

Sports Infographics: Analysis of their Titles and Subtitles

Miglė Vairytė, Evelina Jaleniauskienė, Lina Gaižiūnienė

Kaunas University of Technology, *Faculty of Social Sciences, Arts and Humanities*, Kaunas, Lithuania

ABSTRACT

Background: Nowadays, infographics have become a very popular visual communication format in diverse sectors, including sports. Their use ranges from very formal sports data presentations (e.g., the introduction of the results from worldwide studies) to less formal occasions (e.g., promotion of any physical activity on social media sites). While the graphical design of sports infographics might be greatly facilitated by modern infographic tools, the formulation of captivating textual information, especially in titles and subtitles, remains a complicated task for their designers. Therefore, the study aims to analyze the most common tactics and practices applied when formulating titles and subtitles in sports infographics.

Methods: 50 sports infographics targeting the areas of fitness, running and training were chosen for the current study. The content of their titles and subtitles was analyzed using MAXQDA Analytics Pro 2020 software.

Results. The results revealed that the most frequent words used in titles and subtitles of sports infographics were *training, performance, results, running, endurance, fitness* and *strength*. While the average length of titles was 8 words, the subtitles were made of 2 words on average. Most commonly, the main titles of sports infographics displayed a combination of tactics and were made of two parts separated by a colon. The subtitles were usually formulated with the use of lists, examples, facts, explanations, opinions, teasers or the technique of 5Ws.

Conclusion. The results of this study might facilitate the creation of infographics in the sports sector and thus help to increase awareness of sports-related topics among the general audience.

Keywords: infographics, design of infographics, sports infographics, titles of sports infographics, subtitles of sports infographics.

INTRODUCTION

Given the complexity and speed of today's way of living, individuals prefer quicker, shorter and visual formats of digital communication. Hence, infographics have become a very popular communication format across diverse sectors, including sport. They are popular not only on social media, but also a number of prominent sports-related organizations worldwide (e.g., *The World Health Organization, The International Olympic Committee* or *The Fédération Internationale de Football Association*) include infographics on their websites. For example, the Annual Report 2021 by *The International Olympic Committee* utilized

a number of infographics to attract more attention and facilitate its reader's comprehension. There are also some specific sports-oriented websites (e.g., *YLMSportScience*) that use infographics as a major form of information transmission or a number of general websites (e.g., *Daily Infographic*) that include sports infographics.

Infographics are 30 times more likely to be read than plain text articles mainly because of the fact that visual content is processed 60,000 times faster in the brain in comparison with text (Long, 2014). The attractiveness of this communication format also lies in the fact that everything is seen at a

glance; most commonly all information fits into one page. The design of infographics may range from a very simple layout of information to complex interactive animations (Lazard & Atkinson, 2015). The components of infographics can be classified into three types: 1) visual elements (signs, icons, graphics, etc.), 2) content (facts, statistics, references, text, etc.) and 3) knowledge (conclusions about the story or message) (Siricharoen & Siricharoen, 2015). This format of visual communication may serve a number of purposes: to explain complex topics or phenomena, present research findings, compare options, teach how to do something, etc. For example, Siricharoen and Siricharoen (2015) distinguished among such types of infographics: visual article, flow chart, timeline, useful attraction, data visualization (statistically based), photo, how-to, compare and contrast, research results or did-you-know? On the Internet, thousands of examples can be retrieved with the help of Google's function "Images" after entering "sports infographic".

In formal education, infographics might be used not only as tools to transmit and comprehend sports data more efficiently, but also to better memorize it. More specifically, educators might use either ready-made infographics or ask students to create their own infographics. For example, *The New York Times* provides a comprehensive infographic to explain the types and frequency of injuries in high school boys' sports (<https://www.nytimes.com/2020/01/23/learning/whats-going-on-in-this-graph-high-school-sports-injuries.html>), which greatly facilitates this type of sports data understanding and serves as a ready-made teaching tool. In the disciplines other than sports education, some educators share the cases of using infographics to provide the course material (e.g., Alrwele, 2017; Bicen & Beheshti, 2019; Sudakov et al., 2016). In addition, a number of educators describe educational practice of asking students to design their own infographics either to summarize subject-related research articles (e.g., Jones et al., 2019) or to present data of their own research (e.g., Hsiao et al., 2019; Schultz et al., 2020). The same educational activity may be used in sports education too. It is possible, however, that the majority of educators are still unaware of the ways of using infographics as tools for activating students' learning in the sports sector.

