

Role of Mind Mapping in Higher Education

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Abstract

One of the major problems in education faced by students is to retain new knowledge and to achieve greater degree of utilization of mental abilities. The main objective of educator is to identify, inspire and adopt interactive approach to learning, and to encourage students to be more receptive and cooperative in the classroom. Visual learning techniques are employed to help educators in realizing these goals. Visual learning is a proven teaching method in which diagrams such as concept maps, mind maps, organization charts, tree diagrams, and spider diagrams are used to help pupils of all ages think and learn more effectively and efficiently. They are all used for storing, processing, organizing and presenting information graphically.

One of the most popular techniques to solve this problem is the use of mind maps whose founder is Tony Buzan. This technique gives importance to the combination of imagery, colour and visual-spatial arrangement. Mind mapping is a hierarchy of diagrams which shows the relationships among pieces of the whole and used visually to organize information at one place. Mind maps have been used in all strands of education, training and business. The main objective of this paper is to study the role and importance of using mind maps in higher education. It helps the learner to understand complex concepts and retain knowledge, improve confidence, foster motivation and promote active learning.

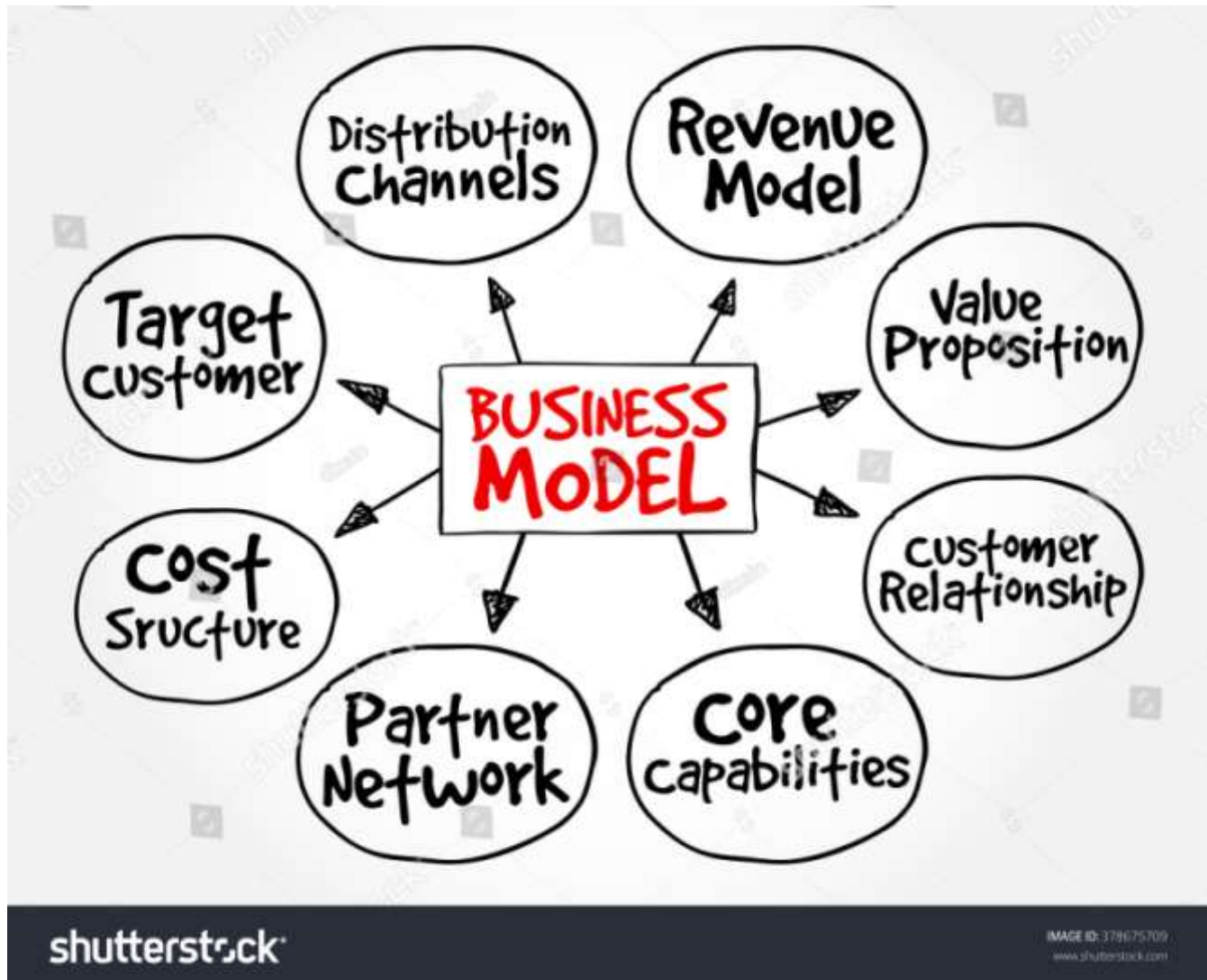
Key words: mind mapping, teaching, learning

