Analysis of the Visual Materials from Turkish Social Studies Textbooks in Terms of Their Types, Communicative Functions and Features

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Abstract

In this study, the inventory of the visual materials of the secondary school Social Studies textbooks in the 2017-2018 academic year in Turkey was taken and their functions for visual communication were analysed. The frequencies, rates and sort of visual materials used in the books; the qualification of the functions of the used materials in terms of visual communication, and the structural and technical features of the materials have been subjected to content analysis by using descriptive survey model in this context. The findings obtained have been presented in tables which show frequencies/percentages and they have been interpreted by being compared to findings of the similar former studies. Being the leading issue among the least studied ones, the textbooks in general and the visual design of the textbooks, in particular, have made someone to think that the findings, results and suggestions obtained might be important for the partners.

Keywords: Social Studies, Social Studies Textbooks, Visual Materials, Visual Communication, Visual Literacy.

Reference to this paper should be made as follows:

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INTRODUCTION

Visual materials in textbooks can be defined as teaching materials that function as channels in the communication process and are the subject of visual communication as a type of communication. Being the first form of communication, the act of seeing predates speech as John Berger stated (Topaklı, 2014, p. 104; Tepecik & Çelik, 2015, p. 78), and provides a basis for understanding, learning, and speech (Erdal, 2015, p. 54). Children of two years,
despite having a few words of vocabulary, have already learned about 50% of what they will learn during their lifetime (Topaklı, 2014, p. 104). As a result of the discovery about this feature of humankind and the pragmatic findings derived from this discovery, the age we live in is evolving into a stage that may virtually go down in history as the Age of Visual Culture. With the rapid development of technology, and the proliferation of mass media and personal computers (Topaklı, 2014, pp. 105-106; Çivitçi, 2014, p. 39), humankind is living now in an environment entirely surrounded by signs, images, and icons, and under a visual bombardment; an excessive amount of information gets into circulation through visuals, and the reactions are improved in accordance with the visual perception. In other words, the visual communication not only is the first communication method of a living creature but also has started to become a socio-cultural quality of our contemporary civilisation, and the visuals, by tolerating the linguistic and cultural differences, has acquired the status of a fundamental language of international communication (Topaklı, 2014, pp. 105-106). This statement of Charlie Chaplin, English director, and actor set a good example of the dimension and the quality of the visual communication in this social order described as “eye-centred society” by Martin Jay (Tüzel, 2010, p. 698): “The silent picture, first of all, is a universal means of expression. Talking pictures necessarily have a limited field, they are held down to the particular tongues of particular races” (Brody, n.d.).

Functioning as preservers and distributors of information and thought, books occupy an important place in the development of human civilization. As a sub-genre of the world of books, textbooks have a function limited to teaching materials, and are beneficial in regard to corroborating curriculums, determining what students will learn, influencing what teachers will teach (Alkan, 1979, p. 244; Ceyhan & Yiğit, 2003, p. 26; Ertok Atmaca, 2006, p. 318; Esen, 2002, p. 144; Kızılçaoğlu, 2003, p. 20; Özmen, 2006, p. 26), reinforcing educational attainment, preparing for exams, and providing a studying facility correspondent with the learning speed (Sezer et al., 2008, p. 924). Textbook can be defined as a teaching material which is prepared under the objective, content, teaching-learning process and the aspect of assessment and evaluation situated in a curriculum; that is written for students at a certain level; that facilitates the process of learning and recalling; that is planned from easy to difficult, and that provides systematic progress and advancement (Akbaba, 2013, p. 27). In brief, helping the teacher to set up objectives and suggesting ways for reaching them, textbooks are a basic tool for both teacher and pupil (Nolen and Goetz, 1959, p. 3), and also have a role in the improvement of lessons within the process (Topses, 2001, p. 1). Being the most important information resources between the student and the teacher, textbooks make possible for a teacher to systematise the subjects that he/she will teach, and provide a possibility for schoolers to regurgitate the subjects which have been taught by the teacher at any time at anywhere, thus, enabling them to self-learn (Akbaba, 2013, p. 27).

Qualified books have the function of starting a relationship between children and written and visual culture; besides they prepare natural living environments for children to both to become socialized and to improve their linguistic skills, creativity, and cognitive learning (Çınar, 2012, p. 531). On the other hand, textbooks can be used not only as teaching materials, but also as a tool for promoting children’s reading and writing activity, and their individualized reading programmes (Welton & Mallan, 1999, p. 340). In this context, the fact that textbooks, being frequently used along with the chalkboard and containing the large part of the data which will be taught (Alpan Bangir, 2004, p. 5; Aydin, 2016, p. 13; Eşgi, 2005, p. 1; Göcer & Tabak, 2012, p. 793; Keser, 2004, p. 262; Şahin, M., 2014, p. 31) are produced according to certain standards has a great importance.

The standards which determine the quality of textbooks can be categorized into two basic dimensions, one related to scope and the other related to visual design (Dursun & Eşgi, 2008, p. 22). About these standards, there are already a regulation issued by the Ministry of
National Education, and preliminary and substantive review procedures applied to candidate books in accordance with this regulation. Nevertheless, since curriculum development is an endless process, and curriculums have qualification of very variable, these standards are constantly changing. Therefore, it is an important necessity that the textbooks which have been inspected by the Ministry are evaluated by students, teachers and academic circles in the context of “opinions and suggestions.” However, many studies in the body of literature agree that the quality of textbooks, especially their visual design features, has not been sufficiently studied (Alpan Bangir, 2004, p. 6; Delice et al., 2009, p. 76; Keser, 2004, p. 265).

