Diana-Elena Niți
Anda-Georgian Marina
University of Pitesti, Romania

Innovative Teaching Methods

Abstract: The purpose of teaching is to enlighten and empower by transmitting useful information among individuals. Now, with the evolution of technology and the great explosion of information throw-out from the internet, more and more teachers face the problem of reaching the audience. Students are losing interest in the common methods of teaching so therefore we must come up with innovative teaching methods in order to overcome this issue. The following paper proposes several solutions including Jigsaw, The Cube, Lotus Technique, Brainstorming Methods and proposes the introduction of more modern teaching through different channels of communication and applications, including social media, video-tutorials, blogging.

Keywords: Innovative teaching methods, empower, Jigsaw, The Cube, Lotus Technique, Brainstorming Methods ,video-tutorials, social-media.

Innowacyjne matody nauczania
Streszczenie: Celem nauczania jest wyjaśnianiać i zachęcać poprzez przekazywanie przydatnych informacji ludziom. Obecnie, wraz z rozwojem nowych technologii oraz ogromnym wzrostem ilości informacji pochodzących z internetu, coraz większa grupa nauczycieli zmaga się z problemem dotarcia do słuchacza. Uczniowie tracą zainteresowanie gdy stosowane są tradycyjne metody nauczania, dlatego też należy tworzyć nowe, innowacyjne metody aby pokonać ten problem. Niniejszy artykuł proponuje kilka rozwiązań w tym, Jigsaw (układanki), The Cube, technika Lotus, metody burzy mózgów oraz proponuje wprowadzenie bardziej nowoczesnego sposobu nauczania z wykorzystaniem różnych kanałów komunikacji i aplikacji w tym mediów społecznościowych, tutoriali, blogów.

Słowa kluczowe: innowacyjne metody nauczania, zachęcać, Jigsaw, The Cube, technika Lotus, metody burzy mózgów, tutoriale, media społecznościowe.

1. Introduction

There is a huge potential among youngsters; they only need the environment, support , competitions and contests. And usually they appear where we least expect. For example in 2015 at the Intel International Science and Engineering Fair(ISEF), eleven South African teenagers   proved that they are capable of finding unique solutions to the world's problems including a country's food security and energy.

One of them was   Anna Midgley, who was sixteen, from Herschel Girl's High School who discovered the potential of Fynbos nuts that have twice as much protein as meat. Also Bernard Smith, who was eighteen and found a way of generating electricity with magnetised bacteria and Siyabonga Nkosi, also eighteen, found a way of generating energy from mud.

Analysing objectively, the conclusion might be that they were all gifted with special abilities from the start. But what exactly would happen if more and more pupils got the courage to speak for themselves,to come with ideas that might change the world as we know it? What, if instead of the typical teaching methods, special environments for developing and training pupils to become the world's problem solvers of tomorrow arose? And how would they help? There is a large amount of research in this area of psychology including Michael Steger's, a psychologist at the University of Louisville in Kentucky, who proved that people feel happy and fulfilled when they are helping others and become more willing to attain their own final goals if it is attached to a social meaning. Then how is it possible to create this special environment? First of all by understanding today's context and then bringing to light the tools and methods that provide advantageous support for teachers.[1]

The education process is complex. From individuals to institutions, the conduct of the work process is in line with the process of education. Social relations, professional and inter-human relationships are based on the education, training and formation of individuals in the community they live in. Still small, the child needs to know some rules of conduct, norms of morality and human behaviour. In fact, the purpose of education is to prepare him for a complete life.

In an education system where "to know" and "to do" are true Standards of individual formation, teaching methodology plays an important role. Learning methods are a bridge between the traditional teaching and modern system, the merging of the two being the optimal version of current education.

Education methods are the systematic ways of learning something that teachers can do in training and students in learning, and they are capable of leading the pedagogical proposed objectives.