Nowadays, the market of digital tools offers a plethora of user-friendly tools to create infographics online (e.g., *Piktochart*, *Visme*, *Infograpija*, *Canva*, *Vennage*). Such tools provide a number of

templates that might facilitate the creation of visual elements and the whole design of infographics. Users can prepare an infographic very quickly by simply choosing from a range of elements present on the websites of such tools. However, as far as the creation of textual information is concerned, texts or parts of written information need to be produced by infographics' designers themselves. This also applies to titles and subtitles, which are usually vital to attract and sustain viewers' attention.

Despite the prevalence of infographics in diverse sectors, the existing body of research regarding their design and specific features that make this type of communication format effective is still very limited (Dunlap & Lowenthal, 2016; Fadzil, 2018; VanderMolen & Spivey, 2017). Considering the design of sports infographics specifically, to the best of our knowledge, no research has been done, including on such aspects as formulation of their titles and subtitles. Therefore, the aim of this study is to analyze the most common tactics and practices applied when formulating titles and subtitles in sports infographics. More precisely, we limit our research to linguistic features and study the average length of titles and subtitles as well as the most frequent words and tactics used in titles and subtitles of sports infographics. We hope that this study will not only facilitate the creation of titles and subtitles in sports infographics, but will also promote their more frequent use in sports sector.

LITERATURE REVIEW

Usually, many diverse formats of communication display written information grouped under headlines and subheadlines or titles and subtitles. In them, words in combination with punctuation marks, numbers or other symbols have both emotional and cognitive meaning (Halpern, 2014). Most commonly, titles and subtitles are expected to fulfill two essential functions at the same time: 1) to make readers interested in the content provided below and 2) to inform about the subject of the material (Menyeh, 2018). Decisions about which of these functions is more important depend on the context and purpose of communication. For example, in the titles of news articles, while earlier the most important function was to give their readers a clear vision of what the article is about, now the need to arouse readers' curiosity about the story has become more important (Kuiken et al., 2017; Linehan et al., 2021). Titles and subtitles are the most important part of information, as readers

see them first and make choices whether to continue reading or not, which makes the task of their crafting quite complicated. To become proficient in this field, title creators need to practise and have awareness about research findings on what makes titles effective and thus attracting readers' attention to the whole message intended.

In order to make readers interested, psychology and linguistics highlight the necessity for curiosity or information gap; titles that invoke curiosity make readers willing to obtain information and take actions suggested (Jiang et al., 2020; Menyeh, 2018). For drawing readers' attention, Linehan et al. (2021) explain that titles have to be specific and detailed enough. Moreover, Halpern (2014) reminds the fact that "language that is highly emotional has a different effect on readers and listeners than more mundane ways of conveying the intended meaning" (p. 138). Consequently, the creators of titles need to be careful with the choice of words and make creative decisions.

A number of researchers and practitioners have attempted to suggest attention-grabbing and effective title or headline writing tactics (e.g., Feldman, 2019; Kuiken et al., 2017; Linehan et al., 2021), which might also apply for the creation of titles and subtitles of infographics. For example, to create headlines for online content, Feldman (2019) suggests a comprehensive list of the following tactics: 1) questions/ask, 2) benefits, 3) colons, 4) do's and don'ts, 5) emotions, 6) facts, 7) greats, 8) help, 9) inspiration, 10) jack, 11) keywords, 12) lists, 13) mistakes, 14) numbers, 15) opinions, 16) power words, 17) quotes, 18) roundups, 19) starting, 20) teasers, 21) uses, 22) verbs, 23) 5w, 24) examples, 25) you, 26) zingers (for a detailed explanation of each of them, see Table 1 below).

Kuiken et al. (2017) and Menyeh (2018) note that clickbait behaviour or the analysis of what really makes readers interested and prompts them to click on the titles provided online might be useful in deciding which strategies or tactics work best for titles. Menyeh (2018) explains three types of strategies that proved to be especially successful for the creation captivating titles. First, a common practice is the use of such words as "who, how, what, when, where, why", which no doubt invoke some level of curiosity and stimulate readers. Second, the use of listicles, or providing information with the help of lists with short titles above, might raise the level of curiosity and let readers choose which portions are interesting for them or which are

already known or unknown. Third, the inclusion of strong adjectives, nouns or verbs (e.g., important, powerful, amazing) might also be a suitable way to attract readers' attention. Linehan et al. (2021) found that explicitly sensational and emotional titles were the most effective on Facebook in 2019–2020. A popular tactic on Facebook from 2017 is the use of a logic 'what happened next' (Linehan et al., 2021).