In fact, visualization of textbooks is an important subject within the context of diverse benefits provided by textbooks (Akbaba, 2005, pp. 287-289; Alpan Bangir, 2004, p. 10; Çalk, 2001, pp. 1-14; Şahin, 2014, pp. 1321-1322; Tosunoğlu et al., 2001, pp. 61-64; Welton & Mallan, 1999, p. 347; Yıldız et al., 2016, p. 44). Textbooks:

- help to learn permanently the knowledges
- give an opportunity to interpret the data which has not been interpreted before
- enhance the comprehensibleness of texts
- offer alternatives for the individual differences
- play an essential role in an effective transmission of a message
- support the conceptual development
- make the book appealing and increase the motivation to read it
- contribute to the development of visual literacy and awareness skills
- promote the interests and skills in art and aesthetics
- enhance the cultural and artistic taste level
- create different perspectives
- improve the sense perceptions and promote the affective learning
- establish an available environment for the practices to develop the power of dream, imagination, and thinking

Spaulding (1955), in his meta-analysis containing 16 research studies which were published between the years 1930-1953 and in concern with the subject, concluded in these common grounds with respect to the effect of illustrations (as cited in Anglin et al., 2004, pp. 872-873):

- Illustrations are effective interest-getting devices
- Illustrations help the learner interpret and remember the content of the illustrated text
- Illustrations are more effective in realistic color than black and white
- Illustrations will draw more attention if they are large
- Illustrations should conform to eye movement tendencies

In another study including 23 studies which were conducted between 1938-1969, Samuels (1970)’ findings are in sum as follows (as cited in Anglin et al., 2004, p. 873):

- For acquisition of a sight vocabulary, pictures interfere with learning to read
- Pictures used as adjuncts to printed text do not work with comprehension
- pictures can influence attitudes.

Yet again, Britton et al. (1993, p. 96) stated that there was no doubt that the visuals affected the long-term memorability and visual oriented memory development, based upon the experimental studies which were especially carried out in laboratories in the last 30 years.
Visual materials procure by performing certain functions these effects and benefits which have been proven by experimental studies. Many of the substantial studies which question these functions are based on the functions described by Nolen and Goetz (1959, pp. 149-152): *To decorate the page, to interpret or explain the text, and to supplement the text.* Duchastel (1978, as cited in Anglin et al., 2004, p. 875) stated that the materials serve three basic roles: *an attentional role, a retentional role, and an explicative role.* The approach of another study by Levie and Lentz (1982, as cited in Anglin et al., 2004, p. 875) is quite similar and based on four major functions: *Attentional, affective, cognitive, and compensatory.* According to Heinich, Molenda, and Russel (1999, as cited in Ünal, 2001, p. 325-326), these functions are as follows: *the function of concretising the meaning, the function of being iconic, the function of motivation, and the function of repetition.* Winn (1993, as cited in Ünal, 2001, pp. 326-327) identified five functions referring to the different dimensions of visual materials: *the function of decoration, symbolisation (representation), arrangement, and of explaining and transformation.* As to Britton et al. (1993, pp. 97-104), they summarized the functions they explained abbreviating as 7C: *Concentrated, compact/concise, concrete, coherent, comprehensible, correspondent, codable.*

Some of the studies in the body of literature argue that visual materials perform these functions within certain conditions and limitations. For example, Shallert (1980, as cited in Anglin et al., 2004, p. 873), in his study in which he reviewed a series of studies that covered the time period from 1972 to 1977, enounced that visual materials would benefit if they met the following criteria:

- when the pictures illustrate information central to the text,
- when they represent new content important to the overall message being presented,
- when they help depict the structural relationships covered by the text, and
- if the illustrated information contributes more than a simple second rehearsal of the text

Levie and Lentz (1982, as cited in Anglin et al., 2004: 873), who compiled a number of studies published from 1938 to 1981, established the following relationships between visual materials and their benefits:

- Learning will be facilitated when the information in the written text is depicted in the illustrations
- Learning of text material will not be helped or necessarily hindered with illustrations that are not related to the text
- When the criterion measure of learning includes both illustrated and non-illustrated text information, a modest improvement may often result from the addition of pictures.

The conditions and constraints indicated by Sanalan et al. (2007, p. 40) have born resemblance to these findings:

- The use of pictures together with texts affects learning process positively.
- The stylistic features of a visual constituent (its colour, size, shape etc.) are effective for drawing attention but not for learning.
- There is a directly proportional relation between the reality in the pictures and the level of learning as its result.
Different from these researches, Stokes (2001, pp. 16-17) emphasizes the variables other than the relation and qualifications of the texts and visuals. According to him, providing expected benefits from the visual materials is based on the visual material using skills of the teachers, the methods and strategies which the regarded visual materials used with and using the guidance for visual literacy skills. İşler (2003, p. 56) and Şahin (2014, p. 31), have also mentioned that the visual metaphors, symbols and diagrams differ from person to person based on their level of knowledge, background, environment and visual interaction levels; and that cultural differences, genetic perception skills and personality were also determinant in this respect.

Along with these conditions and constraints, the visual materials need to be based on specific pedagogical and artistic criteria and used in accordance with some technically particular printing standards. The visuals in terms of the criteria which needed to be used as pedagogical base (İşler, 2003, pp. 57-58; Pekgöz & Hancılar, 1970, pp. 69-70; Seferoğlu, 2014, p. 34; Ünal, 2001, p. 328, pp. 333-334; Yıldız et al., 2016, p. 44):

- need to be suitable for the age and level of development and learning,
- need to be pertinent to the subjects and the acquisitions,
- need to be able to express an event by themselves
- need to be simple and plain,
- should not contradict with the text and not give an opportunity for negative interpretations,
- should contain only one subject and concept,
- should be presented with the explanations they match or be placed as close as possible to the information wherein a reference is made to them in the text,
- need to be compatible with the sociocultural characteristics of the target audience,
- need to contain surprising and unexpected stimuli,
- need to have functions such as indicating, separating and integrating the important things,
- need to contain some deficiencies which need replies, are incomplete or have been relocated,
- need to be in accordance with the fundamental principles to organize a message,
- should not be produced to have unnecessary exaggerations or deformations,
- need to reflect the up-to-date information,
- Their titles and subtitles need to be correct, clear and comprehensible.

