

INFOGRAPHICS: TEACHING AND LEARNING TOOL (Infografik: Alat untuk Pengajaran dan Pembelajaran)

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Abstract

This study examined the use of infographics as a tool for facilitating learning among Graphic Design and Digital Media learners at UiTM Melaka. The study involved ninety-nine learners with similar demographic background who were selected using simple random sampling method. The data collection is based on methodology using quantitative and descriptive statistics. These were derived from a set of questionnaire which is the main instrument. This instrument has undergone content validity as well as the reliability testing. A pilot study was conducted with the results of 0.884 of Cronbach's Alpha. The findings suggested that the main learning problems encountered by learners was to execute instructors' assignment without proper guidelines while others found that the use of too many slides in presentation and too wordy information presented by instructors were a hindrance to their classroom learning. Besides, the study also discovered that all infographics' features including the use of images and symbols, good design, attractive colours, concise texts and diagram or chart can encouraged learners to understand better any learning information delivered through it. Finally, infographics application for facilitating their learning sessions was appreciated mostly due to the high suitability of infographics to make information concise and coherent, to enhance creativity and productivity, and to improve understanding and concentration in the learning session. Therefore, infographics should be promoted as one of the tools to ease learners' problems in learning especially those that involve learners with the tendency of having visual literacy abilities.

Key words: infographics, teaching aid, educational technology, visual communication;

Abstrak

Tujuan kajian dijalankan untuk melihat keberkesanan infografik sebagai alat pemudah cara bagi sesi pengajaran dan pembelajaran dalam kalangan pelajar program Seni Reka Grafik dan Media Digital di UiTM Melaka. Kajian ini melibatkan sembilan puluh sembilan pelajar yang mempunyai latar belakang demografik yang sama dan dipilih mengikut kaedah persampelan rawak mudah. Pengumpulan data adalah berdasarkan penggunaan metodologi kuantitatif dan statistik deskriptif. Data diperolehi daripada satu set soal selidik yang merupakan instrumen utama dalam kajian ini. Instrumen soal selidik telah melalui ujian kesahan kandungan dan kebolehppercayaan. Manakala kajian rintis turut dilaksanakan dengan keputusan Alpha Cronbach iaitu 0.0884. Berdasarkan dapatan kajian mencadangkan bahawa permasalahan utama pembelajaran dalam kalangan pelajar adalah kelemahan pelajar untuk melaksanakan tugas yang diberikan oleh pengajar tanpa garis panduan yang lengkap manakala penggunaan terlalu banyak slaid pembentangan dan maklumat dalam bentuk perkataan oleh pengajar menjadi satu kekangan bagi pembelajaran dalam kelas. Selain itu, kajian juga mendapati segala ciri-ciri yang terdapat dalam infografik termasuk penggunaan imej dan simbol, rekabentuk yang baik, warna-warna menarik, teks ringkas dan gambar rajah atau carta dapat menggalakkan pelajar untuk memahami dengan lebih baik segala maklumat pembelajaran yang disampaikan menerusinya. Maka, penggunaan infografik adalah sangat berkesan sebagai pemudah cara dalam sesi pembelajaran disebabkan oleh kelebihannya yang dapat menjadikan maklumat ringkas dan jelas, dapat meningkatkan kreativiti dan produktiviti, serta menambah kefahaman dan penumpuan dalam sesi pembelajaran. Oleh itu, penggunaan infografik seharusnya digalakkan sebagai salah satu alat untuk membantu pelajar dalam pembelajaran terutamanya bagi pelajar-pelajar yang mempunyai kecenderungan dan kebolehan yang baik dalam literasi visual.

