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AGENCE ERASMUS+ FRANCE · EDUCATION & FORMATION

DOCUMENT FOR A TRANSNATIONAL STRATEGIC PARTNERSHIP FOR IMPROVING OF EDUCATIONAL PROCESSES IN THE REGIONS OF SLIVEN – BULGARIA, KOCANI – THE REPUBLIC OF NORTH MACEDONIA, GUADELOUPE – FRANCE AND BRESCIA- ITALY

Intellectual Output 3

Project tittle: **Nutrition Education by using of the Virtual Reality-based educational approach**

Abbreviation: **Nutrition education through Virtual Reality**

under the ERASMUS+ Programme

AGREEMENT NUMBER: **2023-1-FR01-KA220-SCH-000166024**

CONTENT :

Introduction

This document presents the framework for a **transnational strategic partnership** aimed at improving educational processes in the regions of Sliven (Bulgaria), Kocani (Republic of North Macedonia), Guadeloupe (France), and Brescia (Italy). At the heart of this partnership is the project **"Nutrition Education by using of the Virtual Reality-based educational approach"**, an initiative designed to address a critical dual challenge facing our education systems.

The first challenge concerns the **health and well-being of our students**. Across Europe, youth overweight and obesity are reaching concerning levels, as highlighted by the World Health Organization. This trend is compounded by a lack of effective nutrition education in school curricula and by young people's exposure to advertisements for often misleading and potentially harmful diets and dietary supplements.

The second challenge is **pedagogical and technological**. To prepare students for the jobs of tomorrow, it is imperative to modernize education, particularly in STEM subjects. However, many schools lack the resources and suitable curricula to meaningfully integrate advanced technologies. While teachers are eager to innovate, they cannot be expected to single-handedly develop the expertise required to address complex topics like nutrition.

Our project tackles both of these issues simultaneously by proposing a **synergistic solution**: an interdisciplinary educational approach that uses virtual reality (VR) to make nutrition education engaging and accessible. By integrating this vital topic within science classes (biology, chemistry, mathematics), we empower teachers to enhance their students' skills while promoting healthy habits. This approach is fully aligned with the priorities of the **European Union's Digital Education Action Plan (2021-2027)**, which aims to develop a high-performing ecosystem and enhance the digital skills of both students and teachers.

This strategic document is intended to guide the implementation and sustainability of this innovation. It is structured as follows:

- **Chapter 1:** We will begin with a detailed analysis of the current situation of educational processes in each partner municipality, identifying weaknesses and opportunities for improvement.
- **Chapter 2:** Next, we will formulate concrete recommendations to improve local educational policies and align them with the European Digital Education Action Plan.
- **Chapter 3:** The third chapter will be dedicated to presenting the best approaches (good practices, ICT solutions, awareness-raising activities) for effectively integrating health and well-being topics into the educational process.
- **Chapter 4:** Finally, we will define a long-term action plan, including at least 10 future projects, to ensure the sustainability and expansion of our transnational cooperation.

Through this partnership, we aspire not only to improve the physical and mental health of students but also to sustainably strengthen the capacity for transnational cooperation of all partner organizations, thereby creating a network of innovation for the benefit of European youth.

Project Presentation

Main Objective The project's main objective is the development and practical implementation of the innovative VR-based educational approach for nutrition education in the project partners' regions. The project offers an interdisciplinary educational approach suitable for any topic of community interest, with high transferability potential for implementation in any educational institution. It unites students and STEM teachers from four secondary schools in the regions of Sliven (Bulgaria), Guadeloupe (France), Brescia (Italy), and Kochani (Republic of North Macedonia).

Specific Objectives (SPOs)

- **SPO1: Development and implementation of the innovative Virtual Reality-based educational approach for nutrition education in secondary schools**. The newly created educational method will be described in detail in a Handbook (a small pedagogical material for internal use) for secondary school teachers, serving as a guideline for its implementation in their regular classes and non-formal learning activities.

- **SPO2: Increasing the skills and competences of secondary school teachers and students**, which includes:

    - Increasing teachers' digital skills in using OER (Open Educational Resources) and advanced VR-based educational approaches, as well as improving their overall capacity for transnational cooperation.

    - Increasing students' skills in recognizing the importance of a healthy lifestyle, as well as their skills in teamwork, research, critical thinking, and presentation.

- **SPO 3: Promotion of the importance of nutrition education to improve the physical and mental health and well-being of students**. The planned activities will lead to the creation of recommendations for improving local policies and establishing an appropriate communication strategy.

Main Activities Besides project management, the main activities are:

1. Learning/Teaching/Training activities for STEM teachers and students.
2. Creation of two Project Intellectual Outputs.
3. Communication and promotion activities towards stakeholders.

Expected Results

- Created and successfully implemented an innovative VR-based educational approach for nutrition education in STEM-related school subjects.

- Increased STEM teachers' skills and competences for using advanced ICT educational methods.

- A minimum of 128 secondary school students with increased skills (digital, teamwork, critical thinking, online research, and presentation).

CHAPTER 1:

Chapter 1. Description of the current situation of educational processes in the project partners' municipalities (based on the performed need analysis in the project preparation phase and determined weak sides of educational processes in the targeted regions - from the aspect of potential for improvement, determination of the most adequate educational approaches, selection of the priorities).

Nowadays, more and more pedagogical specialists have the desire to increase their qualifications regarding the use of digital resources in teaching and conducting VR lessons on different topics. Encouraging the departure from the framework of conservative teaching aims at increasing the interest and motivation of students for learning, increasing the results of their learning and having a permanent retention in school

During the Covid-pandemic, the Ministries of Education and Science felt the need to implement digital resources in educational processes. As a result, STEM centers for innovations in education and VR lessons were launched in European countries.

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1. Analysis of educational process in Sliven, Bulgaria

The **education system in Bulgaria** is overseen by the Ministry of Education and Science and is structured into several levels. It has undergone reforms in recent years to align with European standards, particularly the Bologna Process and EU directives.

📚 Structure of the Bulgarian Education System

1. Pre-primary Education (Kindergarten)

- **Ages:** 3–6 (optional), last year (age 5–6) is **compulsory**.
- Focuses on basic social, emotional, and cognitive development.
- Typically held in public or private kindergartens.

2. Primary Education

Grades: 1–4 (Ages 7–10)

- Starts at age 7 (or 6 in some cases).
- Students are taught by one main teacher and receive foundational skills in reading, writing, math, and Bulgarian language.

3. Lower Secondary Education

- **Grades:** 5–7 (Ages 11–13)
- Subject-based teaching begins with specialized teachers.
- Ends with a **national assessment** (NVO) in Bulgarian language and mathematics.

