

# The Contribution of Skills Workshops to the Students' Development of Soft

# **Skills in Greek Schools**

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Abstract: This study aims to record and investigate the opinions of teachers in Greek public schools on the pilot run of soft skills workshops during the 2020–2021 school year. In order to do so, 16 semi-structured interviews were conducted with primary and secondary education teachers, in which they presented their experiences in regard to the contribution of skills workshops to the students' development of soft skills. The students' social, intellectual and digital skills were developed, as well as STEAM education and educational robotics. The activities were adequately planned and the teaching material was rich, however the pandemic impeded the implementation of experiential workshops, and distance learning was instead used. The proposals included developing practical training, descriptive students' evaluation based on reflection and non-obligatory implementation of the 4 annual teaching cycles with a view to improve the education provided.

Key words: skills lab, innovation lab, educational innovation, soft skills development, digital literacy

## 1. Introduction

Skills workshops were proposed by the Institute for Educational Policy for Greek schools as an innovative educational activity aiming to change the educators' pedagogical perceptions (Hargreaves, 2003) and curricula in order for the students to develop 21st-century skills, namely communication, teamwork, critical thought and problem solving skills (Lynch & Ghergulescu, 2018). A pilot run was applied in 218 public schools including model and pilot schools, both live and through the internet (Roberts, Holmes & Bradbury, 2017). The workshops contributed to the students' experimentation through the drafting of actions plans and mini-investigations, as well as to the use of technology, the development of tolerance and environmental awareness, and the reinforcement of motivation to learn (Tonurist et al., 2017; Attakorn et al., 2014).

Furthermore, they introduced the arts and sciences to the students, which led to them engaging in crafts, dramatic play, puppet theater, and drama, with their all-round development in mind (Raikou, Karalis & Ravanis, 2017). They were also introduced to European and interdisciplinary educational programs with a holistic and cross-thematic approach to knowledge.

The new curricula include new topic sections, and they make use of inquiry-based and collaborative learning through developing learning, life, tech, science and mind skills. Learning skills are related to the students'

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communication, teamwork, creativity and critical thinking.

Life skills are related to the students' ability to organize their thoughts, take initiative and make decisions regarding their school life. They cultivate a sense of citizenship, and become digitally active and aware citizens.

The tech and science skills are related to simulation and modelling activities, interdisciplinary approaches to knowledge and digital skills. The students critically utilize the information acquired through the web, they create and share digital educational material, they implement work plans and use open-source platforms, tools and software.

Mind skills include the students' engagement in arts and crafts, solving complex problems and utilizing multiple sources and means to develop computational, algorithmic, analytical and synthetic thinking. STEAM education and educational robotics are developed (Soroko, Mykhailenco & Rokoman, 2020).

The students work as a team to find solutions, they experiment, they collect data and interpret the results of the research and experiments carried out in class. Learning based on these methods is called experiential and follows the students' interests, needs and experiences. It stems from the students' collaboration and active knowledge construction instead of dissemination of accumulated information or memorization.

The workshops' implementation is planned and scheduled by the teachers' association at the beginning of the school year and it includes 4 thematic cycles including various topics. The Ministry of Education in collaboration with education directorates ensure the equitable representation of every type of school, student and teacher groups in urban, semi-urban and rural areas.

Platform 21+ is designed by specialists working for the Institute for Educational Policy. It provides worksheets and evaluation sheets, audiovisual material, information for parents and students by class and level of education, and the workshops' 4 thematic cycles.

The first cycle deals with well-being and includes health education activity programs. This theme has to do with nutrition, road safety, safe internet use, and awareness on disability and addiction.

The second cycle regards the development of environmental awareness, while the third one is called "I care, I act" and has to do with social responsibility, respect of human rights and diversity, inclusive education and fighting school and digital bulling.

The fourth cycle is called "I create, I innovate" and it focuses on the use of technology, STEAM education and educational robotics, the development of analytical thought and the engagement in new occupations.

Regarding Nursery Schools, the workshops are planned to be conducted three times a week and last 45 minutes (one classroom hour). The themes are formed based on the students' interests, cognitive development, age and group composition. The teaching material used is multilingual and adjustable to students with special needs and linguistic/cultural particularities. The principles of differentiated Instruction are applied.

In elementary school, workshops are held 1–3 hours per week in each grade. The themes are related to sex education, mental health, addiction prevention, environmental awareness (acid rain, greenhouse effect, endangered species etc). In middle school, the workshops are taught by specialized educators for one hour each week. The activities are cross-thematic, multimodal texts, online games, dramatic play, short films and various projects are used (Gilboy, Heinerichs & Pazzaglia, 2015).

Student evaluation is descriptive. Students' attitudes, skills, knowledge, projects, participation and teamwork are evaluated. It is conducted at the end of each trimester, quarter or thematic cycle as well as at the end of the school year by use of self-evaluation sheets, questionnaires, video creation on classroom activities, discussion and reflection.

The teacher fills in the progress record sheets using a four-point ability scale (Incipient, developing, satisfactory,

excellent). Progress record sheets are placed in each student's personal portfolio; their purpose is to indicate his/her course of learning, and thus they are not take under consideration for his/her GPA.

Our postgraduate research paper aims to convey the experiences of Greek educators participating in the skills workshops in order to highlight their proposals for the continuation and wider implementation of this initiative starting in 2022–2023.