Regarding the titles and subtitles of infographics specifically, Nuhoglu Kibar and Akkoyunlu (2017) also highlight the need to organize and group information under titles and subtitles in this specific format of communication. The researchers note that this has to be done logically, consistently and systematically; titles and subtitles should be intriguing and of suitable length as well as briefly describing the content provided below. It is also stated that titles and subtitles of infographics need to be clear (Dunlap & Lowenthal, 2016; Visme, 2017) and catchy (Visme, 2017). They also need to be persuasive, as titles are responsible for 90 percent whether a person reads or not reads the information that the title summarizes (Dalton & Design, 2014).

In general, considering the length of titles and subtitles, they tend to become shorter (Linehan et al., 2021). After the analysis of the most shared titles on both Twitter and Facebook, Linehan et al. (2021) found that while 15 words (95 characters) was the optimal number in 2017, 11 words (65 characters) is the ideal length for a title now. Menyeh (2018) provides the findings of the study which proves that the average length of titles that attract readers' attention is 10 words, whereas the length of the ones that do not interest them is 7 words. Moreover, academic research on how this linguistic feature affects clickbait or non-clickbait behavior suggests that readers are more likely to click on longer titles than shorter ones (Linehan et al., 2021; O. Menyeh, 2018). Given the aforementioned findings, they imply that titles and subtitles of infographics do not necessarily always have to be short.

METHODS

For the current study, 50 sports infographics targeting the areas of fitness, running and training were selected from the website *YLMSportScience* (<https://ylmsportscience.com/>). Their titles (50 in total) and subtitles (94 in total) were coded according to 26 headline writing tactics for online content. Table 1 lists all codes searched and includes their explanations.

Table 1. Codes of titles for online content and their explanations (Feldman, 2019)

Codes	Explanation
Questions	Posing questions to engage viewers.
Benefits	Listing benefits to make an emotional appeal.
Colons	Starting with a topical word or phrase, followed by a colon and a statement or question after it.
Do's and Don'ts	Using a “do or don't” format to provide the lists of what does or does not work or is or is not required.
Emotion	Capitalizing on the power of emotions to describe or elicit feelings.
Facts	Listing topical, interesting or provocative facts.
Greats	Using various types of “greats” (great people, great accomplishments, etc.).
Help	Suggesting some form of help.
Inspiration	Inspiring viewers by telling them “you can do this”.
Jack	Incorporating “newsjacking” or taking advantage of news stories or current events.
Keywords	Using typical phrases or keywords that are commonly used when searching for a particular topic.
Lists	Grouping into lists so that viewers instantly know what they might get from the content.
Mistakes	Listing mistakes or some negative aspects.
Numbers	Using measurements, results or anything that can be enumerated to add intrigue.
Opinions	Including someone's opinion.
Power words	Using powerful, emotional or energetic words rather than vague or soft ones.
Quotes	Including a quote from a research, speech, interview, report, song, movie or anything that might make a title more attractive.
Roundups	Inserting a summary of facts, events, results, etc.
Starting	Suggesting effective ways to begin something.
Teasers	Including some type of curiosity gap so that a viewer feels like he or she must know what might be next.
Uses	Explaining how something can be used.
Verbs	Including interesting verbs to call for action.
5W	Using five “W” words (who, what, when, where, why).
Examples	Including various types of examples (accomplishments, people, groups, companies, etc.).
You	Using more personal appeal to a viewer.
Zingers	Creating funny, striking or amusing remarks.

The collected data was analyzed using quantitative content analysis and deductive qualitative content analysis. Data analysis was performed using MAXQDA Analytics Pro 2020 software.

RESULTS

The analysis of the data showed which words were the most frequent in the titles and subtitles of sports infographics targeting the areas of fitness, running and training. Figure 1 provides their summary in a word cloud.

