



Monitoring Report – Local Dynamic Learning Package (DLP)

Country / City / Project Partners: Bulgaria, Sofia, Sofia Development Association

Date of the document: 15 May 2019

Introduction

The purpose of this Monitoring report is to obtain sufficient information about the local pilot implementation of Dynamic Learning Package (DLP) programme adjusted to the target group of local young people.

Below list the schedule of all realized trainings during the implementation of the local DLP, and provide information about each realized training / workshop / module / etc.



SCHEDULE OF THE REALISED TRAININGS

| No. | Name of the training / workshop / module / etc. | Date |
|-----|--|-------------------------|
| 1. | Innovations and entrepreneurship in Creative and Cultural Industries | 29.09.2018 – 01.10.2019 |
| 2. | Innovations and entrepreneurs in ICT and Nuclear Science | 4.10.2019 – 16.11.2019 |
| 3. | Social innovations and entrepreneurship | 4 – 5.12.2019 |
| 4. | Dynamic Learning Programme Digital Skills and Entrepreneurship – Hack and Design | January – May 2019 |
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1. Name of the training : Innovations and entrepreneurship in Creative and Cultural Industries.

A. Agenda

[List below the agenda of the training / workshop.]

| | 29.09.2018 | 30.09.2018 | 01.10.2018 |
|---------------|--|--|--|
| 9.00 – 10.30 | Start up socially innovative business Mira Staleva, Sofia Film Fest Director | Ethical marketing and communications Margarita Dorovska Curator and Director of House of Humour | Pitching to VC, business angels and stakeholders Yanina Taneva, Ideas Factory Association |
| 10.30 – 11.00 | Coffee break | Coffee break | Coffee break |
| 11.00 – 12.30 | Testing your idea Three parallel facilitated workshops | Digital technologies in support of CCI Asen Kanev, art director | Pitching to VC, business angels and stakeholders Individual preparation with mentors |
| 12.30 – 13.30 | Lunch | Lunch | Lunch |
| 13.30 – 15.00 | Business planning Argyro Barata, CitizenLab, Thessaloniki | Management and leadership Three parallel facilitated workshops | Pitching session In the presence of potential investors: funds, banks, start-up programmes |
| 15.00 – 15.30 | Coffee break | Coffee break | Coffee break |
| 15.30 – 17.00 | Financial management Practical exercises | Social impact <i>Vihra Baeva, Bulgarian Academy of Science</i> | Networking |

| | | | |
|--------------------------------|--|--|---------------------------------|
| Skills and competencies | Risk taking, self-confidence, initiative, financial literacy | Digital skills, organizing, communication, impact assessment | Persuasion, presentation skills |
|--------------------------------|--|--|---------------------------------|

B. Signed Attendance Sheets

[Here attach the signed attendance sheets of the training / workshop.]

It is in the eMS, already reported. We do not have permission to share publicly the personal data of the participants.

50 trainees

C. Photo Documentation

[Here attach pictures from the training / workshop.]





D. Introduction of the Trainers / Mentors

[Please provide a short biography of the trainers / mentors that conducted the training / workshop.]

Argyro Barata

Argyro is the project coordinator of Reworks Agora, the forum of ideas of the most prominent festival of electronic music in Greece, Reworks. She is a cultural manager specialized in the tourism sector and holds a track record of planning and coordinating creative events with national reach for independent artists, major Greek festivals and international institutions.

Asen Kanev

Asen is a freelance artist and Art Director at Netcore Games and at the “Tales of Maj’ Eval” computer game and its expansions doing all things 2D art-related – concept art and game art for items, characters, terrain sets, etc.

Margarita Dorovska

Magrarita is currently the Director of Museum “House of Humour and Satire” in Gabrovo. She is a curator of contemporary art by education and formerly has been a senior expert with the Ministry of Culture.

Mira Staleva

Mira is Deputy Director of Sofia International Film Festival and Head of the festival’s co-production market Sofia Meetings, and programmer for the festival. She is also a part of Art Fest, a production, distribution and exhibition company based in Sofia. Staleva is a member of the European Film Academy and the LUX Prize selection board.

