

## USING LOTUS BLOSSOM STRATEGY IN GEOGRAPHY

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### ABSTRACT

*This research analyses the way in which the Lotus Blossom technique has been described and used worldwide, including Romania and it investigates several ways to apply it based on the geographic content. Based on analysing the way this technique was applied it has been found that it may be applied to various topics, both individually and in groups, depending on the geography teacher's expertise, creativity, skills and employed methodology. During the organised activities, Lotus Blossom was used to highlight and develop the most relevant subtopics on a topic, this process being also applied as an activity of introducing and assessing students' knowledge, of extracting, evaluating, selecting, and synthesising information from various sources while systematising them by visual representation (diagram or table). During an activity in which students were asked to solve a problem ("Christmas Market"), Lotus Blossom was used head-on to break down the problem into "smaller" sub-problems or tasks, to identify or discover them, and to further analyse and split them in order to be able to solve them punctually. In this case, the Lotus Blossom strategy can be compared to the Kaoru Ishikawa diagram.*

**Keywords:** *brainstorming, creativity, problem, diagram, Kaoru Ishikawa diagram*

### INTRODUCTION AND THEORETICAL BACKGROUND

The Lotus Blossom is a technique that was included in the literature in the field of educational sciences after 2000, therefore it is less used as a strategy or teaching method in the Romanian education system. In this research, we will analyse the way in which the Lotus Blossom technique has been described and used worldwide, including Romania and we will investigate some possibilities of its application based on certain contents in the field of geography.

### **Lotus Blossom technique in the international research literature**

The Lotus Blossom has been described by Higgins (1996) along with six other creative techniques that can be used to improve strategies. Michalko (2001) argued that the Lotus Blossom Strategy was developed by Yasuo Matsumura, a Clover Management Research in Chiba, Japan. In applying this technique, a diagram comprising 81 squares (see Figure 1-4) or a table with nine columns and nine rows are used. Griffin (2010, p. 373) compared the columns of this diagram and the creative process of developing ideas through this technique with lotus flowers.

Michalko (2001) stated that in the Lotus Blossom, the petals unfold one by one starting from the middle of the flower, while revealing a key component or subtopic. By applying the procedure from the inside to the outside, in ever wider circles, the problem, the opportunity or the topic is explored, deepened, and studied more comprehensively. Even if the application of this strategy has been compared to the flowering of the lotus flower, in reality, it is observed that the outer petals open first, followed by the middle ones.

In the literature, the Lotus Blossom has been called a: technique (Sefertzi, 2000; Dong, Hawryszkiewicz & Binsawad, 2016; Shen, Lai & Tsai, 2016), creative brainstorming technique (Morthland & McPeck, 2010), exercise (Michalko, 2010, p. 132), strategy (Frey, 2011; Rahmansyah & Dahler, 2018; Alnovgada, 2020), structured brainstorming strategy (Michalko, 2006). The Lotus Blossom technique was included by López-Mesa and Grante (2003) in the category of general methods and, among them, in the category of divergent methods. Ross (2006) included the Lotus Blossom technique in the category of organising ideas or methods.

Frey (2011) compared this strategy with the mind map strategy developed by Buzan (1993) the mind map strategy which extracts more information about a topic. He argued that the Lotus Blossom diagram resembles a radial mind map showing some top-level topics and some sub-topics. Buzan (1993), who first used the term "mind mapping", described it as a training strategy in which super-ordinate concepts are linked by lines with subordinate concepts. Buzan (1993) described mind maps as a representation of students' knowledge and understanding, as well as a great way to help them express themselves both verbally and visually. Rahmansyah and Dahler (2018) noted two similarities between the two strategies: using a diagram and the existence of a topic and sub-topics around the core. We note that in the Lotus Blossom technique the relationships between ideas, topics and subtopics, problems and solutions are not represented by lines, but they can be deduced based on their position within the diagram.

Sefertzi (2000, p. 19) applied this technique in planning and forecasting strategic scenarios, in order to deepen the solutions to problems. The activity started from a core idea: to increase product consumption. The eight categories of solutions were: product differentiation, product quality, customer needs, lower cost, service quality, supply

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flexibility, product credibility, and competitors' product strategies. For product differentiation, eight solutions were proposed: by packaging, by design, other uses, smaller/ bigger, plus ingredient, other material, colour change, and meaning change.

