

## The communicative dimension of graphic design elements - Such as infographics

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Received: February 11, 2023

Accepted: March 16, 2023

Published: July 01, 2023

DOI: 10.14295/bjs.v2i7.283

URL: <https://doi.org/10.14295/bjs.v2i7.283>

### Abstract

The purpose of the current study is to address a research question about the role that visual design elements have in communication. The data were collected based on their technical relevance, which highlights the general description of the field of research that includes graphics, infographics in the field of communication, and elements of visual design. Review of the relevant literature and concepts: To begin with, we must consider the communication aspects of the design in order to produce truly successful visual design elements. The communicative dimension of graphic design elements such as infographics are invaluable in conveying information in a clear and engaging way. Two opened the way for the expansion of the use of visual elements in the manufacture of the media message. This study discusses the communicative dimensions of visual design elements, in general, and infographics in particular, as infographic is part of information visualization. This study discusses the communicative dimensions of visual design elements, in general, and infographics in particular, as Infographic is part of information visualization, in addition to that it is a research field related to communication as it focuses on patterns and trends in abstract data sets, and the field of infographic design, and information visualization combines the concepts of computer science, data mining, cognitive sciences and graphic design, this is important in controlling and measuring the quality of communication because the ability to collect, store and manage data, despite the increasing pace of its updating, remains our ability. On their understanding relatively constant. The size, shape, and color of visual design elements can also play a role in communication. According to the results obtained, it was determined that the use of graphs as a visual communication tool was effective in evaluation, understanding and continuity.

**Keywords:** design, infographics, visual, graphic, elements.

### A dimensão comunicativa dos elementos de design gráfico - Como infográficos

#### Resumo

O objetivo do presente estudo, é abordar uma questão de pesquisa sobre o papel que os elementos de design visual têm na comunicação. Os dados foram coletados com base em sua relevância técnica, que destaca a descrição geral do campo de pesquisa que inclui gráficos, infográficos no campo da comunicação e elementos de design visual. Revisão da literatura e conceitos relevantes: Para começar, devemos considerar os aspectos de comunicação do design para produzir elementos de design visual verdadeiramente bem-sucedidos. A dimensão comunicativa dos elementos de design gráfico, como infográficos, é inestimável para transmitir informações de maneira clara e envolvente. Dois abriram caminho para a ampliação do uso de elementos visuais na fabricação da mensagem midiática. Este estudo discute as dimensões comunicativas dos elementos de design visual, em geral, e dos infográficos em particular, visto que o infográfico faz parte da visualização da informação. Este estudo discute as dimensões comunicativas dos elementos de design visual, em geral, e infográficos em particular, já que o infográfico faz parte da visualização de informações, além de ser um campo de pesquisa relacionado à comunicação, pois enfoca padrões e tendências em conjuntos de dados abstratos, e o campo do

design infográfico e visualização de informações combina os conceitos de ciência da computação, mineração de dados, ciências cognitivas e design gráfico, isso é importante para controlar e medir a qualidade da comunicação porque a capacidade de coletar, armazenar e gerenciar dados, apesar o ritmo crescente de sua atualização, permanece nossa capacidade de compreensão relativamente constante. O tamanho, a forma e a cor dos elementos de design visual também podem desempenhar um papel na comunicação. De acordo com os resultados obtidos, foi determinado que o uso de gráficos como ferramenta de comunicação visual foi eficaz na avaliação, compreensão e continuidade.

**Palavras-chave:** design, infográficos, visual, gráficos, elementos.

## 1. Introduction

Infographics are a great way to communicate complex ideas visually and in an easier to understand way infographics can also be used to promote products or services with unique visuals, which can significantly increase reader engagement (Saad, 2021). Graphic design is the process of visual communication and problem-solving through the use of typography, photography, and iconography. Graphic designers create and combine symbols, images and text to form visual representations of ideas and messages. Infographics are designed to be aesthetically pleasing while still conveying their message effectively (Saad, 2022).

