

The Extent to Which Lecturers at Jordanian Universities Utilize Infographic Guidelines for Curriculum Design

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Abstract: This research aims to discover the degree to which faculty members use educational infographic design standards in computerized courses. So, the study adopted the descriptive analytical method; a questionnaire was used to collect data and then distributed to a sample of 149 faculty members in Jordanian universities. Accordingly, the study results showed that the degree of use of educational infographic design standards by faculty members in Jordanian universities in computerized curricula is moderately high. In addition, there indicated no statistically significant differences in the estimates of faculty members in Jordanian universities due to gender and the certificate source.

Keywords: Lecturers, Infographic, Curriculum Design, Jordanian Universities.

1. INTRODUCTION

Since the growth of nations is determined by their output in the fields of science and technology, university education is regarded as one of the fundamental components sustaining human development worldwide. There is a massive and quickening technological revolution in many areas of life. The ability for educational institutions, especially universities, to benefit from e-learning tools and their applications in facilitating the process of learning and teaching, as well as the delivery and storage of knowledge in various forms, such as the use of web networks and electronic curricula, has increased in recent years. These tools and applications aim to deliver information to the learner in the least amount of time, with the least amount of effort, and with the greatest amount of effectiveness.

With this advancement, supporting innovations and electronic technologies in teaching processes in all university colleges and their various departments has become urgent and necessary. That has made it necessary to support and employ e-learning in education and work to improve its quality, as e-learning quality can help to improve education—the standard of academic results (Mansour, 2015).

Al-Mutwali and Salem's study (2017) emphasized that the educational curriculum is only a means to achieve the goals and plans of education and the actual and practical translation of the educational goals, plans, and directions. As a result, it is a crucial foundation for advancing the educational and learning movement, but this can only be done by considering how to present the content and produce it engagingly and creatively. That guarantees the accomplishment of the educational curriculum's ultimate aims and objectives.

In order to provide a new visual format for gathering and displaying information and delivering the content to the student in a captivating and engaging fashion, the university instructor must adopt the standards of educational infographic design while presenting the educational content. According to Hassan's study (2016), infographics, with their diverse styles, can alter how people perceive complicated facts and information because they transform them into graphical pictures that are simple to understand without the need for in-depth text reading. Additionally,

according to Shaltout (2016), infographic technology is a significant, useful, and appealing way to present information because it combines simplicity, speed, and entertainment. It relies on visual effects to transform abstract knowledge and digital data into captivating images and graphics stored in the students' long-term visual memory.

Consequently, the researcher thinks university faculty members should work very hard to acquire meaningful experiences using infographic design standards, whether through self-learning or professional development projects, programs, and training courses in learning.

This study intends to determine the extent to which academic staff at Jordanian institutions employ graphical design standards for learning in computerized courses—infographics used in education because of the factors (gender, Certificate issuer).

1.1. Study Significance

On the other hand, the significance of the current study stems from the advantage that higher education institutions will receive from focusing more on creating a computerized educational curriculum in a better way, using form, colour, and image as active aspects in the infographic design. Moreover, Jordanian university professors have benefited from emphasizing the function of infographics in improving comprehension of course material. Add research and studies in this area to the Arab libraries in general and the Jordanian libraries, in particular, to help them grow.

On the other hand, Jordanian institutions were eager to integrate e-learning into their curricula; thus, faculty members had to change how they thought and behaved. However, despite this, proper adoption and usage of the technology have not produced any beneficial outcomes. This study aimed to determine the extent to which educational infographic design guidelines are used by faculty members at Jordanian institutions' computerized courses because there is a dearth of information on the topic. This issue gives rise to the following queries:

1. What is the degree of use of educational infographic design standards by faculty members in Jordanian universities in computerized courses?
2. Are there statistically significant differences at the level ($\alpha \leq 0.05$) in the degree of using the educational infographic design standards in the computerized courses by faculty members in Jordanian universities due to the variables (gender, Certificate issuer)?

