

## Utilizing the method of De Bono Six Thinking Hats for making educational decisions

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### ABSTRACT

*The presented teaching scenario utilizes the technique of Edward De Bono “Six Thinking Hats”, which by using an experiential and interdisciplinary way of learning, namely, visual plastic constructions, painting, theater, poetry, and songs, guides the students of secondary education in making vocational education decisions. This scenario has been experimentally implemented in the experiential activities of career guidance programmes in the Greek secondary education. Briefly, the students of a class are divided into six teams. In the first phase after an introductory exercise in each team, they make the colored hats. The teacher walks between the teams, reciting poems that correspond to the color of each hat. Then a practical problem is given and an activity follows, related to resolving this problem. In the next phase, each team fills a dashboard with paintings, drawings, words and poems related to the color of their hat, which is presented to the entire class. Finally, the students are invited to reflect on the process of the Six Thinking Hats for solving practical problems that are associated with their studies and career choices.*

### KEYWORDS

*Six Thinking Hats, decision-making, educational decisions, career guidance*

## RÉSUMÉ

*Ce scénario pédagogique met en valeur la technique d' Edward De Bono "Six chapeaux de la réflexion" vécue comme une expérience et visant d'une manière originale et interdisciplinaire de l'apprentissage, à savoir des constructions plastiques visuelles de la peinture, du théâtre, de la poésie et des chansons, à bien guider les apprenants de l'enseignement secondaire à la prise de décisions concernant leur avenir professionnel. Ce scénario a été expérimentalement mis en œuvre dans les activités basées sur le vécu des apprenants, par le biais des programmes d'orientation professionnelle dans l'enseignement secondaire grec. En bref, les élèves d'une classe sont divisés en six équipes. Dans la première phase après une activité de sensibilisation dans chaque équipe, certains font des chapeaux colorés. L'enseignant se promène entre les équipes, récitant des poèmes qui correspondent à la couleur de chaque chapeau. Ensuite, un problème pratique est donné et une activité suit, lié à la résolution de ce problème. Dans la phase suivante, chaque équipe remplit un tableau de bord avec des peintures, des dessins, des mots et des poèmes liés à la couleur de leur chapeau, qui est présenté à toute la classe. Enfin, les étudiants sont invités à réfléchir sur le processus des Six chapeaux de la réflexion pour résoudre des problèmes pratiques qui sont associés à leurs études et les choix de carrière.*

## MOTS-CLÉS

*Six chapeaux de la réflexion, la prise de décision, les décisions d'éducation, l'orientation professionnelle*

## THEORETICAL FRAMEWORK

The method of Six Thinking Hats was coined by Edward de Bono (1986, 2006), psychologist, physiologist and university professor in the early 1980s. It is an original and specific technique of thinking that has been already used successfully in a variety of applications, including: medicine (Liu, Zehtabchi & Liteplo, 2014), systemic thinking (Zenko et al., 2013), community development (Batchelor, 1996), marital counseling (Li, Lin, Nelson & Eckstein, 2008), gender studies (Hittner & Daniels, 2002) and education (Goebel & Seabert, 2006; Koulaidis et al., 2007; Rizvi, Bilal, Ghaffar & Asdaque, 2011; Childs, 2012; Kivunja, 2015; Tzortzakis & Vlachokyriakou, 2015; Vlachokyriakou & Tzortzakis, 2015). According to the relevant international bibliography, the method of Six Thinking Hats contributes both to the recognition of different approaches in solving a problem and to the formulation of a framework that develops creative thinking (Schellens, Van Keer, De Wever & Valcke, 2009). Moreover, it facilitates a better understanding of a problem, thus resulting in an improved innovation and creativity of the suggested solutions (Vernon & Hocking, 2014). Herein, the method is presented for making educational/career choices in secondary education through a teaching scenario, supplemented by the additional use of art-forms to help students in solving practical problems and in a process of discovery learning.

