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Concept Mapping Strategy in Planning and Teaching

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Abstract

We advocate the idea of having teachers for the future who are well-equipped in all the areas related to school education over and above the subject they teach or are considered to be master of it. At the teacher education institute apart from training the individual trainee in terms of practical skills and techniques of teaching well in the classroom it is also extremely important that they learn certain things in such a manner that they know how to connect it with previous and present knowledge of an individual and class.

Concept mapping is one of the strategies to teach teacher-trainees to make them understand the pedagogy of teaching science as well as execute and utilize in teaching scenarios in class. The researcher has tried to put forth the usage of it in lesson planning and content management for classroom teaching in the present paper.

Key Words: - Concept mapping, strategy, pedagogy, science, lesson planning

Introduction

Learning might be appropriately characterized as a generally perpetual change in conduct barring the impact of development and development. Encouraging procedure is additionally identified with understanding a similar goal. Some researchers characterized the instructing as "exercises that are structured and performed to deliver change in student conduct". It prompts presume that showing comprises of each one of those exercises that are planned to create learning. In any case, it isn't basic for instructing to be finished with learning, and learning may likewise occur without including the conventions of educating. Along these lines, As Smith stated, "Taking in doesn't issue from instructing, that educating is a certain something and learning is very another". Both concepts may exist and have capacity autonomously yet for the beneficial things to come there is a need for an acceptable connection between the two. They are to hold hands, draw close, and have an amalgamation known as the educating learning process. Doubtlessly it relies much upon the earnestness and difficult work of the educators and its execution requires the utilization of different encouraging methodologies appropriately to deliver significant learning and to keep up this relationship.

Strategies for Teaching for Learning to Happen

The term encouraging system alludes to the plans, implies, and explicit ways uniquely contrived and utilized by the instructors for the best possible acknowledgment of wanted showing goals in a specific educating learning circumstance. It varies essentially from the terms, for example, showing strategies, showing

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strategies, and showing gadgets as far as its arrangement, thoroughness just as a degree. Various instructing techniques are being utilized. These might be despotic (content-focused and instructor-commanded) or majority rule (student-focused) types.

Strategies for learning

The thing that the learner is certain of, according to Ausubel, is the single most essential factor influencing realization. It is only when a person intentionally and openly links new knowledge to essential concepts that they already comprehend that they may say that they have learned anything meaningful. When new knowledge is personally incorporated into the conceptual framework, this is referred to as repetition learning. The data obtained isn't connected to any existing conceptual frameworks. That is, the material is "discrete and disengaged," and the structures are not related to existing conceptions in the conceptual framework. The most typical learning methodologies employed by students are surface and profound level handling. The student focuses his attention on studying the material itself, has a regenerative concept of learning, and is effectively obliged to utilize a repetition learning strategy as a result of surface-level preparation. On the other hand, higher-level handling directs the learner toward the learning material's intended substance and toward understanding what the author has to say about, say, a given logical issue or guideline.

What is Concept Mapping?

The Concept Mapping technique is a two-dimensional, guide-like method of presenting the conceptual structure of a topic order. Normality in objects or events designated by a certain mark, as defined by Novak, is a notion. Concept Mapping is a technique for communicating data in graphs. Conceptual systems are represented using information diagrams. Hubs (focus vertices) and connections make up systems (arc edges). Concepts are represented by hubs, while relationships between concepts are represented by connections.

There are names for the concepts and connections. Connections can be made in one of three ways: none, unit, or bi-directional. Concepts and connections may be arranged, they can be associated, they can be indicated or they can be segregated into groups, for example, easy-going or worldly relationships, and so on. As a result, Concept Maps are diagrammatic representations of essential connections between concepts, which serve as suggestions to the viewer. Ideas for suggestions are at least two concept marks connected by

phrases that provide information on connections between concepts or depict correlations between different concepts.

Teacher education and concept mapping

Teachers face a complicated assignment; they must do whatever they can, to compose a learning situation that will encourage student learning. To do this educators attempt to enable students to acknowledge what they should do as students, just as what they can do as instructors, to accomplish what is designated "shared significance of information".

On the off chance that point of view instructors are to embrace rehearses that energize significant learning, it appears to be clear that they should know the topic definitively.

The utilization of concept mapping apparatuses in instructor training projects can assume a valuable job in two different ways. First, these instruments may support forthcoming or in-administration instructors to direct learning approaches towards increasingly important (and less repetition) rehearses. They can try to make the topic all the more conceptually straightforward i.e., they can accentuate the implications of key concepts and standards and their interrelationships, in manners students can shape a conceptual comprehension of the subject.

Concept mapping empowers educators to get priceless bits of knowledge into the concept methods of their students. The procedure has been generally utilized to more readily fathom contrasts in student development of information and ensuing learning improvements.

Review of Related Literature

Among the professional courses like Bachelor of Education which aim to prepare teachers, a trainee must master the skill or technique of lesson planning

Tyler (1949) listed three major criteria to be met in lesson planning: continuity sequencing and integration. Thirty-five years later **Novak and Gowin (1984)** first mentioned the possibility of concept maps to be used as educational apparatuses, and it was they who gave concept maps their current form. The y conducted comprehensive investigations into concept mapping in the context of the school teaching-learning method to accelerate the development of concept mapping research at an exponential rate. Novak collaborated with a

large number of partners on different aspects of concept mapping.

Regis, A., Albertazzi, P.G., and Roletto, E. (1996) described the use of concept maps as a meta-cognitive tool to assist scientific instructors and students in improving study hall instruction and learning. In light of changing perceptions of the concept of logical knowledge and how learning occurs, concept maps were used.

