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USE OF THE ACTIVATING TECHNIQUE – MIND MAPPING – IN THE IMPLEMENTATION OF THE SUBJECT: ECONOMIC SECURITY

WYKORZYSTANIE TECHNIKI AKTYWIZUJĄCEJ – MIND MAPPING – W REALIZACJI PRZEDMIOTU: BEZPIECZEŃSTWO EKONOMICZNE

"*The soul never thinks without a mental image*."

Aristotle

Abstract**:** The aim of this paper is to present and encourage the use of activation methods in conducting classes with students. The article describes one activation technique – Mind Mapping. The author also describes the course of summary classes in the subject of 'Economic Security', during which this technique was used. The main objectives of conducting the above mentioned classes using Mind mapping were: 1. To include all students from a given group in the process of summarizing the knowledge of a given subject; 2. To motivate students to independently systematize the content learned during the classes. The author also asked herself the questions: 1. Is it worth combining the so-called traditional forms of teaching with activating methods? Do students like classes with the use of active methods? On the basis of literature review and students' answers to a survey conducted at the end of classes, it can be definitely confirmed that it is worthwhile incorporating activation methods during classes as they actively engage students in the learning process. The use of activation methods leads to a significant increase in efficiency and improvement of the entire didactic process.

The following research methods are used in this paper: a literature review on the presented topic and a survey questionnaire. The purpose of the literature review is to introduce the reader to the activation methods, their division and the individual steps of creating mind mapping. The purpose of the questionnaire survey among students was to obtain feedback on how to conduct classes with the use of the mind mapping activation method. The article presents a map made by students of the National Security major, as part of the final classes of the course 'Economic Security' implemented in the academic year 2018/2019, who prepared a summary of the acquired knowledge using the discussed activation technique.

***Zarys treści*:** Celem artykułu jest przedstawienie i zachęcenie do stosowania metod aktywizacyjnych w prowadzeniu zajęć ze studentami. Artykuł opisuje jedną technikę aktywacji – Mind Mapping. Autorka pisze również o przebiegu zajęć podsumowujących z przedmiotu „Bezpieczeństwo ekonomiczne", podczas których zastosowano tę technikę. Głównymi celami prowadzenia w/w zajęć z wykorzystaniem Mind Mapping były: 1. Włączenie wszystkich studentów z danej grupy w proces podsumowania wiedzy z danego przedmiotu; 2. Zmotywowanie studentów do samodzielnego usystematyzowania treści poznanych na zajęciach. Autorka zadała sobie również pytania. 1. Czy warto łączyć tzw. tradycyjne formy nauczania z metodami aktywizującymi? Czy uczniowie lubią zajęcia z wykorzystaniem metod aktywnych? Na podstawie przeglądu literatury oraz odpowiedzi studentów na ankietę przeprowadzoną na zakończenie zajęć można z całą pewnością stwierdzić, że warto na zajęciach stosować metody aktywizujące, które aktywnie angażują studentów w proces uczenia się. Stosowanie metod aktywizacyjnych prowadzi do znacznego wzrostu efektywności i usprawnienia całego procesu dydaktycznego.

W pracy wykorzystano następujące metody badawcze: przegląd literatury przedmiotu oraz kwestionariusz ankiety. Celem przeglądu literatury jest zapoznanie czytelnika z metodami aktywizacji, ich podziałem oraz poszczególnymi etapami tworzenia map myśli. Celem badania ankietowego wśród uczniów było uzyskanie informacji zwrotnej na temat prowadzenia zajęć z wykorzystaniem aktywizacyjnej metody mapowania umysłu. W artykule przedstawiono mapę wykonaną przez studentów kierunku Bezpieczeństwo Narodowe w ramach zajęć końcowych realizowanych w roku akademickim 2018/2019 kursu „Bezpieczeństwo ekonomiczne", którzy przygotowali podsumowanie zdobytej wiedzy z wykorzystaniem omawianej techniki aktywizacyjnej.

***Key words*:** activating methods, activating techniques, Mind maps, didactic process
***Słowa kluczowe*:** metody aktywizujące, techniki aktywizujące, mapy umysłu, proces dydaktyczny

Introduction

Globalization, dynamic technological progress, almost unlimited access to information, and at the same time social isolation of the younger generation, due to the current pandemic, pose new challenges to civilization, especially to teaching staff at all levels of education.[1]

The development of civilization and the resulting economic, social and cultural changes are the causes of changes in people, their needs and abilities. These changes are the result of people striving to adapt to the new situation by acquiring knowledge, experience and competences helpful in finding themselves in the surrounding reality. The need to acquire knowledge and the ability to use it in life is one of the elementary human needs described by psychologists, as well as the purpose of the educational process, which accompanies a person for most of their life.[2]

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[1] M. Szewczuk-Stępień, M. Adamska, *Efektywność procesu dydaktycznego wykorzystującego metody aktywizujące. Współczesne zarządzanie. Koncepcje i wyzwania*, A. Sopińska, A. Modliński (red.), SGH, Warszawa 2020, s. 359–376.