Lotus Blossom was used as an exercise to generate ideas or solutions to the problem of finding a "Job". A sub-topic or problem was "Creating a CV", which thus became a new central topic and required generating new ideas and connections (Michalko, 2010, p. 132). Kerkow, Riegel and Uenalan (2010) used Lotus Blossom during the exploration stage in order to obtain an initial set of ideas about the subject they were interested in, usually a problem. The ideas written by the participants on small cardboards were collected and exhibited on a table. Önen and Koçak (2011) used the Lotus diagram to identify the metaphorical images of the candidate teachers regarding the structure of the campus (faculty member, student, administration, advisor, assistant, courses, registration office, and library). Metaphors provide rich images of researched topics, events, and situations (Koçak, 2013). Koçak (2013, p. 45) collected the metaphors of the teacher candidates about "School" within a diagram considering it an effective tool for data collection, for revealing, understanding and explaining a concept and its components: "student, teacher, principle, classroom, Ministry of National Education (MNE), parent, teachers' room, inspector". In this case, categories and sample metaphorical images were presented for each component.

The Lotus Blossom method has been used as a tool to analyse the risks that may increase the general vulnerability in a region when sudden structural changes occur and to visualise how to prevent the risks identified in practice (Hautamäki & Ahonen, 2013). It was used and appreciated as a tool for organising creative ideas and stimulating thinking in intelligent knowledge management (Li, Li & Chen, 2014) Shen, Lai and Tsai (2016) experimentally explored the effect of Lotus Blossom technique on potential and students' performance to solve problems creatively, following carrying out creative solving works.

Lotus was used to develop a rental service for old artifacts to stimulate the connection between grandparents and grandchildren, to encourage the playful process of discovering children and preserving cultural heritage and family stories. The eight components were derived from the name of the project "GRAND.C" starting from the core of the diagram to the margins: Pass on element; Low tech lock; Intuition; Exchange personal info; Relationship connection; Storytelling; Spontaneous; Cycle. For each of these units, 8 photographs were included in the diagram (Dewit et al., 2016, p. 348).

The Lotus Blossom technique has been used in classifying and analysing knowledge-sharing barriers within an organisation in order to find ways to eliminate them (Dong, Hawryskiewicz & Binsawad, 2016). Following the analysis of the literature, the authors identified 160 barriers and grouped them into eight topics: social, individual, culture, technology, political, organisation, content and routine, procedure and process (2016, p. 3). They established and analysed the barriers considered the most

significant: psychological ownership, lack of motivation, lack of trust, lack of incentive and reward systems, lack of organisation culture, lack of leadership, lack of technical support, insufficient technology infrastructure (Dong, Hawryszkiewicz & Binsawad, 2016, p. 7). The results were used to identify and present several factors that allow barriers to be removed (the pleasure of helping others, interpersonal trust, leadership, reward and incentive systems, support for top management and the use of ICT) (Dong, Hawryszkiewicz & Binsawad, 2016, p. 7).

The Lotus Blossom strategy has been used in Classroom Action Research (CAR) to improve students' ability to write the text of a report, to help them develop their ideas and manage their writing in a balanced composition by using a good diagram (Rahmansyah & Dahler, 2018). Shen, Lai and Tsai (2016) analysed the impact of applying the Lotus Blossom technique on creative problem solving and teaching performance. Sinaga (2018) analysed the effect of the Lotus Blossom technique on student performance in writing the narrative text of second grade students.

Vera and peers (2019) used Lotus Blossom to fully understand cyber defence tactics, techniques and procedures against advanced persistent threats (APT), cyber-attacks on businesses and individuals who have multimedia data storage systems. Fast-Berglund and Romero (2019) used Lotus Blossom as a strategy for implementing collaborative robot applications for operators. In his dissertation thesis, Alnovgada (2020) studied the effectiveness of the Lotus Blossom strategy in writing persuasive texts. He concluded that it can be used as an alternative strategy in learning to write persuasive texts because it helps students to think creatively, find many ideas related to a topic, understand, and find sub-ideas in a text (Alnovgada, 2020).

Michalko (2006) provided several structured brainstorming strategies, many of which were suitable for the study of architectural design. The Lotus Blossom technique was thus used to create works that require creativity and the use of imagination. Morthland and McPeck (2010) used the Lotus Blossom as a creative brainstorming technique to stimulate students' conceptual development and divergent thinking. In the example shown, in the central square, the key problem or objective of the architectural design project are written. The sub-topics derive from the "New Building" core topic: fenestration, infill, historic context, mixed use, linear site, orientation, covered entry, and space for art.

After the demand for divergent and convergent thinking to get ideas, dynamic, integrated thinking was used to combine ideas and make graphics, manually or using software and a 3D printer (Shen & Lai, 2018). This method was also used by Koelle, Wolf and Boll (2018) in physical design sessions in which artifacts were designed. In an experiment, Hassan (2018) investigated the differences in applying divergent thinking techniques to launch creative products. He compared the Lotus Blossom with a "structural" technique and the Challenge with a "procedural" technique. The Lotus Blossom has generated better results in conceptual simplicity, productivity, speed, and novelty of ideas.