4. Upper Secondary Education

- **Grades:** 8–12 (Ages 14–18/19)
- **Two main types:**
  - **General Secondary Schools (общообразователни училища)**
  - **Vocational Schools (професионални гимназии)** – Combine general and vocational education.
- Ends with the **Matura Exams (Държавни зрелостни изпити)**, required for graduation and university admission.

5. Higher Education

- **Types of institutions:**
  - Universities
  - Specialized higher schools
  - Colleges (shorter programs)
- **Degrees offered:**
  - **Bachelor's Degree (4 years)**
  - **Master's Degree (1–2 years after Bachelor's)**
  - **Doctorate (PhD)**
- Admission is based on the Matura exams and/or university entrance exams.

🏫 Types of schools

- **State/Public Schools** – Majority, free of charge.
- **Private Schools** – Tuition-based, often offering international curricula.
- **Religious Schools** – Must be licensed by the state.
- **Special Needs Schools** – For students with disabilities.

- 🎓 **Main characteristics:**

- **Compulsory Education:** From age 5 (pre-school year) to age 16.
- **School Year:** September 15 – end of May/June (depending on grade).
- **Grading System:** 2 (poor) to 6 (excellent).
- **Language of Instruction:** Bulgarian, with options for minority languages and foreign language schools (e.g. English, German, French).

🔄 Recent Reforms and Trends

- Introduction of **competency-based curricula**.
- **Digitalization** and use of electronic diaries, platforms, and resources.
- Strengthening of **dual education** in vocational schools (school + company practice).
- Focus on **inclusive education** for students with special needs.

The mandatory requirements for the results in the system of preschool and school education, in Bulgaria as well as the conditions and processes for their achievement, are called the State Educational Standards.

Lows and bylaws in the education system of Bulgaria:

- LAW ON PRESCHOOL AND SCHOOL EDUCATION
- REGULATION No. 11 of 1.09.2016 on assessing the learning outcomes of students
- REGULATION No. 10 of 1.09.2016 on the organization of activities in school education
- REGULATION No. 5 of 03.06.2016 on preschool education
- REGULATION No. 13 of 21.09.2016 on civic, health, environmental and intercultural education
- REGULATION No. 15 of 22.07.2019 on the status and professional development of teachers, principals and other pedagogical specialists
- REGULATION on Inclusive Education … and etc.

Preschool education

Preschool education in the Republic of Bulgaria is mandatory from the school year, which begins in the year the child turns 4 years old. It is organized in groups according to the age of children.

At the national level, kindergartens for children from 2-3 to 6 years old are managed and methodologically supported by the Ministry of Education and Science through the regional departments of education in the country, and independent nurseries for children from 10 months to 3 years old are managed by the Ministry of Health. At the municipal level, the municipal education and health departments of the municipalities are responsible for the management and supervision of kindergartens, kindergartens with nursery groups and independent nurseries.

In 2024/2025 school year in Sliven district, Bulgaria, there are 59 kindergartens. 4 of them also have nursery groups. The number of schools with groups for compulsory preschool education is 18. The number of preschool children is 6,360, and the number of pedagogical specialists is 500. There are 8 independent nurseries with 560 children.

Preschool education can be full-day, half-day, hourly or according to individual needs (independent organization). Children attending full-day and half-day classes are organized in separate groups in the kindergarten. All forms of organization include the provision of education, socialization, training and support for the upbringing of the child. They are provided in partnership with parents, and the achievements of children in kindergarten are monitored and reported at the beginning and the end of the respective age period using appropriate tools.

The state has removed obstacles to children's access to early education and parents do not pay fees for attending nurseries and kindergartens.

In kindergartens, directors and teaching staff have appropriate education and qualifications for the positions they have. There is a regulated system of continuing professional development for staff in the education system and working conditions are good. In nurseries, medical and pedagogical specialists are also appropriately qualified.

The provision of a program and methodology in kindergartens (for children aged between 2-3 and 7 years) is based on the state standards for preschool education, set out in Regulation No. 5 on preschool education. Various methodological tools exist on the basis of these standards. The curriculum (program system) for kindergartens is based on pedagogical goals, values and approaches that enable children to develop their full potential in accordance with their social, emotional, cognitive and physical development and with a view to their well-being. The importance of play as an important part of the educational process is taken into account.

The curriculum includes the competencies (or expected outcomes) that children should achieve through their education, upbringing and socialization. These competencies include Bulgarian language and literature, mathematics, the surrounding world, fine arts, music, construction and technology, and physical activity.

Kindergartens, including nursery groups, are obliged to follow the national principles for child protection and to be advocates for the rights of every child.

School education

School education in Bulgaria is compulsory until the age of 16 and begins in the school year that begins in the year the child turns 7. It includes two levels - the basic level and the secondary level of education.

The basic level includes the primary stage (from grades I to IV) and the lower secondary stage (from grades V to VII).

The secondary level of education is divided into two stages. In the first secondary stage, students from grades VIII to X are educated, and in the second secondary stage - from grades XI and XII.

In the compulsory school hours, training is provided for the acquisition of general educational preparation through the subjects provided for study in the respective grade, and in the vocational training classes - and general vocational training in accordance with the state educational standard for the acquisition of a qualification in a profession.

General educational preparation in school education is the same for all types of schools. The specific subjects and their distribution by grade and stage are determined by the framework curricula. The training for acquiring general education in each of the subjects is carried out according to curricula, which specify the students' competencies as expected learning outcomes for the class.

Profiled training is acquired in the second stage of secondary education by studying the profiling subjects included in the respective profile, and covers in-depth competencies for a specific profiling subject and complex competencies for a given profile. The teaching time for implementing profiled training in the second stage of secondary education is between 18 and 20 teaching hours per week, with each of the profiling subjects being studied for no less than 4 teaching hours per week throughout the entire stage of education. Each profiling subject consists of mandatory and elective modules.

In Sliven district, there are 6 primary schools, 37 basic schools, 11 secondary schools, 1 combined school, 8 vocational high schools, 3 specialized high schools, 1 sports school, 1 national school of folklore arts and 1 national art high school.

Higher education

Higher education at the educational and qualification degrees (ECD) "bachelor", "master" and "specialist" is acquired in higher education institutions.

The minimum period for full-time study according to the curriculum for the "bachelor" ECD is 4 years. The perio of study for acquiring the educational and qualification degree "master" in full-time study vary depending on the field. The training for acquiring the educational and qualification degree "specialist" is organized in colleges. The duration of the training is with a minimum period of preparation of 3 years with a total number of hours not less than 1800 and not more than 2400.

In the district of Sliven, we have a branch of the Medical University - Varna and the Faculty of Engineering and Pedagogy (FEEP), which is a branch of the Technical University (TU) – Sofia.