### *The Six Thinking Hats*

The six different hats, each of a different color, correspond to different ways of thinking (Koulaidis et al., 2007; Vlachokyriakou & Tzortzakis, 2015). According to de Bono (1986), the separation of different thinking aspects is deemed more appropriate than implementing several thinking aspects simultaneously. When students wear one of the hats it means that they choose

this particular way of thinking that is symbolized by the color of the hat. By changing the hat they also adopt the new way of thinking. More specifically:

- *White Hat* is neutral and emphasizes on the collection of information. It is typically used at the beginning of the teaching scenario, as background for the thoughts to follow. Some of the questions raised by anyone who wears it and called upon to answer are: What is known about the subject of concern? When did it happen? What is its frequency? How many people participated in it? Why did it happen? Is it real or not? What is the case?
- *Black Hat* is the one commonly used most often. The persons who wear it are called to be as cautious as possible, more careful and exercise reasonably documented criticism on the issue that concerns them. So they approach hazards, obstacles, potential problems and disadvantages that exist. Some of the questions raised by anyone who wears it and called upon to answer are: What are the disadvantages of the fact that concerns us? What is the risk that will occur? Will it work? What problems will arise? May it negatively affect someone or something? What are the mistakes of the heroes of the story?
- *Yellow Hat* is characterized by positive and constructive thoughts, focusing on the positive evaluation of the considered issue. It explores the value and the benefits arising from the issue. It requires rationally documented views. Some of the questions raised by anyone who wears it and called upon to answer are: What are the advantages of the fact that concerns us? Who would benefit from this? In what areas positive results can be identified? How will our goals be achieved?
- *Red Hat* faces feelings as a necessary element of thinking. Its use is focused on the expression of views, feelings and intuition, without requiring their documentation. Through it, students show their transiently expressed and momentary feelings. It is proposed that a sheet with the basic categories of emotions should be given to this team. Some of the questions posed by anyone who wears it and called upon to answer are: What do you like? What do you not like? How do you feel? How would you feel if you get involved in this? How do you feel when you think about the fact that concerns you? What are your feelings about the persons involved in the facts?
- *Green Hat* presents the innovative ideas in a topic. It also presents alternatives and different courses of action. The Green Hat includes both the spontaneous and the conscious creativity. Some of the questions posed by the person who wears it and is called upon to answer are: How many different ways are there to achieve the objective? What new information or new ideas do you recommend? Are there any alternatives? How can the problem be solved?
- *Blue Hat* is taking control of the process; it manages and organizes the thoughts. It is used at the beginning of the experiential workshop to present the issue for discussion and the order of usage of the hats. It requires discipline and announces the change of hats; it stops confrontations and sporadic interference. At the end of the experiential workshop, it is called to read the results and present the necessary conclusions. It is useful to ask the students to wear it at the end of the course, in order to comment on the steps taken and to submit their conclusions to the educational process with accuracy and objectivity. Some of the questions posed by the person who wears it and is called upon to answer are: Which topic do we discuss? What is the matter of concern to us? What are the aspects of this topic? Are there alternative ways of addressing this issue? What do we hope to achieve? What do we seek to achieve? What is the sequence of hats that will be used? At the end,

Blue Hat summarizes: What has been achieved? What are the conclusions? What are the next steps?