The method comes from the Greek word methods (odos = path, road and metha = to; Methods = search, search, tracking) which means "the way to …; Way to follow … "in order to achieve some determined purposes, of achieving expected results.[2]

In this sense, the method is a way to access the knowledge and a transformation of reality, the acquisition of science, a technique, and a culture of human behaviours, being a component that is indispensable to the training process. A first assessment of the methods used today in education takes into account the historical criterion, dividing them in two large groups :

- methods called "old" also called "traditional" or "classic", essentially those that call for direct, ongoing communication in the course of transformation and ;
- new or "modern" methods, the most recent expression of pedagogical innovations, are pupil-centred, and develop a pupil's personality.[3]

The advantages and disadvantages of classic and modern methods includemore precisely the main disadvantages and criticisms of the methods used to date, along with the characteristics and main directions of renewal.

Table 1. Comparison between classic and new methods.1

Classic methods	New methods
Focused on the learning process	Concentrated on developing individual skills rather than the learning process
Centred on the content, assimilating the subject, having an "intellectualist" approach.	Focused on the student, on exercising and developing capacities and abilities
Offers priority to the activity of the teachers.	Follows the activity and engages the student.
Put the emphasis on "Teaching".	Put the emphasis on Learning while increasing the level of teaching.
The student is seen as the object of the teaching process	The student becomes both the object and the subject of the teaching and formatting process and of their own development
Are centred on words. On theoretical learning	Are centred on action, exploring. The knowledge is attained during experiments, surveying or actions.
Are oriented on product. Science becomes a sum of finite knowledge	The attention is drawn to the processes in which the students are able to elaborate their own theories.
Are abstract and formal	Put the emphasis on direct contact with reality, being concrete.
Bring a rigid teaching method	Encourage independent work, initiative and creativity.
Promote competition	Stimulate cooperation and mutual help.
The teacher has the role of transmitter of knowledge	The teacher has the role of the organiser of the proper environment for learning and has the role of bringing guidance and animating the learning process.

---

1 Basedon:http://stiintasiinginerie.ro/wp-content/uploads/2013/12/17-IMPORTAN%C5%A2A-METODELOR-DE-%C3%8ENV%C4%82%C8%9A%C4%82M%C3%82NT.pdf

2.Methods

2.1 Brainstorming

Initiated by Alex F.Osborn, this method is one of the most appreciated innovative methods in pedagogy. It's a method of group discussion with the distinct function of ease of searching and finding the most adequate solution to a problem, encouraging an immense mobilization of all the participants to discuss ideas. Meeting two principal aspects: first of all, it means a method of the participants to simulate creativity and discover innovating solutions for the problem. Secondly, it defines a proper setting for scholar instruction. Taken   by its initiator from Zen Buddhism (meaning the concentration of the calm spirit), brainstorming refers to postponing the evaluation of the emitted ideas for a further stage (this is why the brainstorming method is also named the method of postponed evaluation). At the first stage no affirmation is put under a critical approach. Thus a constructive atmosphere is developed, each idea getting the maximum attention, because starting from a poor explanation of the phenomenon, original solutions can be brought.

In lack of criticism, a series of inhibiting factors and blockings to the spontaneity of thinking that produce intellectual routine are diminished. In the first stage, a group of 5 to 12 people, preferably a heterogeneous group (in a homogeneous group a consensus exists that limits the spontaneity), which during approximately an hour brings a large number of ideas. The ideas can be emitted in three ways: the progressive linear way that implies the evolution of an idea through formulating it until the issuing of the idea that solves the problem. Also the catalytic way- the ideas are proposed through analogies or through the apparition of a new idea, opposed to the one that generated it. Lastly, the mix way, when an idea can develop simultaneously complementary solutions and opposing solutions to the original.[4]

The brainstorming session follows the following pattern: all the ideas have a knowledge characteristic and will be respected by the other members of the group; no suggestion is to be criticized; all members of the group have to be encouraged to build the idea of each person; in the end no idea belongs to anyone, the combination of ideas are encouraged; the "silent" members of the group are solicited to come up with ideas , which will empower them and broaden their self trust; the quality is less important than the quantity, but this should not stop the members of the group trying to think creatively and intelligently.