2. LITERATURE REVIEW

2.1. Infographic

Infographics are visual communication that facilitates information simplification, creates eye-catching visual effects, and encourages strong human interaction. They are used frequently in everyday activities and on various communication platforms because they enable us to turn complex information and data into clear visual images. Simpler and more efficient (Pettersson, 2020). Effective visual communication between the sender and the receiver is achieved by translating complicated information and data into visual representations that are simple for people who view them to comprehend easily and engagingly without the need to read much text (Abdul Samad, 2017). From the perspective of education, it is a technical method employed by university instructors through which material is transformed into images and drawings to simplify the curriculum for the students.

The two elements of the phrase infographic are info, which stands for information, and graphic, which stands for photography. As a result, this phrase refers to transforming information and data into visual forms and images (Smiciklas, 2012). University professors and teachers rely on infographics because they help explain complex and even simple theories in a way that makes them easier to understand. That is one of the many educational uses for infographics (Alford, 2019). Infographics are utilized in education because they are one of the finest tools for helping pupils concentrate and make clear connections between different pieces of information (Dunlap & Lowenthal, 2016).

Infographics may also be used to deliver complete and integrated knowledge effectively and understandably by assisting the learner, whether a student or a teacher, in forming a quick image of the information that is accessible and how it relates to other information (Ahmad et al., 2022).

2.2. Informational Graphics' Value in Education

The use of infographics in education has been aided by various factors, making it one of the most dependable modern tools. Infographic applications in education The utilization of infographics across all subject areas and educational specialties sets them apart. Using infographics in education is significant because it aids in the learner's understanding of complex material by demystifying and clarifying it (Leonard & Thomas, 2022). An infographic is defined as assisting the student and the instructor in effectively comparing and analyzing the supplied information.

The infographic contributes to the learner's increased culture and knowledge. Additionally, infographics are used in education because of their effective and potent capacity to provide all scientific and theoretical knowledge in visual formats and visuals for simple and quick assimilation (Elena Gallagher et al., 2017). This significance may be seen in the infographic's capacity to provide data in a visually appealing way. In keeping with what has been said, using infographics in education is less expensive than other teaching methods. Also, infographics are used in teaching. Infographics, like health flyers on the newly developing coronavirus or something similar, are used to teach pupils about a certain subject. Moreover, infographics are used in teaching. The field of infographics aids in improving learner culture (Shcherbakova, 2023).

In order to use them as a resource for the current study, a number of prior studies on the topic of (infographics) were tracked in the theoretical literature. These studies are presented below in chronological order, from the earliest to the most recent, in terms of the date of their publication. In order to develop the academic performance of students who struggle with learning difficulties in the preparatory stage, as well as their attitudes toward the subject and maintain the impact of their learning, Hassan (2016) conducted a study. The findings indicated that all types of infographics—fixed, animated, and interactive—could potentially improve academic performance for students who struggle with learning and their attitudes toward academic subjects.

Rezaei and Sayadian's (2015) study also supported the effectiveness of static and animated infographics and their role in enhancing the educational process and raising students' levels of academic achievement. That is because static and animated infographics present information and data as engaging visual information, which also aids in information linking and the ability to recognize relationships and patterns. As opposed to this, Morsi's study from 2017 found that presenting the study material entirely as infographics, first in the form of generalizations before moving on to specifics, helped him develop a general understanding of the subject (the ancient "Pharaonic" civilization of Egypt) in the history course he took. Students in their first year of secondary school then assisted in organizing the new material in their cognitive framework.

In their 2018 study, Ozdamli and Ozdal sought to understand the views of teachers and students (from primary schools in Cyprus) on using infographics in the classroom and to build an educational design based on the ADDIE model for infographic design. To develop knowledge and skills in the theoretical and applied dimensions required for infographics design, 43 primary school teachers participated in an eight-week training using the Internet. The teachers used and developed the infographics on the training's contents. After the course, they were aware of the infographics' impact on several aspects. The study's findings demonstrated that instructors and students had favourable views on using infographics in educational settings.