Introduction:

Mind mapping is an effective tool for students and educators seeking to maximize the learning experience. A mind map is a learning tool which allows users to create and share visual representations of things like lectures, notes, and research. In education mind mapping is useful for a wide variety of tasks, and can be easily tailored according to the user's needs. Mind mapping strategy is one of the teaching strategies. Mind maps show facts, as well as the overall structure of a subject and the relative importance of individual parts of it. It helps students to think creatively, collaborate ideas, and make connections that might not be possible otherwise (Tony Buzan, 2010)

Mind map was defined by Buzan (1993, pg.59) as "an expression of Radiant Thinking and is therefore a function of the human mind," and "a powerful graphic technique which provides a universal key to unlocking the potential of the brain".

According to Mona and Adbkhalick (2008) mind mapping is useful technique for students to structure their understanding of environmental concepts in more effective way. Graphics organizers assist learning by providing an opportunity for visual, stimuli, brain storming and recording information in assessment, problem solving, checking understanding, creating analogies, elaboration, note taking, summarizing, illustrating sequence of events and other creative ways of instruction. Gregory (2002), Trevino (2005) said there are studies also proving that mind maps contribute to longer retention and recall the information. Buzan (2005), Akinoglu et al (2007), Keles (2011), helps students to see the connections among the pieces of information.



Example of mind mapping figure 1

Source: <https://www.shutterstock.com/image-vector/business-model-mind-map-flowchart-concept-378675709>

Review of literature: Boyson, G. (2009), studied on 'The Use of Mind Mapping in Teaching and Learning'. The Learning Institute, Assignment. The findings revealed that mind map proved to be an effective technique for note making and organizing their thoughts during revision in more appropriate way.

Jain (2015) conducted a comprehensive Study of Mind mapping Technique to Understand Concepts and Ideas in Science Teaching on total 100 students from 5 urban schools, including 50 boys and 50 girls. The study revealed that the performance of mind mapping group was better than the non mind mapping group in subject science.

Ying Liu, Guoqing Zhao, Guozhen Ma and Yuwei Bo (2014) conducted a study on "The Effect of Mind Mapping on Teaching and Learning : A Meta-Analysis." The meta-analysis shows that mind mapping has positive effect on teaching and learning and country, usage, subject and achievement can influence the results.

Stankovic et al (2011) conducted a study on "The evaluation of using mind maps in teaching" the result of the research show that students are more motivated to learn through

the mind maps. So, as mind maps help visualization of the content, students establish better correlation and integration of theoretical and empirical knowledge.

Wickramasinghe et al (2007) conducted a study to know the effectiveness of mind maps for medical students. The study discovered that the majority of medical students agreed that Mind Mapping is to be helpful for memorizing the information in an organized way when compared from previous self-study techniques.

Research conducted by Toi (2009) shows that Mind Mapping can help children recall words more effectively than using lists, with improvements in memory of up to 32%.

A study revealed that Incorporating Mind Mapping in teaching of comprehension skills enhances students' understanding and memory of comprehension passages. Feedback of students also showed that mind mapping is useful technique for organizing and understanding the whole information given in the passage. (Wong-AngGekMoi and Ong Lee Lian, 2007)

A study by Al-Jarf (2009) proves in his study that the group using Mind Mapping software gain higher ability to generate, improve, visualize and organize ideas for their writing.