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The Lotus Blossom was used to help students in industrial design make several less refined sketches before choosing the best solution to develop. After completing twelve criteria and solutions for each criterion in "The Idea Box" (Michalko, 2010), the students chose eight solutions that they represented by drawings on sticky notes. The sketches were placed like flower petals (Paepcke-Hjeltness et al., 2019).

The principles of Lotus Blossom Ideation were used in High Intensity Ideation Training (HIIT) attended by approximately 100 students (Pownall, Brook & Pashley, 2021). The activity took place on the Miro online visual collaboration platform. Students built homework assignments and displayed them as a team. The researchers pointed out that this concept of "alone-together" determines the feeling of belonging to the virtual group, without making verbal communication between teammates. The Lotus process and appearance allowed for the rapid highlighting of the quality of ideas and the rapid decision-making of the group on the most promising topics or on which they need to focus more.

### **Lotus Blossom technique in Romanian literature**

In the Romanian pedagogical (Oprea, 2003; Oprea, 2006; Flueraş, 2005) and didactic (Breben et al., 2002; Dulamă, 2008) works, Lotus Blossom is considered a technique that starts from a core problem or topic around which eight secondary ideas are built, like the petals of the water lily flower. These eight secondary ideas become, in turn, the main topics for another eight water lily flowers and another eight secondary ideas are built around each of them. These authors stated that this technique, which starts from a core topic, generates new topics that are developed. The technique is used to deduce connections between ideas, concepts, starting from a central topic (Oprea, 2003, 2006).

After presenting this technique, the mentioned authors included some examples. Oprea proposed the application of the technique to the topics "Medicinal plants" (2007, p. 197) and "Ways to stimulate the creative potential of students" (2007, p. 197). On the topic of "France", students were asked to propose eight main topics they would like to study related to this country. For each proposed topic, a group of students searched for information and presented it to the whole class (Dulamă, 2008, p. 290). On the topic of "Trees", each group had to complete information about all the trees and then give the sheet to the other groups to complete other ideas (Dulamă, 2008, p. 291). On the topic of "Environmental protection" the core topic was established by the representatives of the eight groups, while each group developed the assigned topic (Dulamă, 2008, p. 292). In describing the use of the technique on "Vegetables" in the stage of making sense, it was stated that students form eight groups and each group has the task to analyse a vegetable, write eight pieces of information about it and introduce this information (Dulamă, 2010, 2012). In preschool education, Breben and colleagues (2002, pp. 71-108) proposed to apply the technique in several activities as a game and by using images, on the topics of "Geometric shapes", "Colours", "Rhythm and movement", "Autumn", "Letters and

words”, “Autumn flowers”, “Orchard”, “Universe”, “Endangered animals”, “Endangered plants”.

Gavrilă and Tulbure (2018) applied the Lotus Blossom technique interactively, in groups, in the ninth grade, to a biology lesson about *the Phylum Artropoda – Class Insecta*. Each group solved the task in one of the eight sub-topics: definition, organisation, classification, relations, evolution, role, adaptation, and schematisation. The authors appreciated that the technique stimulated the active involvement of students in solving the tasks, providing the proper implementation of knowledge in various contexts and situations. With the help of a questionnaire, Petruța (2013) found that the Lotus Blossom technique was used in the first grade during the “Romanian language and literature” subject, in the third and fourth grades at “Natural sciences” and in “Civic Education” lessons. This researcher noticed a gradual decrease in the percentage of teachers applying the Lotus Blossom technique, from the first to fourth grade. Badea and peers (2013) used the Lotus Blossom technique to creatively interview students in a training course, regarding knowledge management and integrated creative thinking to find customised solutions for future students.

### **Advantages, benefits and weaknesses of Lotus Blossom technique**

Several advantages or benefits of the Lotus Blossom technique are analysed in the literature: generating strategic scenarios (Higgins, 1996); supporting the process of generating ideas by stimulating creative thinking (Lenski & Lewis, 2008; Petruța, 2013); increasing the level of involvement in the activity and the degree of creativity in the writing process using the Lotus Blossom strategy can improve writing skills (Lenski & Lewis, 2008); encouraging students by teachers if the first solution to a problem was not adequate (Lenski & Lewis, 2008); freely establishing the links between the ideas generated on a topic or problem (Lenski & Lewis, 2008); a statistically significant increase in critical and creative thinking skills (Hanesová, 2014); increasing the power of brainstorming through the visual representation of ideas, to understand the limits of knowledge sharing and decrease them (Dong, Hawryszkiewicz & Binsawad, 2016).

