

## Section 1 - Summary

### 1.1 Author(s)

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### 1.2 Background

I am Oana Maria Iacob, primary school teacher representing a number of 35 students from both 3<sup>rd</sup> and 4<sup>th</sup> grade in my school located in a rural area. In our last school assessment regarding the satisfaction of the beneficiaries, the students and their parents were interested in more activities that involve technology, experimenting and developing digital skills.

### 1.3 Descriptive title

We STE(A)M! - Optional discipline

### 1.4 Abstract

Our policy requires the implementation of an optional discipline to be studied by students in 3<sup>rd</sup> and 4<sup>th</sup> grade. During the classes, the students will be involved in activities based on a STEAM approach: experimenting, investigating, solving realistic problems, questioning facts and statements.

This will help develop transversal skills, digital competences, critical thinking. We plan to carry out the activities in one hour once a week during the whole school year at our school unit. The discipline we motion will give added value to the policies of our school, it will create the premises for developing other STEAM based policies and it will enhance the image of the school in our community. You can support our proposal by endorsing it in the board of directors.

## Section 2 – Goals

### 2.1 General goal

Students of early ages (9-11) use technology mostly for recreational reasons – games, social media, music, movies. They encounter difficulties when they have to use it to write a homework, to make a presentation for school, to solve a problem that requires investigating, experimenting, assessing sources of information.

We propose an optional discipline that has a STEAM based approach which will create a deeper understanding and usage of technology in everyday life.

## 2.2 General goal description

Our goal is to involve 35 students aged 9-11 from our rural school in STEAM based activities.

Factory 4.0 & Frames (Forbes, 2020) mentions that by the year 2030 in Romania digitalization will create 1 million jobs in the digital field. In the PISA tests in 2018 Romania was the only country in UE where 15 years old students used paper and pens.

Eurostat (2019) reports that in Romania, 43% of the people aged 16-74 have reduced digital competences. In addition, only 56% of the young people in our country (aged 16-24) have basic digital competences (situating Romania last in the list of UE countries). In a future society where digital and transferable skills are a must, developing projects that help students achieve those skills is mandatory.

65% of the students in the target group are girls, so our proposal takes into account the Digital Education Action Plan for 2021-2027 of the European Commission which encourages women to participate in STEAM activities. More than that, we base our motion on the European Skills Agenda for sustainable competitiveness, social fairness and resilience and the Council Recommendation on key competences for lifelong learning (European Commission, 2018). Lifelong learning is crucially influenced by the developing of key competencies that allow citizens -in our case rural citizens - to adapt to change.

## 2.3 Strategic goals

A - Involve 35 students in STEAM based activities once a week for one hour during the whole school year

B – improve transferable skills, critical thinking and digital competences of our students by 5 -10 % by the end of the next school year

## Section 3 – Targets

### 3.1 Beneficiaries

The beneficiaries are 35 students in 3<sup>rd</sup> and 4<sup>th</sup> grade in our school, 65% of them are girls.

The students are going to develop transversal skills, critical thinking. They will improve their digital skills with 5- 10%. Through the activities we also aim to boost their confidence in their own strengths, increase their interest in collaborative work.

More than in urban schools, the students in rural schools tend to have a negative, or at least pretty low opinion regarding exact sciences – their grades are lower, they consider them to be hard to understand (especially girls). We want to change that opinion, to show the students ways of perceiving that kind of knowledge.

Because we propose activities that are based on real-life problems, students will be more engaged in solving them, they will feel that they have the power to do something for their community, that their opinion matters. We will engender a sense of responsibility, of civic conscience.

### 3.2 Recipients

In our project, the recipients are the same as the beneficiaries.

### 3.3 Special needs

Our policy involves 4 beneficiaries with average learning difficulties and one with epilepsy. In both cases we plan to place these students in different teams so that they won't feel excluded, the teacher will give them supplementary explanations, appropriate tasks and monitor them closely. The other students will be taught how to relate with them, to encourage their efforts and help them when the situation will ask for it. A collaboration protocol with the local doctor's office will ensure the medical assistance of all the 35 students.

## Section 4 – Value Proposal

### 4.1 Value proposal

We propose to involve 35 students in STEAM based activities through an optional discipline.

### 4.2 Results

- 35 students participate in STEAM based activities during one school year
- a number of 35 students will increase their digital competences with 5-10%.
- a number of 35 students will develop transferable skills
- a number of 35 students will develop their critical thinking

### 4.3 Impact

We aim to make *We STE(A)M!* an optional discipline to be studied each year by the 3<sup>rd</sup> and 4<sup>th</sup> graders. Also, we plan to extend this discipline to an upper level – to middle school.

We plan to have a contest each year - students divided in teams will elaborate a plan to solve a community problem by means of applying knowledge on a STEAM based project.

## Section 5 – Costs

### 5.1 Cost structure

- Administrative costs
- Hardware
- Software
- Miscellaneous services

### 5.2 Funding opportunities

Our policy will be funded from the school budget. Potential sponsors might be: the town hall, economic operators in the common/village.

## Section 6 – Action Plan

### 6.1 Activities

1. Develop the structure of the optional discipline (for each class), as it is requested by the Ministry of Education in Romania: tear sheet, general competences, specific competences and learning activities examples, contents (means to develop the competences), methodological suggestions (didactic strategies, design of the teaching activities, assessment methods, values and attitudes promoted by the discipline, resources-of time, materials, people involved). (1 week)
2. Planning and projecting the activities based on the STEAM approach. (1 week)
3. Purchasing the devices needed for the implementation of the project. (1 week)
3. Implementing the optional discipline across the school year. (9 months)
4. Evaluating the project. (in the last month of school)

## Section 7 - Risks

### 7.1 – Risks/Competition

#### a. Risk description

The project we are proposing is the only one in the school that is based on STEAM educational approach, there is no other resembling optional discipline or project currently implemented.

- b. Probability 1
- c. Severity 1
- d. Mitigation strategy

There is no need for a mitigation strategy.

## 7.2 – Risks/Opposition

- a. Risk description

1. Some of the teachers that are not familiar to STEAM education approach may deny its value or consider it is inappropriate for students aged 9- 11.

- b. Probability 1
- c. Severity 1
- d. Mitigation strategy

Any opposition issue that will arise will be solved by communication, tolerance and respect and having in mind the managements methods for STEAM education.

## 7.3 – Risks/External Menace

- a. Risk description

1. Covid pandemic – could force us stop face-to-face interactions, and start online activities, or some of the teachers or the students might get sick.

2. Weak internet connectivity, problems with the devices.

3. Low funding – budget cuts, sponsors unable to honor their contract.

- b. Probability 2
- c. Severity 2
- d. Mitigation strategy

1. The pandemic we are currently experiencing might affect the implementation of the project. We will design activities that can be carried out online on an educational platform. In the team of teachers that will work on the project we shall assign multiple roles in case one of us will be unable to carry out his/her task.

2. A constant maintenance of the Internet connectivity and of the devices will ensure good Internet speed and a properly functioning of the devices.

3. In case of low funding there are two strategies: the activities will be modified so as to request a minimum investment we can have a sponsorship from economic operators in our commune.

