representational, and interpretational. From these three functions, representational function has the highest frequency whereas interpretational the lowest. The researchers think that the developers of the books purposefully used more illustrations having representational function in order for students to make a close connection between the text and the picture, allowing the learners to comprehend the information in the text better.

Table 2. *Functions of illustrations per grade level*

Function	Grade level				Total
	5 th grade	6 th grade	7 th grade	8 th grade	
decorational	28 (11.3%)	13 (5.9%)	10 (3.7%)	33 (10.9%)	84
representational	214 (86.6%)	197 (90.7%)	212 (80%)	240 (79.7%)	863
organizational	4 (1.6%)	-	8 (3%)	-	12
interpretational	1 (0.4%)	1 (0.4%)	29 (10.9%)	15 (4.9%)	46
transformational	-	6 (2.7%)	6 (2.2%)	13 (4.3%)	25

The use of decorational illustrations was lower than the representational ones and it is considered that such an approach is beneficial since decorational illustrations serve no more than increasing the attractiveness of the text with little information about the content. Actually, placing decorative illustrations in course books with no explicit aims may distort the comprehensibility of the text and even distract the students. The illustrations having organizational function, making the context information more integrated and transformational function, making the text information more memorable (Levin, 1981) had the lowest frequency in the books. The reason for low percentages can be associated with the difficulty in finding illustrations serving for these purposes. In addition, it is thought that finding these kinds of illustrations can be time consuming for the book developers, forcing them to neglect illustrations serving for these functions.

A striking finding based on the analysis is that illustration functions such as organizational, interpretational, and transformational can hardly be seen particularly in the 5th and 6th grade English course books. It was concluded that this finding may be the result of the relationship between these functions of illustrations and higher order thinking skills. Learners should use higher order thinking skills when they see such illustrations. In 5th and 6th grades, it may be more difficult for learners to use these skills when compared to 7th and 8th graders.

Discussion and Conclusion

The current study aimed to investigate the frequencies and functions of illustrations based on the categorization by Levin (1981) in four English course books used for teaching English in Turkey. Based on the findings, all course books included illustrations in varying frequencies. The distribution of the numbers of illustrations showed a systematic increase as the level of the course books increased, which was an unexpected finding for the researchers. It was expected to find more illustrations as the grade level decreased because using more illustrations in the course books is a more viable option in lower grades due to the decrease in the textual density of their books when compared to higher levels.

In terms of their functions, representational illustrations ($n=863$) were the most common in all four grades which is consistent with the findings of the study conducted by Romney (2012) on the course books used in Japan. Decorative illustrations, increasing the attractiveness of the text without adding information to text, were second ($n=84$) to the representational ones. In line with our findings, Mayer (1993) also found that the majority of illustrations in science textbooks were either decorational or representational. In the studies they conducted, Hill (2003) and Romney and Bell (2012) found that decorative illustrations were dominant in the course books they analyzed, which is contrary to the findings of the current study. Laitinen (2014) also found that illustrations in the eight

English course books analyzed were mainly used as decorative elements. However, it is still problematic to find a high number of decorative illustrations in this study. The explanation for the higher number of illustrations in the course books analyzed in this study can be related with the aim of attracting the book users. According to Evans et al. (1987) such an approach may be the result of publisher concerns to present the books in a more attractive and appealing format. Hill (2003) also claimed that course book developers and publishers have a preference for using decorative pictures rather than the content related ones to make the books visually more attractive. Using decorative pictures only to occupy space in the books is problematic and mostly related with affecting the teachers' preference for using their books (Woodward, 1993). The researchers of the current study also argue that using decorative pictures frequently to occupy space in the books and to make the books visually attractive may result in problems with the comprehensibility of information presented in the books since it may distract the students' attention away from the main purpose. Decorative pictures may be considered as unsuitable for the instructional purposes and have no educational value because they "include only little learning-relevant information, they cannot contribute much to mental model construction directly" (Lenzner, Schnotz & Mülle, 2013, p. 827). In other words, the use of illustrations having decorative function in English course books does not engage students mentally.

Illustrations in the English course books should be attractive and charming for the students. However, charm and attractiveness of the illustrations should be closely linked with the instructional purposes because the important thing is the "didactic function [of illustrations] which either supports or hinders them. Hence, the design of a picture should be considered in connection with the functional perspective" (Molitor, Ballstaedt & Mandl, 1989, p. 28). In a study on the 4th grade English course book (Özdemir, 2007), all the teachers that participated in the study stated the pictures, drawings, and colors in the book were the strongest aspect of the book. However, there is no information about the functions of the illustrations in the book. In this context, we can claim that the teachers' statements regarding the illustrations can be deceptive since "teachers and administrators equate attractive layout and stunning photographs with instructional quality. Unfortunately, *there is no necessary connection between bountiful and attractive illustrations and learning* [emphasis added]" (Woodward, 1993, p. 132).