Some weaknesses of the strategy were also mentioned: students do not ask questions during the writing process (Lenski & Lewis, 2008); teachers who do not notice the continuity of the stages in applying the Lotus Blossom strategy do not implement this strategy properly as time management (Sloane, 2010, p. 22).

### **METHODOLOGY**

**Objective.** In this research, we aimed at two objectives: to analyse the application of the Lotus Blossom technique to various topics in the field of geography; to analyse the diagrams in which the topics and problems studied with the students were represented and synthesised.

**Participants.** The research was attended by students from Babeş-Bolyai University of Cluj-Napoca. The twenty students from the "Curricular Management" Master's Programme at the Faculty of Psychology and Educational Sciences work as teachers in primary education. To become a geography teacher the sixteen students from the Faculty of Geography attend two study programmes: a Master's Programme in Geography and the Psychopedagogical Studies Programme. The research involved the professor who organised the teaching activity with the students from the two groups and the author of this research who analysed and interpreted the data collected from the students. The participants accepted to get involved into the research, observing confidentiality.

**Procedures.** Each group of students participated in an activity organised on the Microsoft Teams learning platform. The professor briefly introduced them to the Lotus Blossom method, wrote the topic and task on the chat, and specified the sub-topics. To complete three diagrams (Figure 1, Figure 2, and Figure 3), students worked individually on the written subtopic assigned by the professor, solved the task, and posted the solution in the chat box. The diagram regarding the "Christmas Fair" was made frontally by the students of the "Curricular Management" Master Programme through discussions with the professor during the activity. Students were free to search the internet for information. After posting the solutions in the chat box, the professor discussed with the students in each group about the results and the method applied.

**Data analysis.** The ideas written and shared in the chat box, as well as the content of each diagram were subjected to content analysis. In case several ideas on a sub-topic were offered, these were grouped into categories.

## RESULTS AND DISCUSSION

### Applying the Lotus Blossom technique to the "Cities in Romania" topic

*Analysis of the diagram completion process.* Geography students applied the Lotus Blossom in order to learn how to apply it with students after they become teachers. After introducing the diagram, the professor asked them to write each eight ideas about a city in Romania (Figure 1). Some students included the ideas in the diagrams, others wrote a list of ideas that they posted in the chat box.

*Diagram analysis.* The fact that the students did not receive any directions regarding the content to be referred to and the way of including it in the diagrams generated a series of differences among solutions. One student asked if he could write only geographic information, and the professor said that they decided what kind of information they wrote, emphasising that the purpose of geography was to understand the world we lived in. The information about some cities was selected according to a certain criterion: tourist attractions (Braşov), relevant or representative aspects (Iaşi, Bucharest, and Oradea).

Council Square	Catherine's Gate	White Tower	Bega Canal	Traian Vuia International Airport	German Mayor Dominic Fritz	Capital	The National <i>History Museum of Romania</i>	The hotel
Martyr city	<b>BRAȘOV</b>	The Black Church	West University	<b>TIMIȘOARA</b>	Temesvár – its Hungarian name	<i>The Triumphal Arch</i>	<b>BUCHAREST</b>	Herăstrău Park
The Black Tower	Sforii Street	Tâmpa	Banat Village Museum	Moderate temperate continental climate	Orthodox Metropolitan Cathedral	Parliament House	Grigore Antipa Museum	Intercontinental Hotel
The Palace of Culture	Al. I. Cuza University	Three Hierarchs Church	Brașov	Timișoara	Bucharest	Oradea Fortress	Crișul Repede River	Hot springs
The Botanical Garden	<b>IAȘI</b>	Antibiotic factory	IAȘI	<b>ROMANIAN CITIES</b>	Oradea	Criș Country Museum	<b>ORADEA</b>	Black Eagle Palace
Capital of Moldova	Located on seven hills	The National Theatre	Constanța	Craiova	Cluj-Napoca	The Church with the Moon	Astoria Grand Hotel	Oradea University
Located in SE Romania	Located on the Black Sea coast	The largest seaport in Romania	Located on the left bank of the Jiu River	269,506 inhabitants – at the 2011 census	Dolj County Residence	Union Square and St. Michael's Church	Botanical Garden	Ethnographic Museum of Transylvania
One of the oldest cities in the country	<b>CONSTANȚA</b>	Population declining compared to 2002	Former residence of the ruler	<b>CRAIOVA</b>	The Dacian fortress of Pelendava	University Centre	<b>CLUJ-NAPOCA</b>	The capital of youth
Important tourist area	Part of the surface located in a lagoon area	One of the warmest cities in the country	Important centre for car construction	Historical personalities: Petriche Poenaru and Nicolae Titulescu	CSU Craiova - Football League I.	Economic, cultural and innovation centre	Students - a third of the city's population	The largest multipurpose hall in SE Europe