It can be seen that the most frequent words were: *training* (30), *performance* (12), *results* (12), *running* (10), *endurance* (7), *fitness* (7) and *strength* (7). The choices of words can be grouped into the

following categories: initiating action (e.g., *training, performance, exercise, workload*), labeling a type of sport (e.g., *running, aerobic, fitness, sprinting*), describing characteristics of sporty people (e.g., *strength, endurance, muscular*) and pointing to final outcomes (e.g., *results, activation, effects, recovery*).

In the analyzed set of sports infographics, the average length of titles was 8 (7.8) words. The subtitles were much shorter and were made of 2 (2.3) words on average.

The results also revealed ten most popular tactics to formulate both titles and subtitles in sports infographics, which are summarized together with their examples in Figure 2 below. In some cases, a combination of two tactics was found.

To formulate titles, the most popular tactics were the following: their formulation using colons (8 times), provision of examples (5 times) and use of power words (4 times). Most frequently, the titles of sports infographics that included a colon were quite lengthy and demonstrated more than one tactic in them (e.g., *Deceleration training in teams sports: Another potential “vaccine” for sports related injury?* or *Resistance training: an excellent way to boost your running performance*).

For formulating subtitles in sports infographics, the most common tactics were the following: the use of lists (19 times), examples (18 times), facts (12 times), explanations of uses (9 times), provision of opinions (8 times), use of the 5Ws technique (6 times) or teasers (6 times). The 5Ws technique is known as using Wh- questions (What, Why, When, Where, Who) to structure information.

All choices of tactics for titles and subtitles separately are shown in Figures 3 and 4.

Figure 3 shows that the tactics of using colons (8 times), examples (5 times), power words (4 times), help (4 times), facts (4 times), benefits (4 times) were the most frequent choices in the analyzed set of titles in sports infographics. The following tactics were not observed in the titles of the studied sports infographics: the use of zingers, you, the technique of 5Ws, opinions, numbers, mistakes, lists or keywords.

Figure 4 shows that the tactics of using lists (19 times), examples (18 times), facts (12 times), uses (9 times), opinions (8 times), the technique of 5Ws (6 times) or teasers (6 times) were the most frequent to formulate subtitles in sports infographics. In the studied set of subtitles in sports infographics, the following tactics were not observed: the use of you, verbs, roundups, quotes, numbers, keywords, inspiration, greats, emotions, benefits or questions. In comparison, while the use of colons was the most frequent tactic to formulate titles, it was applied only once for formulating subtitles.

DISCUSSION

The results of the study revealed that the practice of creating both titles and subtitles of sports infographics is partially similar to the universal recommendations for the creation of this type of written communication. Ten out of 26 headline writing tactics suggested for online content (see Feldman, 2019) were also used in the studied set of titles and subtitles of sports infographics. The



Figure 3. Most common tactics for formulating titles in sports infographics

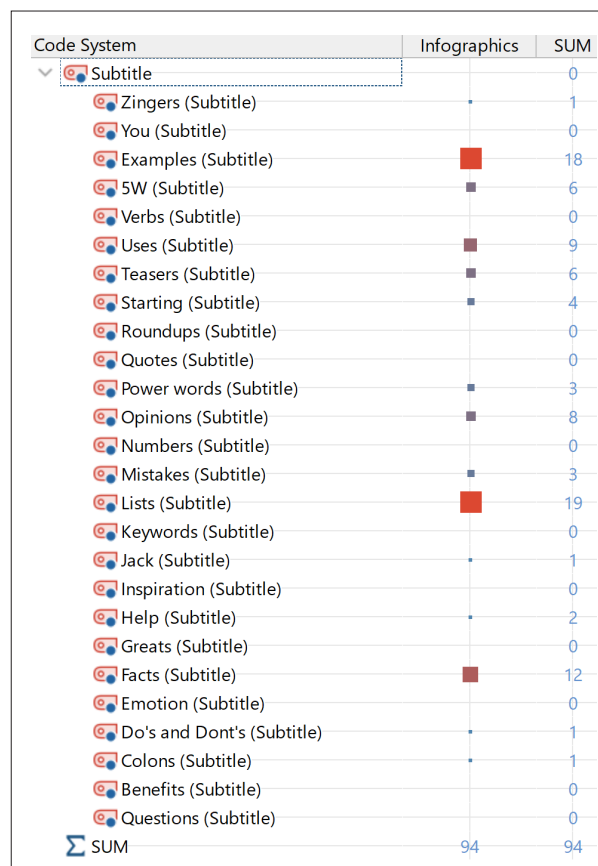


Figure 4. Most common tactics for formulating subtitles in sports infographics

tactics that can be borrowed for the purpose of creating titles and subtitles of sports infographics are the following: formulating them using colons, providing examples, using power words, lists or examples, listing facts, explaining uses of something, providing opinions, using the 5Ws technique or teasers. The given range of tactics includes two strategies (the use of lists and such words as “who, what, when, where, why, how”) that make online content titles especially successful (Menyeh, 2018). Therefore, the creators of both titles and subtitles can use them to make their texts more persuasive in an online environment.