The results of the current study indicated some important insights for the use of illustrations in the English course books of the future. It is clear that using decorative illustrations more than the content-related ones is a more pragmatic approach if illustrations are aimed to be used for instructional purposes and engagement of students mentally. In the books analyzed, it is considered that decorative illustrations is only second to the representational ones in all levels for the marketing purposes. The publishers prefer to use decorative illustrations to sell more books by attracting teachers. This means that there is a weak connection between the publishers and the researchers in the design and development process of course books. This connection should be strengthened in order for course books to include more illustrations serving the instructional purposes. With regard to the effects of illustrations, among the functions of illustrations, interpretational and transformational ones are more effective in terms of learning and representational and organizational ones are more effective than the decorative ones (Levin, Anglin, & Carney, 1987). Therefore, it can be concluded that English course books should include less decorative illustrations and more other illustration types to enrich the learning of students from the texts.

Illustrations may also mean different things for different students because interpretation of illustrations is open to cultural bias and students might not be able to

interpret their intended use and meaning. Teachers should therefore foster the skills necessary for their students to be able interpret them (Evans et al., 1987; Hewings, 1991). In conclusion, every illustration in the books should be selected carefully to increase their benefits in terms of enhancing the learning of the students and course book designers should not ignore the fact that a random selection of illustrations may possibly reduce the intended beneficial effect of illustrations for text comprehension. In other words, the positive effects of illustrations used in English course books on learning can be augmented with the use of carefully selected illustrations. Murakami and Bryce (2009) states that “when images or figures match the verbal input, they are encoded by both the verbal and non-verbal systems, thus promoting memory more strongly than in the case of verbal or visual input alone” (p.50), which can be valid for the match between the information in the text and illustrations supporting it. The use of illustrations may also help the learners to grasp the information presented in the text when the learners “face formidable barriers in a written text without any accompanying visual context” (Chun 2009, p. 146). In addition, limitation of decorative illustrations which are used mainly for increasing the sales of the books with no proved benefits on learning and using carefully selected illustrations accompanying texts may increase the positive effects of illustrations on learning. As Alley (1994) suggested “the success of future textbooks... hinges, at least partially, on the quality and application of their illustrations” (p. 494). In this context, the illustrations in course books should not be considered as *ornaments* but tools to enhance learners’ comprehension of information in the text.

This study was limited to the investigation of illustrations and their functions in four English course books. The other course books in the market used for English language teaching may be investigated for comparison purposes. Future studies may also include views of the students and teachers since they are the *real players* who can show whether illustrations are helpful in elaborating the content in the books.



References

- Alley, D. C. (1994). Trends in the Use of illustrations in University Spanish Textbooks. *Hispania*, 77(3), 489-495. <http://doi.org/10.2307/344979>
- Basal, A. (2013). ELT teachers as online material developers. *The Online Journal of Distance Education and e-Learning*, 1(2), 8-12.
- Carney, R. N., & Levin, J. R. (2002). Pictorial illustrations still improve students’ learning from text. *Educational Psychology Review*, 14(1), 5-26. <http://dx.doi.org/10.1023/A:1013176309260>
- Chun, C. W. (2009). Critical Literacies and Graphic Novels for English-Language Learners: Teaching Maus. *Journal of Adolescent & Adult Literacy*, 53(2), 144-153. <http://dx.doi.org/10.1598/JAAL.53.2.5>
- Çakır, I. (2015). Instructional Materials Commonly Employed by Foreign Language Teachers at Elementary Schools. *International Electronic Journal of Elementary Education*, 8(1), 69-82.
- Domin, E. A. (2007). *On application of visuals in teaching English: Selected Issues*. Retrieved from <http://mail.publikacje.edu.pl/pdf/8385.pdf>