[2] S. Rapacka-Wojtala, *Metody aktywizujące w nauczaniu dorosłych, czyli jak sprawić, aby studentom chciało się chcieć*, 187_208_Rapacka-Wojtala.pdf (lodz.pl), [access: 04.12.2021].

When it comes to higher education teaching, it is worth noting that it is now significantly different from the patterns of learning that operated back in the 20th century. Universities now operate in a single market, giving members of their community almost unlimited opportunities to study in another country or at another university. Thanks to this approach, students are becoming citizens of the world, aware of the opportunities created by the global market. Of course, their awareness of their value also increases, i.e. they know exactly what they expect. Globalization thus poses a number of challenges to the development of the teaching, learning and creativity process, among which are the following:[3]

- the university is no longer just a place of transmitting and acquiring knowledge, it is a space where personalities permanently meet and forms of communication evolve (e.g. Internet knowledge portals are created and used);
- students constitute a social group, which efficiently uses modern information technologies (e.g. creating network communities, using pedagogical platforms, including simulation games);
- an academic teacher must create a climate for greater involvement of learners in the learning process, thereby giving them responsibility for the outcome of their education;
- society is brought up in the constant presence of television and the Internet, and as we know, modern media provide strong visual and auditory impressions, which in turn stimulates greater creativity;
- the student is more and more often also an employee who has to face the necessity of solving real problems on a daily basis, therefore the tasks set before them must be ambitious.

Currently, universities are places where students develop their own talents and bring out their creative potential. All this should take place in the spirit of subjectivity, personalism and individualism.[4]

One of the ways to improve the quality of the educational process is to use activating methods in didactic work. It is these methods that are an integral part of problem-based learning, they fit into the models of inquiry teaching and cooperative learning.[5]

[3] M. Szewczuk-Stępień, M. Adamska, *Efektywność procesu dydaktycznego wykorzystującego metody aktywizujące, Współczesne zarządzanie. Koncepcje i wyzwania*, A. Sopińska, A. Modliński (red.), SGH, Warszawa 2020, s. 359–376.

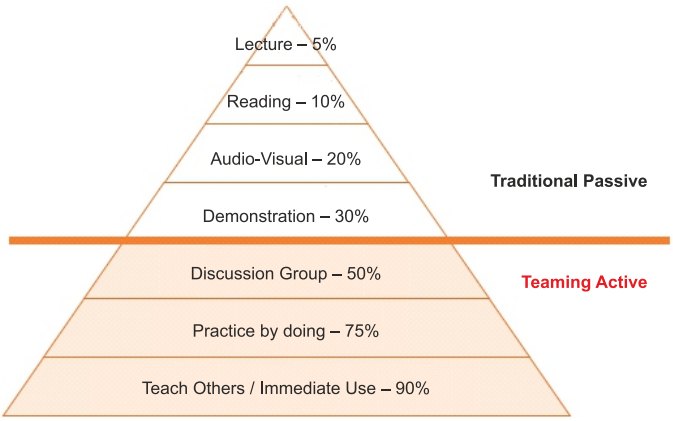
[4] J. Wnęk-Gozdek, *Formy i metody aktywizowania studentów, Formy i metody aktywizowania studentów*, [w:] *Współczesne wyzwania dydaktyki szkoły wyższej* (up.krakow.pl), [access: 04.12.2021].

[5] J. Wnęk-Gozdek, *Formy i metody aktywizowania studentów...*, *op. cit.*

Learning pyramid

Looking at the process of knowledge transfer, it is worth noting the so-called learning pyramid (Figure 1), showing the average percentage value of content assimilated by the student and transferred by different teaching methods. It shows that from a lecture delivered by a traditional method, only 5% of the material is remembered. Multimedia presentation shows about a 20% recall, while the most ambitious classes so far, with the use of IT equipment, results in only 30% of the material being memorized. Much better results, as much as 50% of the assimilation of content, can be obtained during the seminar form of classes, in which students are inspired to exchange views during discussions. As much as 75% of the material will be learned through practical activities such as well-planned projects, preferably team projects. However, the most beneficial effects are achieved when students use the acquired knowledge on an ongoing basis and pass it on independently to other students in an understandable form.[6]

Fig. 1. Learning pyramid



Source: Pawełczyk M., *Nowoczesne metody nauczania w technicznej uczelni wyższej*, URL: https://www-arch.polsl.pl/Jednostki/RJO3-KS/Documents/MPawelczyk.pdf [access: 04.12.2021].