Vihra Baeva

Vihra Baeva is Associated professor in Anthropology of Verbal Tradition at the Institute of Ethnology and Folklore Studies with Ethnographic Museum, Bulgarian Academy of Sciences.

Yanina Taneva

A strategic communicator by profession I am a co-founder of Ideas Factory and its director at the moment as well as Changemakers Academy, Social Innovation Challenge and Granny residence.

E. Training Minutes

[Please provide short minutes about the training / workshop.]

The training programme was designed for young cultural managers – senior students, young professionals (up to 29 years old) in the areas of cultural facility managers, galleries, museums, theatres, cinema production and distribution, design, performing arts, etc., both from the private and independent sector and from municipally owned cultural institutions.

The participants were recruited from four Balkan countries – Bulgaria, Romania, Greece and Bosnia and Herzegovina, with the cooperation of Goethe-Instituts in the respective country. The purpose was to make the programme more attractive by allowing for international exchange, networking and interactions, and creating opportunities for further internationalization of the cultural products and services.

Social innovation ideas developed:

Below is a brief description of some of the social innovation and entrepreneurship ideas developed by the teams during the Balkan Academy for Cultural Managers:

Future Libraries: Libraries date back to the ancient times and throughout the centuries, they evolved according to the specific needs and characteristics of the people. In the 20th century, the library was utilized as an establishment for the dissemination of knowledge and culture. The cultural evolution in the age of the internet and its numerous technological advancements, such as the appearance of e-books and online encyclopedias affected the library's format and questioned its relevance.

Future library aims to transform the previous abandoned libraries into joyful and innovative cultural spaces, full of life during the summer. It includes refurbishment and revitalization and abundance of events managed by volunteers.

Family-centered education as a sustainable tool for cultural institutions: Family-friendly culture is blooming with more and more cities, companies and institutions featuring themselves as “family-friendly”. This trend indicates the new priorities and demands of families for quality leisure time and education for their children. This social business would assist museums, festivals, cultural institutions to develop, market and implement family-friendly programmes (hands-on exhibitions, interactive exhibits, family workshops, screenings and open-space events for families), and thus help them to adapt to new means of curation and communication in the shake of their educational purpose, as well as strengthen their sustainability.

Performing arts at cultural heritage sites: In recent years we can witness the revival of the practice of establishing stages for the performing arts at various cultural heritage sites in Bulgaria. Cooperation between Bulgarian regional historical museums and state theaters and opera houses results in festivals at such sites as the Tsarevets Fortress in Veliko Tarnovo, Roman Thermae in Varna, the Baba Vida Fortress in Vidin and the Belogradchik Fortress in Belogradchik.

The business idea is to provide models, studies and facilitation services to match historical sites with performing arts operators. Potential cooperation would result in better recognition, increased audience and improved financial results.

Alternative cultural routes: The social enterprise idea is based on two concepts: cultural/experiential tourism, and exposing socialist heritage. Cultural routes are drawn following the tracks of diplomatic presents received by socialist dictators like Torod Zhivkov, Nicolae Ceaușescu, with interactive exhibitions in the respective capital cities of former socialist countries. The team also envisions as part of the business the production of souvenirs based on the diplomatic presents to dictators.

Digital storytelling: The purpose of museums is to tell true to life stories. In the past this storytelling was done through passive exhibitions, which relied on interested viewers who would go through the museum, see the display and read the explanations. The present-day museums are eager to develop new type of expositions based on the edutainment concept. Digital storytelling provides services and know-how to develop multimodal interactions before, during and after the museum visit for a variety of audiences.

F. Summary about the lessons learned and results of the training / workshop

[Please provide a concise summary about the lessons learned and results of this training / workshop.]

Working with young professionals to understand social entrepreneurship and develop potential business ideas is challenging because they have already made their career choices and invested in university degrees. A lot of them already work in cultural institutions that are traditional and

therefore less flexible. The DPL programme therefore is less likely to result in actual start-ups but is nonetheless needed since it brings understanding and potential reforms in the cultural sector through public-private partnership or contracting.

The cross-border/international composition of the group of trainees resulted in increased interest in the programme and excellent retention rate. However, it is also quite time consuming since apart from skills and competences development a lot of background information is needed regarding the conditions in the different countries, among which also a non-EU member state.

