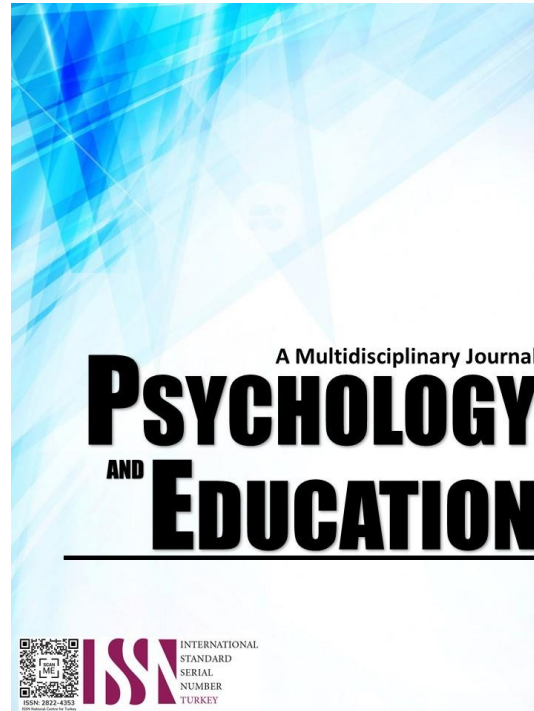


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Use of Infographics in Student's Comprehension Level in Araling Panlipunan 10

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Abstract

The study aims to provide supplementary material and strategies in teaching and learning on holographic that can foster and enhance students' comprehension level in Araling Panlipunan 10. The study covered the following: elements of infographics such as visuals such as color, font, design, and graphics; content as informative, interesting, and relevant to the topic. Comprehension levels include literal, inferential, evaluative, appreciative, essential and critique. A descriptive correlational methodology investigated the perceived level of infographics elements in comprehension. There are 50 students from Grade 10 of Dr. Arsenio C. Nicolas Integrated National High School participating in the survey for the academic year 2022-2023. The results showed a significant relationship between the use of infographics and students' comprehension levels. In light of the findings, the more informative and relevant the information and creating interest in a topic presented through infographics, the higher the level of comprehension and the ability to provide constructive criticism of the information presented. Moreover, it can be a powerful tool for promoting deeper comprehension. It can effectively allow a significant amount of information into a small space without compromising precision and comprehensibility, making them a powerful instrument in teaching and learning.

Keywords: *infographics, visual, content, comprehension level*

Introduction

The caliber of instruction students get significantly impacts how effectively they learn. Employing efficient teaching strategies to communicate the intended learning objectives for each class leads to a well-executed lesson. (A. Lucero 2021). The K-12 graduate is a holistically developed who has built foundations for learning throughout life. One of the skills that necessary to tackle the challenges and take advantage of the opportunities of the 21st century is learning and innovation skills, it includes among others creativity and curiosity, critical thinking, problem-solving, adaptability, managing complexity and self-direction, and sound reasoning skills. Acquisition of these skills help learners resolve daily issues and challenges be it academic, personal, social, etc. Learning and innovation skills are honed in all subject areas ad across grade levels. (DepEd Order No. 21 s. 2019). The Philippine government has implemented several comprehensive initiatives and projects to raise the standard of education in our nation but concerns and problems persist. Every instructor may have methods and procedures that they might use with every student. The true purpose of education is to mold young people's hearts and brains through diverse means. This study aims to shed light on education's fundamental and essential function in learners' lives. It emphasizes how important it is for schools to meet each student's needs and significantly impact their education outside the classroom. Ultimately, it underscores the importance of pursuing high-quality

education and its transforming potential.

Damyantov & Tsankov (2017) assert that we require an instrument to assist and support the vast amount of knowledge and information. They claimed that infographics could help us better understand the many facts provided in a written work or other materials. Students will be motivated to read and fully understand the material to confidently investigate the subject if a graphic or image accompanies it. For learning to be effective, a variety of tools and instructional materials can be used. Although teachers are the ideal learning tool, they should offer their students relevant and efficient learning techniques. The environment, population, wealth, power, disputes, and tensions are all covered, as well as associated topics and issues. As a result, adult learners gain the capacity for critical thought, broaden their horizons, and become aware of how society is impacted by human behavior. M. Reeves and M. Deimler (2011).

Methodology

Research Design

This study is employing a descriptive research design which is according to Van Wyk (2012), it is the overall plan for connecting the achievable goal with the conceptual research study. Therefore, it is evaluated



what data is needed. It was also defined by Helen Dulock (1993), that this is a blueprint, or a plan specifically created to answer the research question and to control variance. A well-designed research study can help to ensure the validity and reliability of the findings. By controlling potential sources of bias and variance, researchers can have greater confidence in the results of their study. Additionally, a clear research design can make it easier for other researchers to replicate the study or build upon its findings.

