



**TeComp**



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Strengthening Teaching Competences  
in Higher Education  
in Natural and Mathematical Sciences

**Modalities of mental mapping  
method in lecturing and  
teachers' preparatory work**

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**IMPROVEMENT OF PEDAGOGICAL AND METHODOLOGICAL COMPETENCIES OF  
TEACHERS / ASSOCIATES IN HIGHER EDUCATION INSTITUTIONS, Niš,  
December 20-24, 2021**

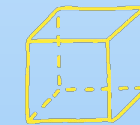


# Why do we have a problem with learning?

- Learning as a complex mental operation
- Unlearned learning rules and techniques
- Problem with remembering abstract data
- Problem with reproducing information exactly in order
- Nonlinear but logically connected abstract information in the brain



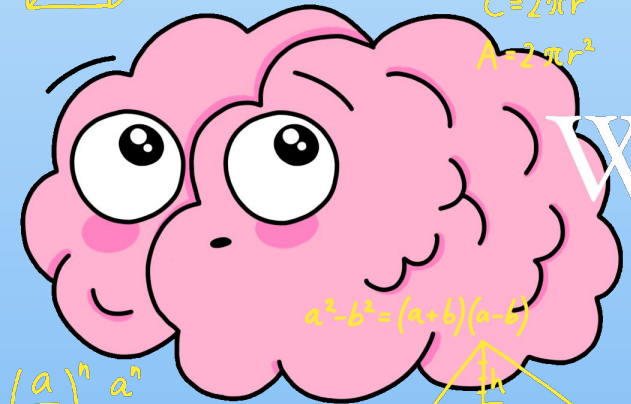
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$$C = 2\pi r$$
$$A = 2\pi r^2$$

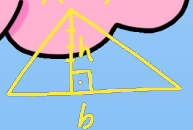


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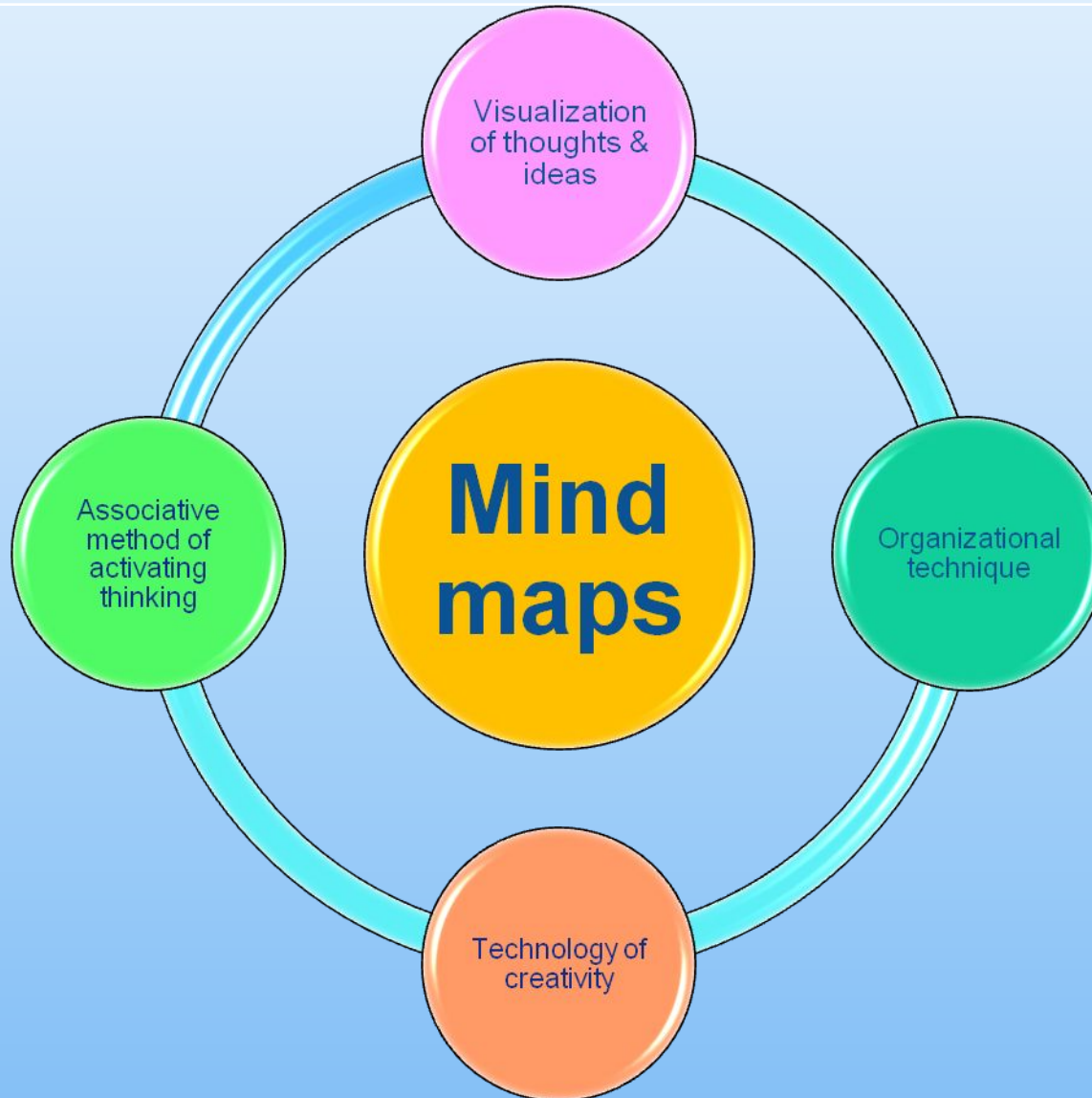