Applying the DLP to a specific audience – in this case young professionals in the area of the creative and cultural industries (CCI) – is very beneficial because it allows closer cooperation and forming teams, comparing and evaluating ideas, more precise mentoring and instruction. It also makes it a bit easier to invite and secure a critical mass of potential investors. Finally, the fact that CCI is a priority in Sofia Smart Specialization Strategy means that there is a more receptive environment and potential funding available.

2. Name of the training : Innovations and entrepreneurs in ICT and Nuclear Science

A. Agenda

October 4, 2018 Programme “Training”

| | |
|---------------|---|
| 9:00 - 9:30 | Opening and presentation of the training program and project, Denitsa Lozanova , Sofia Development Association |
| 9:30 - 11:00 | Why physics and nuclear science are important?, Interactive lecture and conversation with the participants about the different applications of nuclear science in people's lives, Prof. Dimitar Tonev and Dr. Mladen Mitev |
| 11:00 - 11:30 | Break with drinks and sandwiches |
| 11:30 - 13:00 | What does it mean to be an entrepreneur in the field of nuclear technology?, stories from practice with Lyuben Marinov |
| | and role-playing |
| 13:00 - 13:45 | Lunch |

| | |
|---------------|--|
| 13:45 - 14:30 | Business modeling: what is this and why it is important?, interactive discussion and case solving with Assoc. Prof. Nikolay Netov |
| 14:30 - 15:00 | Are we capable of listening to one another?, Interactive game with Sevdalina Voynova |
| 15:00 - 15:30 | Interactive break with skills testing for networking with Denitsa Lozanova |
| 15:30 - 16:30 | Do we know how to work in a team and how to understand who what role has or wants to have?, Vanya Benovska |
| 16:30 - 17:45 | Entrepreneurs of the future with Nikolay Tzenkov |
| 17:45 - 18:30 | Summary of lessons learned during the day and preparation for the competition |

Meeting with mentors for initial discussion of project ideas

October 5, 2018 Programme "COMPETITION"

Hackathon "Digital Technologies in Nuclear Science and Engineering"

9:30 - 10:00 Opening and greetings by **Yordanka Fandakova, mayor of Sofia, Prof. Dimitar Tonev, Director, Institute for Nuclear Research and Nuclear Energy, Bulgarian Academy of Sciences and Dr. Mladen Mitev, Bulgarian Nuclear Society**

10:00 -10: 30 Presentation of the rules for conducting the hackathon

10:30 - 16:00 Team work on project development

Mentors: Nikolay Netov, Lyuben Marinov, Mladen Mitev, Albena Nacheva, Vanya Benovska, Sevdalina Voynova, Denitsa Lozanova, Milena Gosheva - teacher of physics.

16: 00-16: 30 Last Instructions: How do we present our idea to the jury?, Denitsa Lozanova

16:30 - 17:30 Presentation of the ideas to the jury

17:30 - 18:00 Awarding Ceremony

6 October - 10 November 2018 Programme "Mentorship"

Electronic communication with mentors and further development of project ideas

16 November 2018 Programme "Practice"

Visit of Kozloduy NPP

8:00 Departure by bus from "Alexander Nevski" cathedral

10: 00-12: 00 Arrival at the Kozloduy NPP and visit to the nuclear plant

12:00 - 13:00 Lunch

13:00 - 15:00 Presentation of project ideas and discussion with Kozloduy NPP employees

15:00 - 15:30 Break with drinks and sandwiches; Departure

B. Signed Attendance Sheets

[Here attach the signed attendance sheets of the training / workshop.]

It is in the eMS, already reported. We do not have permission to share publicly the personal data of the participants.

30 participants

C. Photo Documentation

[Here attach pictures from the training / workshop.]



D. Introduction of the Trainers / Mentors

Prof. Dimitar Tonev, Director, Institute for Nuclear Research and Nuclear Energy, BAS. Prof. Tonev graduated from the National School of Mathematics, direction Physics, and then from the Faculty of Physics of Sofia University "St. Kliment Ohridski ". He is an author of a number of scientific publications and books and his main works are related to the National Cyclotron Center of Bulgaria

Assoc. Prof. Dr. Nikolay Netov, Head of the Department of Economics at Sofia University. Assoc. Prof. Netov is author and a lecturer in a number of courses such as "Cloud Technology in Education", "Creating E-learning Content", "Computer Modeling with Microsoft". Specializes in "Information and Business Services, Data Processing".

