Infographic as a tool to Facilitate Teaching and Learning

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ABSTRACT: This paper aims to review on how infographics can be used efficiently in education primarily as a teaching and learning tool. The term of infographic refers to the combination of information and graphics. Infographic is a medium to a representation of info and graphics that can communicate to diverse audiences, and the meaning can be understood quickly. Therefore, the application of infographics as data visualisation has a potential to be utilised in teaching and learning as a tool to facilitate the process of understanding the intended content.
KEYWORDS: Infographics, learning tool, learning strategy, visual communication

INTRODUCTION

This paper reviews on how infographics can be used as a teaching and learning tool to facilitate students. In today's world, technology plays an essential role in finding and sharing information. The technology helps in many ways in education. Educational environments are changing and are supported by various tools through technological advances. The development of teaching and learning materials has become crucial for learners in every level of education (Mohd Noh, Mohd Fauzi, Hoo & Ilias, 2017). Educators need to keep up to date with current technology to teach and learn new materials to facilitate the learning process. Mohd Noh et al. (2017) mentioned that in almost every teaching and learning session, the instructors would use all the facilities and teaching tools available to enhance the learner's interest and understanding. The important aspects of technology in educational context should be emphasising on the effectiveness of knowledge transfer from the instructors to the learners without abandoning the excitement of learning.

According to Williams (2002), infographics have become the new trends in learning approach since infographics involve many components used in data visualisation, and it enables to present the data in different visual forms (as cited in Baglama, Yucesoy, Uzunboylu & Ozcan, 2017; Yildirim, 2016; 2017). Supported by Smiciklas (2012), the infographic is considered to be one of the essential means of visual communication and one of the most effective in the delivery of the information content in the digital age.

Smiciklas (2012) mentioned in the era of information overload and shortened attention spans, many organisations of all sizes opt to use infographics to quickly deliver information and understanding to internal and external audiences. Plus, the social media fuels "shareability" and infographics becoming one of the most effective forms of content for communicating information.

Infographics have become a popular digital technology for sharing information graphically in various sectors, including the news media, business, social media, and research (Shanks, Izumi, Sun, Martin & Shanks, 2017).

DEFINITION OF INFOGRAPHIC

According to Smiciklas (2012), an infographic is a type of picture that blends data with design, helping individuals and organisations to communicate messages to their audience concisely. The definition of infographics is tried to convey complex information into a visualisation of data or ideas that can be consumed and understood easily by the audience. The process of developing and publishing infographics is called data visualisations, information design or information architecture.

Toth (2013) defines infographics as information graphics that attempt to educate audience through combining words and visuals to create a specific topic or issue in visually exciting and easily navigable manner. He claims that infographics can assist the audience to receive quick information and help them to understand complex quantitative or qualitative data. Infographics typically combine data displays, lists, graphics and other visual elements to make a point, to inform and frequently use to persuade the intended audience regarding the focused topic (Toth as cited in Allen, 2016).

According to Marr (2014) definition, the infographic is an artistic representation of data and information using different elements such as graphs, pictures, diagrams, timelines, checklists and many more. Infographics allow people to tell a complete story of the data and are more engaging compared to the most traditional ways of communicating data and information. The excellent infographic is always focusing on the communicating insights. The message of the visualisations is far more critical compared to the aesthetic. Marr added that visualisation is the key to translating the raw data for easy understanding.

Meanwhile, according to Infogram website (n.d.), the most common definition of an infographic is a visual representation of information and data. Infogram website defines an infographic as a data-rich visualisation of a story, a tool to educate and inform and a way to build brand awareness. Many industries started using an infographic as a communication tool for businesses, governments and educational institutions.

Infographic is not a new invention, and it has been used for editorial use since the 1930s and early 1940s. The design of information is not a new thing to modern day data visualisation. The design existed since the earliest cave paintings, and humans have always utilised graphic depictions as a representation of information. Infographic is a visual display of information. Featherstone (2014) stated that graphics information might be ancient, but the methods by which they are created and disseminated are evolving rapidly.

THE FORMATS OF INFOGRAPHIC

The key format of infographic communication is static images, motion content and interactive interfaces. These formats are widely used in education, marketing and social media as the medium for disseminating data to enhance communication and create understanding among diverse audiences (Lankow, Ritchie & Crooks, 2012).

Lankow et al. (2012) stated that the effectiveness of each format depends on how the users choose to communicate the information. Each medium chosen has advantages based on the users understanding the attributes of each format.

Static infographic typically is fixed information and is a one-way interaction. The user interaction consists of viewing and reading. The display output is a still image such as a blogroll or magazine spread, and according to Lankow et al. (2012), it works best as a narrative but can be explorative in some cases.