- Evans, M. A., Watson, C., & Willows, D. M. (1987). A naturalistic inquiry into illustrations in instructional textbooks. In H. A. Houghton & D. M. Willows (Eds.), *The psychology of illustration*. Vol.2: Instructional issues (pp. 86–115). New York: Springer. http://dx.doi.org/10.1007/978-1-4612-4706-7_3
- Hewings, M. (1991). The interpretation of illustrations in ELT materials. *ELT Journal*, 45(3), 237–244. <http://dx.doi.org/10.1093/elt/45.3.237>
- Hill, D. A. (2003). The visual elements in EFL coursebooks. In B. Tomlinson (Ed.), *Developing materials for language teaching* (pp. 174–182). London: Continuum.
- Krippendorff, K. (2004). *Content analysis: An introduction to its methodology*. London: Sage.
- Kuzu, A., Akbulut, Y., & Sahin, M. C. (2007). Application of Multimedia Design Principles to Visuals Used in Course-Books: An Evaluation Tool. *The Turkish Online Journal of Educational Technology - TOJET*, 6(2), 8-14.
- Laitinen, M. (2014). *Thousands of words. A comparative study on the functions of pictorial illustrations in English language textbooks*. (Unpublished master's thesis). Retrieved from <https://jyx.jyu.fi/dspace/handle/123456789/43121>
- Lenzner, A., Schnotz, W., & Müller, A. (2013). The role of decorative pictures in learning. *Instructional Science*, 41(5) 811–831. <http://dx.doi.org/10.1007/s11251-012-9256-z>
- Levin, J. R. (1981). On functions of pictures in prose. In Pirozzolo, F. J., and Wittrock, M. C. (Eds.), *Neuropsychological and Cognitive Processes in Reading* (pp. 203–228). New York: Academic Press. <http://dx.doi.org/10.1016/B978-0-12-185030-2.50013-5>
- Levin, J. R., Anglin, G. J., & Carney R. N. (1987). On empirically validating functions of pictures in prose. In D. M. Willows & H. A. Houghton (Eds.) *The psychology of illustration, volume 1: Basic research* (pp. 51–85). New York: Springer-Verlag. http://dx.doi.org/10.1007/978-1-4612-4674-9_2
- Levin, J. R., & Mayer, R. E. (1993). Understanding illustrations in text. In B. K. Britton, A. Woodward, & M. Binkley (Eds.). *Learning from Textbooks: Theory and Practice* (pp. 95–113). New Jersey: Lawrence Erlbaum Associates.
- Mayer, R. E. (1993). Illustrations that instruct. In R. Glaser (Ed.), *Advances in instructional psychology*, Volume 5 (pp. 253-284). Hillsdale, JH: Erlbaum.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd Edition). Thousand Oaks, California: SAGE Publications.
- Molitor, S., Ballstaedt, S. P., & Mandl, H. (1989). Problems in Knowledge Acquisition from text and Pictures. In Mandl, H. & Levin, J. R. (eds). *Knowledge Acquisition from text and Pictures*, 3-35. North Holland: Amsterdam, New York, Tokyo. [http://dx.doi.org/10.1016/S0166-4115\(08\)62145-7](http://dx.doi.org/10.1016/S0166-4115(08)62145-7)
- Murakami, S., & Bryce, M. (2009). Manga as an Educational Medium. *The International Journal of the Humanities*, 7(10), pp. 47-55.
- Olshansky, B. (2008). *The Power of Pictures: Creating Pathways to Literacy through Art*. San Francisco: Jossey-Bass.
- Özdemir, F. E. (2007). *An evaluation of Time for English 4, the 4th grade English course book for public schools*. (Unpublished master's thesis). Middle East Technical University, Ankara, Turkey.
- Romney, C. (2012). Images in ELT textbooks: Are they just decoration? In A. Stewart & N. Sonda (Eds.), *JALT2011 Conference Proceedings*. Tokyo: JALT.
- Romney, C., & Bell, L. (2012). The role of graphics in business English textbooks. In K. Bradford-Watts, R. Chartrand, & E. Skier (Eds.), *The 2011 Pan-SIG Conference Proceedings*. Matsumoto: JALT.

- Skorge, P. (2008). Visual representations as effective instructional media in foreign language teaching. *Poznań Studies in Contemporary Linguistics*, 44(2), 265-281.
<http://dx.doi.org/10.2478/v10010-008-0011-1>
- Teele, S. (1995). *The multiple intelligences school: A place for all students to succeed*. Redlands, CA: Citrograph.
- Weber, R. P. (1990). *Basic content analysis*. London: Sage.
- Woodward, A. (1993). Do illustrations serve an instructional purpose in U.S. textbooks?. In B. K. Britton, A. Woodward, & M. Binkley (Eds.). *Learning from textbooks: Theory and practice* (pp. 115–134). New Jersey: Lawrence Erlbaum Associates.

APPENDIX – A: Examples of illustrations from the current study and their functions

<p style="text-align: center;">Decorational</p>	<p style="text-align: center;">Representational</p>
<p style="text-align: center;">Organizational</p>	<p style="text-align: center;">Interpretational</p>
<p style="text-align: center;">Transformational</p>	