Vanya Benovska, Manager, Benovska Consultancy Ltd CP - South East Europe, WADE / World Alliance for decentralized energy

Luben Marinov, Director, Kozloduy NPP - New Power Plc. Mr. Marinov holds a Master's degree in "Financial Management" at the University of Plovdiv "P.Hilendarski". In 2008, he was appointed expert in the Nuclear Energy Division, Energy Security Directorate of the Ministry of Economy and Energy (MEE). He has monitored the markets for energy raw materials and has developed analyzes on their development. He has participated in dozens of IAEA work and technical meetings on human resources development and financial risk management, as well as IFNEC meetings on radioactive waste management, decommissioning processes and methods for their financing.

Sofia Municipality

Nikolay Tzenkov, Governor of the Municipal Guarantee Fund - Entrepreneurs of the Future, Sofia and Chairman of the Management Board of the Institute for European Initiatives. By 2016 he is Chairman of the Board of Directors of the National Company "Industrial Zone", Sofia, and adviser to the Committee on European Affairs and Control of the European Funds at the 43rd National Assembly. At present Nikolay Tsenkov is a legal adviser at the Diplomatic Institute of the Ministry of Foreign Affairs. He graduated from New Bulgarian University in Sofia.

Mladen Mitev, Director, Bulgarian Nuclear Society, the Bulgarian Nuclear Society (BNS) is a public service organization whose main purpose is to contribute to all-round development of science, technology and practice for the safe use of nuclear energy for peaceful purposes, as contributing to the achievement of understanding, objective attitude and goodwill from the public on nuclear energy issues. Mr. Mitev is a physicist.

E. Training Minutes

[Please provide short minutes about the training / workshop.]

The training program was held in 3 stages of dynamic interaction with the participants:

- A learning module that gave them knowledge and develops skills through lectures, group discussions, case solving and game tasks. During this stage the participants also had opportunity to meet and learn from successful entrepreneurs;
- Teamwork, through which participants developed their own projects and present them to the audience. In the process of project work, the participants acquired skills for forming and teamwork, starting with a self-assessment test for the roles in the team;
- Mentoring, through which the participants in the training had the opportunity to develop their project ideas with the support of mentors from the business.

Summary of innovative project ideas born in the training:

The project by team “John Atanasoff” is called “Nuclear Energy and its Safe Application.” The students believe there can be no innovation unless people are convinced that nuclear energy is safe and don’t confuse nuclear bombs with nuclear power plants. This is why the team proposed a wide platform for educating the public and adapted a robotic arm they had previously designed for disarming explosives to be used in high radiation scenarios.

The ELSYS team proposed the “Optimization of Nuclear Reactor Design via a Genetic Algorithm.” The problem this project addresses is that the optimization of a nuclear reactor has many different purposes, many variables, and many local problems, i.e. there is no guarantee that a particular optimization would lead to the best general design. The genetic algorithm the team used is derived from nature and contains the phases of population, selection of the most appropriate elements, pairing and mutation of the elements placed in an appropriate environment. The team generated a simulated model of a nuclear reactor and applied the genetic algorithm to outline the most effective optimization of the design, based on variables such as price, number of reactors, fuel and others.

NHSMNS (physicists and programmers) developed a demo version of a nuclear physics educational website. The site compiles information arranged by topic, resources, video lectures and tests, as well as a discussion forum the team plans to develop in the future. The test section allows users to register and learn on the basis of interactive educational games: correct answers win a badge, while incorrect responses return the user to the information from that section of the test to re-study, and then automatically generates a new test. The site includes a section for news and events.

SHSM team #2 took on the problem of radiation pollution of water resources. The example the team worked on is the Rossen mine and the polluted beach Vromos near Chernomorets. Their proposal is to use zeoliths (minerals that can absorb certain elements with a specific mass) to reduce the radiation pollution and to clean the beach using centrifugal sedimentation.