It is precisely the greatest percentage of assimilation, understanding and also recall of information that is associated with teaching another person. It is about the student transferring the knowledge to another student in such a way that it is understandable and that this person is able to apply it in practice.[7]

[6] M. Pawełczyk, *Nowoczesne metody nauczania w technicznej uczelni wyższej*, https://www-arch.polsl.pl/Jednostki/RJO3-KS/Documents/MPawelczyk.pdf, [access: 04.12.2021].

[7] *Ibidem*.

Activating methods

"That old idea that you can turn up to the lecture to sit passively and get filled up with knowledge, just does not stand the test: You have to work actively in order to learn anything…"[8]

A teacher stands in the front of the classroom and talks. Students listen and maybe take notes. After the lecture, students write in their notebooks and complete exercises. Sound familiar?

This model of teaching, where a teacher provides information and pupils' role is just to sit still and listen, is an old school method. Sometimes there is a place for this model as well, but if it is the only teaching method in the class, all skills (in learning, socializing, collaborating) will become narrow. Traditional teaching is only one part, although it still has an important role in creating peace and safety in the classroom. Students of different ages need different methods.[9] That old idea that you can turn up to the lecture to sit passively and get filled up with knowledge just does not stand the test: you have to work actively in order to learn anything – both pedagogic and neurobiological research show this. In order to understand and remember what is being said in a lecture it is crucial that the students are made to use that new knowledge during the lecture. Students should constantly be made to reflect and relate to questions – they should constantly have the feeling of being "on." This principle counts for all kinds of teaching.[10]

Active learning is an approach to instruction that involves actively engaging students with the course material through discussions, problem solving, case studies, role plays and other methods. Active learning approaches place a greater degree of responsibility on the learner than passive approaches such as lectures, but instructor guidance is still crucial in the active learning classroom. Active learning activities may range in length from a couple of minutes to whole class sessions or may take place over multiple class sessions.[11]

Activating methods are a category of methods characterized by the fact that in the teaching process the students' activity should exceed the activity of the lecturer. These methods, by definition, stimulate greater involvement, are more attractive and characterized by higher efficiency. The main advantage of this approach is the possibility of improving skills that are useful not only during the classes, but also in everyday life, including professional life, e.g. the ability to think analytically, to look critically, to combine facts and events, and above all to make inferences. Activation teaching methods emphasize that their foundation is to 'activate' students by teaching them

[8] https://medium.com/cultivate-grow-your-teaching/tips-for-student-activating-teaching-fe72a-e0c8de9, [access: 04.12.2021].

[9] https://learningscoop.fi/activating-methods-in-classroom/, [access: 04.12.2021].

[10] https://medium.com/cultivate-grow-your-teaching/tips-for-student-activating..., *op. cit.*

[11] https://www.queensu.ca/teachingandlearning/modules/active/04_what_is_active_learning.html, [access: 04.12.2021].

how to ‚discover' on their own using real examples and with the mentoring support of the teacher[12].

The use of a variety of activity-based methods in working with students is important because information from the human external environment is received through all the senses in a polysensory manner. Full use of the brain's potential results from the participation of all the senses in the process of getting to know the world and learning.[13] As a result of these changes, the teacher ceases to be a specialist in their field and becomes a facilitator of the learning process. They take on the role of a reflective researcher and creator of the learning process.[14] When using activating methods, imagination, experiencing, using emotional strategies play an important role, which is based on research on the brain, because it is known that information with an emotional tone is easier to remember than neutral information.[15] How to define an activating method? One definition explains that the activation methods are, a group of teaching methods characterized by the fact that in the learning process the activity of the learner exceeds the activity of the teaching subject. In order to better understand the above definition, it is worth analysing it carefully:[16]

- the focus is shifted from the educational programme to the learner, developing their competencies,
- the learner is the active subject; they acquire knowledge through their own experience and exploration,
- the task of the teacher is to create a reality that is conducive to acquisition, emotional involvement, solving difficult situations,
- teaching takes into account all the processes of group dynamics.

[12] M. Szewczuk-Stępień, M. Adamska, *Efektywność procesu dydaktycznego wykorzystującego metody aktywizujące. Współczesne zarządzanie. Koncepcje i wyzwania*, A. Sopińska, A. Modliński (red.), SGH, Warszawa 2020, s. 359–376.

[13] B. Gola, D. Pauluk, *Stosowanie metod aktywizujących przejawem profesjonalizmu nauczyciela akademickiego*, https://edukacjaustawicznadoroslych.itee.radom.pl/images/2015/2/03_2_2015.pdf, [access: 04.12.2021].