According to previous research, infographics are helpful in teaching because they boost student retention of the content. In contrast to the previously stated studies, the current study was conducted on a sample of faculty members in Jordanian universities. She provided information on how Jordanian university faculty members employ instructional infographic design standards in computerized courses, which forms the basis of their excellence. In defining the issue at hand, establishing the theoretical foundation, and deciding how to construct the study instrument, the current study also profited from earlier investigations.

2.3. Standards for Infographic Creation in Education

The standard is the yardstick by which one may assess the value, appropriateness, and discipline of objects. It also determines the amount, weight, and extent of anything and its worth, quality, level, or degree (Suskie, 2018).

Types of standards: A- Educational standards: The following is a presentation of the most crucial of these criteria: They are the foundations derived from the findings of research and theories in the fields of education and psychology, which must be taken into account in the design process, such as about: the subject of learning, the procedural objectives, and the content of the program (Hubka & Eder, 2012). All facets of learning are covered by learning objectives. The goals for instruction are laid forth in a behavioral-procedural way. The gradation of the material aligns with the educational goals. The scientific material's substance and instructional goals are tightly intertwined. The educational goals are in line with the target audience's characteristics. The course's learning goals are quantifiable.

Technical criteria: These are the underpinnings of the organizational and technical research findings that should be considered during the design process. As a result, they should be present in multimedia programs, such as those that deal with the user interface and the interaction interface elements for usability. The most crucial of these requirements are presented as follows: Consider how the figure and backdrop differ in colour. Considering how well-organized and obvious the program's student navigational pathways are. It is also considering how the animation infographic has organized its colours. The user interface is well-balanced and easy to use. The design's user interface is uncomplicated and straightforward. Utilizing typefaces gradually, clearly separating the animation infographic's major and supporting parts by size and employing them (Newman & Ogle, 2019).

Infographics are utilized in education following several criteria and concepts, some of which include the following: Infographic applications in education. The first and most crucial need is to convert the material into an infographic if it is meant to be simplified and comprehended. Check the accuracy of this material by analyzing its content (Tarkhova et al., 2020).

They rely on clarity and conciseness while employing infographics in education to aid with topic comprehension. By focusing on punctuation, infographics are used in education to display information in a structured and ordered way, making it easier for students to memorize and comprehend. One of the requirements is that the emphasis be solely on one issue and be expertly transformed into a visual image (Afify, 2018).

Infographic applications in education Concentrate on reputable information sources. They rely on images, photos, and colours matching the information delivered to make it appealing and easy to grasp—maintaining the information's regularity and sequence to effectively convey its purpose and concept. Additionally, please pay attention to any grammar and spelling mistakes and thoroughly examine them (Provvidenza et al., 2019).

A card was created to evaluate the quality of the design and execution of animated infographics based on prior educational and technical requirements for those fields. Its simplicity of use distinguishes it and may also serve as a guide during the design and creation of animated infographics. It seeks to understand the extent of achieving quality within the animated infographic and the availability of educational and technical criteria.

3. METHODOLOGY

3.1. The Study Sample and Data Collection

The descriptive survey strategy was used for the study because it is the most suitable method for determining how frequently educational infographic design guidelines are used in computerized courses by Jordanian university professors. The study's participants were academics employed at government-funded universities in Jordan. The research instrument was given to a sample of (150) teaching staff members who were chosen randomly from the study population.

Earlier research was used to inform the development of the study instrument. The original version of the questionnaire included eleven (11) items. The study tool's response was created using the five-point Likert paradigm, and it was formatted as follows: There are five degrees in the very big degree, four in the large degree, three in the moderate degree, two in the small degree, and one in the very tiny degree.