SHSM team #1 also saw the information gap in the area of nuclear physics, and designed an educational website full of graphs and images intended to help students in this area of physics and to prepare them for physics competitions. The website links up students with theoretical physicists, and students compete amongst themselves in real time and can keep track of their rating and success.

F. Summary about the lessons learned and results of the training / workshop

[Please provide a concise summary about the lessons learned and results of this training / workshop.]

The precise focus area – ICT and Entrepreneurship in Nuclear Energy proved to be very effective as it made direct correlations between general knowledge about entrepreneurship with a very specific area for further professional development.

The combination of lecturers from academia and business was appreciated by the participants as they could easily understand the theory through the practical discussions and exercises.

The study visit as well as the competition were a serious incentive for participation in the training.

3. Name of the training : Social innovations and entrepreneurship

A. Agenda

[List below the agenda of the training / workshop.]

1 – 5.12.2019

Design thinking seminar for identification of socially significant issues, that will be addressed and projects will be developed during the training. Seminar is led by Kalin Radulov, KnowHowse.

5.12.2018

| | |
|---------------|---|
| 9:00 – 9:15 | Opening of the training, presentation of NewGenerationSkills project, Denitsa Lozanova, SDA |
| 9:15 – 10:30 | Management and leadership. Can we work in team/create and inspire teams – interactive group work Ilyan Manolov, Bulgarian Academy of Sciences |
| 10:30 – 11:45 | Challenges and opportunities faced by social entrepreneurs – good and bad practices практиката Yurii Valkovski, Academy for Social Entrepreneurs |
| 11:45 – 12:00 | Coffee break and networking |
| 12:00 – 13:30 | Business modeling – what is this and why it is important?, assoc. prof. Nikolay Netov, Sofia University |
| 13:30 – 14:30 | Business lunch (skills development – networking during business events) |
| 14:30 – 15:15 | Fundraising, crowdfunding and marketing , Kalin Radulov, KnowHowse |
| 15:15 – 17:00 | Team work – developing socially innovative projects |
| 17:00 – 17:30 | Entrepreneurs of the future, Nikolay Cenkov, director of municipal Guarantee Fund |
| 17:30 – 18:30 | Presentation of the projects and awarding the best ones, selected by a jury |
| 18:30 – 19:00 | Closing |

B. Signed Attendance Sheets

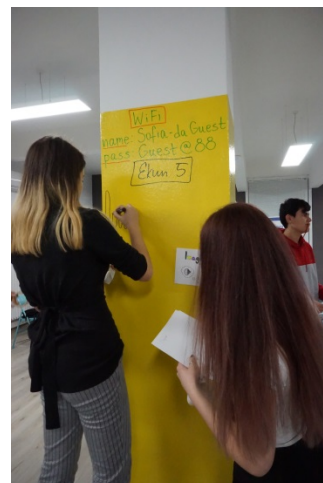
[Here attach the signed attendance sheets of the training / workshop.]

It is in the eMS, already reported. We do not have permission to share publicly the personal data of the participants.

25 participants.

C. Photo Documentation

[Here attach pictures from the training / workshop.]



D. Introduction of the Trainers / Mentors

[Please provide a short biography of the trainers / mentors that conducted the training / workshop.]

Assoc. Prof. Dr. Nikolay Netov, Head of the Department of Economics at Sofia University. Assoc. Prof. Netov is author and a lecturer in a number of courses such as "Cloud Technology in Education", "Creating E-learning Content", "Computer Modeling with Microsoft". Specializes in "Information and Business Services, Data Processing".

Nikolay Tzenkov, Governor of the Municipal Guarantee Fund - Entrepreneurs of the Future, Sofia and Chairman of the Management Board of the Institute for European Initiatives. By 2016 he is Chairman of the Board of Directors of the National Company "Industrial Zone", Sofia, and adviser to the Committee on European Affairs and Control of the European Funds at the 43rd National Assembly. At present Nikolay Tsenkov is a legal adviser at the Diplomatic Institute of the Ministry of Foreign Affairs. He graduated from New Bulgarian University in Sofia.

Kalin Radulov, KnowHowse , Business consultant. Graduated Entrepreneurship and Innovations from Lund University, Sweden. Spheres of competence: business modeling, online marketing and branding.