[14] J. Wnęk-Gozdek, *Formy i metody aktywizowania studentów...*, *op. cit.*

[15] B. Gola, D. Pauluk, *Stosowanie metod aktywizujących przejawem profesjonalizmu...*, *op.cit.*

[16] J. Wnęk-Gozdek, *Formy i metody aktywizowania studentów...*, *op. cit.*

Activating methods and techniques

Give me a fish and I will have something to eat all day long.
Teach me to fish and I will have something to eat all my life.

J. Krzyżewska

In the literature you can find the terms: methods and techniques of activation. What is the difference between methods and techniques and is there any systemization of them?

Activation methods and techniques have been classified in a number of ways. One of the many possible attempts to organize the methods and techniques of activation is a distinction presented by A. Klimowicz, who indicates the division of methods and assigns each of them specific techniques A. Klimowicz distinguishes:[17]

- discussion (with the associated techniques: panel debate, pros and cons, meta-plan, six hats according to de Bono);
- role-playing (techniques: simulations, didactic games and plays, drama, role--plays);
- analysing and solving problems (techniques: brainstorming, decision tree, 'U' procedure, pyramid of priorities, diamond ranking, case study);
- learning in small teams (corresponding techniques: puzzle, snowball, relay);
- visualization (techniques: mind map, map of associations, creating posters, comics, rebus, interactive exhibition);
- project;
- portfolio;
- task stations.

The origins of Mind Maps

Mind maps emerged in the 1970s. Their creator is considered to be the English psychologist Tony Buzan, who died in 2019, who, together with his brother (Barry Buzan) developed their theoretical basis and then practical applications in various fields – from education to business.[18]

One classic definition is that: 'Mind maps are a system for storing, organizing, and prioritizing data using words and pictures, each of which will stimulate specific memory resources and stimulate new thoughts and insights'. According to another definition: 'Mind maps are a method of creating notes in graphical form. They make it easier to organize and structure information – making it easier to remember and understand'. To draw up a mind map you not only need to

[17] B. Gola, D. Pauluk, *Stosowanie metod aktywizujących przejawem profesjonalizmu..., op.cit.*
[18] A. Radomski, *O zastosowaniu map myśli w nauce i edukacji*, „Kultura i Historia" nr 36/2019 (2).

understand the content, but also know how to organise the information to a high enough degree.[19]

The genesis of Mind maps was the idea that we could take notes in a different way and then remember the data they contain better when we use different note-taking methods. The previous method, which is still dominant, consists in writing certain information in a linear order, i.e. from left to right and from top to bottom. Most of the time, such notes have the form of sentences, the same letter size, colour and some phrases may be bulleted at most. This system of note taking, as T. Buzan points, out has many disadvantages. The most important ones include:[20]

- length of notes;
- difficulty in memorizing;
- time-consuming execution;
- lack of stimulation of the brain for further creative and imaginative work.

In addition, these types of notes are difficult to add to and expand upon. As Tony Buzan wrote, 'This system uses only left-brain memory mechanisms in which words, tables, logic, order, sequence, and numbers play a major role. Imagination, association, exaggeration, humour and absurdity, colour, rhythm and sensory impressions are completely ignored'. Mind maps are more effective because, according to Tony Buzan, they better reflect how the brain works. The human brain does not think linearly but in different directions at the same time – starting from single, central starting points, in the form of images or keywords (Figure 2) – this is called radial thinking. Thus, the concept of Mind maps is designed to function like the brain, i.e. to reflect the radial thinking mentioned above.[21]

The first Mind maps appeared over 40 years ago. They were drawn up by hand on sheets of paper. The technological revolution and the advent of the digital age have 'revitalised' the classic Mind map. Tools for creating digital Mind maps have been developed and their appearance has significantly broadened their functions and possibilities. Currently, Mind maps are mainly created on computers and various types of mobile devices (tablets, smartphones, etc.).[22]

[19] *Ibidem*.
[20] *Ibidem*.
[21] *Ibidem*.
[22] *Ibidem*.

Fig. 2. Neurons in the brain – radial thinking

Source: https://wyborcza.pl/napamiec/7,139301,16645287,ile-mamy-neuronow-w-mozgu.html?disableRedirects=true, [access: 04.12.2021].

What is Mind Mapping?

Mind maps were defined by Buzan 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. Mind mapping has four essential characteristics:

1. the subject attention is crystallized in a central image;
2. the main themes of the subject radiate from the central image as branches;
3. branches comprise a key image or key word printed on an associated line, and
4. the branches form a connected nodal structure.