The gradient was as follows: the upper limit of the options was set at (5), the lower limit at (1), and the higher limit was calculated by subtracting the lower limit from the lower limit, which resulted in (4).

Then, as stated in the following equation, divide the difference between the two boundaries by three levels: The number of levels or lower value of the alternative depends on its greater value. Therefore, the following scale is used to evaluate the degree of estimations in the research sample:

- The score is low if the arithmetic mean is between -1 and less than 2.34.
- The score is moderate if the arithmetic mean falls between 2.34 and less than 3.68.
- The score is high if the arithmetic mean falls between 3.68 and 5.

3.2. The Validity and Reliability Of The Tool

Tool Validity: Four (4) specialized arbitrators were given the tool in its initial form and asked to evaluate the paragraphs' appropriateness, degree of clarity, and linguistic integrity. They were also asked to mention any proposed amendments, suggest paragraphs they felt were necessary, and delete any unnecessary paragraphs. The committee of arbitrators agreed to the 85% agreement threshold, and once the tool was returned, the proposed adjustments that the arbitrators had indicated in their recommendations were made.

Tool Stability: Stability refers to the precision and consistency of an individual's performance and the consistency of outcomes through time. The Cronbach alpha coefficient was determined for internal consistency, and the result is regarded as statistically acceptable if its value is more than (0.60). The fixed test yields the same findings when applied to the same people again. The internal consistency coefficient for the entire questionnaire was 0.97, so the study's instrument may be classified as stable. As a result, the data produced by it are susceptible to a high degree of dependability and are suited for measuring variables.

3.3. Limitations and Study Procedures

Identify the extent to which faculty members in Jordanian institutions employ instructional infographic design guidelines in computerized courses. Regarding the study's human constraints, only a sample of faculty members who work at three Jordanian public institutions were included. (Yarmouk, Jordanian, Mutah). Regarding geographic restrictions, The University of Jordan, Yarmouk University, and Mutah University were the only universities included in this study. Timeframe: The study took place in the first semester of the 2021–2022 school year.

Conclusions: The study used the following procedures: evaluating the relevant sources and references to compile the study's theoretical literature. The study's sample, population, methodology, and statistical procedures are described. They were preparing the research tool and identifying evidence of its reliability and validity. Application of the research tool to a faculty sample from three Jordanian public universities: Yarmouk University in the north, Mu'tah University in the south, and Jordanian University in the middle.

The distribution and collection of the tool took (140) days. The information was loaded into the computer and statistically analyzed using the SPSS program when the tool's application was complete and copies had been collected. They provided suggestions after interpreting, going through, and discussing the findings.

4. THE RESULTS AND DISCUSSION

The study's findings are presented in the following manner by responding to its questions: 1. Answers to the first query:

Results of the first question: The research tool was used to extract the arithmetic means and standard deviations for statements (1–11), and the findings are shown in Table (1).

Table 1: shows how often instructional infographic design guidelines are used in computerized courses by Jordanian university professors.

No.	Statements	Arithmetic mean	Standard deviation	Rank	Levels
6	The instructional material's goals are met by the instructor using the infographic design.	3.90	1.005	1	High
4	Due to the Corona pandemic, the instructor uses the infographic design to create an electronic curriculum that calls for more distance learning.	3.35	1.026	2	Moderate
7	The infographic design is one of the instruments the teacher employs to swiftly and effectively convey the idea and aim via the curriculum.	3.28	1.096	3	Moderate
8	The teacher includes the infographic design in the curriculum to enhance the cognitive component.	3.17	1.038	4	Moderate
9	The instructor uses the infographic design to communicate the lesson materials efficiently.	3.02	1.199	5	Moderate
3	The professor has the skills to gather, process, and store information using multimedia.	2.97	1.182	6	Moderate
5	The teacher uses the infographic design to streamline the subject matter.	2.93	1.14	7	Moderate
2	Electronic information in educational curricula often uses graphic design as an appealing component.	2.90	1.173	8	Moderate
1	The creation of instructional information and e-books uses infographic design.	2.88	1.224	9	Moderate
11	The infographic design is a technique the instructor uses while creating electronic educational programs.	2.85	1.26	10	Moderate
10	When creating instructional booklets, the teacher uses infographic design components.	2.23	1.258	11	Low
Total		3.13	1.145	-	Moderate

