Article

Do college students really know and use graphic organizers for learning?

Los estudiantes universitarios ¿realmente conocen y emplean los organizadores gráficos para aprender?

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Abstract

Objective: To analyze the knowledge that new dental students have about graphic organizers.

Methodology: Non-experimental, qualitative, phenomenological, descriptive and transversal study. Apply the survey technique to 295 students new to the Dental Surgeon Degree from a public university, selected randomly. The survey consisted of 10 questions. The data was collected through Google forms and analyzed using frequency statistics.

Contribution: 98.3% of students report that they know what graphic organizers are and how to make them. 97.6% report knowing and using the Debate, 94.9% the Comparative Table, 90.8% the Timeline, 89.2% the Mental Map, 88.8% the Conceptual Map, 80.7% the Synoptic Table, 75.3% the Summary., 54.6% the Synthesis, and 46.8% the Reading Report and the Essay. However, when the teacher asks the students to prepare them (as a learning tool), it is observed that not all of them know them and they do not demonstrate how they should be done.

Students, Graphic organizers, University

Resumen

Objetivo: Analizar el conocimiento que tienen los estudiantes de odontología de nuevo ingreso, sobre los organizadores gráficos.

Metodología: Estudio no experimental, cualitativo, fenomenológico, descriptivo y transversal. Aplica la técnica de encuesta a 295 estudiantes de nuevo ingreso a la Licenciatura de Cirujano Dentista de Universidad pública, seleccionados aleatoriamente. La encuesta se conformó por 10 preguntas. Se recolectaron los datos a través de Google forms y se analizaron bajo estadística de frecuencia.

Contribución: El 98.3% de los estudiantes refieren que saben qué es y cómo se hacen los organizadores gráficos. El 97.6% refiere conocer y usar el Debate., 94.9% el Cuadro comparativo., 90.8% la Línea del tiempo., 89.2%., el Mapa mental., 88.8% el Mapa conceptual, 80.7% el Cuadro sinóptico, 75.3% el Resumen., 54.6% la Síntesis, y el 46.8% el Reporte de lectura y el Ensayo. Sin embargo, al momento de que el docente solicita a los estudiantes que los elaboren (como herramienta de aprendizaje), se observa que no todos los conocen y tampoco demuestran como deben hacerse.

Estudiantes, Organizadores gráficos, Universidad

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Introduction

It would be expected that students entering the university context have received approximately 12 years of study (6 years of primary, 3 years of secondary and 3 years of baccalaureate) and during that period have acquired competences related to the choice and implementation of graphic organisers that enable them to learn.

The study of the origin of graphic representation as a form of representation, organisation and information processing describes graphic organisers as tools that can be used in the educational field to favour processes of acquisition, comprehension, interpretation and recall of information (Reodríguez & Ropero, 2018).

Hidalgo (2023) refers to graphic organisers as a teaching and learning strategy that helps university students to organise, analyse information and be creative in organising and remembering it.

Licta and Quimbita (2023) state that the implementation of graphic organisers contributes to the development of students' cognitive abilities and skills for the incorporation of problem-solving, decision-making and value-judging citizens.

Graphic organisers are best captured visually, they start with the prior knowledge and creativity of the person who makes them, allowing information to be retained. When developed collaboratively, they allow for negotiation among participants (Fuentes, 2006).

Graphic organisers (synoptic table, conceptual and mental map, essay, among others) do work for university students to learn significantly, they allow knowledge and information to be represented visually, favouring comprehension, critical and creative thinking (Gaete, (2021).

Finally, for this study, a graphic organiser is a visual or textual representation that captures relevant information about a concept to be learned.

In this sense, it would also be expected that university students make graphic organisers as a study habit, that is, as a natural strategy used to assimilate knowledge at their own pace, that they put it into practice with responsibility, commitment and discipline, as well as carrying it out with continuity, representing it in daily life behaviour. As a consequence, learning is reinforced and thinking skills such as: observation, comparison, relation, classification and description are activated.

From the context of basic education, graphic organisers are implemented as teaching and learning strategies that promote critical and reflective thinking, and it is important to mention that they continue to be used at the upper secondary level. Therefore, when entering the university context, the mastery of knowledge and employability of these strategies would be expected.

However, among new students entering the university context, it is frequently observed that few of them have a taste for reading and show little reading comprehension, and they also find it difficult to select the information that allows them to reflect on the important criteria to be learned (theory) in order to link it to the discipline (practice). Few students are concentrated in class and show creativity in their ideas. Also, it is often detected that they tend to memorise information in order to obtain a passing grade in assessments, without internalising that such memorisation is forgotten in the short or medium term.

If students entering university really used graphic organisers to learn, it would increase their ability to argue critically, in reading comprehension, in creativity, they would have time for recreation, rest and sleep because it would reduce the time of "memorisation" and would regulate the emotional states of trait anxiety and academic stress.