When using brainstorming with a didactic purpose it is important for the group that emitted the ideas to be the same as the one that evaluates at the end of the session. Brainstorming is mostly used in   synthesis lessons with an applicative character, in seminaries and in circle activities rather than in common lessons.[5]

2.2. Modern Technology involved in the learning process

The use of modern IT concepts and applications has become the modern method of education. It can be used in all stages of the didactic process: in design, teaching and learning. The use of computer and educational software enhances the quality of learning and contributes to the formation of systematic, selective, rapid, efficient thinking.

Social Media like Facebook, Twitter and Blogs, are the most used content providers that feed the minds of the current generation, therefore these can be seen as a good platform to share useful knowledge.[6]

There are many private teaching entities which saw the potential of platforms such as Reverso (an English learning tool) that is providing every few days short videos explaining new words and vocabulary for the users on Facebook.

Additionally, television channels have created their own social media pages in order to reach the audience, such as BBC News.

The benefits of using these popular communication channels are:

- The range of age and interests can be selected.
- The audience impact can be tracked.
- Different from classic teaching inside the school borders. The receivers of information are able to give a more sincere opinion and feedback related to the content of an online lesson for example, and are also able to mark it as an anonym. This is a good method for teachers to improve themselves by receiving feedback without being under pressure.
- The users can pause it anytime and play a tutorial until they understand it properly.

The approach in sharing information on social media is different since the users are not forced to attend and they are able to skip or just pass through the info. Content providers should be aware of body language and marketing strategies in order to gain attention. In this case, spreading information through the social media can be a provocation for teachers, but taking into consideration that it reaches the auditorium in a more effective way than the traditional one, it is considered worthy. [7]

2.3 Bunch Method

This method can be used especially at the stage of updating the previously learned structures, or in the evocation stage, pupils being put in the position to establish connections between the studied elements, to be actively involved in the thinking process. After solving the task, students will use the notions and links created to develop concrete ideas about THE PROPOSED CONCEPT.

Through this exercise, the whole class is encouraged. The teaching – learning technique is designed to encourage students to think freely and stimulate ideas connections. The way is to create ideas associations or to give new meanings to the ideas that were previously highlighted. Bunches can be made individually or as a group activity (Figure 1.) .[8]
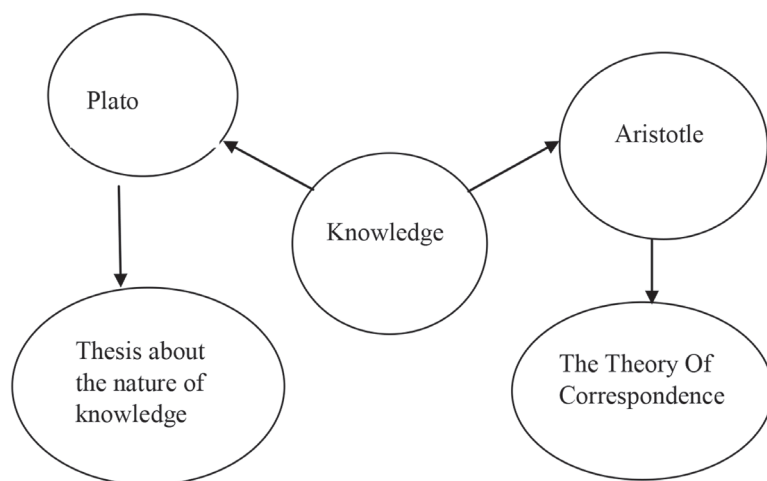
Plato

Aristotle

Knowledge

Thesis about the nature of knowledge

The Theory Of Correspondence

Figure 1. Example of Bunch method.[2]

2.4 Cube Method

Numerous pupils face communication problems. Even if they have the abilities, the knowledge and the willingness to talk, the lack of practice inhibits them and blocks the spontaneity of thinking. The cube method comes to solve this issue. It is a strategy that facilitates the analysis of a topic from different points of view. The method can be used at any time in the lesson. It provides students with the opportunity to develop the skills necessary for complex approaches. It can be used with any subject or age group.