When viewed from the artistic point of view, these following criteria are distinguished among ones which are referred in the regarded literature, and can generally be collected under the heading of visual design principles (Çivitçi, 2014, p. 39; Kaptan & Gündem Kaptan, 2005, pp. 161-168; Oğuzoğlu, 2001, p. 115; Rzayev, 2014, p. 41; Seferoğlu, 2014, pp. 34-38; Smaldino et al., 2011, pp. 192-194; Ünal, 2001, pp. 333-334; Yalın, 2017, pp. 113-120):

- It needs to design in order to prepare creative, communicative and/or functional and aesthetical materials,
- They need to be created with aesthetical and plastic concerns,
- They need to be created by paying attention to the stylistic (symmetrical) and unstylistic (dynamic) balances,
- They need to be created by avoiding the distracted grounds and paying attention to the rules of chromatics,
• They need to be created by considering the fundamental design principles such as integrity, balance, emphasis, justification, closeness, proportion, direction, contrast and harmony.
• Powdered crayons, watercolour paints, poster paints, aquarelle techniques should be used for the earlier age groups; and for the older group; the techniques and paint should be switched into more detailed ones such as ecoline paints, acrylic paints, computerized colorization, hatching with ink,
• In order not to make each page seem like belonging to a different book; the characters, figures, colors, line values should be used coherently and the pictures should be indexed.

The researches on the qualifications of textbooks in Turkey have shown that the textbooks are inadequate in terms of several fundamental analysis criteria. We can summarize the findings which we obtained from the scanning and analysis as follows:

• The qualities of the textbooks in different dimensions have started to become a current issue since the 1990s, however; any kind of satisfactory study has not been done yet.
• The majority of the studies is relate to mathematics, science and geography textbooks, and very few numbers of them are relate to social studies textbooks.
• The postgraduate dissertations which can directly be associated to this research have generally observed to be focused on the topics such as “Analysing the effects of using visual materials on learning and teaching”, “Associating the visuals with teaching the specific concepts and values”, “Analysing the visuals in textbooks” and “Analysing the teachers’ and student’ opinions”.
• The common ground of the researches is that the textbooks in Turkey are inadequate for meeting the criteria indicated above in terms of both content and visual design. To illustrate some of them:
  - In the study which has been named “The Textbooks of Turkey” (1991, p. 11) and included the analysis of the textbooks of Turkish, Literature, Foreign Language, History, Geography, Citizenship, Sociology, Psychology, Philosophy, Logic, Religious Culture and Moral Knowledge, History of Art and Painting Education; it has been argued that those textbooks have had imprecise visual organization and have not been close to being attractive, inspirer and motivational for students.
  - In an another study, Oğuzoğlu (2001, pp. 114-199) has deduced that the visuals in the textbooks have been irrelevant images which were low in resolution and quality and also had defects on compositions and designs, and that the visuals on covers did not represent the related course content and there were no kind of aesthetic concern and compositional principles for visual designs of the covers.
  - Kılıç and Seven (2002, pp. 123-124) indicated that in the textbooks they have analysed, they determined numerous mistakes such as; the details were not suitable for the age-group level; there were differences on the colours and compositions between the pages; complicated and matt colours were used; the pictures and texts were placed inconsistently; graphical figures were not comprehensible; the colours did not correspond with the subjects and there were crowded and incorrect words and phrases on the maps.
  - Köksal (2003, p. 106) states that the colour selections are imprecise while Eşgi (2005, p. 2) mentions that there is a confusion on the graphic design of the textbooks. Dursun and Eşgi (2008, p. 23) also emphasized that the visual variety of the textbooks were not adequate enough; the visual design principles were not
considered and the visuals used were in poor quality. It is possible to observe the similar findings and evaluations on the research done by Delice et al. (2009, p. 77) and Cinkılıç (2010: 33) who have been referring to several researches and analysis in the literature,
- Şenşekerci (2016, pp. 98-99), who analysed the Social Studies textbooks in terms of “linguistic expression and questions, pertinence to the program, content, physical features and visual expressions” in accordance with the opinions of the teacher candidates, has revealed that the visual expression components of the textbooks got the lowest grades when compared to other dimensions insufficiency grading made in consideration of certain criteria, that while the other dimensions have got grades higher than 70, the visual expression was able to get 57.05.

**Importance of the Research**

In today’s world, where mass media, visual communication and visual literacy is gaining importance day by day, the teaching technologies in general and the visual design and visual material components the textbooks contain in particular are also gaining importance too. When the related literature is searched, it has been observed that textbooks are not subjected to the researches and the subjects of visual design and visual communication have barely been subjected to the dissertations and papers. Accordingly, with respect to the visual designs of textbooks, it is crucial that having sufficient information and critical perspective for the people, authorities and agents who are authorized to evaluate the textbooks, the commissions who prepare the textbooks, the designers of the textbooks, the publishers and the teachers and the students who are the end users of the textbooks. Concordantly, such studies are essential to increase the demands for more qualified textbooks and to expand the circle that controls and evaluates the textbooks and to keep this topic on the agenda.