Kata kunci: infografik, bahan bantu mengajar, teknologi pendidikan, visual komunikasi;

1.0 INTRODUCTION

Nowadays the development of teaching and learning materials has become crucial for learners in every level of education. In almost every teaching and learning session, the instructors will use all the facilities and teaching tools provided to further enhance the learners' interest and understanding. The development of computer technology brings forth numerous applications and media for instructors to apply in their teaching session. Most of the instructors realized that they need to be in-line with the fast-changing technology to adapt to the positivism of technology in classroom. The important aspects of technology in educational context should be emphasizing on the effectiveness of knowledge transfer from the instructors to the learners without abandoning the excitement of learning. Most of the technology used by the instructors nowadays is solely depending on computer applications such as Microsoft PowerPoint with multimedia elements applied on the slideshow to deliver knowledge to learners during learning sessions. A major concern is that the use of slideshows as teaching tools can be at times expensive in terms of the facilities and infrastructure requirements in addition to the need for the instructors' skills and knowledge to use them. Another issue pertaining to the use of slideshow is that learners' attention and understanding do not solely depend on the how animated and interactive the multimedia slideshow is in presenting the information to the learners (Howell, 2008).

Hence, infographics is introduced as a teaching tool to assist the instructors in the teaching and learning session to facilitate learners particularly in the higher learning institution. Infographics is a combination of the words "information" and "graphics". Infographics can be defined as images that combine the data into a design, to facilitate individuals or organizations to spread the information to the audience concisely. Williams (2009) pointed out that 75% of information processed by the brain comes from the visual format. This suggests that visual communication is a significant main support system to cognitive processes in solving complex problems and motivate learners' motivation and behavior to maintain excellence and sustainability. The use of infographics is lauded due to the suitability of this medium as an effective tool not only for learners but for instructors to ensure that learners will acquire the accurate information that can be used in performing the tasks assigned (Davis & Quinn, 2014). Infographics should be more extensively used for learners in the higher learning institutions and it can be effective in the working environment too. The study focused on the use of infographics as a tool for facilitating learning in the higher learning institution and the learners' acceptance of information or knowledge received through the learning process presented by instructors. Therefore, three objectives are outlined which are: to identify the issues that impedes the learning process; to determine the most important elements in infographics that can influence Graphic Design and Digital Media learners in learning; and to ensure the acceptance of learners with the use of infographics as a tool for facilitating learning.

1.1 Infographics and Its' Capabilities

An infographics is a type of picture that blends data with design, helping individuals and organizations concisely communicate messages to their audience. More formally, an infographics is defined as a visualization of data or ideas that tries to convey complex information to an audience in a manner that can be quickly consumed and easily understood. The process of developing and publishing infographics is called data visualization, information design, or information architecture (Smiciklas, 2012). Information graphics presents information by using graphical elements that are relevant to data, which may include charts, diagrams, graphs, tables, pictograms and maps. As a visual tool, it presents useful information in a way that is easy to view. Infographics has been used to communicate data since prehistoric times. Early humans created cave murals in pictorial drawings of symbolic icons to record what they did and where they went. In the middle ages, Christopher Schneier became one of the first persons to explain his astronomical research on the sun in visual form (Hatch, 2002).

In the modern time, we use infographics to deliver and communicate relationships and systems of complex information and knowledge in intuitive ways, rather than merely keeping records or explaining scholarly theory. Infographics research in the last decade has largely focused on the role graphics play as an attention-getting device, whether they aid recall and comprehension, and whether they are used mainly to complement an article's content or to grab a reader's attention (Morrison, 2013). Fussion Strategy (2013) found that infographics aid comprehension and recollection. Shively and Maine (2012) demonstrated mastery of the concept and methods of infographics to extend the concept to real world applications for learners besides going further to prove that infographics is the ideal tool of the 21st century to scaffold and support learning assessment among learners and instructors. In recent years, the use of infographics has generally increased in many areas such as journalism, organizations as well as

in education (Abilock & Williams, 2014). This owes to the increasing use of technology as well as competition that arises in all these fields, and the impact of globalization and internet. Infographics is particularly a type-based graphics which does not require a lot of effort and skill to produce and yet the impacts to the audiences are tremendously positive.