Yurii Valkovski, manager of Reach for Change Bulgaria organizing competition named Promianata for socially innovative enterprises and carrying out Academy for Social Entrepreneurs.

E. Training Minutes

[Please provide short minutes about the training / workshop.]

The social problem identified by school teams during the design thinking sessions was the alienation of children from parents. During the DLP they developed and pitched the following projects:

History Game – A game which consists of a lot of other games. The team has conducted a survey so as to find out what games were playing the older generation. They collected them in this innovative history game. Except for the old games that have been played since 1970 they have tried to predict what kind of games might be played in the future (until 2020). They created History Game in order for children and parents to spend time together in an attractive and pleasant way.

Boarding Game “More time with kids” – It is an educational boarding game including playing with words as well as a few different scenarios to be played by the family. Five players in total could play at the same time. The game not only stimulates families to spend time together but also combines educating and entertaining.

Creative parents – This digital game is a way for parents and their children to spend time together while using technologies. Since the young generation is mainly interested in spending time on their mobile phones, the team has found a way through which their parents could get involved too. It is an application which includes various games. All of the players connect their phones to TV and the parents are able to choose what kind of games will be played and for how long.

Learning Gamebook “Mom and me” – The team is aware that the gap in the communication process between children and their parents is a big social problem. Therefore they have created a learning gamebook which contains entertaining tasks, games, recipes, crossword puzzles and foreign language learning exercises. Children nowadays spend more time in front of the computers and this book is supposed to change this. All games are meant to be played by both children and their mothers and they are created in a way that would be interesting for both generations.

Imaginext – This is a game recommended for little children. It contains a set of cards with the images of famous children characters. The parent or the child is holding the card on his forehead while the other player explains what he sees until the first player manages to guess which character is on the image. This way the children learn new words, colors and develop their imagination.

F. Summary about the lessons learned and results of the training / workshop

[Please provide a concise summary about the lessons learned and results of this training / workshop.]

Intensive training is better than modules organised every week/month, especially when working with high school students, as they have to travel and receive also parents' permission.

The competition module is a trigger for researching in depth the addressed issues and better prepare a project.

Face to face meeting with young entrepreneur who share experience on the creation of start-up and pitching in front of investors provoked genuine interest in the students.

4. Name of the training: Dynamic Learning Programme Digital Skills and Entrepreneurship – Hack and Design

G. Agenda

[List below the agenda of the training / workshop.]

In January 2018 SDA started a DLP for development of digital skills and entrepreneurship in partnership with Data Science Society.

The DLP on digital skills and entrepreneurship has 3 phases:

- Phase 1: Co-Coding Sessions: Every second Wednesday co-coding “nerd-up” sessions are organized in Sofia Lab since January 2019. Coders gathered in Sofia Lab in co-coding sessions during which they learned from each other's, but also from mentors.
- Phase 2: 4-day competition “Hack & Design Challenge in the area of video games using artificial intelligence” (1-4 March 2019). Entrepreneurs from the gaming industry and professors from Faculty of mathematics and informatics at the Plovdiv University were trainers and mentors during the competition.

Challenges:

Challenge 1: Create a game & AI bot – Create a game from any genre (Action, Card, Fighting, Platformer, Racing, Shooter, Sport, Strategy) and then create an AI opponent for this game.

Challenge 2: Procedurally Generated Game – Create a Procedurally Generated Game (Game environment, sounds, NPC behaviour included)

Challenge 3: Teach a bot to play a game – Create a bot that plays an already existing casual game

Challenge 4: Cooperative Game – Create an AI for a game and then create more than one bot (different bots could have different behaviours), who then have to cooperate in order to beat the game.

Challenge 5: Educational Game – Create an educational game, which is an example of AI itself.

Challenge 6: Multiplayer Arena Game – Create a simple arena battle game where every participant could create a bot to play against other bots.

Reprogramming and adjustments on the bots are allowed.

Participants developed video games to address the challenges.

- Phase 3: Further developemnt of the games, mentorship and pitching in front of investors during WEBIT.festival 13 – 15 May 2019 in Sofia.

H. Signed Attendance Sheets

[Here attach the signed attendance sheets of the training / workshop.]