The communicative dimension of graphic design elements – such as infographics – are invaluable in conveying information in a clear and engaging way. Color is one of the most important elements of graphic design. Shape can be used to create a more literal message, such as an infographic. Form is another important element that conveys a certain message. When used effectively, color can be a powerful tool for communication.

Technology and social media have become a regular part of our daily lives. The advent of the second version of the web 2.0 opened the way for the expansion of the use of visual elements in the manufacture of the media message. This study discusses the communicative dimensions of visual design elements, in general, and infographics in particular, as Infographic is part of information visualization. This study discusses the communicative dimensions of visual design elements, in general, and infographics in particular, as infographic is part of information visualization, in addition to that it is a research field related to communication as it focuses on patterns and trends in abstract data sets, and the field of Infographic design, and information visualization combines the concepts of computer science, data mining, cognitive sciences and graphic design, this is important in controlling and measuring the quality of communication because the ability to collect, store and manage data, despite the increasing pace of its updating, remains our ability On their understanding relatively constant. Graphic design and infographics are leading form of information presentation and communication.

In this article, we will explore the communicative dimensions of graphs and how they can be used to communicate messages effectively. Graphs are a great way to visualize data and convey complex information in an easily digestible format. The size, shape, and color of visual design elements can also play a role in communication. Infographics are a great way to communicate complex information in a visually appealing and easy-to-understand format. There are three communicative dimensions to any visual design element: message, context, and audience.

By looking at all three dimensions, you can create a graph that engages and informs your audience. The audience is the group of people the message is targeting. Understanding these communicative dimensions of visual design elements can help you create more effective designs that better convey your intended message.

## 2. Literature review

Communication is an essential element of any visual design, whether it's for a website, product or even a simple poster. There are three main communication dimensions to any design element: clarity, readability and message. In this blog post, we'll explore each of them in more detail and give you some tips on how to improve your visual communication (Crawford, 2015).

Literal messages are those that immediately appear in the design itself (Qi et al., 2020). The most common symbols used in visual design are shapes, colors and patterns. Symbolic messages are more abstract and often convey ideas or concepts rather than directly represent them (David; Matthew, 2020).

Context can be influenced by many factors, including surrounding elements, overall tone of the piece, and the biases and personal experiences of the viewer (Saad,2021). In order to create a successful visual design, it is important to consider all three of these communicative dimensions (Infographics: Research, Writing, & Visuals

for the Win, 2019): Semantic meaning of an element: What does this element literally represent?

Communication messages and their injection into broadcast channels require the mobilization of huge amounts of text symbols. The needs of the audience will determine the type of visual design elements used. Designers should consider who the target audience is and what their needs are. When considering the audience, designers should also consider the context in which the design element will be presented (David; Matthew,2020).

Infographic is the art and science of transforming data and processing it into visual forms (Walter, 2012). Infographics are data visualizations that provide complex information quickly and clearly, which includes signs, images, maps, drawings and diagrams (Ghode, 2012), with different views of graphs as visual representations.

Currently, there are guidelines for designing Graphic and infographics widely under the umbrella of many disciplines that include semiotics and graphic design (The Psychology of Color and Graphic Design). Communication through images from cave dwellers is used to present the Day of Civilization. Western civilization has become dependent on visual images, according to the National Association for Education. The activity of designing a blueprint or visual representation of an idea can help the audience engage in an argument, sharpening their cognitive skills (Sidneyeve; Jaigris, 2016).

Not just a beautiful picture (Condit, 2003), as it seems at first, the task of infographics may seem relatively easy and simple to create, but the recipient soon realizes that the process of pre-planning takes a lot of time and effort and requires the task of converting information into graphics to use computer programs to edit graphics and practice inquiry-based communication to expand online research skills and identify sources to support cognitive communication. Students uploaded their infographics to LMS discussion forums to get peer feedback on their work.

### 3. Field study

For the purposes of this study, the researchers designed a questionnaire sheet targeting experts and specialists in the fields of communication sciences (Condit, 2003), graphic design, and data analysts to obtain answers to the questions of the study, and to come up with more accurate data. Presenting the questionnaire to a group of peers for arbitration, as peer criticism is especially useful in questionnaires directed to specialists and experts where their peers are likely to be the first responders, although graphs can be used as quick tasks and relatively low risk, if they require. Contactors do a large original research, the infographic can be effective in an article, and it is more weighted towards the final score.