For all the above reasons, the general objective of this study is to analyse the knowledge of this study is to analyse the knowledge that incoming dental students have about graphic organisers.

Method

Non-experimental, qualitative, phenomenological, descriptive and cross-sectional study.

The survey technique was applied to 295 new students entering the Bachelor's Degree in Dental Surgery at a public university during the 2022-2023 school year.

Sample by convenience

Instrument: Self-constructed survey, consisting of 10 questions aimed at understanding the lived experience they have had during those 12 years of previous schooling, which allows us to visualise the meaning (knowledge and use) they give to graphic organisers.

Procedure: at the beginning of the school year, incoming students were asked to answer the survey using Google forms.

Data analysis: frequency statistics.

Results

98.3% of the students surveyed reported that they know what graphic organisers are.

Debate	97.6%
Comparative table	94.9%
Time line	90.8%
Mind map	89.2%
Concept map	88.8%
Synoptic table	80.7%
Summary	75.3%
Synthesis	54.6%
Reading report	46.8%
Essay	46.8%

Table 1 Use of Graphic Organisers
Source: Own elaboration, 2023

Table 1 visualises the frequency with which respondents report doing graphic organisers.

Discussion

With the above findings in this study, we agree with the arguments of the following authors:

Sanchez (2023) mentions three theoretical definitions of what graphic organisers are: 1) visual representations that communicate a logical structure that can be used both for teaching and learning, 2) they serve to present in a structured, hierarchical and classified way the information to be studied, where the main characteristics are: the order of the concepts and the logical sequence to facilitate thinking and understanding..., and 3) are visual representations of concepts or explanations of information used while executing a visual and semantic programming of concepts, is used to work with diverse ideas in order to present diverse information and teaches students to clarify their thinking; process, organise and prioritise new information.

Malasquez's (2023) results indicate that graphic organisers have a significant effect on the development of critical thinking in the area of communication.

Gavilanes et al. (2023) reiterate that mind maps are powerful study tools that favour the learning process and long-term memorisation, and prove that the daily use of this study tool greatly stimulates the cognitive part and study is harmonious.

It is important to highlight what is expressed by Hidalgo (2023), Palomino (2023), Díaz (2023), Malasquez (2023) and Sánchez-Bejerano, Fernández and Griffin (2023) who show that graphic organisers do work in university students in different areas of knowledge, for example, in the learning of financial and tax law, medical technology, language and literature, communication and reading comprehension, as we are convinced that the good use of organisers in dentistry can really provide significant learning.

Furthermore, the findings of this study indicate the importance of incorporating graphic organisers as a real study habit which, in turn, could make the learning process more proactive in the university context, since perhaps if students really used them consciously, it would help them to link theoretical disciplinary knowledge with practical knowledge.

It is necessary that students entering university realise that using graphic organisers activates thinking skills such as: codification of information, selection, abstraction, interpretation and integration of knowledge, which are indispensable at this educational level, and that with their frequent use it will be easier for them to link new dental knowledge (selected with awareness) with previous knowledge in order to make a second selection and give it a hierarchical order. In this way it will be easier for them to link theoretical knowledge with practice in dentistry.

It is important for university students to realise that the implementation of any graphic organiser also develops higher order knowledge in them, because by executing them, they process, organise and create new information, giving the guideline to the visualisation of relational patterns between concepts and theories that will allow them to be better dentists.

It is also important to highlight that university teachers assume that incoming students know and know how to make different graphic organisers that facilitate their learning and that is why they request them as reinforcement activities. However, many of the teachers do not follow up on this activity, some evaluate it half-heartedly or simply do not evaluate it at all, and even the student says *"Why ask me to do the concept map if he/she doesn't even tell me if I did it right or wrong, my teacher doesn't evaluate them",* therefore, this teaching and learning activity can be seen by the student as a meaningless activity.

From what has been described above, Cruz (2015) reaffirms that the role of the teacher is key, as he/she is responsible for encouraging participation and providing the conceptual and procedural scaffolding necessary for students to develop their own organisers that ultimately reflect the textual structures, as the graphic organisers constructed by the students are more effective, providing them with the opportunity to process the reference material in a deeper way.

According to Reyes (2019) the synoptic table, concept map and mind map are the most used graphic organisers in the university context in Ecuador, which, compared to the results obtained in this study, are used around 80%.

Conclusions

It is concluded that graphic organisers are important resources in the application of study habits at university, as they facilitate learning. The most popular were: timeline, debate, comparative chart, mind map, concept map, synoptic chart, summary and synthesis. The least known were the essay and the reading report.

In view of the above, students entering the university context say that they do know and know how to make various graphic organisers.

It is considered necessary to carry out more studies to reveal the incongruence between "saying and doing" graphic organisers in order to truly learn. In addition to relating the study habits variable to the effectiveness of these organisers. It is also recommended that higher level university students be asked whether they know and know how to use these learning tools.

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