#### 2. Theoretical Framework

Our literature review indicates that several countries have developed Skills Workshops in the fields of finances, health, and justice. Specifically, they have been implemented in USA, UK, France, Germany, Finland; they deal with the subjects of physics (Liu et al., 2017; Encalada & Sequera, 2017; Kapici, Alcay & De Jong, 2019), chemistry (Danovitz et al., 2015; Lynch & Ghergulescu, 2018), biology (Beltz, Desharnais, Narguizian & Son, 2016), biochemistry (Soroko et al., 2020), and mathematics (Bouck et al., 2019). They help students experiment, research and construct knowledge in collaborative frameworks.

A research by Caci, Chiarrese & D'Amico (2013) focused on SW contribution to the planning of educational robotics and the students' development of logical, digital, visual and spatial skills. The tools used were lego Mindstorm NXT, Robot kit and Microsoft Kodu game lab (KGL). Students become acquainted with creating robotic artifacts and programmed their movements using algorithms. They watched movies on robots (transformers, Aibo, Runbot), which sparked a scientific debate on biology, physics and mathematics. Problem solving, interactive games, game-based and meaningful learning, concentration and attention enhancement, and logical ability development were the main points of the study. SWs also appeared to enhance memory, comprehension of abstract ideas, storytelling and the creation of scenarios with robots as their main characters. The students discovered the value of collaboration and teamwork as well as new ways of learning.

The following research was conducted by Liu, Wu, Wong, Lien & Chao (2017). In it, the students used mobile devices in class to collect and process data and perform experiments. They mostly used smartphones, cameras, microscopes and voice recorders. These devices allowed them to save time and effort in data collection and processing, and helped them explain natural phenomena. The students were developing a positive attitude towards technology and science. The value of mobile, digital and experiential learning was highlighted.

Another research, by Soroko, Mykhailenko & Rokoman (2020), concerns the use of the *STEAM craft edu* platform in applying STEM education in secondary schools in Ukraine. It includes educational games, interactive quizzes and international communication and collaboration among 80 schools. The countries participating are Ukraine, New Zealand and China. STEAM education helped students participate in online SWs on chemistry, biology, mathematics, and astronomy, and cultivate arts such as dance, drama, painting, photography and literature. Furthermore, through online platforms and skills workshops, students become acquainted with simulators, interactive digital games, projects and online libraries, using collaborative problem solving and new technologies.

Distance learning was also used, as students participated in dynamic learning environments that included tests, projects, forums, blogs and teleconferences. They adopted new ways of thought, they communicated and collaborated in order to restructure curricula and improve the quality of their education.

A research by Rane-Sharma, Mangelkar, Shirgave & Sasikumar (2017) highlights the contribution of SWs in the development of communication skills and the learning of English as a foreign language. The main focus was on applying theory and grammar in hands-on scenarios performed in class. The students were evaluating the digital

material and practiced grammar, punctuation, and vocabulary. They acquired the ability to communicate in English, write and read, using interactive digital activities. The acquisition of the English language was essential in their daily social lives.

The following research was carried out by Raikou, Karalis & Ravanis (2017). It describes the impact of art and physics experiments during SWs on the development of critical thought in Nursery School students. The students participated in SWs and used art, literature, painting and sculpture in learning and teaching, performing experiments on light and shadow.

The value of intercultural education for the integration of the children of immigrants in the school life was highlighted. The students learned about different cultures, customs and traditions regarding nutrition and music in other countries and developed tolerance and respect for diversity. They were listening and analyzing stories, they were watching videos and learning to argue. Viewpoint questions and role-play supported the development of their cultural awareness.

Kapici, Alcay & de Jong (2019) argue that combining hands-on and digital SWs boosts the acquisition of cognitive and social skills and improves learning outcomes. During skills workshops they worked on electricity, creating circuits, and understanding physics.

Bouck, Park, Bouck, Alspaugh, Spitzley, Buckland (2019) focused on mathematics workshops in elementary and secondary education in Michigan, USA. They functioned as support tutoring for students with special needs and students with difficulties in solving complex mathematical problems.

Encalada & Sequera (2017) focused on the use of MOOCs, virtual worlds and information available online in knowledge building. Students were learning to Know, learning to Be, learning to Do, and learning to Live Together.

Lewis, Mc Gann & Blomkamp (2020) focused on the value of innovative SWs in solving social problems and introducing innovation in the public sector, businesses and education. They refer to NESTA'S Innovation Labs, MARS in Toronto, Govlab in New York, and 27e Région workshops; essentially, organizations influencing politics through dialogue and citizen participation.

The findings of this research regard the impact of these workshops on citizen collaboration for decision-making and shaping politics. Projects are carried out and the citizens' creative problem solving and innovative action is cultivated. This constitutes a people-centered approach emphasizing the introduction of innovative and collaborative problem-solving methods in the public sector.

Subsequently, Mc Gann, Wells & Blomkamp (2019) focused on 5 innovative SWs in New Zealand and Australia in which government and non-government organizations participated. They function as means of expression of the citizens' ideas and opinions, and tools for evaluation and educational reform in schools. Digital literacy, social media use and the formation of digital citizens who communicate online and share opinions, ideas or solutions to social issues are some of the practices applied in innovative skills workshops (Williamson, 2015). The importance of collaboration in problem-solving is also highlighted in a research by Rosenow-Gerhard (2020).

Nesti (2017) presented 3 innovative initiatives in skills workshops in Amsterdam, Boston and Torino. Their aim is to encourage citizens to collaborate in order to improve the quality and effectiveness of public services.

Mind Lab in Denmark is characterized by its people-centered approach of problem-solving regarding environmental, financial, health and administration issues. Nesta Lab in the UK promotes innovation in healthcare and focuses on digital governance, communication media and improving the quality of life of the elderly.

Citizens collaborate with local and national institutions, organizations, services and Ministries in the framework of their community's initiatives. The "housing a changing city 2015" project aimed at providing

affordable housing (to buy or rent). The "do it yourself" and "smart citizen project" initiatives in Amsterdam helped citizens track and curb environmental pollution using technology.