### ***The research questions***

The first educational decisions have to be made by the students of upper-secondary education. In most educational systems of the world, upper-secondary education schools can be either general or vocational ones. Similar decisions have to be made at the end of secondary education, towards a career course in post-secondary or tertiary education. For supporting students in their educational decisions, decision-making can and has to be learned. Formally (in the Greek educational system), it is one of the four topics of School Vocational Guidance syllabi that nowadays is conducted mainly as an extracurricular activity or as a subject of the curricular project course (Papakitsos, Makrygiannis & Tseles, 2015). In this topic, the proposed methods of decision-making can be described as either structured or formal. In the first case (Dimitropoulos, 1999, p. 233-254), the steps of the decision-making process are described, but the content of each step is defined in a rather abstract manner. It is stated there that the prerequisites of making a decision is the mental and emotional maturity of the person that makes the decision (Dimitropoulos, 1999: 247). Thus in the school context, it is not only questionable whether this kind of maturity exists but it is also a goal of the educational process to develop such a maturity to students. In the second case of the formal methods, the proposed one is the Decision Matrix (Amundson, Harris-Bowlsbey & Niles, 2009, p. 131) that is used by engineers of all disciplines for making technical and managerial decisions (Papakitsos, 2013, p. 11-14). It is questionable how it can be taught to students of early secondary education in an interesting and appealing manner.

Consequently, the research question was how to apply a decision-making method that would cope with the deficiencies of the previous methods in school context. Namely, to use a new method that has the following features:

- to be structured by having clearly defined steps;
- at the same time, to develop mental and emotional maturity to students, regarding decision-making;
- to be interesting, appealing and pleasant to learn.

For this purpose, the method of Six Thinking Hats has been tested as a teaching scenario that is presented herein. Especially for achieving the last feature above, the implementation of this method was combined with cultural activities in an interdisciplinary manner, for having a more pleasant teaching-and-learning process.

## **METHODOLOGICAL FRAMEWORK**

### ***Succession of hats - strategic thinking***

Wearing the hats in succession changes the mode of thinking or the perception of the topic. By applying this technique, the students learn how to identify opportunities, to remove their selfishness, to oppose the unilateral approach of an issue and seek dynamic results. With this method, they neither defend nor openly reject an idea, before it is investigated.

What is described by strategic thinking (Tzortzakis & Vlachokyriakou, 2015) is the selection of the proper sequence of using the six hats to solve problematic situations. There is not

a single correct sequence of using the six hats. Any sequence can bring satisfactory learning outcomes. There are various sequences proposed, depending on the nature of the problem. There are sequences suitable for exploring, for resolving problems, others to settle a dispute or making a decision. For educational/career decisions, the proposed strategic thinking that has been proved efficient most of the time, without being binding as mentioned above, is the following:

Firstly, the topic for debate is presented, along with the organization and process control (Blue Hat). After analyzing the data of the topic under consideration (White Hat), the emotional states related to it are expressed and processed (Red Hat). Then, criticism is performed and drawbacks are highlighted (Black Hat). Positive criticism and advantages are highlighted (Yellow Hat). Creative ideas and alternatives are proposed (Green Hat). At the end, the final decisions are summarized (Blue Hat again).

### ***Teaching objectives***

According to the general principles of School Vocational Guidance in Greece (Government Gazette, 2003), this course supports the students of the 3rd grade of mandatory secondary education (15 y.o.) to their educational and vocational decisions. Greek secondary education consists of two stages: the mandatory one (Gymnasium) of three grades (13-15 y.o. students) and the optional one (Lyceum) of three grades (16-18 y.o. students) in two types of schools (General and Vocational Lyceum). In particular, one of the goals of this course is to help students understand the different methods of thinking and thus realize their own approach, if several options exist for solving issues that concern them. The teaching is expected to activate the students on key issues of their concern, such as the selection of their educational and vocational course, as well, but also to formulate a complete picture about themselves and develop knowledge, skills and abilities.

Consequently, a relevant teaching scenario has been implemented, with an estimated time of completion: six (6) teaching hours (sessions). The required materials and teaching aids for the successful implementation of the teaching scenario are: two workbenches for each team, cardboard sheets in the six colors (white, black, yellow, red, green and blue), scissors, markers of different colors, adhesive tapes, colored rubber bands and staples. In the centre of the room a computer (PC / laptop) is placed with speakers, a video projector and a dashboard.

## **RESULTS**

The teaching course is evolved in four phases.

First Phase (consists of two activities).

