USE OF MIND MAPS: TEACHING/LEARNING STRATEGY FOR THE CONSTRUCTION OF CONCEPTS IN A MEDICINE COURSE

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ABSTRACT

The construction of scientific concepts represents one of the main difficulties faced in the teaching and learning process at all levels of schooling. This study aims to report the experience of using mind maps as a pedagogical strategy, highlighting the benefits observed by the students and the participants' perceptions regarding the use of this tool in the study of legislation (RDC No. 222/2018) concerning the adequate management of healthcare waste. The activities were carried out in a laboratory with first-period Medicine students, focusing on the elaboration of mind maps. The experience report is a research method that uses qualitative data collected from real events with the objective of understanding current phenomena within their own context. The process followed four fundamental stages: planning, organization, interactivity, and teaching. The application of this methodology not only facilitated the understanding of the addressed legislation but also sparked the teachers' interest in conducting research throughout the course, contributing to the consolidation of acquired knowledge. The obtained results indicate that the use of mind maps can be an effective tool to promote the construction of concepts and the interrelation of knowledge, favoring more significant and lasting learning. The reported experience suggests that the adoption of visual methods in teaching can improve the retention and practical application of knowledge, benefiting both the educational process and the training of future healthcare professionals.

Keywords: Mind Map; Interactivity; Learning; Teaching.

INTRODUCTION

One of the main difficulties in the teaching and learning process, at all levels of schooling, is related to the construction of scientific concepts by students. Even though they are frequently used, these concepts are often not properly formulated and assimilated. Often, despite the concepts being verbalized correctly, many students have difficulty explaining them in terms of meaning or in establishing connections with other concepts, as well as applying them in real situations; they often associate the act of conceptualizing only with the verbal explanation of a term or object, which is frequently confused with the idea of definition (MENEZES, 2021).

This study describes the work developed with first-period students of a Medicine course, using mind maps based on the themes "Management and correct disposal of healthcare waste" described in RDC 222/2018, established in the sub-

area of procedural skills, (area of Medical Skills I) which were identified from the main problems of the management and correct disposal of Healthcare Service Waste (RSS) in healthcare establishments. The use of the maps was considered a significant methodological resource, as it is aligned with adequate theoretical training for the necessary interventions in the reality under study and facilitates the understanding and assimilation of scientific concepts by students (BUZAN,2004). According to Socha (2020) the use of mind maps is an effective tool to facilitate the organization of knowledge and stimulate creativity, allowing students to visualize connections between ideas in a clearer and more intuitive way.

The experience report enabled the construction of a mind map that articulates RDC No. 222/2018 with RDC No.15/2012, RDC No. 36/2013, RDC 50/2002 and as well as NR No. 32/2022, providing a robust cognitive representation that favors the systematic analysis of normative guidelines regarding the management of healthcare service waste. This integrative approach not only facilitates the understanding of the interdependencies between the different regulations but also grounds a critical reflection on the implementation of safe and sustainable practices, promoting compliance with legal requirements and the protection of public and environmental health. The elaboration of the mind map took place in scheduled meetings in the practical techniques laboratory, in block F. In which 139 academics participated, divided into groups of 12 students during the second semester of 2023, under the guidance of teachers. Following the stages: planning; organization; interactivity; teaching. The central theme of the mind map was "Management of Healthcare Service Waste- RDC 222/2018".

This type of methodology is characterized by a detailed study with the purpose of providing knowledge about how to work in a group. The elaboration of this experience report aims to describe the experience of using mind maps, including the observed benefits and the participants' perceptions regarding the use of this tool for the study of legislation on healthcare service waste.

METHODOLOGY

This is a qualitative approach, which emphasizes the subjective and interpretative nature of the adopted approach, highlighting the richness of perceptions and insights (insight is defined in the English language as "the ability to understand hidden truths etc., especially of character or situation" thus having a

meaning equal to "discernment" (ALLEN, 1990, p. 612), obtained through this in-depth analysis.

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Initially, the mind maps produced by the participants were collected, along with complementary information, such as completed questionnaires or testimonials about the experience of using the mind maps in the study of RDC 222/2018. The mind maps and other collected data were organized and categorized according to relevant criteria, such as the structure of the maps, the inclusion of the proposed requirements, which brings clarity to the presented information and the participants' perception of the usefulness of the mind maps. This was the moment when the identification of recurring themes and subthemes, strengths and areas for improvement in the mind maps produced by the participants was discussed.