Shimba, Mahenge & Sanga (2017) focus on online SWs using simulations and experiments, while Beltz, Desharnais, Narguizian & Son (2016) focus on physics and biology SWs and highlight their contribution to reallife problem-solving. The students were studying physics and biology. For example, they studied the habits, organs and functions of birds like falcons, pigeons. They also comprehended the way the natural world functions. They understand scientific matters, they link theory to practice and science to life.

Furthermore, Dikke & Faltin (2015) focused on the Go-Lab project, in which 50 European countries participated. 500 schools and 800 teachers participate in the Go-Lab portal (www.golab2.eu). They share best practices, attend seminars, conduct online experiments and classes, presentations, research papers, book recommendations, present documents and slides in order to disseminate knowledge. Online skills workshops promote communication and collaboration among people in different countries.

Literature research indicated the workshops' contribution to the acquisition of soft skills as well as high level skills in students (Al Musawi et al., 2015; Kapici, Alcay & De Jong, 2019). They also appeared to help cultivate soft skills in educators (Attakorn et al., 2014). Educators collaborate with colleagues and share best practices, in the framework of their professional development (Sergis et al., 2017; Soroko et al., 2020). When educators are good communicators, facilitators, they act as observers (Pedaste et al., 2014), are cooperative, flexible and critical thinkers, they succeed in their teaching. They often act as mentors (Danovitz et al., 2015), advising and leading their younger colleagues, organizing conferences, lecture and school seminars.

The researchers recorded the innovative skills workshops (Lewis et al., 2020) as tools for evaluation and educational reform (Mc Gann et al., 2019). They bring up the need for digital literacy (Rosenow-Gerhard, 2020), digital governance, the shaping of critically thinking and digitally active citizens (Williamson, 2015) who will be able to utilize technology in education, healthcare, finances, justice, in every aspect of life (Malic et al., 2017). They will also be able to take initiative and find solutions in everyday problems.

Beside that, the value of flipped, self-regulated (Sergis et al., 2017), digital and mobile learning (Beltz et al., 2016), in promoting educational innovation. Students took their laptops with them in class and built knowledge using internet sources, new tools and dynamic online environments (Liu et al., 2017). They worked collaboratively (Snape, 2017).

The main obstacles in applying skills workshops around the world include large numbers of students (Lynch & Ghergulescu, 2018), lack of time from the teachers' part due to the need to cover all the material in the curricula, and insufficient school infrastructure (Shimba, Mahenge & Sanga, 2017). However, their impact was significant on the development of the students' cognitive, communication and social skills, the teachers' professional development (Sergis et al., 2017) and the improvement in the quality of education.

#### 3. The Research

Our study aims to investigate the views of elementary and secondary education teachers on the pilot run of skills workshops in Greek schools.

In that context we formulated our research questions and hypotheses.

- 1st research question: Do SWs contribute to the development of social, mental and digital skills in students?
- 2nd research question: What obstacles and difficulties occur in their implementation, the way it is

currently planned?

- 3rd research question: What part does school administration play in addressing the objectives of SWs?
- 4th research question: What proposals did educators come up with after the SWs pilot run in order to improve their design and planning?
- 1st hypothesis: SW contribute to the development of soft skills in students.
- 2nd hypothesis: There have been obstacles and difficulties in their implementation.
- 3rd hypothesis: School administration does play a part in their success.
- 4th hypothesis: Educators do have some proposals for the improvement of the SWs' design and planning.

#### 4. Methodology

Qualitative research is mainly used in social sciences and emphasizes the deeper understanding and interpretation of social phenomena, by addressing questions of "why" and "how" (Denzin & Lincoln, 2000). It is characterized by a small sample of participants and the analysis of their accounts and behavior, as well as the subjectivity in interpreting the social phenomena, which obstructs the extrapolation of the conclusions. The ultimate goal of qualitative research is to help understand human behavior (Denzin & Lincoln, 2000).

Interviews provide the researcher with the opportunity to collect a large amount of data for his/her object of study, trying through observation to understand the participants' behaviors, facts, situations, intentions, motives, experiences and views on the topic of investigation. They focus on studying the standpoints from where people experience and feel specific events (Kedraka, 2008), and aims to discover new aspects of the event or phenomenon in question, shedding light on human behavior. They are acceptable and selectable as a research tool (Kedraka, 2008).

Our research focused on qualitative data analysis and on 16 interviews of elementary and secondary education teachers, in order to investigate their views, experiences and motives regarding the implementation of SWs. The interviews were conducted through Webex at a time convenient for the participants, in compliance with the measures taken in response to the pandemic. Their duration was 40–50 minutes.

There haven't been in our country previous knowledge, experience or recorded research given the pilot implementation of skills workshops in 2020–2021.

Our focus was on the 218 schools participating in the workshops. Schools in several cities participated in our research, including Methoni in Messenia, Nafplio, Imathia, Pieria, Korinthia, Thessaloniki, Arta, Pella in Macedonia, Preveza, Alexandroupolis and Giannitsa.

More specifically, out of the 11 participating schools, 6 were elementary schools, 1 was a middle school, 1 was a vocational high school and 3 were nursery schools. The full questionnaire was completed by 16 educators (14 women, 2 men), 5 of which were elementary school teachers, 4 nursery school teachers, 2 computer science teachers, 1 language and literature teacher, 1 English language teacher, and 2 French language teachers. They all attended training on new technologies (levels A and B), as well as on other subjects. 7 of them had a Bachelor's Degree, 8 of them had a Master's Degree and 1 of them had a Doctoral Degree.