Therefore, the use of infographics are highlighted to examine its impact on Graphic Design and Digital Media learners at UiTM Melaka and their perceptions on the concept in their process of learning as a tool to enhance better understanding in the most efficient way possible. As learners are basically visual learners, visual literacy is deemed important. When words and pictures are presented, learners are more likely to build verbal and visual representations and to make connections between them. If meaningful learning is enhanced when learners can build connections between corresponding visual and verbal representations, then learners should learn more deeply when animation is added to narration. Learners are more likely to be able to hold corresponding visual and verbal representations in working memory at the same time when the animation and narration are coordinated in time. In contrast, with successive presentation, the limitations on working memory capacity make it less likely that corresponding visual representation and verbal representations will be in working memory at the same time (Abilock & Williams, 2014).

2.0 METHODOLOGY

The quantitative approach was used for this study, which requires information and data in the form of figures that can be measured. This research was conducted at a higher learning institution namely the Universiti Teknologi MARA (UiTM) Melaka. The target respondents were learners from the Department of Graphic Design and Digital Media under the Faculty of Art and Design. The population in this study involved learners in fourth (04) and fifth (05) semesters amongst the undergraduate program of Graphic Design and Digital Media. There were 120 learners in total and they consist of 79 learners from 04 semester and 41 learners from 05 semesters. In order to carry out the descriptive research, questionnaire was used to gather the necessary data from respondents. All 99 sets of questionnaire given to the respondents were returned. The reliability of this study was based on the items instrument according to Cronbach's Alpha value. It was carried out using questionnaire for a descriptive research. A pilot test was conducted on 30 respondents amongst the learners and the results obtained were with the use of statistical package as data analysis.

3.0 FINDINGS AND DISCUSSION

The overall mean score was ($M = 3.23$, $SD = 0.82$). 35.3% of the respondents were having problems in learning session at the "High" level while 47.4% respondents had problems at the "Moderate" level (refers to Table 1). Based on the findings, learners faced huge difficulty to complete assignments were given by instructors without proper guidelines during the learning session. Furthermore, learners stated that the learning sessions which focused on the use of presentation slides with a lot of text to convey learning information contributed to a certain level of difficulty for them to remain focused.

Table 1 Issues Impedes the Learning Process

No.	Learning Issues Items	Mean	SD	Level
1	I find it difficult to understand a lot of text information	3.19	1.03	Moderate
2	I find it difficult to maintain my focus of learning with many slides	3.33	0.98	Moderate
3	I find it difficult to understand the lecturer's explanation in the process of learning	2.99	1.10	Moderate
4	I find it difficult to ask question to lecturer in the process of learning	3.03	1.10	Moderate
5	I find it difficult to execute lecturer's assignment without proper guidelines	3.59	0.96	High
	Overall	3.23	0.82	Moderate

The findings also proved that the features found in infographics can influence learners in the learning session based on the overall mean score which was ($M = 3.92$, $SD = 0.69$) which indicated at the "High" level (refer to Table 2). A total of 72.8%, which includes 72 respondents, who were at the "High" level, stated that the features available in infographics were accordance to the tendency of learners'

acceptance for learning information, while another 26.2% was at the level of "Moderate". Based on the results, it can be deduced that they were able to understand information communicated through the use of visual images or symbols with the use of good design.

Table 2 Learners' View of Infographics' Features

No.	Infographics' Features Items	Mean	SD	Level
1	I tend to understand the information through visual/ image/ symbol	4.04	0.77	High
2	I tend to understand the information through a simple text	3.94	0.82	High
3	I tend to understand the information through a diagram/ chart	3.60	0.89	High
4	I tend to understand the information with the use of attractive colors	3.97	0.81	High
5	I tend to understand the information with good design	4.04	0.81	High
	Overall	3.92	0.69	High

Based on the respondents' feedback to determine the acceptance of respondents on the use of infographics as a tool to facilitate learning for learners, it showed that the overall mean score for this subsection is 4.10 (SD = .69) with the total of 80.9% of them or 80 learners responded at the "High" level regarding the use of infographics for facilitating learning while 18.1% responded at the "Moderate" level and 1 respondent at the "Low" level (refer to Table 3). The results for every items stated indicated at the "High" level which means that the respondents found that infographics is highly suitable to be used for facilitating their learning.