$$\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}$$

$$a^2 - b^2 = (a+b)(a-b)$$



# Mind mapping as a solution for learning problems

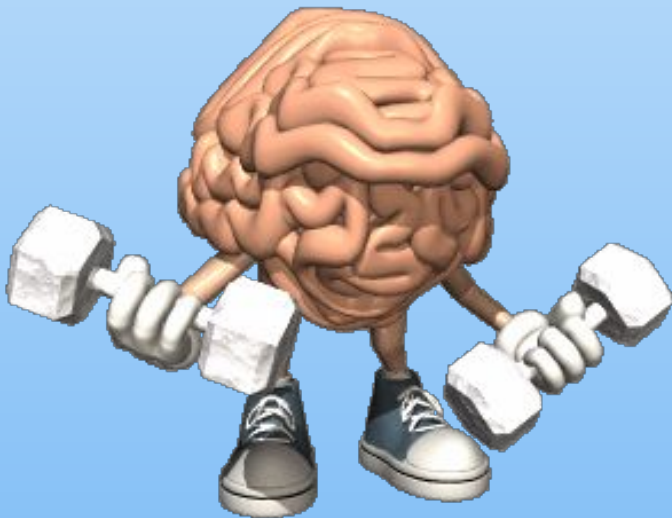


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# When it is useful to use mind maps?

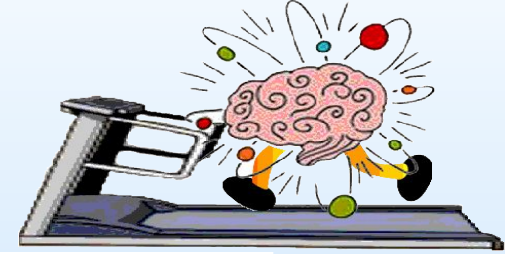
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- ✓ independent learning
- ✓ presentation of a product or service
- ✓ inscription a large amount of information
- ✓ generate new ideas



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# Mind mapping in education



## Benefits:

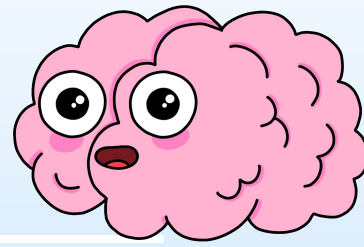
- ❖ improving the quality of teachers' work
- ❖ better understanding and retaining students' knowledge
- ❖ confining lesson information into one space
- ❖ grasping complex topics and ideas
- ❖ active and multisensory engagement
- ❖ associating various pieces of seemingly disconnected information
- ❖ better information retention and making sense
- ❖ linking end goals with current thought processes
- ❖ capitalizing research and action at post-secondary level

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# Using mind maps in the classroom



- ❑ creating a curriculum overview or lesson plan
- ❑ organizing and managing class projects
- ❑ creating introductory presentations
- ❑ designing discussion templates and fostering critical thinking
- ❑ facilitating oral exams and lesson reviews
- ❑ creating games, quizzes and questionnaires

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# How to create mind map?