Their work was educational (9 participants) and administrative (7 participants). 2 of them were heads of nursery schools, 3 were head teachers in elementary schools, one was an assistant headmaster in a vocational high school and one was an assistant head teacher in an elementary school. The majority of the participants were older educators (7 were 36–50 years old, 8 were above 50, 1 was 22–35 years old) and had significant experience in class. They had

worked for many years in public and private schools (9 of them 11–20 years, 3 of them 21–30 years, 1 of them 1– 10 years and 3 of them more than 30 years). Their specialization was on social sciences (9 participants), humanities (5 participants), technology and computer science (2 participants).

Our interviewing tool begun with processing our sample's demographics (age, gender, specialization, position, level of education, years of professional experience, academic qualifications and further training). The second part included questions on the experiences of the educators who participated in the initiative. Consequently, the interview material was thematically analyzed, the data was grouped and organized in thematic categories so they could be interpreted.

#### 5. Conclusions

The analysis of our findings based on the views of the educators who participated in skills workshops was structured in axes corresponding to our research questions.

Table 1 includes the activities that educators organized in class in order to help students develop their social, mental and digital skills. Here we present some quotes regarding their views on the initiative:

T1: "We organized an earthquake drill and we drew ourselves under the desks so that we learn to prevent and face natural disasters..."

T2: "Through painting, we put down our fears and then categorized them..."

P5: "During the first cycle, on road education, I remember been given by the program some keywords with the sign for pedestrian crossings and we made a story with the kids, which we later turned into a fairytale..."P3: "The action plan begins with the drafting of a concept map of the children's previous knowledge and in the end of the activity we create the concept map of their newly acquired knowledge, so I believe that this is a step towards developing critical and organizational thought..."

**T4:** "The digital skills kids can learn, help them develop actual algorithmic thought, categorized their problems, and break down a bigger problem into smaller ones..."

There have been schools that focused on the topics of nutrition, addiction, and online safety. They promoted environmental awareness and found ways to deal with the environmental issues to improve the quality of life. The following excerpts are indicative:

P6: "I made sure they became aware of healthy nutrition and bullying..."

P10: "We focused on online safety..."

P16: "We went to our city's park and estimated our ecological footprint..."

**P9:** "We found our ecological footprint using a quiz..."

P13: "We found how the ecological footprint of different foodstuff harms the environment..."

Other schools focused on the issue of waste management, the students' experience evaluation and emotional expression about virtual trips in Europe, respect towards diversity and inclusive policies for students with special needs. Bellow we list some indicative excerpts on the activities conducted.

**P11:** "We thought how the waste of our school can be managed, we collected banana peels and used our school garden's composter."

**P13:** "I am referring to an activity focusing on emotional expression and was based on a trip in several countries, where we were acquainted with the lifestyle of children in different parts of the world. So we became familiar with different cultures and we developed a certain kind of thought process."

T14: "I have run alongside the children during the program "ef zin", that focuses on the local history."

P12: "We created in class a floor game in which the kids were the ones to set the limits and rules..."

T15: "We talked about respect and diversity... We started from blindness and took it a little further."

Other schools focused on visiting archaeological sites, creating digital games, using clay, arts and crafts and collages, and utilizing a robot that students built with easy-to-use material. The following excerpts are indicative:

T1: "We learned about the historical site of the Castle of Methoni and then we created a digital game of virtual tours in our city's site"...

**P7:** "Most of our activities are performed in teams, for example writing a short story, presenting a comic book, creating a theatrical performance. It's very rare for our students to do something individually...

T2: "they worked together to mix soil and water and create clay, dip their hands in it and leave their handprints on a large sheet..."

**P5:** "We made three collages based on the themes of the forest, the city, and the sea..."

T15: "The kids made a collage with a 3D version of the nutrition pyramid".

Other schools mentioned using role-play on road safety, on the students' ability to argue, on enhancing their creativity by using recyclable materials for arts and crafts, and in developing empathy. The following excerpts are indicative:

P5: "In road safety workshop, kids had to play a role game and become traffic officers, drivers and pedestrians..."

**P11:** "The children had to understand how we can give life to our disposed items... So we formed small groups and made storage boxes using recyclable materials."

"Creating the neighborhood's map and the hank of communication" is related to the material recommended by the Institute for Educational Policy (IEP). The educators described the respective activities.

**P10:** "During the 'Out of Eden Learn' Harvard program, children were extremely cooperative, because one of the first steps was to create the map of their school and neighborhood..."

**T15:** "They played the game with the hank, an activity suggested by the Institute for Educational Policy, they were throwing it to each other asking questions because we wanted to show that this interaction is continuous..."

SWs helped students take initiative, participate in decision-making, and become more responsible.

The teachers mentioned a wide range of activities, including beach clean-up, poster creation, robotics, "recycling", and creating a song about coronavirus. The following excerpts provide some more indicative information on the realization of these innovative activities.

T1: "We took the initiative to clean our beaches and beautify our school..."

P16: "One of our initiatives involved cleaning our school's park and record its flora..."

T2: "They worked together to create posters about the renewable and non-renewable energy sources and we chose the robot that was looking for an energy source..."

P3: "Children were asked to work together on a sculpture depicting the succession of seasons..."

P11: "Citizenship is involved in the issue of waste management within their school and wider area..."

**T12:** "We talked about people with special abilities and how roads should be built so that they can easily move around..."

**P6:** "Recycling means giving a second chance to life to an item, and so we gathered a bunch of plastic cups of the Michelle coffee brand and we would make a dress with them..."

P12: "They took the initiative to create posters, rules and pamphlets on road safety and hygiene, as well as

injury prevention during earthquakes, and we also made a nice little song about coronavirus..."