Mind Mapping in Higher Education

Mind Maps facilitate the learning process:

Mind Maps can facilitate the learning process in a many ways:

Creating Interest and engaging the students' mind: Goodnough and Woods (2002) conducted a case study on student and teacher perception of mind mapping. Their study perceived Mind Mapping as a fun, motivating and interesting approach to learning. Majority of the participants expressed that mind mapping facilitates and improves their learning capacity in variety of ways, when Mind Maps are prepared by using symbols, lots of colours, design and key words.

Organising, integrating and understanding of subject matter: Research by D'Antoni and Pinto Zipp (2005) found in their therapy that majority of students agreed that Mind Map technique accredit them to better organize, understand and integrate the material presented in their course.

Concentration: A study carried at New Church Community Primary School in Warrington showed the diversity of improvements in students' learning after introducing the mind maps in classroom teaching. Evidence includes staying on task for longer periods of time, improved concentration, improved interaction during class discussions and improved independence. Cain (2001/2002)

Mind Maps also promote active learning, create interest, foster motivation, boost confidence, and support a various type of learning styles and levels of ability – all in a fun way!

Self-regulated learning:

Tony Buzan. (2005) stated that Mind Maps are more firm than conventional notes, often taking up one side of paper. It helps students to make associations easily, and generate new ideas. If students find out more information after drawn a Mind Map, then they can easily organize, integrate and associate it with little interruption. A good Mind Map depicts the "shape" of the subject, the relative importance of different individual points, and the particular way in which various facts relate to one another. Students can easily do self-study at home with making notes through mind mapping and can organize all study material at one space during exams.

Leads to better information retention:

Mind map gives a platform to store and retrieve variety of information. Students who engaged in higher studies are familiar with the feeling of information overloaded, their mind can't retain huge amount of information so they get frustrated and stressed caused by racking their brain to remember a concept later. Mind maps provide a solution to this—rather than having excess knowledge stored in our heads with little to tie it all together, this platform gives us the tools to help the information actually make sense.

Mind mapping makesteaching process more effective:

Mind maps help the educator to teach complex topics effectively and efficiently. It provides effective and flexible approach to teacher for preparing lesson plans and helps to boost the self-confidence while delivering the lecture. It also facilitates to recall the whole subject matter and make a class more interactive. Mind maps are visual by nature so it can create learners interest in class during lecture teacher also can share notes on complex topics which are beneficial for learners to understand and recall the whole subject matter during exam.

D'Antoni and Pinto Zipp (2005) recommend that educators incorporate Mind Mapping into their curricula since it is easy to use and involves no cost. There are several options for utilizing the technique such as - 1) pre-lecture format – integrating concepts from assigned readings prior to review by instructor; 2) post-lecture format – integrating concepts from assigned readings and material previously reviewed by the instructor; and 3) case presentations.

It facilitates teaching in many ways:

1. Mind maps used in class to generate discussion create interest among students and improve self-confidence during teaching.
2. It is used to design and prepare the lesson plan for teachers and educators.
3. It helps in organizing the material, create structure of ideas and thoughts and making connection among them.
4. Mind map is useful for assessment by asking students to express their ideas about the topic before and after the class.
5. It is an effective way of evaluating the student' understanding regarding any concept or topic.
6. It is important tools of self-assessment for teachers by evaluating preparation of subject matter and teaching style
7. It is helpful for the teachers to planning the curriculum.

Conclusion: most of the studies revealed that mind mapping is a useful technique for teaching and learning. Where it increases the students' ability to remember, helps in organizing integrating and understanding the subject matter, increases concentration power, creating interest in learning and helpful in making notes, on the other hand it facilitates teacher for preparing curriculum, lesson plan, organizing the material, ideas and thoughts. From the above studies we can conclude that mind mapping proved to be an effective technique for teaching and learning. It makes teaching and learning more effective and interesting.

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