Similar to a concept map, a Mind map is also a kind of graphic organizer, which is described as two-dimensional visual knowledge representations, including flowcharts, timelines and tables. They show relationships among concepts or processes by means of spatial position, connecting lines and intersecting figures.[23]

Mind maps are graphical representations of information. In contrast to the traditional, linear notes you might make in a text document or even on paper, Mind maps let you capture thoughts, ideas and keywords on a blank canvas. These ideas are organized in a two-dimensional structure, with the title/main idea always located in the centre of the map for visibility. Related ideas branch off from the centre in all directions, creating a radiant structure.[24]

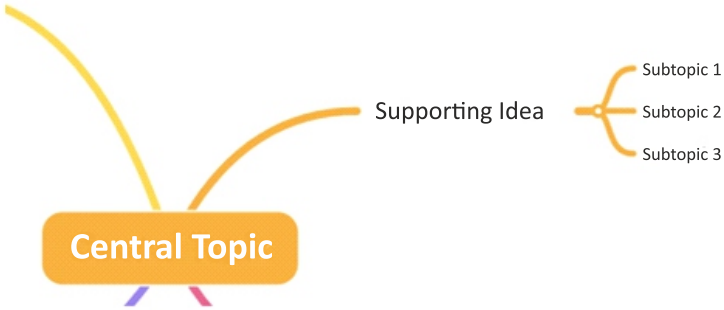
[23] Ying Liu, Guoqing Zhao, Guozhen Ma and Yuwei Bo, *The Effect of Mind Mapping on Teaching and Learning Meta-Analysis*, https://www.researchgate.net/publication/297833919_The_Effect_of_Mind_Mapping_on_Teaching_and_Learning_A_Meta-Analysis, [access: 04.12.2021].

[24] https://www.mindmeister.com/blog/why-mind-mapping/, [access: 04.12.2021].

Mind mapping is a powerful technique to help you visually develop and organize ideas and information. Mind maps provide a structured way to capture and organize ideas and information. They help users to understand concepts by breaking them down into their component parts. The technique is used to develop new ideas, or to break down and better understand existing information. Whether developing new ideas or organizing existing information, Mind maps help you see how information fits together. Mind maps provide an expansive and flexible structure to support one's thinking.[25]

Unlike other visual diagrams, a Mind map is built around a single central topic (Figure 3). All the information on the map is "anchored" to the same start point. By placing the main idea at the centre, it is easier to understand the core focus of the Mind map (Figure 4).[26]

Fig. 3. Principles for creating a Mind Map



Source: https://www.mindmaps.com/what-is-mind-mapping, [access: 04.12.2021].

Tree-like branches make up a Mind map. They can expand and grow as you develop your ideas. Each branch shows information organized as topics and subtopics, based on categorizations and connections identified by the map creator. The result is a structured hierarchy of information at all levels of the Mind map.[27]

Reasons to use Mind mapping[28]

The list of benefits of Mind maps is very long. First of all, Mind maps can help you:

- Improve your memory with visual cues, words and images.
- Identify relationships between different topics.
- Develop your subject understanding.

[25] https://www.mindmaps.com/what-is-mind-mapping, [access: 04.12.2021].
[26] *Ibidem*.
[27] *Ibidem*.
[28] https://www.port.ac.uk/student-life/help-and-advice/study-skills/mind-mapping, [access: 04.12.2021].

– Connect your ideas and experiences to the literature you study.
– Explore subjects broadly and in depth.
– Organise your thoughts to plan and structure assignments.
– Decide what to include or exclude in projects, including contextual information.
– Introduce new ideas and resources to a topic as you learn more about it.

Building a Mind map[29]

1. Write your map subject in the middle of the page. Your content will link to this subject and spread out from the main heading. Your subject could be a topic or idea, or information from a text.
2. Add key ideas to your map by writing their headings on the page and drawing a connecting line between them and your main heading. Continue breaking each section down and adding links between subjects to create smaller, specific Mind maps on the page. This is a great chance to explore specific topics more deeply.
3. Use key words or images to represent each piece of information.
4. Link new content to your current map – ideas should always be connected to something else in the Mind map. Adding new information to your current map layout encourages you to engage with the content so you can decide if it needs to be included and where it fits in your structure.
5. Change the style, size or colour of items to represent important content.
6. Use colours to identify themes and relationships. Some information in your map may fit more than one map 'branch.' Colour-coding and extra connecting lines will help you keep track of this.

Who uses Mind mapping?[30]

Mind mapping is used by people in business, education, government, the charity sector and at home.