1. *Team acquaintance exercise*: Message broadcasting and information play an important role in decision-making. The clear message is an important element of the decision. With this introductory exercise, students are exposed in undertaking roles, which will be need to the activities that follow.
2. *Visual creations from paper*: Students are divided in six teams of four members each and occupy their workbenches. Each team begins to make the hats from cardboard with one color per hat and in any form and shape they desire. During the construction period, their teacher explains what the color of each hat symbolizes by reciting verses. Then s/he presents initial reflections on the understanding of the process.

Second Phase (introductory application of the method by a theatrical event). The teacher is making the first steps in resolving a problem that concerns him by alternately wearing the hats. The students form a circle wearing the hats that have built. This first ritual is necessary to familiarize the participants with the thoughts that are represented by the hats.

- Blue Hat: “The problem I face is how to find the presentation of our meeting today”.
- White Hat: “I am among you in great location at the right time”.
- Red Hat: “I feel excitement, emotion, worry, anxiety”.
- Yellow Hat: “I will manage to make a presentation on experiential manner, so as the students will feel being beautiful and creative. They will engage in a process that will serve them in the decisions that will be required to make, relating to the continuation of their studies”.
- Black Hat: “The situation seems extremely difficult and it makes sense that this process will not succeed because students are used to a different manner of presenting a topic by their teacher. The experiential exercises are difficult and they cause commotion in the classroom”.
- Yellow Hat: “Students will be impressed by this new way of presentation and will help a valuable experiential presentation to take place with their participation. I will give the floor to them”.

Each “hat” takes the floor and the Blue one is proposed to direct the discussion and choose the appropriate sequence.

- Red Hat: “I feel safety and confidence”.
- Green Hat: “I think that in today's meeting, paper cutting, music and theatrical events will help the presentation very much”.

Blue Hat gives the floor to Yellow and Green Hats for presenting lyrics of the hats’ descriptions. The presentation of the aspects of thoughts that every hat represents causes interest and concern. The teacher approaches each team and gives to its representative the verses to recite that characterize their hat. Finally, the teacher expresses the decision with enthusiasm, wearing a blue hat: “I decide that in this way I will develop my thinking”.

Third Phase (consists of three activities of visual creations by the teams). Teams take exercises that cultivate creative thinking on the expressions of the hats, using phrases or patterns, drawings and sketches.

1. *Figures, paintings, drawings, phrases and lyrics*: On the workbench of each team there is cardboard of the corresponding color and markers. Within 15 minutes, each team is called to describe the particular thinking that is expressed by their hat, on the corresponding cardboard, with words, drawings, paintings and sketches.
2. *Descriptions and questions on the use of hats*: The teams are called within five minutes, if they consider it necessary, to make additions and improvements to whatever was originally recorded. Additionally, a description and auxiliary questions are handed out on the use of hats (potentially, along with a conceptual map).
3. *Presentation of the hat from each team*: Each team shall put its board in a prominent spot of the classroom and describe/analyze its creation to the class. White Hats have the role of realist, focusing on the information given, the information not given, the actual events, which events are the most important in the history of our topic, trying to remove feelings

from thinking. Red Hats see things from the emotional point of view, how they feel those who study the topic, how the protagonists feel, how they react to situations, giving emotional color to thoughts. Students may express whatever their feelings are. Green Hats are very creative and study the situation seeking effective solutions and innovative proposals for tackling the difficulty of the problem. Black Hats are one of the most useful teams since they examine the weaknesses of each proposal and thought, based on logic. Yellow Hats are the rational team of positive thinking. They evaluate the data presented by White Hats, study and assess the proposals of Green Hats, always through a positive and rational perspective, looking for ways that they can work and address the difficulties encountered by Black Hats. Blue Hats are the coordinating team. They specify the order in which they will present the thoughts of other teams, keep the discussion on the topic restoring the thinking on the right track (if it escapes), raise new questions that promote discussion, raise questions about the very process of thinking, organize and coordinate the debate, make composition, arrive at conclusions.