In comparison with the subtitles in the analyzed set of sports infographics, the titles were longer and, most commonly, formulated as two-part statements with a colon in them. This choice of infographics’ designers can be explained by the fact that they were the main titles of infographics, which are usually expected to be the most informative and eye-catching parts in this format of communication. The subtitles were very short and showed the tactics of lists, providing facts, opinions, explaining uses of something, using the 5Ws technique or teasers as the most common ones. The popular tactic for creating both titles and subtitles was the use of examples to attract viewers’ attention.

Considering the numbers of the most frequent words used in the analyzed set of sports infographics targeting the areas of fitness, running and training, these findings may be somewhat limited to the given specific context. Therefore, no direct implications can be taken from these empirical findings.

Regarding the length of titles, the average number of words (8 words) appeared actually lower than the number suggested for the length of online titles so that they attract readers’ attention (10 or 11 words (Linehan et al., 2021; Menyeh, 2018)). This number is close to the length of titles (7 words) that proved not to attract readers’ attention (Menyeh, 2018). The average length of subtitles (2 words) was four times shorter in comparison with the length of titles and totally different from what is recommended for an ideal title. However, the findings regarding the shorter length of both titles and subtitles may be explained by the fact that infographics, including sports infographics, represent the kind of communication format that offers very limited space for all types of information, including written ones.

CONCLUSIONS

The current study enabled us to draw conclusions about the tactics that may be applied to formulate titles and subtitles in sports infographics. For formulating main titles, the most common tactic is to formulate a lengthy two-part title including a colon. The use of a colon allows to include more information and helps to attract viewers’ attention. The use of longer titles should not be avoided as this measure can help to fulfill both functions that titles usually require to merge: making readers interested and inform them about the subject of the material. In addition, the findings from the performance of online headings proved that longer titles were more successful in comparison with the length of titles confirmed by this study. The designers of sports infographics may also choose a combination of tactics in formulating one title. Based on the findings of the current study, subtitles in sports infographics should be shorter and may be formulated with the help of lists, examples, facts, opinions, uses, 5Ws technique or teasers. Among them, the priority should be given to the tactics of using short subtitles for lists and question words in them. Both for titles and subtitles, the use of examples might be a useful tactic to engage audience in sports infographics. Most importantly, both titles and subtitles of sports infographics have to be informative, clear and eye-catching; however, the findings of the current study do not allow us to draw conclusions about how the aforementioned aspects affect the readers of the analyzed titles. Finally, we argue for a more frequent use of infographics in sports education either by using a plethora of ready-made infographics available online or by engaging students and educators in the design of their own infographics.

Availability of data and materials

The datasets analyzed during the current study are available from the corresponding author upon request.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