Twenty-eight (28) field experts were consulted, and the necessary adjustments were made to the forms based on the opinions obtained in the last stage which included validity and reliability tests for the interview forms, where a pilot study was conducted with 6 experts from different fields, in the pilot study, two questions answered by the experts in difficulty were deleted and the interview forms were completed. The interview model developed consists of three dimensions, namely "General opinions on charts" (Table 1), "Opinions on graphic design" (Table 2) and "Opinions of expert approach to graphs" (Table 3).

**Table 1.** General opinions about graphics.

General opinions about graphics	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Total
Graphic design competencies in digital media	12	3	1	4	8	28
Graphic design competencies according to the principles and elements of graphic design	9	6	3	7	3	28
Graphic design competencies according to compatibility with the target group and its content	11	8	0	8	1	28

Source: Authors, 2023.

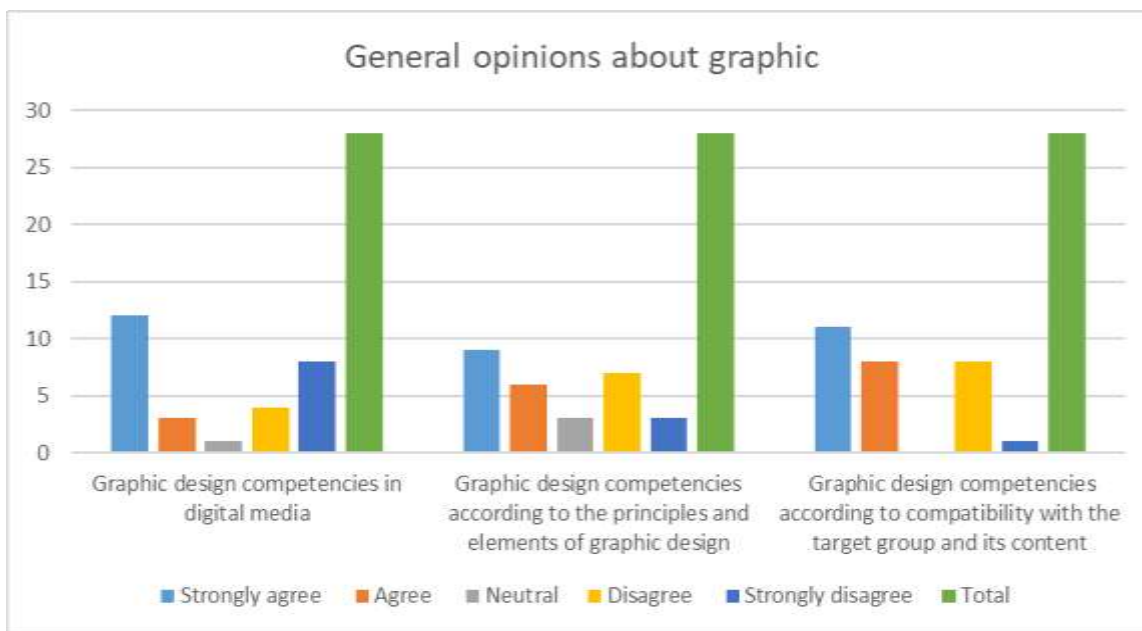


Figure 1. Opinions and graphic design. Source: Authors, 2023.

Table 2. Opinions on graphic design.