**Fig. 1.** Applying the Lotus Blossom technique to the "Romanian cities" topic

In other cities, some information is particular (Constanța – the largest seaport in Romania), and others are general (Constanța - relevant tourist area; Cluj-Napoca - university, economic, cultural centre). Students concisely inserted the information in the diagrams, and those who made lists of ideas wrote it extensively because they had no space constraints. The choice of information included in the diagrams was influenced by the students' field of study ("Tourism Geography" in Brașov), acquiring knowledge by direct observation of cities (Iași, Bucharest, Cluj-Napoca), by selecting them from Internet sources (Craiova), or based on their previous knowledge.

*Analysis of discussions with the students.* In the discussions after completing the diagrams, the students deduced that The Lotus Blossom technique can be used in geography lessons to: extract the key aspects related to a topic or subject from a text or from the Internet; systematise information on a topic; revise some knowledge after going through a learning unit / topic or chapter. Depending on the number of students and the time available, they realised that they could complete the diagram individually, in pairs or in groups. During the activities performed with the students, the teachers can request the completion of eight boxes based on some criteria. In the case of this topic, eight aspects about each city could be mentioned: the geographical position; the particularities of the relief, the landform or the major unit of relief; the river that crosses it or flows nearby; number of inhabitants; the age of the city; a relevant economic unit (factory), a representative tourist attraction (museum, church, monument, etc.), an identity feature ("treasure city", capital, youth capital, etc.).

### **Applying the Lotus Blossom technique to "Romania" topic**

*Analysis of the diagram completion process.* The students of the "Curricular Management" Master's Program, who currently work as teachers in pre-university education, stated that they have not previously applied The Lotus Blossom. After introducing the diagram and the topic, the teacher asked them to individually write eight names from Romania in each of the eight sub-topics: rivers, caves, spas, lakes, cities, fortresses, museums, and mountains (Figure 2). In each sub-topic the professor established the names of the students who study it, but without working in pairs or groups, there were two or three different solutions to a sub-topic.

*Diagram analysis.* We selected the relevant names for each subtopic (Figure 2) from the students' suggestions. From the analysis of the solutions proposed by the students, we found that they included little known caves (Alun Cave in Cluj County; Căsoaia lui Ladaș Cave in Mureș County) and little-known churches (Rupestra Sinca Old Church in Brașov County; Banu Church of Iași; Cincu Fortified Church in Brașov County; Probotă Monastery in Suceava County) in the diagram or in the list. The fact that the name of the city was specified when locating the church, the county seat induced, in some situations, the idea that the church is in the city, not in the county.

Olt	Jiu	Someș	Vântului	Scărișoara	Techirghiol	Băile Herculane	Băile Tușnad	Vântului
Siret	<b>RIVERS</b>	Argeș	<b>CAVES</b>	Vadu Crișului	Govora	<b>SPAS</b>	Călimănești	<b>CAVES</b>
Mureș	Prut	Ialomița	Cetățile Ponorului	Muierilor	Băile Felix	Geoagiu-Băi	Sovata	Cetățile Ponorului
Razim	Bucura	Lala	<b>Caves</b>	<b>Resorts</b>	Deva	Enisala	Poenari	<b>Caves</b>
Vidraru	<b>LAKES</b>	Bâlea	<b>ROMANIA</b>	<b>Fortresses</b>	Alba Carolina	<b>FORTRESSES</b>	Râșnov	<b>ROMANIA</b>
Ursu	Saint Ana	Roșu	<b>Museums</b>	<b>Cities</b>	Suceava	Neamț	Sighișoara	<b>Museums</b>
Făgăraș	Bucegi	Rodnei	Peleş, Sinaia	Brukenthal, Sibiu	Cluj	București	Iași	Peleş, Sinaia
Bihor	<b>MOUNTAINS</b>	Retezat	<b>MUSEUMS</b>	National Art, Bucharest	Timișoara	<b>CITIES</b>	Constanța	<b>MUSEUMS</b>
Ceahlău	Parâng	Gutâi	National History, Bucharest	National Transylvanian History, Cluj-Napoca	Brașov	Craiova	Galați	National History, Bucharest

**Fig. 2.** Applying the Lotus Blossom technique to "Romania" topic

Because the students had access to the internet, completing the diagram was a very difficult task. One student wrote ideas about rivers from a conceptual perspective (definition, watershed, food sources, examples, usage, metaphors, etc.).