**P5**: "They also recycled items, they collected bottle caps, they bring items from home, so that now we can make a robot with useless objects they bring."

**T4:** "The most indicative of our activities are the ones on robotics and the creation of weather stations or programming a bee bot in the nursery school."

**T2:** "The children tried to find ways to save energy, they created posters and windmills, we used robotics and clay, we organized dramatic games, and the concept maps helped widen our knowledge..."

Some of the creative activities were arts and crafts using new techniques like decoupage, as well as fiction and poetry writing, puppet theater, and experiments. Here are some indicative quotes:

T14: "We focused on puppet theater to discuss the topic of sexual assault..."

T14: "The 5th Grade is preparing a project where they will present experiments with water..."

T1: "One of our activities involves a presentation of the Castle of Methoni through puppet theater."

**P9:** "We are trying to create a measuring device based on the Pythagorean theorem, so that they can measure the height of an object"

One of the schools created soap and antiseptic lotions. Another focused on the "little meteorologists" program and STEAM education.

Table 1 presents all the activities implemented in skills workshops in order to cultivate the students' soft skills.

Skills	Activities in skills workshops
Problem-solving, critical and organizational thought	Expression of emotions, concept maps, problem categorization, accident prevention, addiction & online safety, healthy nutrition, respect towards disability, waste management, response to natural disasters.
Communication and collaboration	Virtual museum tours, digital games, collages, arts and crafts, role-play, comic strip creation, fiction and poetry writing.
Responsibility, decision-making, initiative	School beautification, beach clean-up, robotics, poster creation, composting, "recycling", singing about COVID-19, drama, puppet theater, special education.
Teamwork & creativity	Collages & crafts, robotics, building a windmill, a weather station, wind farms, using clay, collaborative documents, padlet, drama play, interactive games: the communication hank, making a map of our neighborhood
Self-awareness, self-care, self-esteem	Healthy nutrition, self-assessment and peer assessment.
Citizenship & social awareness	Beach clean-up, volunteering, recycling, ecological footprint
Experimentation & knowledge investigation	Experiments, creating a dictionary, using an educational material repository (Photodentro), robotics, making soap and antiseptic cleanser, water cycle.
Skills related to subjects of the school curriculum	All subjects are interrelated in the framework of cross-thematic, interdisciplinary and holistic learning and work plans.

Table 1 All The Activities Implemented in Skills Workshops

The teachers acknowledged the contribution of SWs through the implementation of various activities. In Table 2 are presented the main difficulties in their implementation. The main obstacles included the pandemic and lock-downs, failure to implement experiential workshops, lack of infrastructure, and student evaluation. Here are some indicative opinions.

P3: "The main difficulty was the fear of a lock-down due to COVID..."

- P6: "During the lock-downs we continued our SWs through Webex, using video and discussion..."
- P9: "The situation prevented us moving from classroom to classroom..."

T1: "The main obstacle was the lack of the necessary equipment..."

Factors	Conclusions:
Obstacles in the implementation of the workshops	Appointment cancellation with parents, the local administration Pandemic and school lock-down Distance learning Lack of direct contact with students, insufficient infrastructure, inability to move from class to class and conduct experiential SWs, lack of timely, experiential and hands-on training, heavy workload of educators, obligatory nature of the 4 cycles of SWs, non-implemented and obscure SW evaluation, some students' lack of willingness to participate in SWs, some educators' non acceptance to conduct the workshops, administration indifferent towards promoting innovation, lack of time to implement SWs, insufficient material, links not working, educators' resistance to change, defense of traditional teaching, fear of the unknown, administrative interventions, bureaucratic educational system impeding decision-making by the educators.
SW planning	Was considered adequate
SW training	Theoretical, insufficient, inapplicable, general with no practical direction, the trainers were not adequately prepared.
SW evaluation planning	Obscure, not accepted by educators, anti-pedagogical, inapplicable.
The educator's role in SWs	Responsible, active, leader, coordinator, intelligent, auxiliary, creative.
Goals reached at class level	Usable educational material, soft skills development, positive impact on students.

#### Table 2 The Main Difficulties in Their Implementation

P11: "Some educators created problems because they wouldn't change their schedule and resisted anything innovative..."

**P7:** "It took a while to catch a pace, because some students didn't see the point of a workshop that doesn't contribute to their GPA..."

**T14:** "The 4 cycles are hard to complete, considering that the school year includes school trips, events, holidays, where we essentially miss some teaching hours..."

T4: "The tight deadlines to complete the 4 cycles was a major difficulty."

**P7:** "Meeting with local administration and the parents was difficult, we all had heavy workloads, and the pandemic period in general was very difficult..."

P10: "There are still some broken links, like the one of WWF..."

P13: "We had plenty of material, but the sheer volume of it made it hard to use and navigate..."

T2: "Our training was theoretical, we need hands-on training by people who have already worked in SWs..."

**P7:** "I think the training should be planned according to each level of education and should be included in our working hours."

**T14:** "So much time was devoted to using Microsoft Teams recommended by the Institute for Educational Policy, which we never used."

P12: "What was said was in fact inapplicable ..."

The evaluation of SWs was carried out through discussion, reflection and students' portfolios using progress report sheets. Here are some indicative quotes.

P8: "The progress report sheet and the students' portfolios will shape the results of the evaluation..."

**P16:** "There was a process of reflection, every class gathered the material they had worked on and we made a PowerPoint video presenting the work of each class..."