It works by creating a cube whose faces can be covered with different coloured paper;

On each face of the cube one of the following instructions is written: DESCRIPTION, COMPARATIVE, ANALYZE, ASSOCIATION, APPLY, ARGUMENT. It is advisable to have the cube faces in the order shown, following the steps from simple to complex. Students are asked to write for 2-4 minutes on the topic of the lesson describing it from all points of view (form, colour, size) in a limited time. Describing – looking at the object carefully describing what you see; Comparing – to what is it similar? Why is it different? Association- what makes you think? What will inspire you? Release your mind looking for associations for

---

[2] Based on: https://mesageriistiintei.files.wordpress.com/2012/05/filo-32.png

this object. Analyzation – say how it is made, from what and what parts it contains. Applicability – how can it be used? Giving arguments – for or against; take a position and use any logical arguments to argue in favour of or against the subject.[9]

Adherence of group management to training activities is underlined when students are grouped into six teams (one for each face of the cube) at the tables. Participation in the completion of the joint paper will be led by the teacher, who must encourage the participation of all students in the established groups;

At the end of the exercise, the entire structure will be commented on and completed with the appropriate explanations. The final form of the contents made by each group is shared with the whole class (6 minutes – one minute for each face of the cube).Final work can be done on the board.[10]

2.5 Method i know – i want to know – i treated

It is a strategy of raising students' awareness of what they know, or they think they know, about a subject and also what they do not know, or they are not sure they know, and would like to know or learn.

The method can be used in the first part of a lesson – updating old knowledge – evoking; it engages the students and makes them aware of the process of learning; it provides students with the opportunity to check their level of knowledge. It is realized in the following way : students are asked to come up with the ideas they hold on the topic, or the topic of the investigation that will follow. These ideas will be noted in a column heading "I KNOW". See Table 2 and Figure 2. .[11]

Table 2. I know, I want to know , Learned3
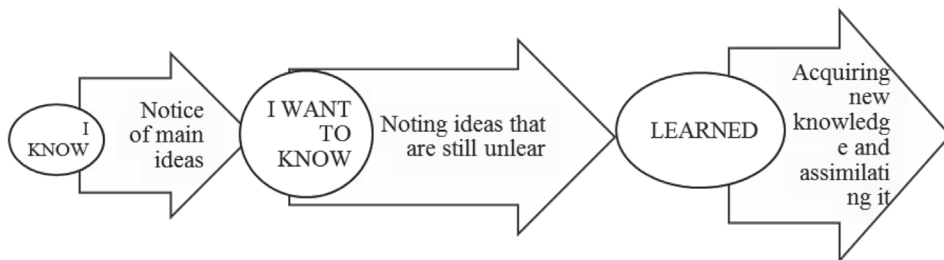
I KNOW	I WANT TO KNOW	Learned

Figure 2. Representation of I know, I want to know , learned method4

---

3 Based on https://image3.slideserve.com/6082921/slide3-n.jpg

4 Based on own elaboration.

2.6 THE VENN–EULER METHOD

It consists of two overlapping circles: in the separate parts of the circle the attributes that are unique to each of the two articles are compared ;in the overlapping part, the attributes that the two articles have in common are written. To conclude, one of the main advantages of this method is that the subject is not exhausted, another pedagogical circle can follow, didactic innovation remains an on-going process ,the pupil must be permanently in the position of making, judging, cooperating, giving answers, having opinions, analysing the answers, finding the right answers, and then discovering the new knowledge. See Figure 3. .[12]
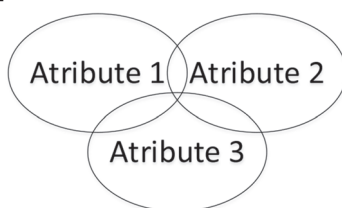