**Purpose of the Study**

The aim of this study is to computationally and proportionately determine the types of the visual materials used in the Secondary School Social Studies textbooks in the academic year 2017-2018, and to describe and classify the communicational functions of these visual materials.

**Research Questions**

Answers for the following questions have been sought in order to accomplish the goal of the study:

- What types of visual materials have been used in the Social Studies textbooks, and in which frequency and proportion they have been used?
- What are the functions of the materials which have been used in terms of visual communication?
- What are the structural and technical characteristics of the materials which have been used?

**METHODS**

In this study, the descriptive survey model and content analysis technique, which can be used both on texts and visuals (Yıldız et al., 2016, p. 44), have been used. The content analysis
technique is a qualitative research type based on the document analysis and also on describing the subjected people or the objects as being in their own conditions (Karasar, 2003, pp. 77). The technique has been implemented on the textbooks published by several publishing companies, approved by Turkish Education Board and used in the academic year 2017-2018. In the process of implementation, a couple of study documents have been created upon the suggestions of three experts who have specialized in the fields of visual arts, communication, development and learning; and by making use of the literature. The names of the publishing companies have not been indicated; the letter A for the textbook of Social Studies 5, the letter B for the textbook of Social Studies 6, and the letter C for the textbook of Social Studies 7 have been used.

While seeking an answer for the first research question, instead of an abstractive and categorical study, an approach to directly determine the quantitative inventory of the visual types has been preferred. The main determinant reason for this preference is because there has not been any kind of absolute agreement on visual categories and there are differences in the visuals in respect to the economic sectors which they have been used. For instance; while Smaldino et al. (2011, pp. 183-185) have categorized the types of the visuals as “realistic, homothetic, schematic, associative, transformational and interpretative”; the classification suggested by Duchastel (1980, as cited in Sanalan et al., 2007, pp. 40-41) is as follows: “descriptive, explanatory, configurator, functional, logico-mathematical, representations of instructions and data”. In Turkish literature, the categories such as “dynamic and stable visuals” (Riza, 2000, p. 186; Çilenti, 1984, pp. 80-81); “constituents with pictures, with graphics and written ones” (Kılıç & Seven, 2002, p. 129); “photographies, pictures and schemas” (Güneş, 2002, p. 137); “visuals which have been created for real-like portrayals and visuals which encode the reality symbolically” (Şimşek, 2015, p. 138); “technical illustrations, informative illustrations, architectural illustrations and illustrations of maps” (Keş, 2001, p. 81); “illustrations where the emphasis is on the picture, illustrations which have been prepared for a specific text (explanatory), decorative illustrations” (İşler, 2003, p. 55) have been observed. In this regard, instead of creating a normative list for visuals which is expected to be used in textbooks and analysing the textbooks through this kind of checklist, a technique based on classifying the visuals used in the textbooks and the following visual types have been determined from the related analyse:

- Photographs
- Pictures (artworks which have been created with paints and drawing tools, all kind of sub-genres of the drawing art, collage designs which contain small photographs, cover designs which have been prepared independent from a specific text or a factual informations have been classified in this scope)
- Comics (not only the humorous comics, but also the visuals which have been created using the techniques of comics and conceptual comics with pictoral qualifications in technical way have been classified in this scope)
- Tables (in addition to all of the presentations turning the information into a table, tables for semantic analysis used for teaching concepts have been presented in this scope)
- Schemas / Figures (simple drawings which show abstract relations and concepts have been classified in this scope)
- Diagrams (the illustrations which show developments and changes of the entities and events e.g. seasonal diagrams and timelines, have been classified in this scope)
- Graphics (the visual presentation of numeric data have been classified in this scope)
- Maps.
• Media Clippings (the visual-containing media clippings created from printed medias such as magazines and newspapers or websites have been classified in this scope)
• Logos / Emblems (the visuals which represent the institutions and organizations via typographic and/or iconic illustrations have been classified in this scope)
• Signboards (the copies of informative panels required to be used in institutions and organizations by legislations as well as typographic and iconic platforms have been classified in this scope)
• Affiches / Posters (Commercial presentation designs and cultural reflectives such as institutional posters intended for the public wealth and commemorative stamps have been classified in this scope)
• Symbolic signs (the informative, regulatory and proscriptive illustrations which symbolise a product or an idea, computer designs and pictograms have been classified in this scope)
• Conceptual networks and maps (the visual designs showing hierarchies, meronomies, the relations between the concepts have been classified in this scope)

While seeking an answer for the second research question, “decoration, interpretation/explanation and supplementation” functions of the visuals, which serve to transmit information, emotions and thoughts in a communicative way, have been analysed. These functions which have been brought to agenda by Nolen and Goetz (1959, pp. 149-152) for the first time in literature, have been adopted as “classic” functions of visuals and become popular, though they have been extended by some researchers later. For instance, there have been some researchers who named the graphics and schemas as “associative, transformational, schematic and data representation” or named the informative visuals as “descriptive, configurator, functional and instructions”. However, it has been observed that all of these visuals have functioned as “interpretation/explanation” or “text-supplementation” in terms of “communicational function” when the descriptions of these researchers were analysed. It is possible to describe the three functions which have been used to analyse the communicational functions of the visuals:

• Text-decoration function: The visuals which function as “drawing attention, representing aesthetics and artistic values, stimulating the imaginations and fantasies of the children, being predicated on affective learning, stimulating the sense of empathy on communication” in the page and in their relations with the text have been considered in this category.
• Text interpretation and explanation function: The visuals which function as “associating the phenomena and concepts with each other, showing process steps, changing and construction phases, explaining theories and abstract relations, and presenting meronymies” in the page and in their relations with the text have been considered in this category.
• Text-supplementation function: The visuals which function as “describing concepts and phenomena, informing, schematization of the data, and explaining quantitative data” in the page and in their relations with the text have been considered in this category.