20 participants.

The attendance sheets will be uploaded in the eMS.

I. Photo Documentation

[Here attach pictures from the training / workshop.]



J. Introduction of the Trainers / Mentors

[Please provide a short biography of the trainers / mentors that conducted the training / workshop.]

Sergi Sergiev, The Head @ DSS

Inspired by the idea that science and business can collaborate together in the Data Science sector applying existing knowledge and sharing expertise and know-how among them. He believes that data scientists need to be part of community and together they can grow and develop. Over 7 years of managerial experience in a leading international companies and startups. Business Development of growing companies, areas of expertise in marketing, management, consulting and delivery with specialization in Business management, Operations and Business analysis.

Angel Marchev – Professor at University for National and World Economy

Angel Marchev, Jr. considers himself a fusion of thought explorer and a digital native. He is also a coeval and a very good friend to the personal computer for the last 35 years. Angel has graduated in finance at the University for National and World Economy as a merit student. He later finished master degree in corporate finance at the Burgas Free University. He pursued a career as a Bank analyst but found it is too formalistic and not enough challenging. Marchev Jr. has at least five generations of professors in his genealogy and it was only natural to choose the same career. He has more than 20 years of teaching experience implementing active methods of learning. Angel is a PhD in applications of computer simulations in business and investment. He has specialized in Risk theory with European mathematical society. He is also a certified SME consultant by the Instituut voor het Midden- en Kleinbedrijf.

His scientific interests include (the list is far from exhaustive): cybernetics, computer simulation, forecasting, portfolio management, simulation and gaming, self-organization, multi-stage selection procedures, genetic algorithms, neural networks, fuzzy logic, chaos theory

Steve Stavrev is a jack-of-all-trades when it comes to the link between AI and gaming. He teaches game design and does research at the Faculty of mathematics and informatics at the Plovdiv University. Steve is an entrepreneur in the field of serious gaming, and most importantly he is a distinguished lecturer at tech conferences in the fields of AI and gaming.

Petya Parvanova, Freelancer

Petya is a passionate problem solver with interests in the fields: Growth and People, Entrepreneurship, Business Process Modeling and Automation, Innovations, Corporate Culture and change management

K. Training Minutes

[Please provide short minutes about the training / workshop.]

The co-coding sessions gather young people with wide range of intellectual backgrounds (mathematicians, statisticians, programmers, biologists, and more) who work together and develop new digital and entrepreneurial skills in the data science domain. Teams work on

projects, which are result of the overlap between two or more science disciplines, where any team member usually has a stronger background on one of the disciplines and less/no knowledge on the others, so they all learn from each other.

The participants explore statistical data from real-world problems and build statistical models and tests. They learn how different machine learning systems work and how to choose or build a model which fits the data best by using different validation tools including R-square calculation, graphical residual analysis and different numerical methods. Participants gain skills in state-of-art open source software:

- Jupyter Notebook - an open-source web application that is used for data cleaning, numerical simulations, data visualization, machine learning and more.
- MongoDB - a cross-platform compatible open-source NoSQL database, with many useful and important features like cloud deployment, multiple programming language support, no limitations for data types.
- R programming environment which enables wide-scale analysis and data visualization.

The teams competed and created video games. Mentors worked with them for 2 months to help them develop their project so they could reach the market. The teams presented their projects in front of investors and decision makers during one of the biggets digital festivals in Europe – Webit on 14 May 2019.

L. Summary about the lessons learned and results of the training / workshop

[Please provide a concise summary about the lessons learned and results of this training / workshop.]

The partnership is essential for the implementation of a specific learning programme. In this case we had better outreach and pool of mentors thanks to the partnership with Data Science Society.

The approach of sharing knowledge and skills between participants proof to be efficient as they made interdisciplinary teams.

It was also a very good promotion for Sofia Lab, as it built an image of place where every Wednesday you may gather with programmers, designers, artificial intelligence experts, marketing experts, etc.

Learning programmes on digital skills is a step ahead as it provides skills and knowledge for the 21st century in the fastest developing sector.



Working with business and young entrepreneurs/start-ups is also a step ahead as it provides skills and knowledge but also the opportunity to create a real prototype and to start commercialising them.