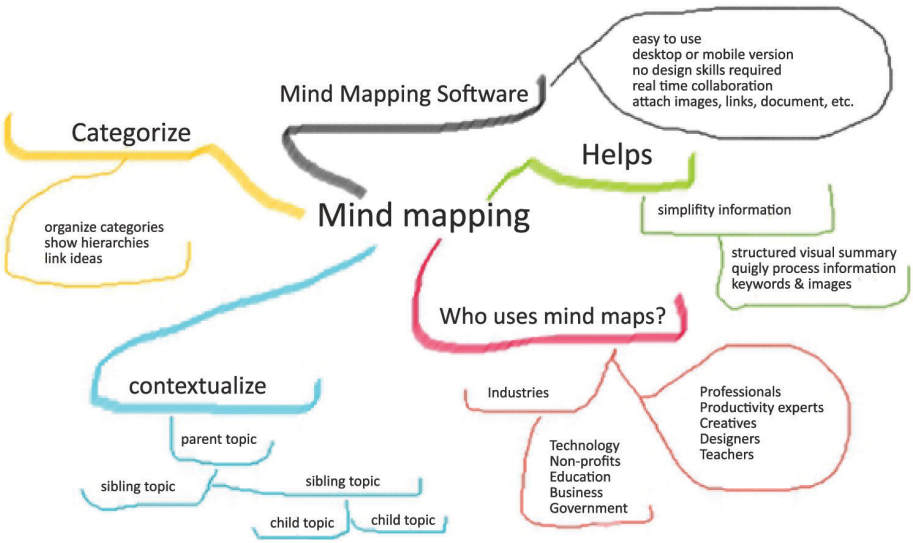
In **business**, Mind mapping is used for project planning, strategic thinking and managing meetings. Mind mapping software helps teams to **develop their ideas more collaboratively**. Online mapping allows people to build off of each other's ideas and develop a shared understanding of a situation. It can also break down complex projects into more manageable parts.

In **education**, students of all ages use Mind maps for note taking, summarizing subject information and planning written assignments. Educators are use Mind maps for lesson planning, innovative homework assignments and group exercises

[29] *Ibidem*.
[30] https://wwwmindmaps.com/what-is-mind-mapping, [access: 04.12.2021].

in the classroom. Outside of these fields, many individuals use Mind maps to help with their organization and future planning. People often use Mind maps to plan their weeks, their goals and their careers.

Fig. 4. Basic information about the Mind Map



Source: based on https://www.mindmaps.com/what-is-mind-mapping, [access: 04.12.2021].

The use of a Mind map during classes with students

Students majoring in National Security as part of the final classes of the course 'Economic Security' conducted in the academic year 2018/2019 prepared a summary of the acquired knowledge, using the Mind Mapping technique. The main objectives of conducting the activity using Mind mapping were:

1. to involve all the students in the group in the process of summarizing the knowledge of the subject;
2. motivating students to independently systematize the content learned during the classes.

The summary session began with a presentation of information about the Mind Mapping technique, its origins, benefits of its use and rules of creation. Then students were divided into groups of 4–5. Each group was given large sheets of paper and different coloured marker pens. Students were given the following instructions:[31]

[31] The Effects of Mind Mapping Activities on Students' Motivation, https://digitalcommons.georgiasouthern.edu/cgi/viewcontent.cgi?article=1314&context=ij-sotl, [access: 04.12.2021].

Step one: Brainstorm:

1. Write the topic in the centre of a blank page. Topic: State economic security.
2. Use colours, pictures, words, and symbols to record any ideas, topics, research or theories that are associated with the topic. You can place these anywhere on the page. Associate freely and do not filter out ideas at this point; anything and everything is okay.

Step 2: Organization:

1. Map the relationships between the ideas or key points using lines, arrows, colours and words to link them.
2. Identify the type of relationship between ideas or points, such as: contrasts, similarities, cause and effect. Write these relationships along the linking lines.

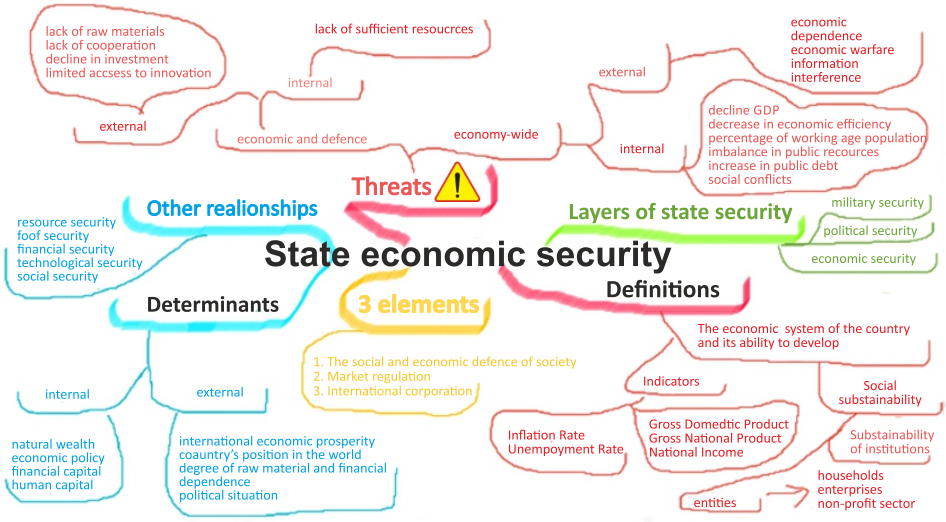
Step 3: Mind Map:

1. Once you are comfortable with the associations and organization in your brainstorm, then use the ideas that you have developed to draw out your final Mind map.