While seeking an answer for the third research question, the visuals have been considered as teaching materials and it has been aimed to determine the situation in terms of only specific pedagogical features, therefore, instead of detailed artistic and technical analysis, the technical features of the visuals, their positions on the pages (layout) and the presentation styles for the students have been focused on. With this purpose, a categorization based on the
following questions has been presented based on the legislations published by MEB (Ministry of National Education) on the textbooks, recommendations of UNESCO, suggestions of national and international professional associations and the related academic studies:

- Is it a photograph or an illustration?
- Is it realistic or symbolic?
- Is it multicoloured or monochromatic?
- Is the resolution sufficient enough for the details to be seen easily or not?
- Does it have a frame or not?
- Is it on the same page with the text that it represents or not?
- Is there any explanatory caption?
- Does it reflect only one thought or more than one thought?

Constraints

This study has been restricted to three textbooks which have been approved by Ministry of National Education to be used in the academic year 2017-2018 and published by different publishing companies.

RESULTS AND DISCUSSION

Research Question One

*What kind of visual materials have been used in the Social Studies textbooks?*

Table-1.1: Visual Types Used in Book A (Social Studies 5)

<table>
<thead>
<tr>
<th>Visual Type</th>
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<th>%</th>
<th>Visual Type</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
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<tr>
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<td>224</td>
<td>61,36</td>
<td>Maps</td>
<td>12</td>
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<tr>
<td>Pictures</td>
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<td>9,58</td>
<td>Media clippings</td>
<td>13</td>
<td>3.56</td>
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<tr>
<td>Cartoons</td>
<td>19</td>
<td>5,20</td>
<td>Logos / Emblems</td>
<td>8</td>
<td>2.19</td>
</tr>
<tr>
<td>Table</td>
<td>10</td>
<td>2,73</td>
<td>Signboards</td>
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<td>0</td>
</tr>
<tr>
<td>Schemas / Figures</td>
<td>9</td>
<td>2,46</td>
<td>Affiches / Posters</td>
<td>11</td>
<td>3.01</td>
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<td>Graphics</td>
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<td>0,54</td>
<td>Symbolic signs</td>
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Table-1.2: Visual Types Used in Book B (Social Studies 6)

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<th>%</th>
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<td>Logos / Emblems</td>
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<td>1,13</td>
<td>Signboards</td>
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<td>0,91</td>
</tr>
<tr>
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<td>2,05</td>
<td>Affiches / Posters</td>
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<td>2,50</td>
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<td>Symbolic signs</td>
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<td>0,91</td>
</tr>
<tr>
<td>Graphics</td>
<td>11</td>
<td>2,50</td>
<td>Conceptual networks and maps</td>
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Table-1.3: Visual Types Used in Book C (Social Studies 7)

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<th>f</th>
<th>%</th>
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<td>Media clippings</td>
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<td>Schemas / Figures</td>
<td>3</td>
<td>0.6</td>
<td>Affiches / Posters</td>
<td>12</td>
<td>2.4</td>
</tr>
<tr>
<td>Diagrams</td>
<td>1</td>
<td>0.2</td>
<td>Symbolic signs</td>
<td>4</td>
<td>0.8</td>
</tr>
<tr>
<td>Graphics</td>
<td>8</td>
<td>1.6</td>
<td>Conceptual networks and maps</td>
<td>2</td>
<td>0.4</td>
</tr>
</tbody>
</table>

- In the textbook A (Social Studies 5), 365; in the textbook B (Social Studies 6), 439; and in the textbook C (Social Studies 7), 500 visual materials have been analysed by finding their visual design features sufficient.
- In the textbook C, nearly half of the visuals; and in the textbooks A and B, more than half of the visuals have consisted of photographs. This has strengthened the “realism” feature which is one of the principles of visual materials usage.
- The second most used type of the visuals are pictures which have been created by different drawing tools and techniques, and those pictures have been either drawn originally with realistic themes in general or used as reproductions of the artworks exhibited on the museums or the printed works.
- It is remarkable that in the textbook A, the comics have been used intensively to draw the students’ attention; and in the textbooks B and C, media clippings and real news and cases reflected on them have been used effectively.
- The other visual types have not been distributed balancedly into the books just for being used, they were used instead by concentrating on the specific units in accordance with the contents and aims of the related units and subjects. For instance, since such visuals are mostly supportive for quantitative data and function as complementaries; they have been extensively used in the units with subjects such as economy, demography and tourism, where too many numerical data are used. Using maps in the units with history and geography themes can be also another instance for this issue.

Research Question Two

What are the functions of the materials which have been used in terms of visual communication?