All educators were against the evaluation process recommended by the Institute for Educational Policy, involving the 4-point scale and the obligatory nature of the 4 cycles of the workshops. They found it obscure,

inapplicable, and unpedagogic. However, they agreed that the Ministry of Education made a thorough planning and provided plenty of educational material. The following excerpts are indicative:

**P8:** "They told us about a 4-point scale, with all these indicators recommended by IEP, which I couldn't understand."

P14: "Our teachers' association decided to hand-out our own evaluation for every workshop..."

P10: "...this kind of individual, specific, detailed evaluation is impossible to conduct, this is all for show..."

Table 3 presents the role of school administration in realizing the SWs. Here are some indicative quotes on the administration:

Role of school administration	Activities		
Role of head teacher	Supportive, coordinating, administrative, encouraging, providing feedback, leading.		
Innovative programs at school	European projects, e-twinning, teachers 4 Europe, Erasmus, make a wish, Stavros Niarchos Institute programs, Odyssey, "Out of Eden Learn Harvard", cultural, health education, environmental education, "heroes of the internet", "the little meteorologists".		
Reasons for participating	Chosen by Primary and Secondary Education Directorates due to the school's innovative projects, volunteer or paid work by educators.		
Examples of administration efforts to support SWs	Buying and updating computers, providing supplies and equipment, facilitating teachers' collaboration, coordinating computer science teachers for digital coverage Creating a digital game, organizing performances, posting homework on the school page, creating original material, informing parents, teachers and local community on SW projects, connecting school to the internet, opening school towards culture and society, collaborating with educational coordinators etc.		
Evaluating SWs at class and school level	At class level: questionnaire to parents and students, student portfolio, progress sheets and worksheets, emoji feedback for every activity according to their positive/negative impact, reflection at the end of every cycle, discussion, video creation including all school projects. At school level: conclusions report to IEP, publishing SW projects on the school webpage, organizing school events, informing parents and educational coordinator online.		

Fahle 3	The Role	of School	Administration	in Realizing	the SWs
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**P3:** "I consider my collaboration with the head teacher very important. Her role in promoting innovation in our school is paramount..."

**P7:** "The school administration supported innovation, they made great efforts, as far as I know many programs are conducted in our school: health education, environmental education, cultural education, because are kids have a lot of creative output..."

**T12:** "It is very important for the head teacher to know how to handle his/her role, because a leader must be able to inspire. They have to be the first to throw themselves to work, not just stand there and command..."

T14: "I put my efforts towards involving more specialized teachers in the programs..."

**P11:** "Our head teacher helped conduct the SWs and publish the material on our school page so that parents can see it, and there was generally a feedback process and a sense of openness throughout the program."

T2: "We bought a new computer, the material we used was original, created by us."

**P5:** "Our head teacher provided the supplies, informed the local administration about our projects, as well as the PTA... We updated our school's computers."

P3: "Our head teacher promoted my participation in a Teachers for Europe program... She devoted time outside

her normal workday ... "

P7: "They helped our collaboration with other teachers..."

T1: "I worked with the computer science teacher to create a digital game, we used the French language teacher's knowledge to organize theatrical performances..."

The educators planned the SWs evaluation at class and school level. At class level, they used questionnaires, progress sheets for the students, discussion, feedback, student portfolio. At school level, they posted their projects on their school pages and sent reports with their conclusions to the Institute for Educational Policy. They also informed the parents about the SW projects. The following quotes are indicative.

T1: "At class level, we will schedule an online or live presentation to parents... At school level, we will post our projects on the school webpage."

**T2:** "At the end of every cycle we evaluate the students' progress in open worksheets and evaluation sheets, and we also use students' portfolios and our own material..."

Table 4 shows the educators' suggestions for the continuation of the workshops through improvements in their implementation.

T3: "We feel proud of the kids, for the way the expressed their knowledge through teamwork and how all this is reflected in their mind. Students really evolve through this process. SWs are a structured situation, with planned steps, it's really something. This is an evolved form of education, no doubt..."

**P5:** "The entire initiative is very interesting, and I noticed an attitude change, which means the SWs must be extended and introduced to every school next year, because kids acquire problem-solving and critical thought skills, as well as all of the above: self-security, self-care, responsibility..."

**P16:** "I personally found it very helpful, because it provided us with recommended material. It provides guidance, so I believe it would be nice for every Greek school to get involved."

**T4:** "Teachers could focus on one thematic cycle each year, so that they have the time to elaborate on it thoroughly, without the pressure of a pre-defined schedule..."

**T10:** "Distance learning requires a certain educational culture. There also needs to be a flexible schedule when it comes to completing the projects..."

The educators suggested more time to be given through the week in order to complete the SWs. Here are some indicative quotes.

**P9:** "More time should also be given, so that the students have the time to do things. It would be better if SWs covered more hours each week."

They proposed the provision of timely training sessions, which should be practice-oriented, experiential in nature and adjusted to each level of education.

T2: "They should train teachers, I believe that due to our experience, our input will be valuable..."

**P7:** "They should have been planned ahead of time. *And our training should be provided according to the level of education.*"

The teachers expressed the desire to use an online platform functioning as a teaching material repository, which would include all SW projects from every school around Greece, in order to disseminate knowledge and exchange views on best practices. The following quote is indicative.

**P5:** "It would help much more if the IEP platform included the projects of every school who took on SWs, sorted by theme."

Some teachers believe that SWs should be incorporated in the curriculum, since they help students broaden

their knowledge. Here are some indicative excerpts.

P8: "Through the SWs children come to realize the way our society is structured..."

**P7:** "I believe the SWs fulfill their psychopedagogical purposes and boost the students' self-awareness and self-knowledge.

**P11:** "The number of thematic axes should be reduced..."

P16: "The completion of every SW cycle shouldn't be obligatory..."