After completing the task, each group discussed their Mind map.

A selected Mind map, representing the learned issues related to National Economic Security, that was made by students is shown in Figure 5.

Fig. 5. Mind Map –State economic security



Source: Prepared on the basis of a Mind map made by students of National Security.

After discussing the Mind maps, students were asked to complete a short survey (4 questions and an opportunity to freely write comments) regarding their evaluation of how the activities were conducted. The survey included the following questions:

1. Did you like the way the class was conducted using the Mind mapping technique?

- ☐ definitely yes
- ☐ rather yes
- ☐ difficult to say
- ☐ rather no
- ☐ definitely no

2. Did the tutor explain the principles of Mind mapping in an understandable way?

- ☐ definitely yes
- ☐ rather yes
- ☐ difficult to say
- ☐ rather no
- ☐ definitely no

3. During the classes in which teams worked using the Mind mapping technique, was the atmosphere conducive to communication and cooperation?

- ☐ definitely yes
- ☐ rather yes
- ☐ difficult to say
- ☐ rather no
- ☐ definitely no

4. How would you assess the way the classes were conducted using the Mind mapping technique?

- ☐ definitely high, I was able to recall and systematize a lot of information
- ☐ rather highly
- ☐ difficult to say
- ☐ I prefer lectures where the teacher presents the content
- ☐ I did not like the way the classes were conducted

Twenty-seven students responded to the survey presented above. Twenty-three students answered that they definitely liked the way the Mind mapping activities were conducted (three students answered rather yes, and one student answered difficult to say). Twenty students strongly agreed that the teacher explained the principles of Mind mapping in an understandable way (five students answered – rather yes; two students – difficult to say). Twenty-one students indicated working in an atmosphere conducive to communication and cooperation (five students answered – rather yes; one student – difficult to say). Nineteen students assessed the way the classes were conducted using Mind mapping techniques as very high; five students – rather high; two – difficult to say; one student chose the answer: I prefer lectures where the teacher presents the content. Interestingly, there were sixteen freely given comments in the questionnaires which presented their own opinions about the conducted classes. Some of the opinions were:

1. the time passed exceptionally quickly for me during this class;
2. it's been a long time since I had so much fun during the classes, is it possible to conduct such classes more often?
3. I like this way of repeating knowledge. I will use Mind mapping when preparing for other subjects.
4. I like working in a team.
5. it's amazing how on one page quite a lot of knowledge can be presented.

On the basis of the students' answers in the survey conducted at the end of the classes, it can be definitely confirmed that it is worthwhile incorporating activation methods during the classes, as they introduce the culture of teamwork as well as engage the students actively in the learning process. This leads to a significant increase in efficiency and improvement of the entire didactic process in a given subject.

Conclusions

The traditional view of the student as someone whose task is to absorb the information provided by the teacher must, to an even greater extent, give way to an approach in which the teacher acts as a guide. A special place in teaching should be given to the teacher-student relationship and solutions that allow it to evolve into a master-student relationship. The lecturer should become an inspiration to gain knowledge and should try to prepare the student to seek and deepen it independently.[32]

It is commonly said that university graduates enter the job market with extensive knowledge, but very often without the ability to use it in practice in an organization. Therefore, an important element of the applied methodology should be a skilful

[32] M. Szewczuk-Stępień, M. Adamska, *Efektywność procesu dydaktycznego wykorzystującego metody aktywizujące*, *Współczesne zarządzanie. Koncepcje i wyzwania*, A. Sopińska, A. Modliński (red.), SGH, Warszawa 2020, s. 359–376.

combination of forms and techniques of classes, or finding the so-called golden mean in the use of administering methods (e.g. lecture, talk) and activating methods (e.g. discussion, simulations, training games, case studies, brainstorming, solving practical tasks).[33]

Obviously, in order to increase the effectiveness of the teaching process, the staff must have appropriate qualifications and didactic and scientific competences and regularly improve and update them. Lecturers should be increasingly obliged to use diversified didactic methods involving students in the learning process and to use innovative educational methods.[34]

It is also crucial to convey knowledge to students in a communicative way, to teach them to associate facts, to show connections with subjects composing a coherent study programme, to instil the ability to work effectively in a team, while retaining courage and sound argumentation in presenting their ideas.[35]