*Analysis of discussions with the students.* The students realised that this technique can be applied in the primary cycle to the "Geography", "Natural Sciences", "Mathematics and Environmental Exploration" lessons. They also noticed that the students could complete the diagrams based on the information extracted from the textbook or a map, or based on previous knowledge acquired over a longer period of time. They considered that this way of completing the diagram can be done in order to highlight, revise, systematise, or evaluate children's knowledge. The students deduced that the strategy can be further applied by identifying eight ideas about each geographic name mentioned in the diagram.

### **Applying the Lotus Blossom technique to the "Tourism in Romania" topic**

*Analysis of the diagram completion process.* Due to limited time resources, the diagrams for some subtopics were completed by geography students and others by those in the "Curricular Management" Master's Programme. After the presentation of the topic, the professor asked them to individually write eight names from Romania in each of the eight sub-topics: caves, spas, seaside resorts, mountain resorts, cities, museums, "attractive" mountains (Figure 3). Some topics have been suggested by geography students. For the first group, the students chose the subtopic to which they want to complete the diagram, while for the second group, the professor assigned the subtopics to the students.

*Diagram analysis.* In Figure 3, we present the key names for each subtopic. Following the analysis of the written names, we found that, in order to solve this task, the students used the internet sources more. By searching for keywords (the name of the subtopic), the Google search engine displays a list of sites with the correct information from which students can easily deduce and extract the most relevant information. The fact that the students extracted information from the Internet sources is clear, in particular, in the way of stating the names of the statue groups and museums.

*Analysis of discussions with the students.* Unlike the diagram referring to Romania, the one referring to "Tourism in Romania" could be further developed, but within the context of extracurricular activities. The key aspect of this diagram is the fact that, for each sub-topic, the names of some highly valuable Romanian tourist attractions were included. Their choice was made on the basis of the students' and professor's previous knowledge, but also on the basis of the hierarchies established by some Internet sources.

Scărișoara	Vadu Crișului	Urșilor	Băile Herculane	Băile Felix	Sovata	Suceava	Neamț	Sighișoara
Muierilor	<b>Caves</b>	Ialomiței	Geoagiu-Băi	<b>Spas</b>	Olănești	Deva	<b>FORTRESSES</b>	Alba Carolina
Polovragi	Cetățile Ponorului	Meziad	Călimănești	Govora	Balványos	Enisala	Timișoara	Râșnov
The Voivodes statue group of Iași	Școala Ardeleană statue group in Cluj-Napoca	Matia Corvin monumental ensemble, Cluj-Napoca	<b>Caves</b>	<b>Seaside resorts</b>	<b>Fortresses</b>	Mamaia	Jupiter	Năvodari
“Spring” statue group, Mamaia	<b>STATUE GROUPS</b>	“Sfatul bătrânilor” statue group Baia Mare	<b>Statue groups</b>	<b>TOURISM IN ROMANIA</b>	<b>Seaside resorts</b>	Neptun	<b>SEASIDE RESORTS</b>	Costinești
The statue group in Sfântu Gheorghe	Horea, Cloșca and Crișan statue group, Cluj-Napoca	Avram Iancu, Cluj-Napoca	<b>Attractive Mountains</b>	<b>Museums</b>	<b>Mountain resorts</b>	Vama Veche	Olimp	Eforie Nord
Piatra Craiului	Bucegi	Făgăraș	Dimitrie Gusti National Village Museum, Bucharest	The National Museum of the Romanian Peasant, Bucharest	“Moldova” National Museum Complex, Iași	Poiana Brașov	Predeal	Bușteni
Rodnei	<b>ATTRACTIVE MOUNTAINS</b>	Retezat	Peleş, Sinaia	<b>Museums</b>	Bran	Sinaia	<b>MOUNTAIN RESORTS</b>	Păltiniș
Ceahlău	Gutâi	Parâng	Brukenthal, Sibiu	The National History, Bucharest	National Museum of Art, Bucharest	Vatra Dornei	Arieșeni	Râncea

**Fig. 3.** Applying the Lotus Blossom technique to the “Tourism in Romania” topic

### **Applying the Lotus Blossom technique to the "Christmas Fair" topic**

*Analysis of the process of generating and selecting ideas for the central problem.* The diagrams were completed by the students from the "Curricular Management" Master's Programme. After the introduction of the topic, the professor asked them to write in the chat box what problems they think should be solved by the town hall or the company that organises a Christmas fair in a city. Table 1 shows that 21 sub-topics were produced by eight students, the others not getting involved. Because the students wrote simultaneously in the chat box, some issues were raised by several students with similar wording as meaning. Aspects of detail were also proposed (the "access" to the fair).