The results in Table (1) show that Given that the arithmetic mean value for the use of educational infographic design standards in computerized courses was (3.13) with a standard deviation of (1.145), and the sentence that reads, "The instructor using the infographic design is meeting the instructional material's goals," the overall score for this study was medium with an arithmetic mean (3.90) and a standard deviation (1.005) in the first position with a high degree. Immediately after that comes the sentence, "The teacher uses the infographic design to develop the electronic curriculum to increase the need for distance learning due to the coronavirus pandemic." with a standard deviation of 1.00 and an arithmetic mean of 3.35. All the paragraphs received an average score except for the one that reads, "Due to the Corona epidemic, the instructor uses the infographic design to create an electronic

curriculum that calls for more distant learning." It scored poorly, finishing last with an arithmetic mean of 2.23 and a standard deviation 1.25.

Results of the second question: Arithmetic means, and standard deviations were calculated at the level of the groups in order to monitor the apparent differences in the values of the averages of the respondents' responses to the items of the scale as a whole depending on the variables of gender and the Certificate issuer. The (T) test was also used to determine the significance of the differences in the averages of the groups. The results are shown in Table (2).

Table (2): The differences in the respondents' estimates of the degree of using the infographic design criteria

Variable	Group	Amount	Arithmetic mean	Standard deviation	Freedom Degrees	Value (t)	Significance Level
Gender	male	80	3.20	0.68	147	1.37	0.174
	feminine	69	3.06	0.62			
Certificate issuer	Arabic	82	3.22	0.60	147	1.61	0.110
	foreign	67	3.04	0.77			

Notes from Table (2) Both the apparent differences between the arithmetic averages for the two categories of gender (male and female), which was (0.146), and the apparent differences between the arithmetic averages for the two categories of the Certificate issuer (Arabic, foreign), which was to (0.172), are not statistically significant. In terms of the significance of the differences, the results showed that there were no statistically significant differences in the estimates of the respondents on the items of the study tool in terms of gender and the Certificate issuer—significance (0.11), which is greater than the level of significance (0.05).

CONCLUSION

The study's findings revealed that faculty members in Jordanian universities used educational infographic design standards in computerized courses to a medium extent, and the teachers' estimates suggested that this application may significantly impact the achievement of the educational material's unique objectives. The remaining paragraphs, on the other hand, displayed a medium degree. This outcome makes sense because instructors can access the fundamental tools to apply infographic standards, including computer labs, electronic libraries, and the Internet. The ability to apply and profit from these standards still depends on the instructor, technical proficiency level, and motivation.

The study's findings also showed no statistically significant variations in the responses provided by Jordanian university faculty members to the questionnaire's items based on their gender or where they obtained their credentials. This outcome may be explained by the fact that instructors, irrespective of the educational program, attempt to apply graphical design guidelines in computerized courses.

Study Contribution

In light of its results, the current study makes the following contributions: It is bringing attention to the value of infographic design in e-learning among teachers and running seminars that show how to implement infographic design best practices in the classroom. Ayad works on designing technology applications for the university to develop the right software for computerized courses in conjunction with the relevant authorities. Field trips allow Jordanian institutions to gain experience at universities abroad and learn about the practicality of incorporating infographic design standards into their curricula.

The study also contributes to research because it makes it possible for researchers from different fields to carry out future investigations on infographic design in educational curricula, relating it to other factors and identifying the challenges to its implementation from the faculty members' viewpoint.

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