REFERENCES

- Alrwele, N. S. (2017). Effects of infographics on student achievement and students' perceptions of the impacts of infographics. *Journal of Education and Human Development*, 6(3), 104–117. doi: <https://doi.org/10.15640/jehd.v6n3a12>
- Jiang, T., Guo, Q., Chen, S., & Yang, J. (2020). What prompts users to click on news headlines? Evidence from unobtrusive data analysis. *Aslib Journal of Information Management*, 72(1), 49–66. doi: <https://doi.org/10.1108/ajim-04-2019-0097>
- Bicen, H., & Beheshti, M. (2022). Assessing perceptions and evaluating achievements of ESL students with the usage of infographics in a flipped classroom learning environment. *Interactive Learning Environments*, 30(3), 498–526. doi: <https://doi.org/10.1080/10494820.2019.1666285>
- Dalton, J., & Design, W. (2014). A Brief Guide to Producing Compelling Infographics. *London School of Public Relations*. Retrieved from https://www.publishing-school.co.uk/uploads/publications/LSP_2014_Infographics.pdf
- Dunlap, J. C., & Lowenthal, P. R. (2016). Getting graphic about infographics: design lessons learned from popular infographics. *Journal of Visual Literacy*, 35(1), 42–59. doi: <https://doi.org/10.1080/1051144x.2016.1205832>
- Fadzil, H. M. (2018). Designing infographics for the educational technology course: perspectives of pre-service science teachers. *Journal of Baltic Science Education*, 17(1), 8–18. doi: <https://doi.org/10.33225/jbse/18.17.08>
- Feldman, B. (2019, April 20). How to Write Powerful Headlines for Your Online Content [Infographic]. *Feldman Creative*. Retrieved from <https://feldmancreative.com/blog/write-powerful-headlines-2/>
- Halpern, D. F. (2014). *Thought and knowledge. An introduction to critical thinking* (5th ed). New York: Psychology Press.
- Hsiao, P. Y., Laquatra, I., Johnson, R. M., & Smolic, C. E. (2018). Using Infographics to Teach the Evidence Analysis Process to Senior Undergraduate Students. *Journal of the Academy of Nutrition and Dietetics*, 119(1), 26–30. doi: <https://doi.org/10.1016/j.jand.2017.10.022>
- Jones, N. P., Sage, M., & Hitchcock, L. (2019). Infographics as an assignment to build digital skills in the social work classroom. *Journal of Technology in Human Services*, 37(2–3), 203–225. doi: <https://doi.org/10.1080/15228835.2018.1552904>
- Kuiken, J., Schuth, A., Spitters, M., & Marx, M. (2017). Effective headlines of newspaper articles in a digital environment. *Digital Journalism*, 5(10), 1300–1314. doi: <https://doi.org/10.1080/21670811.2017.1279978>
- Lazard, A., & Atkinson, L. (2015). Putting environmental infographics center stage: The role of visuals at the elaboration likelihood model's critical point of persuasion. *Science Communication*, 37(1), 6–33. doi: <https://doi.org/10.1177/1075547014555997>
- Linehan, L., Rayson, S., & Chiu, H. W. (2021, August 17). 100m Articles Analyzed: What You Need To Write The Best Headlines [2021]. *BuzzSumo.Com*. Retrieved from <https://buzzsumo.com/blog/most-shared-headlines-study/>
- Long, J. (2014). Why visual content marketing delivers results. *Search Engine Journal*. Retrieved from <https://www.searchenginejournal.com/visual-content-marketing-delivers-results-infographic/116496/#close>
- Menyeh, B. O. (2018, June 28). The Psychology Behind Captivating Writing Headlines or Titles. *The Writing Cooperative*. Retrieved from <https://writingcooperative.com/the-psychology-behind-captivating-writing-headlines-or-titles-392fe915ff7d>
- Nuhoğlu Kibar, P., & Akkoyunlu, B. (2017). Fostering and assessing infographic design for learning: the development of infographic design criteria. *Journal of Visual Literacy*, 36(1), 20–40. doi: <https://doi.org/10.1080/1051144x.2017.1331680>
- Schulz, D., van der Woud, A., & Westhof, J. (2020). The best indycaster project: Analysing and understanding meaningful YouTube content, dialogue and commitment as part of responsible management education. *The International Journal of Management Education*, 18(1), 100335. doi: <https://doi.org/10.1016/j.ijme.2019.100335>
- Siricharoen, W. V., & Siricharoen, N. (2015). How infographic should be evaluated? In *Proceedings of the 7th International Conference on Information Technology (ICIT 2015)* (pp. 558–564). doi: <https://doi.org/10.15849/icit.2015.0100>
- Sudakov, I., Bellsky, T., Usenyuk, S., & Polyakova, V. V. (2016). Infographics and mathematics: A mechanism for effective learning in the classroom. *Primus*, 26(2), 158–167. doi: <https://doi.org/10.1080/10511970.2015.1072607>
- VanderMolen, J., & Spivey, C. (2017). Creating infographics to enhance student engagement and communication in health economics. *The Journal of Economic Education*, 48(3), 198–205. doi: <https://doi.org/10.1080/00220485.2017.1320605>
- Visme. (2017). How to Create an Infographic – Part 1: What Makes a Good Infographic? [YouTube Video]. In *YouTube*. <https://www.youtube.com/watch?v=nLxQAa5Sras>