Table-2.1: Communicative Functions of Visuals Used in Book A (Social Studies 5)

<table>
<thead>
<tr>
<th>Communicative Functions</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decoration</td>
<td>104</td>
<td>28.49</td>
</tr>
<tr>
<td>Interpretation or Explanation</td>
<td>41</td>
<td>11.23</td>
</tr>
<tr>
<td>Supplementation</td>
<td>220</td>
<td>60.27</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>365</td>
<td>100</td>
</tr>
</tbody>
</table>

Table-2.2: Communicative Functions of Visuals Used in Book B (Social Studies 6)

<table>
<thead>
<tr>
<th>Communicative Functions</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decoration</td>
<td>55</td>
<td>12.52</td>
</tr>
<tr>
<td>Interpretation or Explanation</td>
<td>59</td>
<td>13.43</td>
</tr>
<tr>
<td>Supplementation</td>
<td>325</td>
<td>74.03</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>439</td>
<td>100</td>
</tr>
</tbody>
</table>
Table 2.3: Communicative Functions of Visuals Used in Book C (Social Studies 7)

<table>
<thead>
<tr>
<th>Communicative Functions</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decoration</td>
<td>71</td>
<td>14.2</td>
</tr>
<tr>
<td>Interpretation or Explanation</td>
<td>44</td>
<td>8.8</td>
</tr>
<tr>
<td>Supplementation</td>
<td>385</td>
<td>77</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>500</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

- Almost two thirds of the visuals from the analysed textbooks have been functioned as complementary. This proportion is expected and coherent in terms of the aims of the social studies course and the features of the subjects and units in the textbooks.
- One third of this proportion has been consisted of the equal distribution of the visuals functioned as decorations and interpretations/explanations. In the textbook A, which has appealed to the younger age groups, the visuals functioned as decorations have been used more frequently because in this group affective learning is more prominent.
- In terms of development and learning level, it is an expected finding that the visuals which functioned as interpretations/explanations were used less in the textbook A. However, that the visuals with this function were least used in the textbook C is a deficiency for this book with regard to the development and learning level. It would be expected to use more visuals in the textbook C, which can motivate the children to be active on the high-level process steps, compared to books published in former years.

**Research Question Three**

What are the structural and technical characteristics of the materials which have been used?

Table 3.1: Visuals in A Book (Social Studies 5) in terms of their structural and technical features

<table>
<thead>
<tr>
<th>Visual material</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photo</td>
<td>250</td>
<td>70.22</td>
</tr>
<tr>
<td>Illustration</td>
<td>106</td>
<td>29.78</td>
</tr>
<tr>
<td>Realistic</td>
<td>268</td>
<td>75.28</td>
</tr>
<tr>
<td>Symbolic</td>
<td>88</td>
<td>27.72</td>
</tr>
<tr>
<td>Multicoloured</td>
<td>339</td>
<td>95.22</td>
</tr>
<tr>
<td>Monochromatic</td>
<td>17</td>
<td>4.78</td>
</tr>
<tr>
<td>Sufficient resolution</td>
<td>356</td>
<td>100</td>
</tr>
<tr>
<td>Insufficient resolution</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Framed</td>
<td>192</td>
<td>53.93</td>
</tr>
<tr>
<td>Frameless</td>
<td>164</td>
<td>46.07</td>
</tr>
<tr>
<td>Used on the same page with the text that it represents</td>
<td>356</td>
<td>100</td>
</tr>
<tr>
<td>Used on the different page with the text that it represents</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>There is an explanatory caption</td>
<td>177</td>
<td>49.71</td>
</tr>
<tr>
<td>There is not an explanatory caption</td>
<td>179</td>
<td>50.29</td>
</tr>
<tr>
<td>Reflect only one thought</td>
<td>310</td>
<td>87.07</td>
</tr>
<tr>
<td>Reflect more than one thought</td>
<td>46</td>
<td>12.93</td>
</tr>
<tr>
<td><strong>Total ((Each parameter pair)</strong></td>
<td><strong>356</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
Table 3.2: Visuals in B Book (Social Studies 6) in terms of their structural and technical features

<table>
<thead>
<tr>
<th>Visual material</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photo</td>
<td>293</td>
<td>71.63</td>
</tr>
<tr>
<td>Illustration</td>
<td>116</td>
<td>28.36</td>
</tr>
<tr>
<td>Realistic</td>
<td>375</td>
<td>91.68</td>
</tr>
<tr>
<td>Symbolic</td>
<td>34</td>
<td>8.31</td>
</tr>
<tr>
<td>Multicoloured</td>
<td>367</td>
<td>71.63</td>
</tr>
<tr>
<td>Monochromatic</td>
<td>42</td>
<td>10.26</td>
</tr>
<tr>
<td>Sufficient resolution</td>
<td>238</td>
<td>69.19</td>
</tr>
<tr>
<td>Insufficient resolution</td>
<td>126</td>
<td>30.8</td>
</tr>
<tr>
<td>Framed</td>
<td>395</td>
<td>96.57</td>
</tr>
<tr>
<td>Frameless</td>
<td>14</td>
<td>3.42</td>
</tr>
<tr>
<td>Used on the same page with the text that it represents</td>
<td>409</td>
<td>100</td>
</tr>
<tr>
<td>Used on the different page with the text that it represents</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>There is an explanatory caption</td>
<td>343</td>
<td>83.56</td>
</tr>
<tr>
<td>There is not an explanatory caption</td>
<td>66</td>
<td>16.13</td>
</tr>
<tr>
<td>Reflect only one thought</td>
<td>389</td>
<td>95.11</td>
</tr>
<tr>
<td>Reflect more than one thought</td>
<td>20</td>
<td>4.88</td>
</tr>
<tr>
<td>Total ((Each parameter pair)</td>
<td>409</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 3.3: Visuals in C Book (Social Studies 7) in terms of their structural and technical features