Sampling and Ethical Considerations

The respondents of the study were 50 purposively selected Grade 10 students of Dr. Arsenio C. Nicolas Integrated National High School, while the rest of the students were used for pilot testing of the said study.

Research Instruments

The instrument is a researcher-made survey questionnaire composed of two categories; the perception on elements of infographics and comprehension level, each has its own compositions comprised of 65 questions. The Likert scale for the questions was set as: Strongly Disagree (1), Disagree (2), Agree (3) and Strongly Agree (4) for part I and II.

Data Analysis

The researcher used descriptive and inferential statistics to extract valuable information from the data and tackle the research issues. Initially, the mean score was examined for each variable. As the survey questionnaire responses were qualitative, numerical values were assigned to facilitate quantitative analysis. To determine if there is a noteworthy association between the independent and dependent variables, the Pearson Product Moment Correlation was employed.

Results and Discussion

Summary on the Perceived Elements of Infographics as to Visual

The research participants’ test results were evaluated and measured using the mean and standard deviation.

Table 1 presents the summary of all indicators of visuals. Among the indicators, color and design got the highest men of 3.50, interpreted as highly perceived.

According to the study of O’connor, Z. (2013), the effectiveness of visual communications design in

instructional infographics relies on the significant roles that color and contrast play in visual perception. By strategically utilizing color and contrast, designers can enhance the impact of the infographic, making it more engaging and facilitating better comprehension for viewers. Accordingly, using color in instructional infographics can help create a more engaging and memorable learning experience for the viewer. Therefore, designers of instructional infographics should consider the use of color and contrast carefully to enhance the effectiveness of their visual communications design.

Moreover, in making instructional material as an educator, considering the overall design affects the students’ learning outcomes. Thus, selection of appropriate colors is conducive to learning and promotes student engagement and motivation. Therefore, designing a physical learning environment can be achieved by combining visually appealing and harmonious colors while ensuring that the overall quantity of color is appropriate for the learning context.

Table 1. *Summary Table on the Perceived Elements of Infographics as to Visual*

Statements	Mean	Std. Deviation	Verbal Interpretation
1. Color	3.50	0.37	Strongly Agree
2. Font	3.44	0.40	Agree
3. Graphics	3.46	0.41	Agree
4. Design	3.50	0.36	Strongly Agree
Overall	3.48	0.39	Agree

Summary on the Perceived Elements of Infographics as to Content

The summary of all indicators in content is shown in this table. Indicator three which is relevant to the topic got the highest mean of 3.54 as highly perceived. As a result, it emphasizes that a topic must always be in accordance with its competencies in presenting the materials for teaching and learning activity. Competencies are, indeed, vital, in the teaching-learning process in building skills to equip learners for succeeding grade levels and subsequently, for lifelong learning. Consequently, competencies are necessary for learning and professional development as they play a crucial role in various aspects of life. By identifying and focusing on relevant competencies, individuals can continuously improve their abilities and stay competitive in their fields. Further, competencies are



indispensable for learning and professional growth, playing a critical role in the person’s life.

Since the early ages, humans have relied heavily on images to convey their desires and emotions. From early humans living in caves to the present, individuals have communicated using images, and history has demonstrated this. Emerging communication techniques have contributed to the extensive use of graphics in the virtual world and in all spheres of human activity as society has transformed. (Bicen, H. & Beheshti M. 2017).

According to Thanh (2022), integrating infographics in education offers a valuable approach to enhance student performance through effective engagement with visual content. By incorporating infographics, educators can effectively captivate students' interest and involvement in the learning process, leading to improved academic outcomes. Therefore, infographics in education is an effective way to enhance students' comprehension of complex information by engaging them with visual content.

Considering the results on the relevant to the topic, the total mean value of 3.54 shows that respondents generally had a favorable opinion of the relationship between infographics and pertinent topics as material. The standard deviation (SD) of 0.34 indicates that they little inter-respondent variation and that the replies were generally stable around the mean value.

Table 2. *Summary Table on the Perceived Elements of Infographics as to Content*

Statements	Mean	Std. Deviation	Verbal Interpretation
1. Informative content	3.47	0.35	Agree
2. Interesting content	3.50	0.32	Strongly Agree
3. Relevant to the topic	3.54	0.34	Strongly Agree
Overall	3.42	0.35	Agree

Correlation of Elements of Infographics and Student’s Comprehension Level.

The Pearson Product Moment Correlation or Pearson r between the level of reading comprehension and elements of infographics is shown in Table 16. The analysis revealed that elements of infographics have a significant positive relationship with reading comprehension levels.

The analysis result shows a positive correlation between color and level of reading comprehension, especially on literal, with $r=0.528$ at $=0.01$.. Based on

the findings of the study of O’connor, Z. (2013) that color and contrast are frequently harnessed in the design of visual communications to draw attention to important aspects such as headlines, text, or imagery, and in doing so, help in the to enhance the effectiveness of visual communications design.