This concept is highlighted in the center of the map, representing the focus of the analysis. From the central theme, the main subthemes covered in RDC 222/2018 were identified. Examples include: waste classification; management and storage; treatment and final destination; generator responsibilities; safety standards. The subthemes were arranged on branches that connect to the central theme, using keywords or short phrases that synthesize the essential information. This constituted a facilitator for memorization and the understanding of the information. After the initial creation of the mind map, it was periodically reviewed to incorporate new information or changes in the legislation, ensuring that the content remains relevant and up-to-date. By utilizing the mind maps as a tool for studying and organizing information related to each waste group, highlighting the main characteristics, management standards and other relevant aspects.

RESULTS

When performing a comparative observation between the mind maps produced by the participants, significant differences were identified in terms of approach, content, and perceived impact on the understanding of the requirements of RDC 222/2018. Based on the qualitative and comparative analysis of the data, it was

possible to interpret the results obtained regarding the effectiveness of mind maps as a teaching and learning tool encouraging study and memorization. This could include practical implications and recommendations for future applications of mind maps in the regulatory context. By following these methodological steps, it was possible to conduct a comprehensive and meaningful analysis of the collected data.

In this context, the effectiveness of mind maps presents itself as a teaching and learning study tool for understanding and memorizing the requirements of RDC 222/2018. This can be evidenced through the comparison of information retention, content comprehension, and participants' perception of the usefulness of mind maps in relation to traditional study methods. It was observed that the exposure of the teaching content had good utilization and interaction patterns and trends related to the elaboration and use of mind maps, such as the preference for certain visual structures, the inclusion of key information and the ability to facilitate the understanding of health legislation characterized by an increase in clarity and understanding of the discussed themes.

Based on the obtained results, it is expected that the research will offer recommendations for future applications of mind maps in the study of similar regulations, as well as insights on possible adjustments in the pedagogical approach and in the use of visual tools to facilitate the understanding of complex content. Furthermore, the use of the mind map tends to stimulate active participation promoting a collaborative environment where individuals feel more comfortable sharing ideas and questions.

CONCLUSION

The elaboration of a mind map about RDC 222/2018 provides a visual methodology that facilitates the understanding of the guidelines for the management and correct disposal of healthcare service waste. This approach not only organizes the knowledge but also stimulates critical reflection on the practices established by the norm. The participants in the elaboration of the mind map about RDC No. 222/2018 with articulation to RDC No.15/2012, RDC No. 36/2013, RDC 50/2002 and as well as NR No. 32/2022, presented the following insights: holistic understanding; understanding of gaps; critical reflection; appreciation of collaborative work; ease in knowledge retention; sensitivity to safety and practical applicability.

The potential benefits of this research on the use of mind maps for the study of RDC 222/2018 may include: Contribution to educational practice: By exploring the

effectiveness of mind maps as a study tool for understanding and memorizing the requirements of RDC 222/2018, the research can provide valuable insights for educators, students, and professionals seeking effective strategies for learning and memorizing regulatory content. Promotion of innovative study methods: By demonstrating the practical and applicable benefits of mind maps in understanding and retaining complex information, the research can encourage the adoption of innovative study and memorization approaches in educational and professional contexts.

Improvement of the understanding of health legislation: By facilitating the assimilation of the requirements of RDC 222/2018 through visual and organizational techniques like mind maps, the research can contribute to a better understanding and practical application of regulatory norms in the context of health and safety of the management and correct disposal of healthcare service waste. Support for the development of cognitive skills: By promoting the use of visual tools like mind maps, the research can stimulate the development of the cognitive skills of students and professionals, including the ability of synthesis, organization, and retention of information.

These potential benefits highlight the value of the research in terms of its practical relevance for education, professional training, and understanding of regulatory norms, as well as its potential to positively influence study and learning approaches. This dynamic can result in a positive perception regarding the effectiveness of visual methodologies in learning, contributing to the strengthening of knowledge about norms and practices related to the safety and adequate management of waste.

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