<table>
<thead>
<tr>
<th>Visual material</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photo</td>
<td>389</td>
<td>81.55</td>
</tr>
<tr>
<td>Illustration</td>
<td>88</td>
<td>18.45</td>
</tr>
<tr>
<td>Realistic</td>
<td>460</td>
<td>96.43</td>
</tr>
<tr>
<td>Symbolic</td>
<td>17</td>
<td>3.57</td>
</tr>
<tr>
<td>Multicoloured</td>
<td>380</td>
<td>79.66</td>
</tr>
<tr>
<td>Monochromatic</td>
<td>97</td>
<td>20.34</td>
</tr>
<tr>
<td>Sufficient resolution</td>
<td>400</td>
<td>83.85</td>
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<tr>
<td>Insufficient resolution</td>
<td>77</td>
<td>16.15</td>
</tr>
<tr>
<td>Framed</td>
<td>432</td>
<td>90.56</td>
</tr>
<tr>
<td>Frameless</td>
<td>45</td>
<td>9.44</td>
</tr>
<tr>
<td>Used on the same page with the text that it represents</td>
<td>477</td>
<td>100</td>
</tr>
<tr>
<td>Used on the different page with the text that it represents</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>There is an explanatory caption</td>
<td>414</td>
<td>86.79</td>
</tr>
<tr>
<td>There is not an explanatory caption</td>
<td>63</td>
<td>13.21</td>
</tr>
<tr>
<td>Reflect only one thought</td>
<td>459</td>
<td>96.22</td>
</tr>
<tr>
<td>Reflect more than one thought</td>
<td>18</td>
<td>3.78</td>
</tr>
<tr>
<td>Total ((Each parameter pair)</td>
<td>477</td>
<td>100</td>
</tr>
</tbody>
</table>

- The textbook A which consists of 200 pages (Social Studies 5), there have been 356 visual materials analysed in terms of the structurally and technically based parameters. In this book, there have been 1.78 visuals per page.
- The textbook B which consist of 196 pages (Social Studies 6), there have been 409 visual materials analysed in terms of the structurally and technically based parameters. In this book, there have been 2.08 visuals per page.
- The textbook C which consist of 206 pages (Social Studies 7), there have been 477 visual materials analysed in terms of the structurally and technically based parameters. In this book, there have been 2.31 visuals per page.
- As from a quantitative perspective, it is possible to say that the Social Studies textbook 7 is the one which contains the most visuals both in total and per page.
• It is observed that the average is minimum 1.5 visual materials per page for all the books considering each unit.

• The most of the visuals used in the books are photographs. Because the photographs have the strongest communicational power and the most concretizable among the unidimensional visuals, this preference is suitable with the teaching objectives.

• Drawings and decorations have been used consistently and levelly when it has been necessary to simplify the subject, emphasize the part of a whole or decorate the page.

• The realistic visuals have been used frequently, and this preference corresponds with the development and learning levels. As a matter of fact, iconizing visuals have been associated with the questions on the level of analysis and synthesis on the exercises and activities or with the situations where more than one idea have been reflected.

• That the entire visuals are colorful is extremely consistent with the development and learning levels. The visuals printed with single colour, generally black, have been either symbolic visuals such as icons, schemas, emojis, panels and signs or genuine photographs which reflect specific historical periods.

• It has been observed that the visuals have been printed in the quality which the details could be seen easily, and that a small number of visuals with low resolution were for the small sized visuals.

• The frames have been used consistently in accordance with the functions of the visuals and in specific sizes. For instance, while frames have been used for the visuals to transfer quantitative data such as maps and tables and informative visuals providing complementary information for the text; unframed designs have been preferred for the decorative, explanatory and interpretative visuals or visuals excluded from the units in accordance with the function of the visual, in order to set the field of thoughts and imagination of the students related to the visuals free.

• No visual was identified that is not used in the same page with the related text.

• The visual captions have been obviously used for the complementary visuals. The visuals without any captions are related to short paragraphs, sentences or comics or because this kind of visuals have been used in the instructions, activities or exercises, they have already been linked with a question or an instruction. Besides, all of the visuals have been numbered and their references have been presented in the list named “Visual Bibliography” at the end of the book.

• The textbooks analysed have been designed in accordance with the principle of visual material usage “the visuals used for teaching should be based on only one main idea”. A couple of visuals which contain more than one main idea consist of symbolic visuals which have been associated with the questions on the analysis and synthesis levels mostly on the exercises and activities.

CONCLUSION

Human civilization has entered into the age of visual culture in which the signs have been dominating (Bingöl, 2015, p. 53). The cultural paradigm, which makes the children between the ages 6-12, according to the calculations, spend approximately 16,000 hours of their lives on watching TV and 8,000 of their lives on the computer (Tüzel, 2010, p. 698); have also transformed the social and public relations and forced the people to gain new thinking and problem-solving skills. Those skills bearing the qualification of social adaptation for the individual (Onursoy, 2003, p. 246) have been conceptualized under visual literacy at the present time and defined as “reading, interpreting and comprehending skills or abilities of visual information” (Lüle Mert, 2017, p. 256; Tüzel, 2010, p. 693; Stokes, 2001, p. 12). The visual literacy formed by linguistics, art, psychology and philosophy (Alpan Bangir, 2004, p.
15) have different dimensions such as “perceiving pictures, attention, interpretation, memory models, memory usage, learning, cognitive acquisition and problem solving” and a specific terminology such as “visual reading, visual presentation and colour” (Braden, 1996, p. 493, pp. 494-500). The visual literacy, which cannot be separated from the concepts of visual communication, visual thinking and visual learning since it is an interdisciplinary and multidimensional concept, have become crucial as a field of research and teaching day by day (Göçer ve Tabak, 2012, p. 793).

A textbook is one of the leading materials used most commonly and effectively in the learning-teaching circles, which is actually a communication process, and thus is an important tool for both visualizing the content of the learning process and contributing the necessity of visual communication. The textbooks which have been prepared based on the fundamental design principles of visual arts and learning theories, teaching principles, and acquisition and content of the educational programs, have not only been a type of teaching material, but also may affect children's aesthetic admirations, reading habits and imagination positively while making children gain visual literacy skills. Moreover, this is the natural result of the fact that children live in a more colorful world than adults, and that the materials used for activating their sensitiveness should be educative in terms of artistic (Uzuner et al., 2010, p. 725).