Figure 3. Representation of the Venn-Eule methodr5

2.7 Mosaic (jigsaw method)

The method that suits the lowest part of the Learning Pyramid, with the highest beneficial percentage displayed before, is the Jigsaw Method which focuses on empowering students by involving them in a role play as teachers. Jigsaw (jigsaw puzzle means mosaic) or "interdependent group method" is a strategy based on team-learning. Each student has a study task in which to become an expert. He also has the responsibility of transmitting the assimilated information to other colleagues.

Under this method, the role of the teacher is greatly diminished, he intervenes significantly at the beginning of the lesson when he divides the students into the working groups and introduces the tasks and at the end of the activity when he presents the conclusions of the activity. There are several variants of the mosaic method and we will present the standard version of this five-step method.[13]

Preparation of study material

The teacher sets the topic of study and divides it into 4 or 5 sub-themes. Optionally, he can set for each sub-theme the main elements the student should emphasize when studying the material independently. These can be either questions or affirmative, or an elliptical text that can only be filled in when the student studies the material. Make an expert record in which the 4 or 5 proposed sub-themes pass and which will be given to

---

5 Based on: https://image.slidesharecdn.com/diapozitivecuanimatie1-131113120435-phpapp01/95/
structuri-discrete-curs1-mulimi-66-638.jpg?cb=1384700998

each group. Organizing the teams in learning teams of 4-5 pupils (depending on the number in the classroom). Each student in the team receives a number from 1 to 4 and has the task of independently studying the sub-theme corresponding to his / her number. He has to become an expert in the matter. For example, students with the number 1 of all the formed learning teams will study sub-theme number 1. Those with the number 2 will study sub-theme number 2, and so on.

The independent Phase: each student studies his sub-theme and reads the corresponding text. This independent study can be done in the classroom or can be homework done before the mosaic is organized.[14]

Setting up the expert group

Once they have gone through the independent work phase, the same number of experts gather together, constituting expert groups to discuss the issue together. Thus, students with the number 1 leave the initial learning teams and gather at a table to study sub-theme number 1 and so do the other students with numbers 2, 3, 4 or 5. If the expert group has more than 6 members, it is divided into two smaller groups. The discussion phase is in the expert group. Students present an individual report on what they have independently studied. Discussions are taking place on the basis of the data and materials available, new elements are added, and the way new knowledge will be passed on to the other members of the initial team. Each student is a member of an expert group and is part of a learning team. From the point of view of the physical arrangement, the working groups of the expert groups should be placed in different places in the classroom so as not to interfere with each other. The common goal of each expert group is to train as best as possible, having the responsibility of learning and teaching colleagues from the initial team.

Returning to the initial learning team

In the Team Report Phase experts transmit the assimilated knowledge, retaining the knowledge of their colleagues, experts in other sub-themes. The mode of transmission must be short, concise, attractive, and may be accompanied by audio-visual media, or various materials. Specialists in a sub-theme can demonstrate an idea, read a report, use the computer, illustrate ideas with diagrams, drawings and photographs. Members are encouraged to discuss, ask questions and write down, each realizing their own plan of ideas.

Evaluation

In the demonstration Phase the groups present the results of the entire class. At this point, students are ready to demonstrate what they have learned. The teacher can ask questions, ask for a report or essay, or give an individual assessment sheet to each

student. If the oral assessment is used, then each student will ask a question to answer without the help of the team. Like all other learning methods through cooperation, this has the following advantages: stimulating a student's self-confidence, developing argumentative and group communication skills within the group; developing logical, critical and independent thinking; developing individual and group responsibility. We must note the quality of the interdependent group method to annihilate the Ringelmann effect.