Management of education on regional level

The territorial administration subordinated to the Ministry of Education and Science for management and control of the system of pre-school and school education in the region of Sliven is The Regional Department of Education - Sliven (RDE-Sliven). Regional Department of Education - Sliven is a legal entity and a secondary budget authorizing institution. The organization of the activities in the institution are carried out in accordance with the provisions of the Regulations on the Structure and Functions of the Regional Departments of Education and according to the Rules of Internal Order. It is managed and represented by a Head. The implementation of the activities are carried out by two departments:

- General Administration - Department of Administrative and legal, financial, business and information services;
- Specialized Administration - Department of organizational-methodological activities and control.

The Regional Department of Education - Sliven operates according to an annual plan approved by the Minister of Education and Science.

Mission: Regional Department of Education - Sliven creates conditions for the implementation of the state educational policy in the territory of the district of Sliven, managing and controlling the system of pre-school and school education on the territory of the district.

Vision: Regional Department of Education - Sliven is an active party in the implementation of state policy in secondary education and in the coordination of regional and municipal authorities, the school network, business and civil society for lifelong learning and the development of a knowledge-based economy.

Main priorities of education in the district of Sliven:

1. Effective organization, methodological support and management of the educational system in the district of Sliven for the implementation of the state education policy in accordance with the Law on Pre-school and School Education and the State Educational Standards.

2. Implementation activities of the Collaboration Mechanism of the Institutions for the Enrollment and Inclusion of Compulsory Preschool and School Age Children and Students in the Educational System; their keeping in educational institutions; to provoke students' interest in learning, to continuously improve their skills and to enhance their educational outcomes;

3. Methodological support and control over Bulgarian language learning activities for children whose mother tongue is not Bulgarian; as well as for literacy, mastering the norms of the literary Bulgarian language and increasing the level of functional literacy of the students;

4. Supporting the practical orientation of training, key competencies acquisition activities and result orientation; the use of innovation in the educational process and the active sharing of good practices;

5. Supporting the development of vocational education in line with the development of the economy in the region and the needs of the business;

6. Activities for the implementation of inclusive education policy and support for the personal development of each child and student;

7. Supporting the initiatives and activities of educational institutions related to active partnerships with parents to educate children and students in values and virtues, intolerant of aggression and intolerance, respect for rights and compliance with rules and obligations;

8. Active participation in national and international educational projects.

Most adequate educational approaches :

- Competency-based learning
- Inquiry-based learning
- Project-based learning
- Digital integration
- Inclusive education
- CLIL *Content and language integrated learning
- Cultural responsive teaching- respects students' backgrounds, values, and languages. It is especially important in multicultural classrooms or minority communities (e.g., Roma, Turkish in Bulgaria) that are very common for the region of Sliven

In conclusion we aim to have student-centered and inclusive education, that is practical and skill-oriented, digitally enhanced and adaptable to individual needs and social contex

1.2.Analysis of educational process in Kochani, The Republic of North Macedonia

Educational system on National level in North Macedonia

The educational system in the Republic of North Macedonia reflects the needs of the society for educational, scientific and permanent role of the education and science for the economic, social, technological and cultural development of the society as a whole. Consequently, the Ministry of Education and Science facilitates the continuous development of the system of education, moral education and science in the Republic of North Macedonia.

The education system of North Macedonia is regulated through a number of laws and bylaws covering different segments:

- **Pre-school education** (Child Protection Law);
- **Primary education** (Law on Primary Education, Law on the Bureau for Development of Education, Law on the Adult Education, Law on Education Inspection, Law on Primary and Secondary Education Textbooks, Law on Teachers and Associates in Primary and Secondary Schools, Law on Higher Education Institutions for Teaching Staff in the Pre-school education and Primary and Secondary Education etc.);
- **Secondary education** (Law on Secondary Education, Law on Vocational Education and Training, Law on the Adult Education, Law on Local Self-government, Law on the Bureau for Development of Education, Law on Pupils Standard, Law on Primary and Secondary Education Textbooks, Law on Teachers and Associates in Primary and Secondary Schools, Law on Higher Education Institutions for Teaching Staff in the Pre-school education and Primary and Secondary Education Law on the State Examination Centre, Law on Education Inspection etc.);
- **Higher education** (Law on Higher Education, Law on Science and Research, Law on Student Standard and Law on Education Inspection) and
- **Adult education** (Law on Adult Education and Law on Open Civic Universities for Life Long Learning).

A number of bylaws (rulebooks, regulations, standards, etc.), strategies and other program documents regulate the procedural, technological, organisational, financial and other aspects of the education process.

The Education Strategy for 2018-2025 and Action Plan is the latest document that presents the fundamental principles of national education system.

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Pre-school education

The care for and the education of children at preschool age is a form of child protection, organised for the purpose of care, nutrition, educational, sports and recreational, cultural and entertainment activities. Pre-school education also includes measures and activities for improvement and preservation of the health. The nurturing and enhancing of the intellectual, emotional, physical, mental and social development of the child until the age of 6 is also another important aspect encompassed with the pre-school education.

Pre-school education is organised and offered by:

- Kindergartens;
- Early childhood development centres and
- Agencies which can be established, in line with the Law on Child Protection (Official Gazette of the Republic of Macedonia, No. 164/17), as public or private institutions.

In 2018, there were 37,615 children up to 6 years old enrolled in 68 public and 24 private pre-school institutions, 3 kindergartens within private schools in the capacity of legal entities, 2 early childhood development centres in the capacity of a public entity, 4 early child development centres in the capacity of private legal entities, 1 public kindergarten within a legal entity established for the needs of its employees, 1 private kindergarten within a legal entity established for the needs of its employees. The number of enrolled children in 2018 has increased by 6.6% compared to 2017.

Pre-school education has been developed on the basis of two documents:

- Foundations of the Programme for Educational Work with Children of Preschool Age and
- Programme for Early Learning and Development.

The Programme for Early Learning and Development is based on the Standards for Early Learning and Development. The curricular foundations are developed by the Bureau for Development of Education. The Program was adopted through an act by the Minister of Labour and Social Policy in 2014 .

Pre-school education is not mandatory. It is carried out in Macedonian language, whilst for children of members of other communities, educational activities in public kindergartens are carried out in the language of the respective ethnic community.

North Macedonia has also adopted a National Strategy (2020-2022) and Action Plan (2020-2020) for Prevention and Protection of Children from Violence as well as the Program for Development of Children Protection Activity for 2019.

Primary education

Primary education in North Macedonia has 9-year duration and is compulsory and accessible to all children regardless of gender, social and cultural background, religion, national affiliation and physical and psychological abilities. Each child aged 6 to 14 is provided with opportunity to regularly attend teaching in a compulsory nine-year primary school. Primary education within the framework of established curricula is free for all students and is funded from the State Budget.

The structure of primary education, established through the Concept for nine-year primary education, consists of three educational periods: grades 1-3, grades 4-6 and grades 7-9. Each period is relatively unified as a whole in regards to the developmental characteristics of students and of learning. Each period is also characterized with different approaches in the evaluation and assessment of student achievements, individualised teaching, knowledge, skills and student progression. According to the State Statistical Office, there were 988 primary schools in the country (including satellite schools) in the academic year 2018/19.