Opinions about graphic design	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Total
Forms of computational Infographic achieve a greater communicative effect	18	1	1	2	6	28
Emoji-based Infographic Forms Achieve Greater Communicative Impact	22	0	2	4	0	28
Forms of Infographic that use images achieve a greater communicative effect	24	2	1	1	0	28
Infographic shapes that use text and colors achieve a greater communicative effect	13	8	1	4	2	28

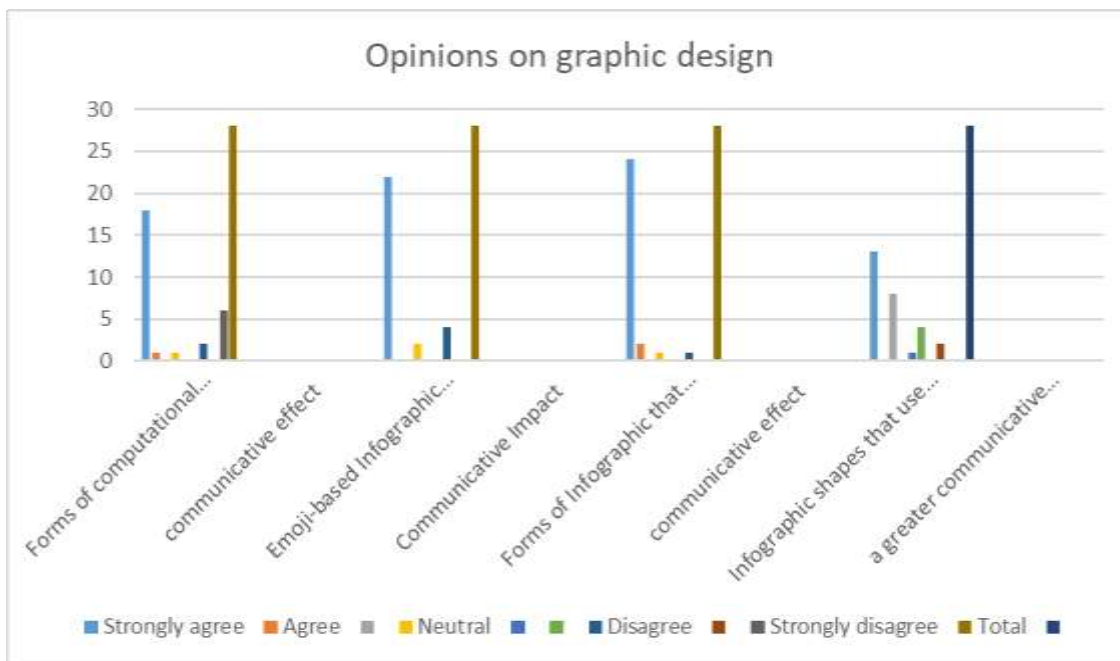


Figure 2. Opions on graphic design. Source: Authors, 2023.

Table 3. Expert approach views on graphics: Expert approach views on charts what makes a design element really effective? Is it its aesthetic appeal? Or is it something more?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Total
Aesthetic appeal	21	5	0	1	1	28
General context	8	8	3	5	4	28
Employing the principles of graphic drawing	7	3	2	9	7	28

Source: Authors, 2023.

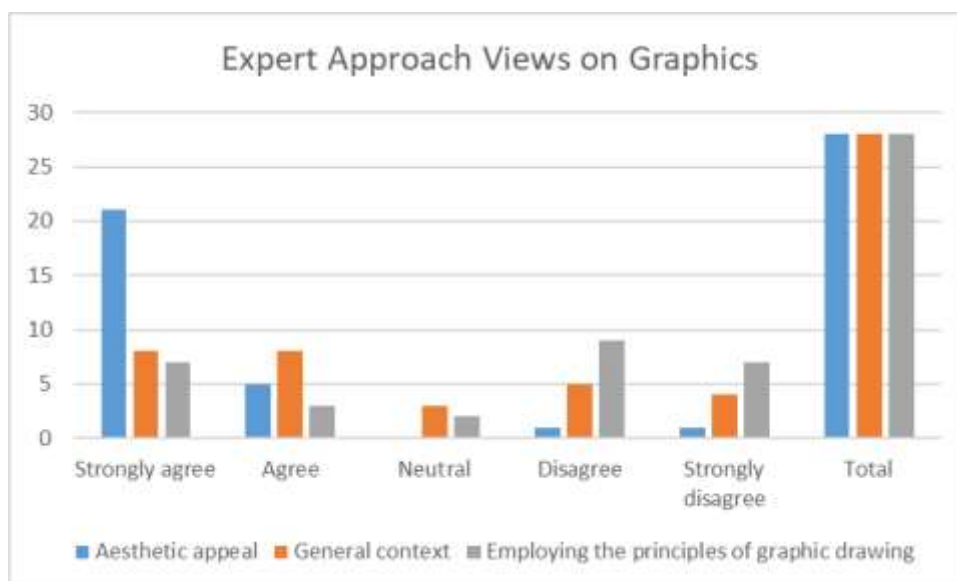


Figure 3. Expert approach views on graphics. Source: Authors, 2023.