This tendency occurs especially when the individual imagines that his own contribution to task solving can not be measured with precision. See Figure 4.[15]
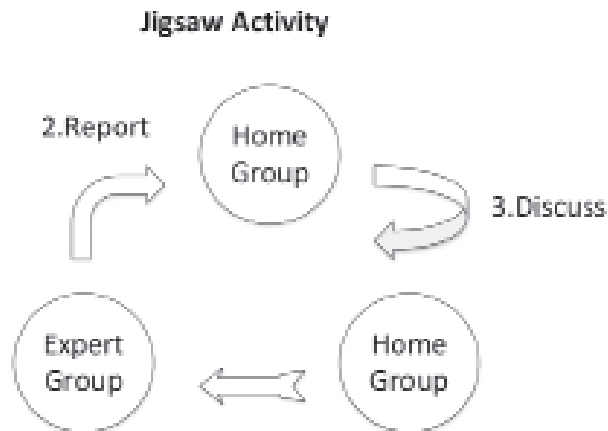

Figure 4. Jigsaw Activity6

2.8 Lotus technique – Lily Flower

The main objectives of this method are establishing relationships between concepts, starting from a main theme and developing the creative potential, multiple intelligences in individual and group activities on topics from different domains..

To describe the activity, the technique of the water lily flower involves the deduction of connections between ideas and concepts, starting from a central theme. The central issue or theme determines the 8 secondary ideas that are built around the main one, like the petals of the lily flower.

The 8 secondary ideas are passed around the central theme, and then they will become the main themes for another 8 water lily flowers. For each of these new central themes, they will build up 8 new ideas. Thus, starting from a central theme, new themes of study are generated for which new connections and new concepts need to be developed. The

---

6 Based on: https://lh5.googleusercontent.com/um-ZyX9ELwbgnxUJCCGda4KtE_nKeKPB85Kor2ifC6 mILVFJdpGgpyg2eyFJW83ewak8hmLhuuFB1htgUaFcMTbU9BUgKqZOo4uESusGNxQfQuLm1zBHy0 kYHD3a9nSV83ZbPwh4

stages of this technique are the following: the announcement of the central theme by the teacher; the completion by students of the 8 ideas of the central theme; the secondary ideas go into the diagram;   the team is divided into groups of 2, 3 or 4 pupils each, depending on the number of pupils in the class; secondary ideas become central themes for each of the 8 groups formed.

The Group work to complete the Lotus chart presenting to the team the results of each group and completing the chart with the ideas presented by each group and the collective discussions, the evaluation and appreciation of the work of each group. See Figure 5.
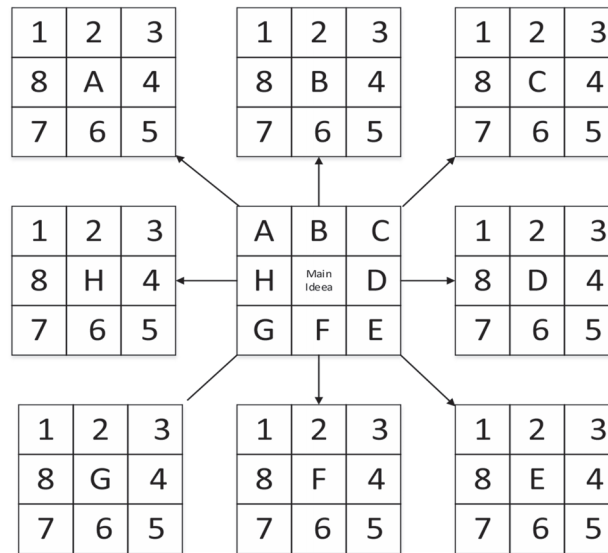

Figure 5. Lotus Technique7

3. Conclusion

People possess creativity from early childhood, but, as   time passes, the system inhibits talent. This paper should be seen as a call for innovation in education, which is not just an opportunity, but a necessity. This work highlights the benefits of introducing methods that stimulate the individuals to be interactive, concentrated, to enjoy participation, to find the most appropriate solutions. The development of such skills depends substantially on the development of curricula in order to increase adaptability skills among youngsters. Since the processes of adaptation are still in progress, adapting an innovation from another country remains a hypothetic idea without further support from authorities and teachers.