Primary education is delivered in primary schools, and for students with special educational needs in special primary schools or classes in mainstream primary schools. In communities with small number of students, satellite facilities operate within central primary schools. Only the central primary schools are public legal entities. The regular primary schools are under jurisdiction of the municipalities, whereas the special primary schools are under jurisdiction of the Ministry of Education and Science. Private primary schools exist outside of the formal education system and are established mainly for provision of educational services for children with foreign citizenship.

The issues of the primary education have been regulated with the Law on Primary Education.

Secondary education

Upon completion of the primary education, students are provided with the opportunity to enrol under equal terms in a secondary school. The Law on Secondary Education defines secondary education as compulsory for each citizen and is free in public secondary schools.
Secondary education provides students with competences for work and further education, and is carried out in state, municipal (public) and private secondary schools. Teaching in public schools is carried out in Macedonian and using the Cyrillic alphabet; for the members of communities in the language and using the alphabet of the respective community (Albanian and Turkish). Depending on the type of secondary education, schooling is completed by passing the State Matura, the School Matura or Final Exam, in line with the Concept for Matura and Final Exam in Public Secondary Education.

The secondary education, which is also compulsory and free, is divided into four streams: general secondary education (gymnasium), secondary vocational education, art schools, and education for pupils with special educational needs. Secondary vocational education may be of 3-year or 4-year duration. At the end of a 3-year vocational education the students take a final exam, without a right for university entrance. Graduates of the 4-year secondary education are allowed to choose between the final exams and state or school Matura depending on whether they wish to continue education, while the gymnasium graduates have to take state or school Matura exams.

Among existing 124 secondary schools, 108 are public while the remaining 16 are private. As far as the profile of the schools is concerned, 23 are general education schools, 43 are vocational schools, 33 offer both general and vocational education, 4 schools are for pupils with special educational needs and 5 are art schools.

Higher education

The system of higher education comprises study programmes within three cycles: undergraduate, master and doctoral studies. There are 6 functional public universities (two of them in Albanian as a language of instruction), 1 private-public university and 9 private universities, and 2 high vocational schools.

In addition to teaching, higher education institutions engage in scientific research in diverse fields. The higher education in Macedonia offers a broad range of opportunities for acquiring academic degrees and professional qualifications.

Terms and criteria for selection and enrolment of new students are proposed by the higher education institutions and harmonised between the universities. Enrolment is open for graduates from general, vocational or art secondary schools. Due to the limited enrolment quotas, candidates are ranked according to their grades from secondary school, the results from the State Matura and, if necessary, results from a qualification exam. Students who meet the demands but are in excess of the number stipulated in the open call for enrolment enter the co-financing quota. Full-time and part-time students need to meet the same requirements.

Within the first cycle of studies, universities offer higher vocational studies, which have 3-year duration and are regarded as non-academic studies.

Curricula and syllabi for higher education are defined by the Teaching and Scientific Council at the respective faculty, upon which an opinion is provided by the university. Accreditation of universities and study programs is granted by the Higher Education Accreditation and Evaluation Board. As at December 31, 2019 the new Higher Education Quality Agency has not been established yet.

The issues of higher education have been regulated by the Law on Higher Education.

Adult education

Adult education is an integral part of the education system, enabling learners to acquire the competences necessary for easier integration in society, easier employment and more flexible adaptation to and entry into the labour market. It compensates for gaps in the schooling of those learners who failed to complete primary education or of those who need to obtain vocational qualifications at secondary school level or higher. It delivers programmes for adults (employed or unemployed) for continuing development, new qualification for new employment. In addition, it contributes to meeting other educational and cultural needs of citizens.

Adult education in North Macedonia is carried out in primary or secondary schools, open citizens' universities, institutions for adult education, larger companies and their associations. Teaching is delivered in the form of regular or preparatory instruction, depending on the age, psycho-physical abilities and self-education capacities.

The Adult Education Centre (AEC) is the key institution for the development of adult education system at national level. AEC was established by the Government in November 2008 and became operational in June 2009. Its main tasks are to promote the Adult education and coordinate cooperation with international institutions and other adult education organisations, to ensure quality particularly through establishment of standards and criteria for formal and non-formal adult education.

The issues of adult education have been regulated by the Law on Adult Education and Law on Open Civic Universities for Life Long Learning.

Type of educational institutions	ISCED levels provided	Main orientation of the programmes provided	Number of educational institutions			
			Total	Public	Government-dependent private	Private independent
Preschool * education (preduchilishno obrazovanie)	0	G	122*	81	(-)	41
Primary School** (Osnovno ucilishte)	1,2	G	363**	363	(-)	3 with approval for experimentation
Upper Secondary School – Gymnasium (Sredno ucilishte – Gimnazija)	3	General	78	60	(-)	18
Secondary Vocational School (Sredno strucno ucilishte)	3	Vocational	77	75	(-)	2

*Source: Ministry of Labor and Social Affairs www.mtsp.gov.mk

**Source: Ministry of Education and Science www.mon.gov.mk

The number of schools in the table refer to legal entities. In the total number of schools 363 as legal entities there are 637 affiliates. The number of schools in the table refer to legal entities.

The number provided for Private Independent Primary School (Osnovno ucilishte) has an approval for experimentation.

For the secondary schools total number is 108 as legal entities (60 gymnasium and 75 vocational). In the number of gymnasiums as legal entity there is one school that has 10 affiliates. Secondary schools can offer either general (gymnasium) or vocational education, but very often they offer both.

Government dependent private educational institutions are not envisaged in the legal framework.

General Information on the Educational system in Kochani municipality:

In municipality of Kochani there are six primary schools, one of which is a musical school and there are two secondary schools.

The situation in the primary schools in the school year 2024/25 is as follows in the table below:

Primary school	Number of students	Number of classes	Average number of students per class
PS "Krste P. Misirkov"	197	19	10
PS "Ss. Cyril and Methodius"	954	48	20
PS "Rade Kratovche"	425	28	15
PS "Malina Popivanova"	482	29	17
PS "Nikola Karev"	500	37	13
Music school "Risto Jurukov" Kochani	164	20	8
TOTAL	**2722**	**181**	**15**

As for the Secondary schools in Municipality of Kochani, the situation in the school year 2024/25 is as follows:

Secondary school	Number of students	Number of classes	Average number of students per class
SS "Ljupcho Santov"	503	31	16
SS "Gosho Vikentiev"	559	34	16
TOTAL	**1062**	**65**	**16**

From August 5th, 2019 (National gazette 161 of Republic of North Macedonia), there are changes in the national Law for education that emphasize the inclusion of the children with special needs and working systematically with the gifted and talented children.