In this study, in order to analyse the textbooks used in Secondary School Social Studies in Turkey, the textbooks prepared for different grades and published by three different publishing companies have been used as samples. In the preliminary analysis, we have formed a general impression that analysing more books will not affect the conclusion. Because the Turkish legislation for the textbooks has stipulated a procedure based on the analysis and approval of the textbooks by Ministry of National Education and distribution of them to the schools from the government centrally. Accordingly, as there have not been any local and civil initiatives on the textbooks for any steps of compulsory education, there have not also been any kinds of market regulations which enable the teachers to choose textbooks. Thus, the textbooks which have been approved by the Ministry for the specific courses of the specific grades, have born complete resemblance with each other within the scope of specified standards and the biggest differences have been generally on technical issues such as paper material, quality of printing and volume.

With this study, it is possible to say that the analyzed textbooks have been prepared by following a perspective which has considered the conclusions and recommendations of the publications printed for the last 30 years in our literature. From the viewpoint of the used visual types, it can be observed that the visuals have primarily contributed to the reality levels of the textbooks by paying attention to the suitability for development and learning levels. This feature of the textbooks has been provided by focusing more on using photographs and pictures. Aside from them; using comics, media clippings, diagrams and graphics more in numbers quantitatively and more with aesthetic and artistic designs qualitatively when compared to textbooks of the former years, is a positive development. Using banners, posters, symbols, conceptual networks, conceptual maps which had been used hardly ever in the former textbooks and are more abstract, symbolic, thought-oriented and contain higher level messages in the right places and right amounts can also be indicated as a considerable innovation.

Comparing to the former textbooks which have been identified by the studies in the literature as to have been visualized not to leave the pages empty and to decorate them, the current textbooks seem stronger and more prosperous in terms of functions of visual communication. It is possible to say that the visuals in the analyzed textbooks have been chosen or produced to meet all of the functions which have been considered as “classic functions” of the visual materials in a proportional balance. Above all, the text-decoration
function has been minimized by restricting it with some text types. Text-supplementation function has become prominent by substituting the decoration and thus the text-visual relation has obtained more didactical qualification. Finally, the visuals which will activate the mental processes related to interpreting and explaining the text through more abstract, more aesthetic and more artistic visuals on the suitable texts and activities have been started to be included.

From the structural and technical perspective, it has been observed that all of the three textbooks have corresponded with both the criteria of the legislation of the Ministry and the criteria recommended by most of the studies in the literature. The textbooks have been visualized with plenty of realistic and colorful photographs in accordance with the age and learning demands of the secondary school students. The rarely used drawings and symbolic visuals have been used pertinently and with the suitable texts and contexts in terms of their technical features and communicational functions. Correcting the defects on printing quality, resolution, visual design – page layout relation, visual using principles indicated in lots of research and analysis have drawn attention as a positive development. Nearly all of the visuals have been used in the same page with the related texts and with a sufficient quality on resolution in all of the three textbooks, framed by considering visual design principles on when to use the frame or not, visuals have been explained with captions and numbers and except from the visuals associated with the activities, almost all of the visuals have been chosen and produced as representatives of only one main idea.

Recommendations

In the scope of the notes which we have taken in the process of analysis and the findings of this study, the following recommendations can be presented to be evaluated by the relevant people and organizations:

- MEB (Ministry of National Education) can increase the criteria which have been used for visual design features of the textbooks in the process of preliminary and main examinations of the textbooks they are evaluating and can raise the grades of these features.
- MEB should organize in-service trainings for the teachers on visual communications, visual literact, using visual materials, learning-teaching activities based on visual materials.
- The textbooks in the process of preparation and produce can be put into service as a whole or a part of them as interactive digital copies in order to be used in the platforms of Ministry such as EBA (Educational Informatics Network) through the works of the related departments of MEB or buying services; the complementary, interpretive and explanatory visuals can be transformed into web based teaching contents for homeworks or self-study activities by associating them with the specific activities.
- Undergraduate and postgraduate programs related to textbook illustrations or designs can be opened based on the fact that visualizing the textbooks is a profession which exceeds the duties of publishing companies and it requires creativity equal to rewriting them.
- The publishing companies can buy services from the specialized organizations on visual designs of the textbooks written by commissions. As a matter of fact, such kind of method has been followed for the textbook A (Social Studies 5) analysed in this study.
- It is necessary to emphasize the following points in terms of the evaluations of the designers and illustrators: the visuals which have functioned as interpretations and
explanations of the texts should be used by associating with activities increasingly as the grade level gets higher; in accordance with the constructivist approach, original visuals should be produced as “dynamic, incomplete, inconsistent, providing focus and concentration, schematizing the social-status, showing processes, emphasizing the problems, containing critical messages or before-after comparisons”; the drawings, ornaments and other graphical components should be original and special to the textbooks; in accordance with the spiral program principle, the abstractness degree and the functions of the visuals should be raised in every phase of the education and they should complete each other; the visuals which function as text-completions should not only repeat the texts visually, but also support the development of thinking and problem solving skills.

- The studies on the topics such as “the content analysis of the visuals”, “opinions of the teachers in terms of the suitability of the visuals to the acquisitions”, “opinions of the students in terms of the drawing attention and motivational effects” of the researches who want to study on the visual materials in the textbooks and visual designs of the textbooks can contribute greatly to the literature.

REFERENCES


Altun, A. et al. (Eds.) (2017). Sosyal Bilgiler Ders Kitabı 5, İstanbul: MEB.


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