*Analysis of the process of generating and selecting ideas for secondary problems or sub-topics.* As time resources were limited and students were working as teachers with children in school or kindergarten, the university professor chose the first issue, i.e., "Attractions for Children", and asked them to suggest aspects that they should reflect on and that must be resolved. Therefore, nine students chatted 16 ideas (Table 1). Based on the analysis of the students' ideas, research and their own opinions, we have completed the eight key aspects for children on the diagram: Santa's house; sleigh / horse-drawn carriage; skating rink; shows; carousel + Ferris wheel; workshops; mascot; competitions. Some of the ideas proposed by the students were used in the other diagrams ("creative centres"). Several ideas were not included: "swings" because they exist in all children's playgrounds; "Cars" because they need more space and require high costs; "Santa's tram" because it runs outside the fair; "Reindeer sleigh" because these animals are not country specific; "Cookie making workshop" because it is not a traditional Christmas activity in Romania and it requires large resources to be arranged. For the children to return to the fair in a thrill of pleasure, we consider that other activities such as: Santa's workshop, live workshops, sleighing, snowball fight, discussions and photos with characters from childhood fairy tales, elves' parade, fireworks, lighting the Christmas tree lights can be organised.

The second sub-topic proposed by the professor was "Products for sale". Here, four students chatted 16 products (Table 1): cookies, hot chocolate, folk costumes, decorations, cakes (two mentions), homemade cakes, "kurtos kalacs" (Hungarian), scraps, rind, sausages, pudding, pies, mulled wine (two mentions). To complete the diagram, we grouped the products into categories and studied which products are offered for sale in other Romanian fairs. We selected eight product categories: traditional dishes (pork); cakes and pastries; beverages; other traditional dishes; accessories and jewellery; handicrafts; winter ornaments and decorations; small items of clothing. To create the most suitable atmosphere for the Christmas holiday and the winter season, the following can be offered for sale: cotton candy, lollipops, hot snacks, fried chestnuts, donuts, "pita with grease, paprika and onion" (bread with...), and honeycombs. A student also

stated that a school in Ploieşti sells products made by children at a Christmas Fair stand.

In the third sub-topic "Objects and services to be paid for", seven students chatted 16 ideas (Table 1). Based on the analysis of the students' ideas and the direct observation of the Christmas Fair in Cluj-Napoca (Figure 5), we established eight categories of objects and services to be paid for: cottages (micromarkets); fir tree + its decoration; space lighting; human resources (employees); ornaments + decorations; artists; panoramic wheel; carousel. In the human resources category, the students included: people working at the fair, Santa Claus, and the elves. They considered that an amount should be spent for renting the place.

Regarding the "financial resources", fewer ideas were offered by students. They considered that the things related to setting and organising the Christmas Fair can be covered by: the local budget, sponsors, promotion, local funds, companies' rental of houses. A student specified the weekly cost for renting a house or for the sale of products by a company at a Christmas market in a city which was considered very high, compared to the value of products sold during this period.

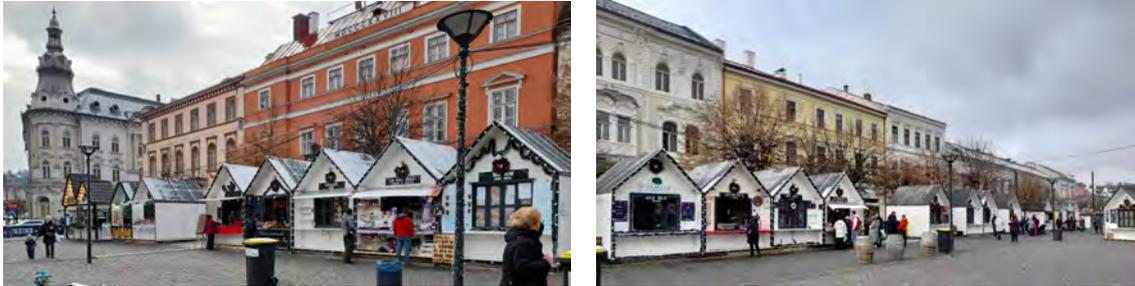
**Table 1.** Ideas generated during the application of the Lotus Blossom technique to the "Christmas Fair" topic