---

7 Based on: http://www.designorate.com/wp-content/uploads/2017/05/Lotus_Blossom_Diagram.jpg?x20015

Teachers play the most important role in preserving the innovative nature of the innovation. Sometimes this requires new methods of teaching in order to provide teachers with a range of potential choices. Supporting materials such as computer, media and web applications also need to be brought into light. They would also constitute a facility of bringing tutorials to the audience before the class actually takes place, which would ease the communication process between the teachers and students during classes.

Besides the original teaching materials and activities, this paper discusses the results of their implementation and provides useful cues about how to carry out the innovation and which results could be expected. It can be anticipated that the exchange of innovations between different countries could prove fruitful. Even when the adaptations mean a great effort, it seems less difficult to adapt an innovation than to design it from scratch. There is no miraculous method that could be applied in any class, it depends on the subject, the environment, culture and people. There are many successful teachers that instead of choosing one method to teach, mix them and change them over the years to adapt to new. But what is essential is to ensure that they have a wide variety of methods to choose from and that curricula allow them to bring innovation in teaching.

To conclude, a quote from the Romanian writer Ioan Slavici can explain the true meaning of the education system: "The true purpose of school is not to teach, but to enlighten, cultivating the desire of learning in the pupil's heart, the need to learn all of his lifetime".

Bibliography

[1] Intel,"Intel International Science and Engineering Fair" (Intel ISEF),2015

[2] Carmen BAL, Nicolae Bal, "The Importance Of Methods In Educational System The Importance Of Methods In Educational System, a- XII-a Conferinta Nationala Multidisciplinara ",Sebes, 2012.

[3] Ioan Cerghit , "Metode de invatamant",2006.

[4] Clive Boddy, "The Nominal Group Technique: an aid to Brainstorming ideas in research, Qualitative Market Research: An International Journal", Vol. 15 Issue: 1, pp.6-18, 2012.

[5] Heslin, P. A. " Better than brainstorming? Potential contextual boundary conditions to brainwriting for idea generation in organizations". Journal of Occupational and Organizational Psychology, 82: 129–145. Volume 82, Issue 1, Pages 129–145 ,2009.

[6] Anusca Ferrari, Romina Cachia and Yves Punie , "Innovation and Creativity in Education and Training in the EU Member States: Fostering Creative Learning and Supporting Innovative Teaching",pag 33-38,2009.

[7] R. Darda, Handbook on Advanced Pedagogy, Monarch University Publications, ch. 2, pp. 45-46, 2014.

[8] Gabriela Chiorean , Adela Chiorean, "Metode Active De Învățare, Tendințe Actuale În Predarea Şi Învățarea Geografiei", Vol. 3, 2007

[9] Daniela Cretu, "Instrumente Şi Metode Pentru Stimularea Gândirii Elevilor ", 2007, Retrieved online at: Researchgate.net

[10] Daniela Simona Mara," Predarea Interactivă Centrată Pe Elev, Tendinţe Actuale În Predarea Şi Învăţarea Geografiei", Vol. 3, 2007

[11] Pirau Maria," Metoda de predare stiu, vreau sa stiu, am invatat", pedagogical seminary ,2014

[12] Julianne Coleman, "Elementary Teachers' Instructional Practices Involving Graphical Representations", Journal of Visual Literacy ,2010.

[13] Durnus Kilic,"The effect of the Jigsaw Technique on learning the concepts of the principles and methods of teaching",Ataturk University , Turkey,World Applied Sciences Journal,2008

[14] Resor, Cynthia. "Encouraging students to read the texts: the jigsaw method." Teaching History: A Journal of Methods, Spring 2008.

[15] Elmar. Souvignier,Julia. Kronenberger," Cooperative learning in third graders' jigsaw groups for mathematics and science with and without questioning training",December 2007.

211