This concept of instructional planning was not sought and got somewhere overlooked in terms of the pre-planning stage or lesson planning stage where it could be used by teachers.

Need and Rational of the Study

Concept mapping can be used as a successful strategy to teach students at the school level. But when it comes to lesson planning utilizing it can make it a strategy for the same. Its applied output needs of hour to be studied. If it is made a strategy for pre-planning it could lead to a better classroom instructional process that can cater to all levels of learners.

Objective of the Study

- To find the effectiveness of concept mapping as a strategy for lesson planning.
- To find the efficacy of concept mapping strategy-based lesson plan execution in the classroom.

Discussion

In recent scenarios, it has been observed that concept mapping is effectively been used to make learning an active and earnest process for the learner. Teacher-in-classroom interaction has been used at various levels of getting information about the prior- knowledge of the but also at the learning stage and evaluation stage.

Concept mapping not only helps learners accentuate noteworthy concepts but also gets a hold of the correlation between these concepts. Various studies have also confirmed that concept mapping can indeed engross the learner in meaningful learning and eventually, the rote learning vanishes from the learning aspect altogether.

The instructional design idea of concept mapping includes teaching objectives, steps, and strategies, which is also the guiding principle of teaching design.

A. Teaching Objectives Concept mapping should be effective; it must focus on the procurement of objectives at three levels:

- To improve students' academic performance.
- To guide students to practice concept mapping.
- To develop students' ability to comprehend or understand the composition of concepts about themselves.

B. Scaffolding

- The Presentation of examples: Teachers could provide at least one typical example which is pragmatic.
- Demonstration: Teachers can effectively convey the drawing process by demonstrating and illustrating each step, aiding students in comprehending the intricacies of the example.
- Provision of Procedural Knowledge: Students benefit from honing their pattern-drawing skills through practical exercises spanning a variety of subjects, facilitating a more comprehensive understanding.
- Training: The entire class can collectively engage in drawing the initial concept map under the teacher's guidance, fostering a collaborative learning environment.
- Practice Session: Each group is tasked with practicing concept mapping, sharing, and comparing their creations. Groups articulate their methodology, allowing the teacher to provide valuable feedback, and emphasizing the importance of planning and revision.
- Reflection and Discussion: To cultivate metacognitive strategies, teachers encourage students to reflect on and discuss their learning experiences, evaluating the applicability of concept mapping in various subjects and real-life scenarios. This approach enhances students' ability to strategize and apply their knowledge effectively.

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C. Teaching Strategies

- Gradual Scaffolding Withdrawal: As students develop their compositional skills, the responsibility for composition shifts gradually from teachers to students.
- Guiding Revision and Refinement: While acknowledging individual differences in students' ideas, teachers must not condone errors in composition. Given the constant need for revision and redrawing in concept mapping, students should be encouraged to refine their work.
- Teacher Sharing: Teachers should openly share their thought processes, including moments of confusion and correction during composition. The process of decision-making observed by students can be more valuable than presenting a flawless result.
- Cooperative Learning: Recognizing concept mapping as an effective cognitive tool, the emphasis is placed on the processes of creation, discussion, sharing, and evaluation rather than solely on the learning outcome. Cooperative composition is crucial for achieving meaningful learning, surpassing individual efforts.
- Student Feedback and Sharing Emphasis: Following the completion of concept mapping, meaningful discussions between teachers and students should take place. Teachers should prompt students to reflect on and evaluate the impact and benefits of their learning, fostering the development of metacognitive knowledge and skills in concept mapping.

Looking into the above if in the preparatory stage concept maps are used following things are to be taken care of:-

1) Educational Goals: The primary objective of teaching is to delineate each learning unit through the representational power of concept mapping. This involves progressively transforming the learning content into suitable concept maps to facilitate effective knowledge acquisition in the field.
2) Textbook Focus: In organizing the course, teachers should align it with the teaching content. This includes identifying the theme of each unit, compiling relevant keywords, and subsequently selecting key terms essential for students to form comprehensive concepts.
3) Analysis of Student Entry Behavior: Assessing students' learning abilities based on past experiences serves as a guiding factor in the teaching process. If a student's entry behavior doesn't sufficiently connect to new learning, the teacher should reinforce it to enhance teaching effectiveness.

4) Teaching Strategies: Teachers need a thorough understanding of the concept mapping process to aptly present thematic concepts in an engaging and accessible manner, ensuring that students find the learning experience both easy and enjoyable.
5) Concept Mapping Types: Concept mapping can be categorized into three types - linking related concepts, presenting causal relationships, and evaluating ideas. Within these, five main types exist fishbone diagrams, spider maps, chain maps, hierarchy maps, and mind maps. Each type serves a distinct purpose in learning. Teachers should align their choice of concept mapping type with the course objectives.

By pre-planning lessons with concept maps that incorporate the mentioned criteria, the lesson plan can achieve depth, and detailed structuring can be accomplished.

Steps for planning lessons using concept maps

- Starting from the topic decision various topics and points related to it need to be put on the map.
- Objectives of various levels need to be decided and written on the map which includes general objectives, specific objectives, and learning outcomes related to it.
- Based on the objectives the teaching activities and based on it student activities are to be chalked out.
- Based on teaching and student activity, evaluation and assessment for all the levels of students should be incorporated into the plan.

The execution of this would lead to a better and more effective liberation of the teaching-learning process in the classroom and to the utmost level the content would be catered to the learner.

Conclusion

The idea behind the paper is to make teacher trainees adapt concept mapping in the lesson planning stage along with the content deliberation stage as well as cater to the learner to better evaluation and assessment levels as per requirement.

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