Fourth Phase (Theatrical: “Make decision on selecting an occupation”). The teacher, wearing Blue Hat, raises the issue for debate, which is the decision on the selection of profession along with the related problems. Indicative questions are:

- I am a student of the 3rd (last) grade of Gymnasium. Should I continue to Lyceum?
- I am a student of the 3rd grade of Gymnasium. Should I continue to vocational education?
- Should I become a painter or a doctor?
- Should I continue my studies abroad?
- Should I get involved in a profession that stereotypically does not suit me (Sex / social class / race)?

Teams can submit their own issues for resolving. The class decides the situation to be investigated with the method of the Six Thinking Hats. Blue Hat submitted the topic to be investigated and manages the debate. The teacher presents the necessary information to White Hat and also contributes to the expression of emotions. Here follows an indicative dialogue between the teams.

- Blue Hat: “I am a student of the 3rd grade of Gymnasium. I want to study Beautician. Should I continue my studies in a Vocational Lyceum?”
- White Hat: “Vocational Lyceum belongs to formal secondary education. The three years of studies include general education courses and vocational courses that are divided into theoretical and laboratorial ones. The fact that the curriculum includes general education courses provide to graduates a diploma equivalent to the diploma of General Lyceum, in addition to the degree of their specialty. In the two last grades, the teaching hours of laboratory courses rise.”
- Red Hat: “I feel upset / excitement / tangle / alertness / tightness / surprise / indifference.”
- Black Hat: “I believe that most of our friends will attend the General Lyceum that is considered to be a better type of school, so will miss them if we attend the Vocational Lyceum.”
- Yellow Hat: “Vocational Lyceum has several laboratory courses that you are involved and can be creative. The lessons become more enjoyable and you learn better, especially if the specialty is interesting to you. Surely we can meet our friends that will choose the General Lyceum outside school.”

- White Hat: “Vocational Lyceum has six directions of studies. Namely, Technology Applications, Health / Welfare and Hairdressing / Beauty, Management and Economics, Fine Arts and Artistic Applications, Agriculture / Food Technology and Nutrition, Maritime Professions. There are respective specialties in the 2nd and 3rd class. The specialty of your interest belongs to the Hairdressing / Beauty direction.”
- Red Hat: “I feel curiosity / excitement / confusion / alertness / surprise / anxiety.”
- Black Hat: “Usually the Vocational Lyceum is attended by pupils that do not have good grading performance in high school, resulting in a low level of education.”
- Yellow Hat: “Vocational Lyceum students choose specialization courses that are interesting; therefore they pay sufficient attention, something that increases their grading performance. Thirteen hours of the weekly curriculum of your study direction have courses about Health Education, Health and Medical Biology Elements, First Aid, Communication, Interpersonal Relationships, School Vocational Guidance - Working Environment - Health and Safety, IT Applications.”
- Red Hat: “I feel satisfaction / pleasure / confidence.”
- Black Hat: “Attend the General Lyceum for sure, since by taking the national exams you can continue your studies in tertiary education. Especially you will be admitted at the Departments of Aesthetics and Cosmetology of Athens or Thessalonica.”
- White Hat: “From General Lyceum you may have access to any Department, but you need increased marks. From the Vocational Lyceum, the students of the particular specialty can be admitted to the equivalent Departments with lower marks.”
- Red Hat: “I feel curiosity / anguish / hope / joy.”
- Black Hat: “For your own case, since you have already chosen a specialty, it’s OK but generally I find it difficult to choose so suddenly profession and direction of studies.”
- Yellow Hat: “It is not so difficult to choose, given that the Career Guidance Centre in your area can get you information, but also a visit of yours to the local Vocational Lyceum will answer many of your questions. Even better, we can find acquaintances who now attend the Vocational Lyceum.”
- White Hat: “The 1st grade in Vocational Lyceum is more tentative for directions, with less session hours for direction courses. Students have the right to choose any direction they wish in the 2nd grade.”
- Red Hat: “I feel lightly.”
- Black Hat: “The general education courses are limited. If you would like to be trained in a profession, then after your graduation from General Lyceum you can enroll in a Vocational Training Institute, with two years of studies plus a practical semester.”
- White Hat: “Indeed in the Vocational Lyceum the curriculum includes weekly 22 hours of general education courses and 13 hours of specialty direction courses. Yet, by graduating from a Vocational Lyceum you can enroll in a corresponding specialty of a Vocational Training Institute and you can upgrade your qualification with studies of one year only. If you choose another unrelated specialty then the studies last for two years.”
- Red Hat: “I feel relief / joy / embarrassment / anxiety / excitement.”
- Green Hat: “I believe that a visit to a Vocational Lyceum, along with your parents, may help you to have an overall view and to take account of the advantages and the disadvantages of your selection.”
- Blue Hat: “I cannot make a decision right now. I must look at the curriculum, discuss it with my parents and it is a good idea to visit a Vocational Lyceum.”