1.3. Analysis of educational process in Guadeloupe, France

Based on the need analysis conducted during the project's preparatory phase, the current situation of the educational process in Guadeloupe, as a partner region, reflects the broader European challenges that this project aims to address. The weaknesses identified are not unique to the region but are representative of systemic issues requiring innovative, cooperative solutions. The analysis below outlines the key aspects of the current educational environment in Guadeloupe concerning the project's objectives.

1.3.1. The Challenge of Digital Integration and Resource Scarcity in STEM

The educational system in Guadeloupe faces a significant gap between the ambitions of the digital age and the practical realities within its secondary schools. While there is a recognized desire among pedagogical specialists to enhance their qualifications in using digital resources, they are often hindered by a tangible "luck of resources," as identified by studies from leading organizations like the UK's Institution of Engineering and Technology. This scarcity manifests in two primary ways: a lack of advanced equipment (such as VR headsets) and a shortage of "suitable curriculums" designed to integrate such technologies effectively into core subjects.

This situation directly impacts the quality and appeal of Science, Technology, Engineering, and Mathematics (STEM) education. Without modern, engaging tools, traditional or "conservative" teaching methods can struggle to capture student interest and motivation. This risks hampering the development of a skilled workforce capable of filling the high-growth, technology-driven occupations that are vital to the global economy. The COVID-19 pandemic underscored this vulnerability, forcing a rapid, and often challenging, shift to digital resources, thereby highlighting the urgent need for a more structured and better-supported approach to digital education, in line with the EU's Digital Education Action Plan (2021-2027).

1.3.2. Unaddressed Student Well-being and the Nutrition Education Gap

A significant weakness in the current educational framework in Guadeloupe is the "non-practicing of nutrition education." This curricular gap has tangible consequences for student health. With rising rates of overweight and obesity among school-age children in Europe, as noted by the World Health Organization (WHO), Guadeloupe's students are similarly exposed to these health risks. The current system does not adequately equip them with the knowledge to establish healthy lifestyle habits or understand the critical importance of a balanced diet for both physical and mental well-being.

This educational void is exploited by the rapidly growing dietary supplement industry and the pervasive advertising of quick-fix weight loss products. Young people are a primary target for these campaigns, often leading them to use such products without proper guidance, which can result in negative health consequences. While educational institutions are mandated to care for student well-being, teachers in Guadeloupe cannot be expected to possess the specialized expertise required to develop comprehensive nutrition education programs on their own. This points to a systemic need for a structured, expert-backed concept that can be integrated into the existing school day.

1.3.3. A Need for Innovative and Interdisciplinary Pedagogical Approaches

The current situation in Guadeloupe is ripe for pedagogical innovation. The project's premise is that an interdisciplinary approach, particularly one that leverages engaging technology like Virtual Reality, can address multiple challenges simultaneously. At present, subjects are often taught in silos. A math, chemistry, or biology lesson, for example, is not typically seen as an opportunity to discuss nutrition or healthy lifestyles.

The project identifies this as a key area for improvement. The educational process in Guadeloupe would benefit from a model that allows STEM teachers to address critical community-interest topics, such as student health, within their regular classes and non-formal activities. The introduction of an innovative, VR-based tool provides an attractive and modern educational method that aligns with the "needs and expectations of the present generation of secondary schools' students." By participating in this project, the educational stakeholders in Guadeloupe signal a readiness to move beyond conventional frameworks and embrace a more holistic, transferable, and engaging system of education. This shift aims to boost not only subject-specific knowledge but also essential transversal skills like teamwork, critical thinking, and digital literacy.

1.4. Analysis of educational process in Brescia, Italy

The educational system in Brescia, like that of many regions in Italy and across Europe, is at a critical crossroads, facing the dual need to modernize its pedagogical approaches and to address growing societal challenges, particularly concerning the health and well-being of young people. The analysis conducted during the project preparation phase revealed that while efforts are being made to integrate digital tools, significant gaps remain, creating a clear opportunity for innovative interventions such as the one proposed by this project.

The Challenge of Digital Transformation in Secondary Education

In line with the general observations of the European Union's Digital Education Action Plan (2021-2027), secondary schools in the Brescia region face a tangible need to strengthen the digital skills of both students and teachers. The Covid-19 pandemic accelerated the use of digital tools but also highlighted a disparity in resources and skills.

The local analysis echoes the findings of the Institution of Engineering and Technology (IET): there is a notable lack of advanced resources, such as Virtual Reality (VR) equipment, and especially of structured curricula to effectively integrate them into STEM subjects. While teachers in Brescia show a growing desire to train in these new technologies to increase student engagement and motivation, they often lack adequate equipment and clear guidelines for applying these tools in an interdisciplinary manner in their math, biology, or chemistry classes. The project thus aims to bridge this gap by providing not only the technology but also the methodology for its application.

The Issue of Nutrition Education and Student Well-being

The Brescia region is not exempt from the European trend of rising youth overweight and obesity, a major public health issue identified by the World Health Organization. The current educational system in Brescia struggles to integrate practical and effective nutrition education into its standard curriculum. This gap has direct consequences: students lack fundamental knowledge about the importance of a healthy diet and are particularly vulnerable to the aggressive marketing messages of the dietary supplement industry, which promise fast and often misleading results.

STEM teachers, despite being at the heart of science education, cannot be expected to be nutrition experts. It is unreasonable to expect them to single-handedly develop comprehensive educational programs on this complex topic. The situation in Brescia, therefore, calls for a systematic approach, providing external expertise and a ready-to-use educational concept (the "Nutrition Education concept") that teachers can easily adopt and integrate into their respective subjects.

Conclusion for Brescia: A Need for an Integrated and Transnational Approach

In summary, the analysis of the situation in Brescia reveals fertile ground for the project's implementation. The region's secondary schools face a dual challenge:

1. **To modernize STEM teaching** through the integration of advanced technologies like VR.

2. **To address an urgent need for health and nutrition education** to improve students' physical and mental well-being.

The project offers a synergistic solution to both of these issues. By introducing a VR-based educational approach for teaching nutrition, it not only makes this health topic more engaging and understandable but also strengthens the digital and scientific skills of students and teachers. The transnational collaboration with partners from Bulgaria, France, and North Macedonia represents considerable added value, offering schools in Brescia a unique opportunity for sharing good practices and developing intercultural skills.

CHAPTER 2 :

Recommendation for improving of the local educational strategies/policies and their compliance with EU Digital Education Action Plan

BULGARIA

When preparing the Strategic Framework for the Development of Education, Training and Learning in the Republic of Bulgaria (2021-2030), the activities set out in the Digital Education Action Plan (2021-2027) of the EU were taken into account.

As a result of the SWOT analysis, 9 priority areas for improvement of education and training until 2030 have been determined in the development of education and training until 2030.