For this to be possible, it is necessary to take into account the individual predispositions of the student, the conditions in which the learning process takes place and the existing atmosphere in the group. Also important are the personal predispositions of the lecturers themselves, their preferences regarding the subject they teach and their teaching experience. Being a good facilitator and guide is a great art. M. Taraszkiewicz points out another very important issue that must be taken into account when using these methods: 'each activation method has its own specificity, involves a different type of experience and brings – in effect – (different) educational results'. Therefore, the use of activating methods in the process of education should always be preceded by thorough preparation and planning of individual steps.[36]

Bibliography

Gola B., Pauluk D., *Stosowanie metod aktywizujących przejawem profesjonalizmu nauczyciela akademickiego*, https://edukacjaustawicznadoroslych.itee.radom.pl/images/2015/2/03_2_2015.pdf, [access: 04.12.2021].

Pawełczyk M., Nowoczesne metody nauczania w technicznej uczelni wyższej, https://www-arch.polsl.pl/Jednostki/RJO3-KS/Documents/MPawelczyk.pdf, [access: 04.12.2021].

Radomski A., *O zastosowaniu map myśli w nauce i edukacji*, "Kultura i Historia" 2019, nr 36 (2).

Rapacka-Wojtala S., *Metody aktywizujące w nauczaniu dorosłych czyli jak sprawić, aby studentom chciało się chcieć*, 187_208_Rapacka-Wojtala.pdf (lodz.pl), [access: 04.12.2021].

[33] M. Szewczuk-Stępień, M. Adamska, *Efektywność procesu dydaktycznego wykorzystującego metody aktywizujące. Współczesne zarządzanie. Koncepcje i wyzwania*, A. Sopińska, A. Modliński (red.), SGH, Warszawa 2020, s. 359–376.

[34] *Ibidem*.

[35] M. Pawełczyk, *Nowoczesne metody nauczania w technicznej uczelni wyższej*, https://www-arch.polsl.pl/Jednostki/RJO3-KS/Documents/MPawelczyk.pdf, [access: 04.12.2021].

[36] J. Wnęk-Gozdek, *Formy i metody aktywizowania studentów..., op.cit.*

Szewczuk-Stępień M., Adamska M., *Efektywność procesu dydaktycznego wykorzystującego metody aktywizujące, Współczesne zarządzanie. Koncepcje i wyzwania*, A. Sopińska, A. Modliński (red.), Warszawa 2020.

The Effects of Mind Mapping Activities on Students' Motivation, https://digitalcommons.georgiasouthern.edu/cgi/viewcontent.cgi?article=1314&context=ij-sotl, [access: 04.12.2021].

Wnęk-Gozdek J., *Formy i metody aktywizowania studentów, Formy i metody aktywizowania studentów*, [w:] *Współczesne wyzwania dydaktyki szkoły wyższej* (up.krakow.pl), [access: 04.12.2021].

Ying Liu, Guoqing Zhao, Guozhen Ma and Yuwei Bo, *The Effect of Mind Mapping on Teaching and Learning Meta-Analysis*, https://www.researchgate.net/publication/297833919_The_Effect_of_Mind_Mapping_on_Teaching_and_Learning_A_Meta-Analysis, [access: 04.12.2021].

https://learningscoop.fi/activating-methods-in-classroom/, [access: 04.12.2021].

https://medium.com/cultivate-grow-your-teaching/tips-for-student-activating-teaching-fe72ae0c8de9, [access: 04.12.2021].

https://www.mindmaps.com/what-is-mind-mapping, [access: 04.12.2021].

https://www.mindmeister.com/blog/why-mind-mapping/, [access: 04.12.2021].

https://www.port.ac.uk/student-life/help-and-advice/study-skills/mind-mapping, [access: 04.12.2021].

https://www.queensu.ca/teachingandlearning/modules/active/04_what_is_active_lear ning.html, [access: 04.12.2021].

https://wyborcza.pl/napamiec/7,139301,16645287,ile-mamy-neuronow-w-mozgu.html?disableRedirects=true, [access: 04.12.2021].

Summary

The global changes we are witnessing force changes in the approach to education. Only individualized and creative approaches will allow the effective facing of new tasks in the future. It is important to skilfully combine various forms and methods of conveying knowledge and skills. It is about combining elements characteristic of traditional didactics, e.g. lectures, exercises, seminars or laboratories, with elements using technological solutions, such as e-learning or interactive simulation tools, as well as practical input resulting from including entities from the university environment in the teaching process, e.g. study visits in institutions, meetings with business.[37]

[37] M. Szewczuk-Stępień, M. Adamska, *Efektywność procesu dydaktycznego..., op. cit.*