**P10:** *"The evaluation cannot be conducted in the recommended way. They ask something way too individual, specific, detailed. I don't think anyone will assess each one of them from each one of the participating schools..."* 

**P13:** "Some teachers with a previously teacher-centered approach have now turned to collaborative methods of teaching."

Table 4 Educators' Suggestions for the Continuation of the Workshops Through Improvements in Their Implementation

Factors	Conclusions:	
Broader implementation of SWs	<ul> <li>Broader implementation of SWs due to the knowledge building, critical thought, problem solving and responsibility development, as well as change of attitude in students. They have a positive impact on parents and educators.</li> <li>Broader implementation under certain conditions:</li> <li>Optional completion of the 4 cycles, timely and hands-on training and different methods in student evaluation, adequate planning, feedback and material by the Institute for Educational Policy.</li> </ul>	
Educators' suggestions	Optional completion of the 4 cycles, more time per week to run the SWs, timely, practical and experiential training, according to the level of education, different descriptive student evaluation, without negative designations, cultivation of the necessary educational culture for distance learning, provision of material and equipment to each school, adequate planning and scheduling for the SWs, a platform where projects are posted sorted by theme, flexible schedule for the SW completion.	

## 6. Discussion-Conclusions

Our research showed that skills workshops helped students develop social, digital and mental skills. They solved problems regarding nutrition, the environment, road safety, bullying (Nesti, 2017; Lewis et al., 2020; Mc Gann, Wells, & Blomkamp, 2020; Soroko, Mykhailenko & Rokoman, 2020; Rosenow-Gerhard, 2020) and developed critical and organizational thought (Bouck et al., 2019; Lynch & Ghergulescu, 2018).

They also learned to respect children with special abilities, understanding the needs and interests, they developed tolerance towards diversity and adopted behaviors promoting their inclusion and integration in the activities of general education (Bouck et al., 2019), through role-play, teamwork activities, arts and crafts, and drama.

The main focus was on communication and teamwork activities (Rosenow-Gernard, 2020) among the students, using clay, digital games, puppet theater, arts and crafts, collages, robotics, comics, poetry and literature. The students' talents were highlighted, and their ability to investigate, argue and debate was enhanced (Rane-Sharma et al., 2017).

Regarding communication and teamwork, some activities that promoted digital literature were mentioned, like using mobile phones during class (Liu, Wu, Wong, Lien & Chao, 2017; Beltz et al., 2016; Shimba, Mahenge & Sanga, 2017) in order to tap into online sources, multimodal texts, interactive books, online libraries (Danovitz et

al., 2015) and digital tools in the quest for active knowledge-building (Al Musawi, Al Balushi & Ambusaidi, 2015; Liu et al., 2017).

Due to the lock-downs, online SWs were implemented (Dikke & Faltin, 2015; Roberts, Holmes & Bradbury, 2017), in which discussion, video presentations, and digital games were used (Sergis et al., 2017; Mahenge & Sanga, 2017).

Through the SWs, students seemed to change attitude, become more responsible, and acquire healthier diet habits and a different lifestyle. They took initiative to reduce their ecological footprint, they created posters and pamphlets to inform parents about waste management, renewable energy sources, recycling, and environmental protection (Kapici et al., 2019; Lynch & Ghergulescu, 2018; Bouck et al., 2019).

Older students included younger ones in their activities and assigned them some roles to help them socialize and develop a sense of belonging and common goal. The workshops contributed to the development of students' creativity and teamwork (Raikou, Karalis & Ravanis, 2017; Malic et al., 2017).

The creation of video, collages, artifacts, digital games, as well as the use of puppet theater, robotics, art and STEAM education (Soroko, Myckhailenko & Rokoman, 2020; Sergis et al., 2017; Rane-Sharma et al., 2017) helped them develop their imagination and interests (Caci, Chiarrese & D' amico, 2013). Knowledge was holistic and interdisciplinary.

They came to understand the needs of society, they developed environmental awareness, appropriate road behavior, they got involved in volunteering, they reduced their ecological footprint and they recycled, in order to develop their citizenship and social awareness (Nesti, 2017; Rosenow-Gerhard, 2020; Lewis et al., 2020; Mc Gann, Wells, & Blomkamp, 2019).

They experimented and broadened their knowledge (Smith, Stein & Holmes, 2020) by creating concept maps, performing experiments (Kapici et al., 2019; Raikou, Karalis & Ravanis, 2017), writing collaboratively and drafting work plans (Lewis, Mc Gann & Blomkamp, 2020), using an online repository (Photodentro) and connecting knowledge on every curriculum subjects cross-thematically (Bouck et al., 2019; Liu et al., 2017). The educators attributed their students' improvement of learning outcomes to their participation in SWs.

Our researched showed that SW implementation enhanced the school's image to the parents and local community (Roberts, Holmes & Bradbury, 2017). Parents understood their children were involved in something different, they acquired knowledge on interesting topics and their participation in the SWs generated positive emotions.

In regard to the investigative knowledge-building, some referred to the students' participation in health, environmental and cultural education activities. Schools organized online discussions (Roberts, Holmes & Bradbury, 2017) and conferences to inform the public about addiction, online safety and volunteering.

Students conducted mini-research projects in digital labs (Dikke & Faltin, 2015; Liu et al., 2017), they formulated hypotheses, collected data and proceeded to make conclusions, shaping a positive attitude towards science, technology, educational robotics, STEAM education and digital learning (Caci, Chiarrese & D'Amico, 2013; Soroko, Mychailenko & Rokoman, 2020).