Topic	Topic type	Total no. of ideas	Total no. of students who offered ideas	No. of student-generated ideas	Average ideas / student
Christmas Fair	Main	21	8	5 ideas - 1 student; 4 ideas - 1 student; 3 ideas - 1 student; 2 ideas - 4 students; 1 idea - 1 student.	21/8
Attractions for children	Sub-topic	16	9	5 ideas - 1 student; 4 ideas - 1 student; 2 ideas - 1 student; 1 idea - 7 students.	16/9
Products for sale	Sub-topic	16	4	7 ideas - 1 student; 5 ideas - 1 student; 2 ideas - 2 students.	16/4
Goods and services to be paid	Sub-topic	16	7	4 ideas - 2 students; 2 ideas - 3 students; 1 idea - 2 students.	16/7
Financial resources	Sub-topic	10	8	3 ideas - 1 student; 1 idea - 7 students.	10/8

*Diagram analysis.* Figure 4 shows that we have completed the diagram for the other problems to be solved, capitalising on our own creativity and the information available on the Internet about other Christmas fairs: Promoting the fair; Ornaments & decorations; Creative workshops / centres; events. The diagram reveals various problems that the mayor's office or a company that organises such a fair must solve.

City Hall budget	Sponsors	Rental	Shops	Christmas tree + its decoration	Lighting	Santa's house	Sleigh / horse-drawn carriage	Rink
Donations	<b>FINANCIAL RESOURCES</b>	Event tickets	Human resource (employees)	<b>PAID GOODS AND SERVICES</b>	Ornaments + decorations	Events	<b>ATTRACTIONS FOR CHILDREN</b>	Carousel + Ferris wheel
Advertisement	Fees for services	Entrance fees	Artists	Ferris wheel	Carousel	Workshops	Mascots	Competitions
Videos on TV	City Hall website	Local newspapers	<b>Financial resources</b>	<b>Place and equipment</b>	<b>Attractions for children</b>	Traditional dishes (pork)	Cakes and pastries	Beverages
Brochures / leaflets	<b>PROMOTION OF THE FAIR</b>	Posters in public transport stations	<b>Promotion</b>	<b>CHRISTMAS FAIR</b>	<b>Products for sale</b>	Other traditional dishes	<b>PRODUCTS FOR SALE</b>	Accessories and jewellery
Electronic display in public transport	Promotion through loudspeakers in public transport	Electronic street posters	<b>Creative Workshops / Centres</b>	<b>Events</b>	<b>Ornaments &amp; decorations</b>	Handicrafts	Winter ornaments and decorations	Small clothing items
Painting Christmas tree decorations	Decorating gingerbread houses	Origami for the Christmas tree	Group of carollers	Puppet theatre	Storytelling by the fireplace	Houses (micro-markets)	Houses for creative centres	Stage
Preparing pancakes	<b>WORKSHOPS / CREATIVE CENTERS</b>	Mime games	Choir	<b>EVENTS</b>	Mime and pantomime	Sleigh / horse-drawn carriage	<b>ORNAMENTS &amp; DECORATIONS</b>	Decorations + festive lighting
Making garlands + crowns	Puppet making	Making greeting cards	Instrumentalist groups	Folk music soloists, etc.	Competitions	Santa's house	Carousel + Ferris wheel	Decorated Christmas tree + lighting

**Fig. 4.** Applying the Lotus Blossom technique to the "Christmas Fair" topic



**Fig. 5.** The "Christmas Fair" in Cluj-Napoca  
Source: the author, December 2021

## CONCLUSIONS

Based on analysing the application of the Lotus Blossom technique in the field of geography, we found that it can be applied to various topics, both individually and in groups, depending on the teacher of geography's expertise, creativity, skills and employed methodology. During the organised activities, Lotus Blossom was used to highlight and develop the most relevant subtopics on a topic, this process being also applied as an activity of introducing and assessing students' knowledge, of extracting, evaluating, selecting, and synthesising information from various sources, while being systematised by visual representation (diagram or table).

During an activity in which students were asked to solve a problem ("Christmas Market"), Lotus Blossom was used head-on to split the problem into "smaller" sub-problems or tasks, to identify or discover them, and to further analyse and share them in order to be able to solve them punctually. In this case, the Lotus Blossom strategy can be compared to the Kaoru Ishikawa diagram also called the cause-effect diagram or the "fish bone" diagram (Dulamă, 2009, p. 361). This is a graphical analysis tool that facilitates the understanding of complex problems and structurally illustrates: the main and secondary causes of a problem; the cause-effect relationships; the relationship between the effects or results and the factors that influence them; ordering and prioritising causes and factors, with the help of a graphic (visual) representation.

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