In recent years, infographics used as visual presentations of information are among the leading new visualization tools. Significant information can be found in the literature regarding the definition, features and areas of use of graphs.

### **3. Results**

According to the results obtained, it was determined that the use of graphs as a visual communication tool was effective in evaluation, understanding and continuity.

The study concluded that participants had positive opinions about graphs, and that they accepted infographics as effective tools, presenting information in an integrated and structured way, incorporating a high visual level, and proving to be attractive cognitive tools.

One of the negative opinions expressed by the participants was the fact that they had difficulties in organizing information for use in the design of the infographic, which was associated with the need to be familiar with the elements of content preparation at the expert level.

An element pool was created with information obtained from research in literature and articles. The five-point Likert type was preferred for each of the data collection tools, and the items in the self-efficacy scale were rated as "1 because I am not a good fit at all, 2 because I am not a good fit, 3 because I am neutral, 4 because I am a good fit", while the items in the poll were rated as "5 for "strongly agree", 4 for "OK", and 3 for "unspecified", And 2 for "disagree", and 1 for "strongly disagree"

The items grouped under the three factors in the self-efficacy scale were classified as "graphic design competencies in digital media", "graphic design competencies according to graphic design principles and elements" and "graphic design competencies according to compatibility with the target group and its content". In the research, semi-structured interview models developed by the researchers were used with the aim of evaluating the opinions of primary school teachers and students on graphs. The first step in developing interview forms for teachers and students was to research the literature.

Next, 20 randomly selected elementary teachers were asked to write an essay on the graphs. Interview forms were prepared based on data obtained from research in literature and articles written by teachers. In order to ensure the structure and appearance of the prepared interview forms, 18 field experts were consulted and the necessary adjustments were made to the forms based on the opinions obtained. In the last stage that included validity and reliability tests of interview forms, a pilot study was conducted with 15 primary school teachers and 12 students.

### **4. Discussion**

The study discussed in this article highlights the effectiveness of using graphs as visual communication tools in the evaluation, understanding, and continuity of information. The results obtained from the participants demonstrate positive opinions about graphs, as well as their acceptance of infographics as effective tools for presenting information in an integrated and structured way, incorporating a high visual level and being attractive cognitive tools.

The study's finding is consistent with the literature that has emphasized the importance of visual communication in presenting information effectively. Visual communication tools such as graphs and infographics are widely used in various fields, including education, journalism, and advertising, due to their effectiveness in attracting attention and facilitating information processing.

The study also highlights the challenges that participants faced in organizing information for use in designing the infographic. This difficulty is linked to the need to be familiar with the elements of content preparation at the expert level. This finding is consistent with previous research, which has shown that creating effective visual communication requires knowledge of both the content and the design principles.

The study's methodology, including the use of a Likert-type scale and semi-structured interviews, is a common research approach in education and social sciences. The authors' efforts to develop the interview forms based on a review of the literature and consultation with field experts also demonstrate a rigorous approach to research design and development.

One potential limitation of this study is the relatively small sample size of teachers and students who participated in the pilot study. While the researchers' efforts to ensure the validity and reliability of the interview forms are

commendable, larger sample sizes could have further strengthened the study's findings.

In conclusion, this study's findings add to the existing literature on the effectiveness of using graphs as visual communication tools. The study highlights the challenges that participants faced in organizing information for use in designing infographics and emphasizes the need for expertise in content preparation and design principles to create effective visual communication. Overall, the study's rigorous methodology and consistent findings with the literature support the use of visual communication tools such as graphs and infographics in education and other fields.