The priority areas cover all significant horizontal challenges in the education and training system following a comprehensive approach and in line with the defined policy areas. The priority area "Educational innovation, digital transformation and sustainable development" is in line with Activity 1 "Encouraging the development of a high-performance ecosystem for digital education" and with Activity 2 "Improving the digital skills and competences needed for digital transformation" of the Digital Education Action Plan.

Innovations in education aim to change the culture of teaching and create a more attractive environment for learning, as well as increasing the efficiency of the educational process. They stimulate creative thinking and creativity in the learning process. Educational innovations will be developed in all stages and degrees of education and in all spheres of school life. Connecting kindergartens and schools as well as teachers in networks and communities for innovation and creativity will be important.

Digital skills and competencies are a priority for the entire educational spectrum. Access to ICT for children of the 21st century is an integral part of access to education. The introduction of ICT-based innovations into the education system will improve the learning process and increase its efficiency and effectiveness.

In the field of education, policies will be implemented aimed at building and upgrading an educational cloud environment and creating resources, as well as sharing and integrating already existing and proven nationally and internationally resources. The formation of skills in students to become digital creators, to model, program and develop digital creativity will also be encouraged. Efforts will be aimed at introducing specialized software solutions for analysis and evaluation of educational results.

Education for sustainable development is closely related to international discussions on sustainable development, with the UN program and the Sustainable Development Goals (SDGs) until 2030. In the context of this perspective, educational policies will be implemented to create a civic, financial, health, environmental and sports culture. Key competencies will be formed in children/students for sustainable development, intercultural dialogue, understanding and appreciation of cultural diversity, as well as competencies for democratic culture and digital citizenship. Knowledge of road safety will be expanded. An overall renewed look of educational institutions will be created, supported by investments in a modern, thought-provoking and creative educational environment and in modern equipment and furnishings.

The following goals are set in this priority area:

1. Encouraging and developing a culture of innovation.
2. Innovations in the educational process
3. Innovations in the educational environment
4. Development of education in a digital environment and through digital resources
5. Education for sustainable development
6. Modernization of the educational infrastructure towards sustainable development

NORTH MACEDONIA

Overall national education strategy and key objectives

In January 2018 the Government of the Republic of North Macedonia has adopted the new Strategy for Education for the period 2018-2025 and corresponding Action Plan. The process of adoption has been preceded by public debates and analysis of the content of the document by experts, national and international, stakeholders and working groups.

The new Strategy for Education and its Action Plan encompass all fields and levels of education. The vision of the Strategy itself is that the education is key for the strengthening of the national economy and the wellbeing of the Macedonian citizens and therefore it is essential to put efforts for development of inclusive and integrated education system which is "student-centered", which implements modern programmes that will enable the future generations to acquire knowledge, skills and competencies compliant to the needs of the democratic multicultural society, labor market and for the new challenges of the global scientific and technological setting. The document covers six main pillars of education system – Pre-school Education; Primary Education; Secondary Education; Vocational Education and Training; Higher Education and Research; and Adult Learning and Education. These are followed by a seventh pillar, covering general issues in the education system.

Following the EU initiatives for revitalization of European Education Area and the new Action Plan for Digital Education (2021 - 2027), and the national Strategy for Education 2018-2025, the Ministry of Education and Science made national reforms in same directions.

The local policies and strategies in Municipality of Kochani are closely related to the national ones and always follow those principles and prioritie

FRANCE

The "Projet d'académie 2024-2027" for the Guadeloupe academic region provides a clear and ambitious roadmap focused on serving all users of the education system: students, staff, parents, and partners. The innovative VR-based nutrition education project aligns seamlessly with these strategic priorities. It offers a practical and powerful tool to accelerate the achievement of the academy's goals while ensuring compliance with the European Digital Education Action Plan.

The following recommendations outline how this project can be integrated into local policies to address identified needs and leverage existing strategic commitments.

Recommendation 1: Systematically Integrate Innovative Digital Tools to Enhance Student Well-being and Success

This recommendation directly supports "Engagement 1: An academy at the service of student users" , which aims for students to "live better together," "succeed better," and "better understand the world". The VR project provides a concrete methodology to advance these three pillars simultaneously.

- **To "Live Better Together":** The "Projet d'académie" correctly identifies that student well-being is fundamental. It explicitly states that sports activities should be developed because they "contribute greatly to the health of students". The VR project's focus on nutrition education directly complements this by addressing a critical component of student health. Local policy should formally recognize nutrition education as a key contributor to student well-being and support its integration into STEM subjects, thus providing a practical response to this strategic goal.

- **To "Succeed Better":** The academy's strategy acknowledges the crucial link between well-being and learning. By using an attractive VR-based approach, the project can increase student engagement, a key factor in academic success. This innovative pedagogy makes learning more meaningful and can help reduce the achievement gaps that the academy is working to close.

- **To "Better Understand the World":** The academy aims to encourage mobility and an outward-looking perspective, leveraging Guadeloupe's unique geographical position. The VR project's transnational nature (with partners in Bulgaria, Italy, and North Macedonia) is a direct answer to this goal. It offers a digital, accessible form of international exchange. Local strategies should promote this project as a model for developing international school correspondence, such as e-twinning, an action the academy specifically seeks to reinforce.

Recommendation 2: Utilize the Project as a Catalyst for Local, Needs-Based Teacher Training

This recommendation aligns with "Engagement 2: An academy at the service of staff users" , particularly the goal to "Mobilize continuing education".

The "Projet d'académie" notes a significant opportunity for growth in locally-initiated training, with only 14% of secondary schools having implemented such programs. The project's dedicated training module for STEM teachers on using advanced ICT (VR and OER) is a perfect example of the targeted, local training initiatives the academy wants to foster. It is recommended that this project be showcased as a flagship initiative for professional development. By doing so, the academy can:

- **Increase Teacher Competence and Engagement:** Provide teachers with the advanced digital skills needed for 21st-century education, directly addressing the EU Digital Education Action Plan.
- **Foster a Culture of Innovation:** Use the project as a model to encourage other schools and departments to develop their own "formations d'initiative locale", thereby decentralizing and customizing professional development as envisioned in the strategic plan.
- **Enhance Recognition:** Fulfills the expressed desire of staff for their involvement to be recognized, as 55% currently feel it is.

Recommendation 3: Strengthen the School-Family-Partner Alliance through Concrete Health and Education Initiatives

This recommendation directly supports "Engagement 3: An academy at the service of parent and partner users" , which focuses on building trust and optimizing services for families.

The "Projet d'académie" highlights the significant challenges faced by many families, including high rates of poverty and difficulties in accessing information and supporting their children's education. The VR nutrition project is a tangible response.