Motion infographic is also typically fixed information. The display output for motion infographic is animated or moving. Motion infographics offer user interaction such as listening to the voiceover or music in addition to viewing and reading. The animation is commonly used in motion infographic. This format works best as a narrative. According to Lankow et al. (2012), this format almost never explorative without being used in combination with interactive content.

The interactive infographic can be fixed or dynamic information input. Interactive infographic allows user interaction such as clicking, searching for specific data, actively shaping the content displayed, and choosing which information is accessed and visualised (Lankow et al., 2012).

According to Richards (2017) the year of 2016 showing the most significant increase in the use of infographic of any content type among the business to business (B2B) marketers.

THE USE OF INFOGRAPHICS

Infographics are becoming a powerful communication tool. According to Krum (2013), the combination of graphic design with data visualisations, illustration, text and images together into a format that tells a complete story.

In the era of digital technology, the infographic has been applied to tell the story. The data and information need to be quicker and easier to processed and distributed to the audiences. A rising trend in the various educational field that using infographics as a tool (Williams, 2002; Niebaum, Cunningham-Sabo, Carroll & Bellows, 2015).

According to Yildirim (2017), infographics have become of the new trends in today's learning approach since they include many components that are used in the visualisation of knowledge and enable knowledge to be presented in different visual forms.

Smiciklas (2012) stated that infographics help to transform information and create information much quicker and easier since the brain takes longer time to understand text compared to graphics. Weinschenk (2011) mentioned on how infographics able to tell the story through data visualisation help learners to interpret the data (Weinschenk as cited in Baglama et al., 2017).

According to Toth (2013), the infographic is relatively new in the world of education. Infographics or information graphics are widely used in the newspapers and magazine (Toth as cited in Yearta, (2016); Yildirim (2017). The newspaper industry is continuously using infographics to inform the public of emerging trends. Infographic has been used to support the work of journalism back in the 1980s as newspapers started employing colourful pictures and graphics to convey news instead of the conventional text-centric, black and white format (Agwa-Ejon & Batchelor, 2016).

The health sector is also utilising the infographic; healthcare professionals use infographics to communicate medical information to their patients. Infographics can be a great tool at the population level for public health messages (McCrorie, Donnelly & McGlade, 2016). For example, Ministry of Health Malaysia is using the infographic on National Environmental Health Action Plan (NEHAP) official website to spread the information and knowledge to the public.

Gebre and Polman (2016) perceive that infographic often used as a form of representation of data and ideas to communicate with the general public rather than with the scientific audience. Usually, infographic combines the use of quantitative and qualitative data as well as qualitative cues to facilitate readers' understanding of the represented information (Gebre & Polman as cited in Gebre, 2017).

THE FUTURE OF INFOGRAPHICS

Graphics and visualisations are potent tools for telling a story. The community that uses the infographic mainly among the designers, artists, journalists and bloggers. These infographic designers tend to rely on software illustration tools that ease the process of creating a visual representation of data (Bigelow, Drucker, Fisher & Meyer, 2014).

Aforementioned by Featherstone (2014), graphics information are evolving rapidly. The search for "infographic" and "infographics" virtually show zero searched until 2010 according to Google Trends data. Social media age increases the number of searches for these terms with the availability of web tools for creating and disseminating user-generated graphics. Media sites such as Twitter and Pinterest that rely on user-generated content allow for rapid dissemination via social networks.

According to Bigelow et al. (2014), the growing interest in visualisation mainly by the emergence of cheap, ubiquitous data, visualisations are now a standard medium for exploring and explaining data produced in the sciences, medicine, the humanities, and even our day-to-day lives. Nowadays, it is easier to find online tools for creating professional looking infographics and data visualisations.

For example, to create professional looking infographics, some of the most commonly used are Easel.ly, Creately, Info.gram and Piktochart. The non-professional designer can now use online tools to pick the templates or designs that are available for free or choose to subscribe to get more options from the selected online tools (Mauldin, 2015).

CONCLUSION

Many researchers saw the potential of using the infographic as a tool to facilitate the process of teaching and learning. Infographic is a part of information visualisations, and the rapid advances and innovation in technology bring new opportunity to introduce infographics in education. Infographic has been efficiently used in journalism and healthcare industry to spread awareness to the public.

Nowadays most of everything can be done with the help of internet. The internet is accessible to anyone, and even people without the design background can produce an infographic with the help of website infographic maker. In conclusion, infographic as data visualisation can be the useful tool to enhance the process of teaching and learning of individuals.

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