Table 3 Learners' Acceptance of Infographics

No.	The Acceptance of Infographics Items	Mean	SD	Level
1	Infographics is more suitable to be use during the teaching and learning session	4.07	0.75	High
2	Infographics can make information easier and simple	4.15	0.77	High
3	Infographics can increase my focus of learning	4.03	0.83	High
4	Infographics can improve my understanding of learning	4.08	0.77	High
5	Infographics can enhance my creativity to produce work effectively	4.13	0.77	High
	Overall	4.10	0.69	High

These learning issues reflect the role of instructors in conducting learning sessions that should emphasize on appropriate teaching approaches and strategies to be used for target learners; in this context it refers to the Graphic Design and Digital Media learners. According to Rum Rosyid (2011), instructors need to be the initiator and responsive for every process that take place in a class from giving guidelines to the learners until they are able to find their own direction and more efforts need to be put in to shape the understanding of the learners according to their ability. The findings also showed that there were similarities with a previous study in which Priya (2012) said that the use of a lot of text to convey particular information in a learning session can cause the information or intended messages failed to be understood properly by learners.

Infographics' features as a whole are appropriate to be used for learners that have the ability and capabilities that vary according to the types of learners. Therefore, the use of infographics specifically has great potential to be used systematically for visual learners to acquire and understand information through visual elements collectively found in infographics. Crnokrak (2008) agrees that the infographics' features can be used as a tool to convey information with the objective to facilitate the presentation of complex data in the form of an understandable visual. As an intermediary medium which functions effectively in conveying information visually, infographics has features that consist of graphical and visual elements such as charts, images, diagrams, tables, pictograms and maps in addition to simple and convenient text implementation to help the audience (here referring to learners) to understand the information being delivered.

4.0 CONCLUSION

Learners felt the use of a lot of presentation slides do not help much in shaping their understanding and the use of too much text information prove to be an obstacle in the process of learning. The results of this study also found that learners are more likely to understand information with the use of effective visual communication and a combination of fine graphic design. Learners also felt that instructors should emphasize the use of attractive colours with concise and understandable texts as information with the support of related diagrams, charts or tables to produce a systematic and effective delivery of information. Nevertheless, the learners collectively agreed that the use of infographics as a tool to facilitate learning is very appropriate and effective as it does not only simplify the learning information presented by instructors, but it could enhance the creativity and the innovation skills among learners in improving the utilization and manipulation of visual as a medium of communication in teaching and learning. It is a medium which coincides with the needs of learners with great visual literacy ability. This study proved that visual literacy ability is an important component in determining the ability of the learners to accept the use of infographics as a tool for effective learning information. In addition, a positive acceptance among learners of the features available in infographics means that the method can also help to resolve some of the problems faced by learners in the learning session. Excellent knowledge among learners associated with visual communication and the tendency of learners against graphic design thus become one of the most important factors in accepting infographics as a tool for facilitating learning.

As the findings suggested, more studies need to be conducted to explore the concept further. A lot of support is needed to ensure the extensive use of infographics in the higher education institution. It has the potential to be promoted to the secondary and primary levels in the educational setting and this can serve as an initial step to attract learners to use graphics and visual besides improving learners' visual literacy skills. Further studies can focus on the relationship of infographics' features as factors in enhancing learners' creativity especially in improving visual literacy skills and visual design. More studies are needed to enhance the development of visual design and functionality or effectiveness of skills and knowledge development among learners through the delivery of information through visual elements. Nevertheless, infographics is flourishing with various types and categories with each bringing varying impact to the audience especially the learners. Infographics is also adapted to approaches in multimedia forms such as montage and interactive design. This made it possible and more effective the improvement of visual literacy skills among audiences and learners.

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