- **Provide Targeted Support to Families:** The project acts as a "specific and concerted local prevention action in health and education", a key action sought by the academy. By addressing the critical issue of student health, the school provides a valuable service to parents and contributes to the "parenting support" priority.
- **Build Trust and Engagement:** The project creates a positive and non-confrontational topic for school-family interaction, which can help increase parental participation, a stated objective given the current low rates in secondary schools.
- **Formalize Partnerships:** The project's structure, involving schools, civil society organizations, and other stakeholders, is a working model for the coordinated partnerships the academy wishes to promote. It can be used as a template for building other multi-stakeholder initiatives.

ITALY

The needs analysis presented in Chapter 1 highlighted a dual challenge for educational institutions in the Brescia region: the need to integrate advanced pedagogical technologies and the necessity of addressing student well-being issues, such as nutrition education. This chapter formulates strategic recommendations for local and regional educational authorities. These recommendations aim to align existing policies with the two strategic priorities of the European Union's Digital Education Action Plan (2021-2027).
Using the PTOF (Three-Year Educational Plan) of the "V. Lunardi" Institute in Brescia as a concrete case study, we will illustrate how innovative and transnational projects can be leveraged to achieve these goals. The objective is not to create new policies from scratch (ex nihilo), but to enrich and guide current strategies to sustainably support an education fit for the digital age.

2.1. Recommendation 1: Fostering the development of a high-performing digital education ecosystem

The EU Action Plan stresses the need to equip schools with high-quality infrastructure, tools, and content. The analysis of the "Lunardi" Institute's PTOF shows a clear commitment to "didattica digitale integrata" (integrated digital teaching) and digital skills (such as the ICDL certification). However, the transition to a "high-performing" ecosystem requires targeted support.

- Recommended action for local/regional policies:
- Move beyond basic equipment: Funding policies should encourage the acquisition of advanced technologies like Virtual Reality (VR). Simply equipping schools with tablets or interactive whiteboards is no longer sufficient to prepare students for the jobs of the future.
- Link funding to pedagogy: Granting subsidies for these technologies should be conditioned on the implementation of specific and structured pedagogical projects, such as this project's "Nutrition Education" module. This ensures that technology is not an end in itself, but a tool serving a clear, interdisciplinary learning objective.
- Institutionalize teacher training: Provide financial and administrative support for teachers to participate in practical, transnational training (like this project's L/T/T activities). This approach, which goes beyond national webinars, allows teachers to gain not only technical mastery of a tool (VR) but also the competence to integrate it effectively into their subject (biology, chemistry, etc.).

2.2. Recommendation 2: Enhancing advanced and transversal digital skills for the digital transformation

The second priority of the EU Action Plan aims to equip citizens with the skills needed to live, work, and thrive in a digitized society. The "Lunardi" Institute's PTOF emphasizes "percorsi per le competenze trasversali e l'orientamento" (Pathways for Transversal Skills and Orientation - PCTO) and "cittadinanza attiva" (active citizenship), which includes health education.

Recommended action for local/regional policies:

- Promote and value interdisciplinary projects: Local educational strategies should formally recognize and value projects that merge STEM disciplines with societal issues. The present project, which uses VR (technology) to teach nutrition (health/biology/chemistry), is an exemplary model. It demonstrates how to develop digital skills (online research, use of specialized software) while addressing a critical well-being topic.

- Integrate data literacy and critical thinking: Encourage pedagogical approaches where students are not mere consumers of technology but critical creators and analysts. The VR module on nutrition pushes students to analyze data, evaluate the reliability of health information, and collaborate as a team to present their findings—skills that are central to the digital transformation.

- Bridge the gap between school and community: Support projects that, like this one, create synergies between schools, NGOs, and local authorities. By aligning pedagogical goals with community needs (shortage of STEM-skilled workforce, public health), educational policies enhance the relevance and impact of teaching.

2.3. Recommendation 3: Systematizing transnational cooperation for sustainable innovation

Isolated innovation within a single institution has limited impact. The European Action Plan promotes the creation of a "European Digital Education Hub" to foster exchanges and cooperation. The Lunardi PTOF mentions exchange projects and a European outlook, which can be strengthened.

Recommended action for local/regional policies:

- Create regional platforms for sharing and pooling resources: The educational authorities of Lombardy/Brescia should draw inspiration from this project's outcomes to create platforms or regular events where best practices are shared. The "Teachers' Network" established on eTwinning within this project could serve as a pilot for a broader regional network.

- Integrate the outcomes of European projects into local strategies: The pedagogical approach and the "Handbook" developed by this project should not remain confined to the partner schools. Local policies should include a mechanism to evaluate, adapt, and disseminate the proven results of Erasmus+ projects to other institutions in the region.

- Support the sustainability of partnerships: Encourage the continuation of cooperation through strategic and administrative support. The "Action Plan for Transnational Cooperation," an expected outcome of the project, should be officially recognized and supported by authorities as a strategic development tool for the region's educational sector.

Conclusion

By adopting these three recommendations, the educational strategies of Brescia and its region can not only effectively address the identified local needs but also position themselves as a model for the proactive implementation of the European Digital Education Action Plan. Investing in targeted, interdisciplinary, and collaborative projects like this one transforms schools into true laboratories of innovation, preparing students to become competent, healthy, and actively engaged citizens in tomorrow's digital society.

CHAPTER 3:

Recommendation of the best approaches (good practices, best ICT solutions and awareness raising activities) for introduction of students' health and wellbeing related topics in educational process.

3.1. Best practices from Bulgaria:

Project title: Learning together for full professional fulfillment and an equal place in life

Erasmus + Project, Key Action 1, School Education

Duration 18 months from 01-11-2021 to 01-05-2023

Partners: "Dobri Zhelyazkov" Vocational school for textile and apparel

Europass, Berlin, Germany

Europass, Helsinki, Finland

Project objectives:

- - By improving and modernizing teaching methodologies, we prepare full-fledged individuals capable of realizing themselves in the dynamic conditions of the modern world.
- - By finding new approaches to creating an effective and attractive learning environment, to:
- - reduce the incidence of student dropout
- - develop lessons and programs that meet the needs of students and teachers for integrated dual learning;
- - use ICT to increase students' motivation for learning and work;
- - create contacts between the school and international educational institutions;
- - share experiences and methods for addressing the challenges arising from the ethnic characteristics of high school graduates;
- - training teachers in areas such as dual training, inclusive education and working with vulnerable groups;
- - increasing the digital and entrepreneurial competencies of administrative management to accelerate the process of changes related to school modernization and the introduction of innovations.