A moderate positive correlation exists between font and evaluative reading comprehension, as shown in the result with $r=0.546$ at $=0.01$.. Therefore, there is a great impact in choosing the font when making instructional materials such as infographics. It comprises various components that all work together to build a cohesive and well-balanced design that educates and, ideally, impacts the reader. (Orana, V. 2021).

Interpreting the result of $r=0.686$ at $p= .000$ and indicates a moderately strong relationship, a positive correlation between the use of graphics and students’ literal level of comprehension. Based on this result, it can be interpreted that the use of graphics is positively related to students' literal level of comprehension. In other words, the more graphics included in an infographic, the better students are likely to understand the literal meaning of the information presented.

On average, results between design and level of comprehension it was a moderately high positive correlation. Therefore, Infographics have been frequently used in recent years to visually present information. This visualization technique aims to effectively present various content to a specific audience by using a visual arrangement that incorporates elements such as shapes, symbols, graphics, photographs, illustrations, and texts.

The data of $r=0.762$ at $=0.01$., interpreted as a moderately high positive correlation between the informative element of infographics and the appreciative level of reading comprehension. As a result, this means that as an infographic's informative content level increases, the reading comprehension level also tends to increase. Infographics are powerful tools, allowing much information to be presented in a small space without sacrificing accuracy and clarity. Unlike oral or written presentations, infographics are visual and can efficiently communicate a narrative, display connections, and illustrate informative organization. (Dunlap J. & Lowenthal P., 2016)

Consequently, using infographics proved advantageous in fostering the students' reading skills. It provided them with a platform to rephrase the main ideas from the texts and demonstrate their comprehension of the readings. Moreover, this



instructional approach benefited teachers by offering a new strategy to explore reading comprehension, particularly in English classes. The findings from López Cupita and Puerta Franco's study in 2019 emphasize the positive impact of incorporating infographics as a pedagogical intervention in enhancing both students' reading abilities and teachers' instructional practices.

A correlation coefficient of $r=0.674$ at $p=0.01$ suggests a moderate positive relationship between interesting and critical levels of comprehension. This implies that when learners find a text interesting, they are more likely to engage in higher-level comprehension processes such as analysis, evaluation, and synthesis. On the other hand, if learners do not find a text interesting, they are less likely to engage in these higher-level processes. The implications of this finding are significant for educators, as it suggests that creating interest in a topic can be a powerful tool for promoting deeper comprehension. Teachers should strive to make learning experiences engaging and relevant to their students' interests to help them achieve higher levels of comprehension. The study's results suggest that educators should create engaging learning experiences that spark students' interest in the subject matter to promote deeper comprehension. Additionally, it underscores the importance of using assessment methods that measure higher-level comprehension processes to understand learners' comprehension abilities fully.

The results of the data on the relationship between relevance to the topic and critique level of comprehension, with $r=0.737$ at $p=0.01$ as the highest results, suggest a strong positive relationship between the two variables. In other words, the more relevant the information presented through infographics is to the topic being studied, the higher the level of comprehension and the ability to provide constructive criticism of the information presented.

Infographics are becoming increasingly common in literature aimed at children, such as magazines, picture books, and informational texts. To fully comprehend and even create these intricate visual representations of information or data, one must possess advanced thinking skills that involve analyzing and comprehending how the text and graphics work together to convey a message or meaning (Smith et al., 2021).

Table 3. Correlation of Elements of Infographics and Student's Comprehension Level

Elements of Infographics		Level of Reading Comprehension					
		Literal	Inferential	Evaluative	Appreciative	Essential	Critique
Visual	Color	.528	.361	.386	.469	.474	.415
	Font	.433	.480	.546	.483	.293	.501
	Graphics	.686	.498	.604	.582	.638	.580
	Design	.646	.616	.734	.711	.688	.732
Content	Informative	.752	.719	.756	.762	.634	.727
	Interesting	.532	.560	.593	.612	.519	.674
	Relevant to the topic	.655	.670	.733	.711	.652	.737

Conclusion

The study's findings led to the conclusion that the hypothesis being tested states a significant relationship between the use of infographics and students' reading comprehension levels. Therefore, the study does not support the null hypothesis.

Considering the findings and conclusions of the study, the following recommendations are offered: first, in making infographics as instructional material, teachers may consider using various designs applicable to the lessons presented, such as the colors should always be attractive to the eye of the readers. Second, students may conduct further study and look for other resources or materials that support the information presented in infographics. Third, consider providing guidance and support to students as they engage with the infographic. This can include providing instructions, feedback, or additional resources as needed. Fourth, consider the learners' prior knowledge and experiences when designing the infographic. This will help the teacher to modify the information to their needs and make it more relevant and engaging. And fifth, for future researchers, it is recommended that other variables may be included when conducting similar studies that were not considered in the current study.

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