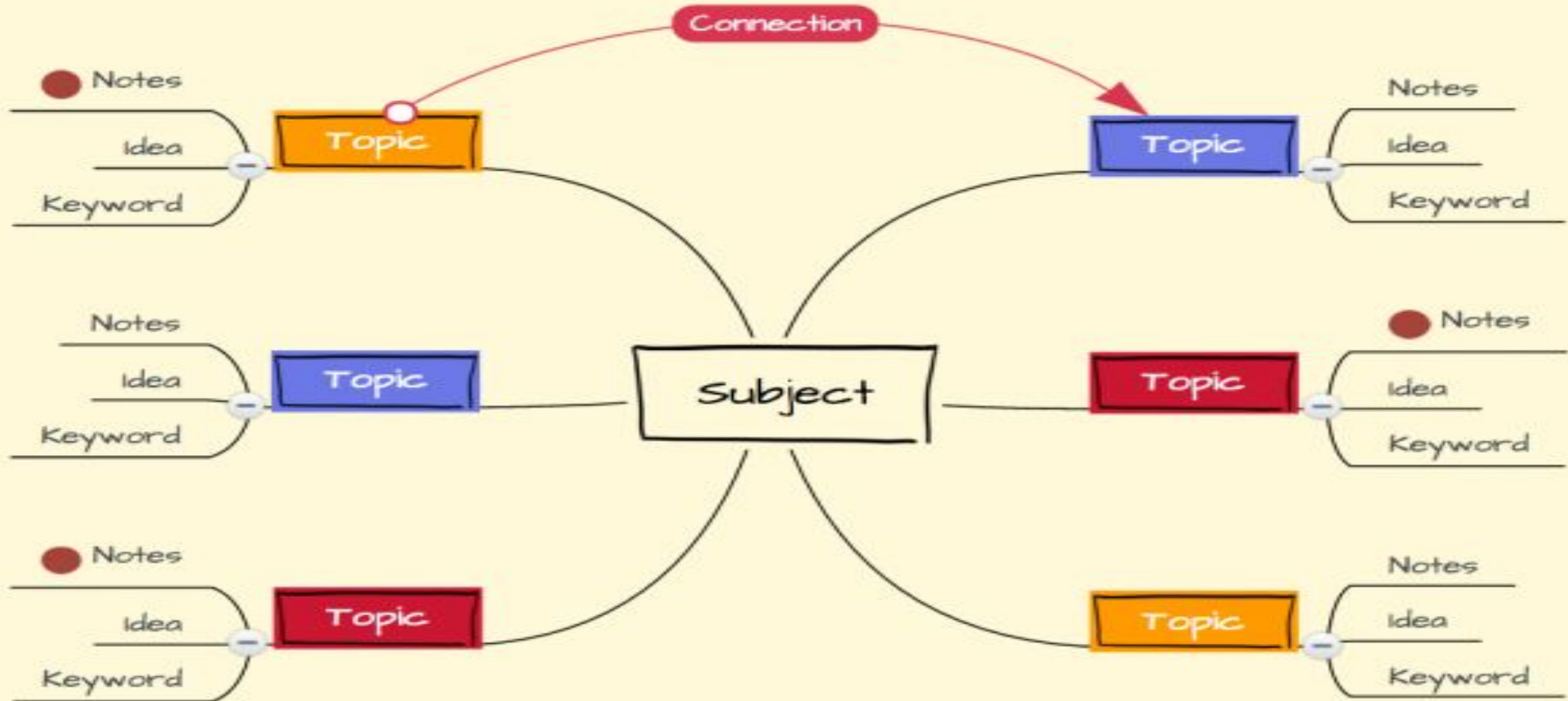


1. Write the **subject in the center** of your paper / canvas
2. **Draw branches** that point away from the center (thoughts and ideas – use meaningful keyword)
3. From each **branch more ideas can branch off** (hierarchical levels in a map)
4. **Use colours, icons and images** (mental triggers for sparking new ideas)

Central Topic



# Map structure







# Final product



Romeo and Juliet:  
Love and Death -  
Text Passages

*"If he be married. / My grave is like to be my wedding bed"*

- ➔ If Romeo is married, Juliet will die unmarried
- ➔ Juliet is foreshadowing her real death

*"Life were better ended by their hate, / Than death prorogued, wanting of thy love."*

- ➔ Romeo would rather die right now than later and without her love

*"The earth that's nature's mother is her tomb; / What is her burying grave that is her womb"*

- ➔ Everything that grows, grows from the earth, and everything that grows dies and returns to the earth

