

## Section 1 - Summary

### 1.1 Author

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### 1.2 Background

I am a computer science teacher of my school and expert to new digital educational technologies. I represent my school from the view of educators.

### 1.3 Descriptive title

STE(A)M it by your needs!

### 1.4 Abstract

In our education it is very important to take consideration the needs of all the students, providing educational programs that support differentiation learning, with the help of appropriate STE(A)M education policy at our school.

We want to give the ability to all the students of our high school ages 12 to 15 years old to exploit their interests and their needs about all the disciplines of a STE(A)M project .

Want to develop their motivation via the prism of differentiation learning with appropriate STE(A)M educational problem based learning activities.

We propose to establish a STE(A)M club into our school with collaboration of our teachers and with participation of our students according to their ages separate it into groups. Each group guides by a mentor – teacher from our school. At the beginning of the school year and according to the needs and the interests of the students its group of the club has to implement a STE(A)M project, producing an appropriate content.

The theme of the project could be connected with the local community environment. At the end of the school year, we organize a STE(A)M view day where all the groups of our STE(A)M club present to school and local community their works about their projects. By the end of the STE(A)M view day all the projects uploaded at the web page of school under the STE(M) club menu and remain accessible for all the community.

The proposal STE(A)M educational policy will take place from October until the April of each school year, where the STE(A)M view event will take place at the end of April for 1 day.

Have to ensure that take consideration the needs and interest of all students and give them the opportunity to engage with STE(A)M projects.

## Section 2 – Goals

### 2.1 General goal

- The general goal is to improve the school environment by giving opportunities to our students to participate according to their needs and interests through STE(A)M project.
- The well structured STE(A)M curriculum that give emphasis to students and teachers collaboration via inter-disciplinar contents.

### 2.2 General goal description

- We want to give the ability to all the students of our high school ages 12 to 15 years old to exploit their interests and their needs about all the disciplines of a STE(A)M project .
- Want to develop their motivation via the prism of differentiation learning with appropriate STE(A)M educational problem based learning activities.

### 2.3 Strategic goals

- Activate a capacity building program on the STE(A)M approach for teachers of 10 hours at the beginning of this school year
- Activate a capacity training program on the special needs education training for teachers of 4 hours at the beginning of this school year
- Organize a presentation day to the students about the STE(A)M plan at the start of school year
- Establish an active collaboration between our STE(A)M teachers
- Ensure cooperation and appropriate funding from our municipality officer
- Make an info campaign about the program to the local community
- Provide the appropriate materials to all the students of STE(A)M club
- Take self evaluation questionnaires about the design and operation of the STE(M) plan
- Organize the open event STE(A)M school day with cooperation of local community
- Make an evaluation discussion as school organization about the STE(A)M plan at the end of each school year

## Section 3 – Targets

### 3.1 Beneficiaries

- The final beneficiaries are certainly their students of our school and secondly the teachers of our school
- Our students will be engaged actively with STE(A)M learning activities improving their transversal and digital competences. From the other hand, our teacher will be improve their teaching practices and enhance them with new teaching methodology according to the STE(A)M design, through specific training and practice.
- 10% of total amount of students would be actively participants and members of our school STE(A)M club.
- Over the 60% of our teachers could be take participation at this procedure by training at STE(A)M didactic methodology with the support of digital technologies and then implement the training to participant students.

### 3.2 Recipients

- The recipients are the same with the beneficiaries

### 3.3 Special needs

- This STE(A)M plan of our school take into consideration the needs all of the students additionally of course and students with special educational needs with specific, adjustable and flexible way.

So, our teachers will be training from experts educators about the education of special needs students according to the STE(A)M education.

We encourage the special educational needs students to participate provide them a flexible and supportive learning environment that help inclusion.

## Section 4 – Value Proposal

### 4.1 Value proposal

- New learning methodologies strategies through STE(A)M problem based learning projects that include all the students according to their needs

## 4.2 Results

- 20 teachers of our schools are introduced to the STE(A)M educational approach
- 10 hours of training about the STE(A)M methodology with synchronous and asynchronous MOOC platform
- 4 hours of training about the education of students with special needs at school from expert education
- 8 groups and relative activities through the school STE(A)M club
- 1 open STE(A)M event day at the end of school year for school and local community

## 4.3 Impact

- We aim to make 10 STE(A)M activities per year at the school STE(A)M club
- We aim to achieve the participation of 20% of our students at STE(A)M club the second year
- We hope to develop cooperation with experts from the state of STE(A)M technology
- We support and hope for closer connection with our local community
- We believe that enhance our school with fresh ideas, teaching practices and new technology that benefit all our students
- We aim to organize every year an open STE(A)M day

## Section 5 – Costs

### 5.1 Cost structure

- Labor (internal staff)
- External consultants
- Administrative costs
- Hardware
- Software
- Miscellaneous services

### 5.2 Funding opportunities

- Funding from our municipality for the equipment of our STE(A)M club and for the open one day STE(A)M event.
- By approaching and finding sponsors from the branch of science and technology

## Section 6 – Action Plan

### 6.1 Activities

- Presentation of STE(A)M plan from a STE(A)M expert educator to the teachers and the headmaster of the school (30 min)
- Discussion, questions and suggestions on the STE(A)M plan (15 min)
- Possible changes and time planning for the current school year (10 min)
- Web training of teachers to STE(A)M methodology by appropriate MOOC (10 hours) before the start of lessons
- Intra-school training about special needs education (4 hours)
- Presentation of STE(A)M plan to students at the beginning of school year (30 min)
- Questions, discussion with students about the purpose and the operation of STE(A)M club (15 min)
- Invitation for the students to participate to school STE(A)M club within next 2 weeks

- 1 hour per week cooperation between the school teachers of STE(A)M club about the organize of this club
- Planning of project curriculum (5 hours)
- Participants (students) divides into sub groups within the STE(A)M club according to their ages and their needs (1 week)
- operation of STE(A)M club 2 days of week per after school program ( per 1 hr)
- Self evaluation of students by questionnaires
- Self evaluation of teachers by questionnaires about the targets and the procedure of the implementation of STE(A)M plan
- Evaluation of STE(A) projects by each separate group of students
- Analysis of the strong and weak points of the operation of STE(A)M club by teachers and students
- 1 event open day to local community for school STE(A)M projectspresentation at the end of school year

## Section 7 - Risks

### 7.1 – Risks/Competition

#### a. Risk description

- The available time of students of the school is a matter because of the many activities that students have probably to do after school. Also the availability of participant teachers according to the STE(A)M plan.

The list of activities is shown in 6.1 above this paragraph

#### b. Probability

- Probability:2

#### c. Severity

- Severity:2

#### d. Mitigation strategy

- The low active participation of students because of their other after school activities
- The low collaboration between STE(A)M teachers of the school club

### 7.2 – Risks/Opposition

#### a. Risk description

- The list of activities is shown in 6.1 paragraph

#### b. Probability

- Probability:2

#### c. Severity

- Severity:2

#### d. Mitigation strategy

- The support of our teachers to the STE(A)M methodology by the project manager of STE(A)M plan and the opportunities to participate at training programs

### 7.3 – Risks/External Menace

a. Risk description

- The participation of students to the STE(A)M lab lessons because of their after school activities
- The lack of appropriate materials for the various STE(A)M experiments and projects
- The hypotonic cooperation with the local community

b. Probability

- Probability:2

c. Severity

- Severity:2

d. Mitigation strategy

- To convince with appropriate campaign a lot of students with their families to engaged actively to STE(A)M club
- To establish a direct and efficient communication with local community
- To ensure the appropriate support from our municipality office