It's worth mentioning that through SWs, students were introduced to all kinds of art (Raikou, Karalis & Ravanis, 2017) and foreign languages, particularly English (Rane-Sharma, Mangelkar, Shirgave, Sasikumar, 2017). They also participated in drama, theatrical play, literature, poetry, sculpture, dance, music and painting activities, all while developing communication and social skills (Al Musavi et al., 2015; Caci, Chiarrese & D'Amico, 2013).

The main obstacles in SW implementation were the lock-downs due to the pandemic and distance learning.

The small number of participating students, the lack of equipment (Lynch & Ghergulescu, 2018) the unstable internet connection, made it hard for educators to implement SWs and STEAM education (Sergis et al., 2017). It was also noted that it was difficult to move from class to class because of the pandemic and the contact with the students was indirect, both of which impeded the workshops' implementation. The lack of supplies was also noted in labs, as well as problems with broken links.

The Institute's material was rich and varying, but its volume was perplexing to educators, who tried to figure out how to use it best (Lynch & Ghergulescu, 2018). The lack of digital skills from the part of many teachers made it hard to post homework online and run the digital labs (Attakorn et al., 2014).

Other obstacles involved the cancellation of meetings with parents, the local administration and the community. Moreover, students found it hard to adapt to the program and accept the lack of grading.

The theoretical and obscure training made it hard for educators to understand how to run the workshops. They noted that their trainers were inadequately prepared, they couldn't make clarifications and they made little mention to the practical part of SWs, in order to guide the educators.

The need for hands-on training, within working hours, according to the level of education, relevant to their interests and daily teaching practice was highlighted (Soroko et al., 2020).

The teachers' heavy workload due to the pandemic generated emotions of anxiety, pressure, and exhaustion (Lynch & Ghergulescu, 2018). They objected to the obligatory nature of the 4 cycles. They consider it impossible to implement due to the conditions in times of a pandemic. Furthermore, the limited time devoted to SWs in primary and secondary education impeded their implementation; many schools also saw a small number of participating students.

The main difficulty that emerged involved planning the evaluation both of students and of the SWs as a whole. All the teachers objected to the 4-point scale of evaluation with a large number of indicators. They found it unrealistic, unpedagogical, obscure, hard to implement. There was no time, knowledge and consent for them to "stigmatize" the students by highlighting their weaknesses and negative behaviors. This type of evaluation is against their pedagogic principles and values. They also noted that the evaluation couldn't be as specific and thorough in large classes or for special needs students.

Our results showed that school administration played a major role in reaching the SW goals. The administration guided, solved problems, formed collaborations, informed the parents (Danovitz et al., 2015). They contributed to the implementation of innovative school activities, which helped students develop social, communication and collaboration skills (Kapici et al., 2019; Al Musavi et al., 2015; Pedaste et al., 2014).

A wide range of European-funded programs was mentioned, some of which were etwinning, Erasmus, teachers 4 Europe, intercultural, environmental, health and special education programs. Others included "Out of Eden Learn, in collaboration with Harvard", "Es school gardeners and future citizens", "Odyssey", "Make a wish", "Stavros Niarchos", "Bring your device at school", "Internet heroes", "Taking care of the environment", "Healthy kids, healthy citizens", "the little meteorologists", and more.

The school administration played a key role in the implementation of these programs, supporting, coordinating, and guiding. They provided supplies and equipment, studied the material, made suggestions, promoted the collaboration between different specializations and cared for integration and special education classes.

The teachers described a head teacher who inspired, shapes a common vision for the school, is a "leader", but also first among equals (Attakorn et al., 2014). They also informed parents about the SW projects and posted the material and homework on the school page. Furthermore, they wrote the conclusions reports and sent them to the

Institute for Educational Policy. They promoted an open school mentality and asked the local administration for the necessary equipment and supplies. They informed the school counselor and promoted the workshops activities to the local community. Head teachers devoted a lot of time and bought interactive whiteboards, in order to work with computer science teachers for digital coverage and internet connection.

They also helped teachers from different fields to collaborate with each other and with teachers in integration classes. Our research results highlighted the indifference of the administration which did not promote the changes and did not support innovative practices, ideas and programs. In this case, educators felt overwhelmed and unable to grow professionally (Soroko et al., 2020; Sergis et al., 2017).

Teachers think a broader implementation of SWs would have a positive impact, since it would help students acquire 21st century skills (Pedaste et al., 2014; Capici et al., 2019; Al Musawi et al., 2015). They noted that this should happen under conditions, like a flexible schedule for the completion of the activities, the non-obligatory nature of the 4 cycles, and a different type of evaluation.

Some teachers suggested more time be given to SWs through the week, and the necessary equipment be provided (Lynch & Ghergulescu, 2018). They also thought it would be useful to create a government platform where every school would upload its activities in order to create material, disseminate knowledge and share best practices (Dikke & Faltin, 2015).

They also proposed the SW implementation by use of auxiliary staff and collaboration among different experts (logotherapists, psychologists, social workers, psychopedagogists) in order to support students with learning difficulties in the framework of a more inclusive and diverse approach (Bouck et al., 2019).

They also feel the planning and scheduling should be timely and thorough, and the training should be more hands-on and suited to each level of education.

Regarding the SW evaluation, they suggest the reduction of bureaucracy and the creation of an evaluation process that helps students reflect and receive feedback without stigmatizing them using negative designations.

Teachers believe there is a need to re-structure curricula with new thematic modules like road safety, sex education, and environmental awareness, as well as to adopt collaborative and student-centered teaching and learning methods.

To sum up, SWs are an innovative educational practice that fascinates students, as it helps them use technology, tap into their talents, experiment, cultivate their imagination and creativity, and develop 21st century skills (Pedaste et al., 2014; Raikou, Karalis & Ravanis, 2017).

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