*"Do thou but close our hands with holy words, / Then love-devouring death do what he dare; / It is enough I may but call her mine"*

- ➔ Death can't scare Romeo as long as he is with Juliet

*"I'll to my wedding-bed; / And death, not Romeo, take my maidenhead!"*

- ➔ Romeo has been banished
- ➔ Juliet thinks that his absence will kill her

# Mind mapping software and tools

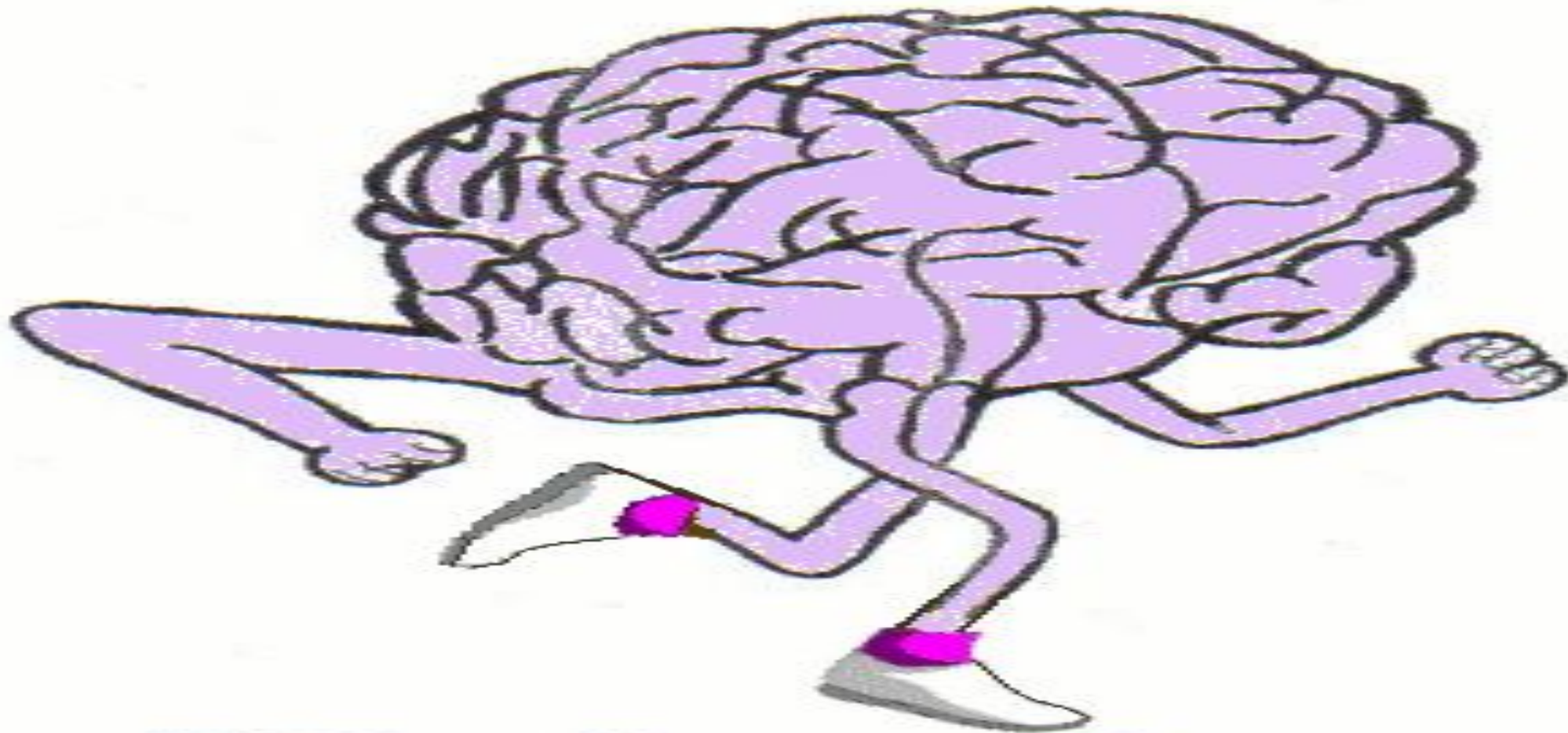
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- iMindMap
- FreeMind
- Mindjet Mind manager
- Mural
- MindMeister
- Ayoa
- Kialo
- ...



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# THANK YOU FOR YOUR COOPERATION



**Mind to Run**