## 5. Conclusions

The research concluded that infographics are powerful tools in the systematic presentation of information, revealing hidden patterns, and creating a persuasive and guiding effect. In this study, created using an experimental pattern, courses using graphs were introduced in a test group, while traditional methods were used in the control group. Designers must have "content knowledge", "visual design knowledge and skill" and "knowledge and skill of using digital design implementation" in order to effectively design infographics according to these three elements. Tunkali conducted a study on the examination of infographics designed for environmental matters and concluded that infographics are useful tools in creating awareness of environmental affairs and communicating this message to people through channels such as social media.

Infographics facilitate learning. Infographics can be used to teach basic information about a topic, introduce new information, or confirm currently available information. Infographics are seen as more informative compared to textual material. Therefore, infographics can be used as supporting elements in books and as an alternative to ordinary textual materials.

The level of trust in the charts increases if the reader knows the person or entity that prepared the graph. The names of creators and designers must be provided during the preparation of infographics. Infographics are the most recommended material among visual educational materials for potential readers. All sources used in the preparation of the graphs must be presented to the reader in the graphs.

Infographics should be updated and updated if necessary to ensure that readers have the most accurate and up-to-date information. Charts that take too long to read are not preferred. Consistency between information and visuals should be provided. Designers should pay attention to the consistency of information content, the taxonomic level and layout that perceptions provide.

## 6. Authors' Contributions

Throughout the research and writing process, all three authors collaborated on developing the theoretical framework, analyzing the data, and revising and editing the final manuscript. They all contributed to the critical evaluation of the literature, and each brought unique expertise and insights to the project.

## 7. Conflicts of Interest

No conflicts of interest.

## 8. Ethics Approval

Not applicable.

## 9. References

- Condit, C. W. (2003). *Meigs, Montgomery (Cunningham)*. Washington, DC: b Augusta, GA, May 3, 1816; d Washington, DC, Jan 2, 1892. <https://doi.org/10.1093/gao/9781884446054.article.T056564>
- Crawford, M. (2015). *How To Use Colors In Graphic Design For Impact*. Retrieved from Designhill: <https://www.designhill.com/design-blog/how-to-use-colors-in-graphic-design-for-impact/>
- David , J., & Matthew, J. (2020). Identifying good algorithm parameters in evolutionary multi- and many-objective optimisation: A visualisation approach. *Applied Soft Computing*, 88. <https://doi.org/10.1016/j.asoc.2019.105902>

- Infographics: Research, Writing, & Visuals for the Win. (2019). Retrieved from spark creativity: <https://nowsparkcreativity.com/2019/09/infographics-research-writing-visuals.html>
- Qi, W., Guan, M., Huang, W., Wang, L., Wang, Z., Liu, S., & Savić, D. (2020). Visualisation of the combinatorial effects within evolutionary algorithms: the compass plot. *Journal of Hydroinformatics*, 517-528. <https://doi.org/10.2166/hydro.2020.073>
- Saad, E. A. (2021). The challenges of integrating artificial intelligence applications and algorithms in the production of journalistic content. *Turkish Journal of Computer and Mathematics Education (TURCOMAT)*, 12(14), 4307-4314. <https://www.turcomat.org/index.php/turkbilmat/article/view/11292>
- Saad, E. A. (2022). Motives for spreading false and misleading information on social media during the emerging Coronavirus pandemic. *Review of International Geographical Education*, 12(02), 56-67. <https://doi.org/10.48047/rigeo.12.02.6>
- Sidneyeve, M., & Jaigris, H. (2016). Teaching with Infographics: Practicing New Digital Competencies. *beds*, 1-8. Retrieved from <https://www.researchgate.net/deref/http%3A%2F%2Fwww.beds.ac.uk%2F>
- The Psychology of Color and Graphic Design. (n.d.). Retrieved from Platt College: <https://platt.edu/blog/psychology-color-graphic-design/>
- Walter, E. (2012). The rise of visual social media. Retrieved from Fast Company: <https://www.fastcompany.com/3000794/rise-visual-social-media>

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