Using the computer/laptop, the speakers with an amplifier and the projector, selected songs are displayed relevant to the Six Thinking Hats. Students decide the color or colors that correspond to their mentality, suggest songs and, if possible, play them with their musical instruments.

### ***Homework***

Students are called to present, if they wish, a decision that has been taken in the past to a problematic situation and describe (adapt) it according to the Six Thinking Hats method. They can make a game for this method to further consolidate the technicalities and for fun, as well. They may also refer to the link:

[http://www.classtools.net/mob/quiz\\_41/\\_\\_\\_\\_Edebono\\_5Xx3C.htm](http://www.classtools.net/mob/quiz_41/____Edebono_5Xx3C.htm).

## **DISCUSSION & CONCLUSIONS**

The method of Six Thinking Hats contributes satisfactorily in decision-making, especially in the modern world of rapid and complex changes, where quick and correct decisions are required. Ego is eliminated, since a decision is not a question of personal reflection enforcement. The appropriate considerations are representative of the hat coloring, which is collectively accepted as such by the other members. Decision-making becomes a neutral process, which allows for an easy change of thoughts or for an easy application; the members are not personally affected as they could have been in any other case. An idea is neither openly defended nor rejected, but depending on the color of the thinking hat, arguments or evidence are presented. The neutrality of colors allows the use of hats without the teacher or the students being embarrassed. The application of art forms, such as visual art, theater, poetry and singing, makes the method accessible and pleasant to the students. The members cooperate better focusing on a specific approach each time. Personal differences are overcome because the egos are left aside, since the facts are separated from the emotions. Time saving is also achieved by producing the desired results. The playing of roles is the most important advantage of the method. Members participate together more actively, accurately and effectively in discussions. They understand all the aspects of a situation and communicate in a comprehensible and concise manner, as they efficiently process a wide range of information. The method is efficient, quickly learned and applied immediately.

The teaching scenario is a team student-centered activity. The students discover the method with the help of the art forms and become responsible in developing their critical thinking, using clear criteria in analyzing and solving problems (Matsagouras 1995; De Bono 2006). They acquire the skills of self-correcting, the application of logic and the sensitive approach of the various situations. The presented reasoning is actively combined and alternative approaches are considered. The issues that concern the students are describe, while they determine the essential characteristics, identify gaps, compare and find similarities and differences, differentiate and categorize the visual topics. Creative thinking emerges because original, innovative and matched by case approaches/decisions are produced to solve a problem. In this way, the students can acquire necessary skills, not only for their life at school but also for their adulthood (Tapscott, 2009; Trilling & Fadel, 2009; Kivunja, 2015).

In conclusion, this team and student-centered method, which utilizes forms of expression and art, achieves a thorough investigation of a situation through different ways of thinking. The method does not reduce the role of the teacher; instead highlights its role as a leader for a successful decision.

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