Project title: Financial-Legal Literacy for Europe

KA2 - Cooperation for innovation and the exchange of good practices

KA204 - Strategic Partnerships for adult education

- Project Start Date: 1st September 2020
- Project End Date: 31st August 2022
-
- **PROJECT WEBSITE:** finleglit.eu
-
- **Coordinator:**
- EURL ARISTOTE SIRET,
- Paris, France
  aristculture.eu
-
- **PARTNERS:**
  1. VsI Finansu teises institutas Lithuania
     Kaunas, Lithuania. finlaw.lt
- 2. Organisation for Empowerment and Non-formal education, (an association, Le Moule, Guadeloupe, France), oenehive.com
- 3. European Multicultural Association, Bulgaria
  ema20.com
- 4. Euroform RFS Italy. Rende, Italy. euroformrfs.it

Project objectives:

- Developing a Manual ("Financial-Legal Literacy Manual for Europe") of financial-legal education for trainers and adult learners, based on the best European practices on the matter and reflecting the objectives of the EU related to green finance and Capital Market Union. The Manual and the Online E-learning Tool will particularly target low-income and/or lowskilled and/or low-qualified adults in countries and regions with different level of economic development. The Manual will be universally applicable throughout the EU and could be used by persons having different financial and legal literacy level;
- Launching and maintaining a financial-legal literacy Online E-learning Tool, which could be used anywhere and in any environment for financial-legal education courses or individual learning;
- Training of the financial-legal literacy trainers to provide financial-legal literacy education to adult learners using the Manual and the Online E-learning Tool;
- Providing financial-legal literacy training to the low-income and/or low-skilled and/or low-qualified adult learners.

3.2.Best practices from North Macedonia:

Project tittle: Establishing of the innovative ICT-based educational approach for tackling of students' academic underachievement in STEM related school subjects in primary schools

The project successfully developed and implemented an innovative ICT-based educational method using holograms and VR tools to address students' academic underachievement in STEM-related subjects in the partner regions. It introduced an interdisciplinary educational approach applicable to a wide range of community-relevant topics, with high transferability potential suitable for use in various educational institutions.

Within the project lifetime, the following key activities were carried out:

- Learning, teaching, and training activities for STEM teachers and students aged 12–14
- Creation of two intellectual outputs
- Communication and promotion activities targeting relevant local and regional stakeholders

Project results:

- An innovative ICT-based educational approach using holograms and VR was developed and successfully implemented
- STEM teachers improved their digital competencies
- Students enhanced their digital skills, teamwork, critical thinking, online research, and presentation abilities
- A long-term partnership among the participating organizations was established

Project partners were from North Macedonia, Oviedo, Spain and Bulgaria.

Project duration is 24 months and it ends in October, 2025.

Project tittle: Virtual Reality based educational approach in tackling of Climate Change

The project's main objectives are focused on: developing Climate Change tackling strategies and educational methodologies based on VR orientated education curricula that better meet the needs of schools' teachers and students; improving quality and attractiveness of the education process in regions of Velenje (Slovenia), Syros (Greece), Ludbreg (Croatia) and Kocani (North Macedonia) by development and implementation of innovative VR based learning methodology; increasing of teachers' and students' competences and skills in using of online available VR educational contents in everyday classes and establishing of transnational strategic partnership among different types of organizations (Local public bodies, NGOs, SMEs, Education institutions) for increasing of quality level of education by development of innovative education methods.

Project results:

-Development and adoption of three Project Results;

-16 school teachers with increased skills and competencies for using VR technology;

-Established transnational teachers network (min 56 teachers) by using of eTwinning networking module;

-min 400 children from four schools with increased competences and skills for using VR technology in the learning process as well as with increased acknowledgment for tackling of Climate Change phenomenon;

-created Project web site with best practices from project activities and with included (free for downloading) materials and created IOs that will be at disposal for teachers from other schools aS well as for any other interested stakeholders on local, regional, national level.

Project partners are from Velenje (Slovenia), Syros (Greece), Ludbreg (Croatia) and Kocani (North Macedonia).

Project duration is 24 months and it ended in February, 2024.

3.3. Best practices from France:

Drawing on the analysis of the Guadeloupean context and French national strategies, this recommendation proposes an integrated, three-pronged approach to sustainably introduce health and well-being topics, such as nutrition, into the educational process.

3.3.1. Good Practices: Pedagogical and Structural Approaches

These practices constitute the strategic framework to ensure that health education is coherent, systemic, and collaborative.

1. **Integration into the "Parcours Éducatif de Santé" (Health Education Pathway):** Rather than treating nutrition as a one-off topic, the best practice is to embed it within the Health Education Pathway, which structures health-related actions throughout a student's schooling. Aligning with the directives of the **Programme National Nutrition Santé (PNNS)** provides a validated scientific framework and institutional legitimacy to the approach.

2. **Anchoring in Strategic Partnerships: The "Cités Éducatives" Model:** Collaboration is essential. The national "Cités Éducatives" (Educational Cities) program is an exemplary practice for uniting stakeholders (National Education, local authorities, associations, parents) around the well-being of the student. The Guadeloupe academy is proud to have 5 "Cités Éducatives" and considers them a model for coordination to be strengthened. Integrating the project into this framework is a structural practice that guarantees reaching the most vulnerable populations.

3. **Peer-Based Professional Development: The "Constellations" Format:** To ensure adoption by teachers, peer-to-peer training is an effective practice. The "Constellations" format, which the Guadeloupe academy wishes to extend beyond the primary level, promotes the exchange of practices and mutual support, which is crucial for deploying innovative tools like VR.

3.3.2. Best ICT Solutions: Tools and Platforms

Information and Communication Technologies (ICT) for Education are the operational lever to make health education engaging and accessible.

1. **Virtual Reality (VR) as an Immersive Learning Tool:** The central ICT solution is the VR software. Its effectiveness lies in its ability to create immersive and interactive scenarios:

    - Simulating the composition of a balanced meal in a virtual canteen.
    - Role-playing to make healthy food choices at the supermarket.
    - 3D exploration of the impact of nutrients on the human body.

2. **Institutional Dissemination Platforms (DRANE and ENT):** To prevent the tool from remaining confidential and to address the identified "lack of resources", the solution is to share it widely. Collaborating with the

   Délégation Régionale au Numérique Éducatif (DRANE) to host the software and the pedagogical handbook on the academy's **Espace Numérique de Travail (ENT)**, or Digital Workspace, ensures sustainable and large-scale access for all teachers.

3. **Continuing Education Platforms (Magistère):** Teacher training must be modernized. Using the national platform **Magistère** to create an online training module on the VR tool is an effective solution. This would help overcome the low rate of locally-initiated training (14% in secondary schools) and reach a maximum number of teachers.

4. **Transnational Collaboration Platforms (eTwinning):** To encourage the exchange of best practices among the project partners (Guadeloupe, Bulgaria, Italy, North Macedonia), the **eTwinning** platform is the ideal ICT solution for creating a sustainable professional network with a European scope.

3.3.3. Awareness Raising Activities: Mobilization and Dissemination

These activities are crucial for generating buy-in, ensuring the project's visibility, and mobilizing the entire educational community.

1. **Presenting the Project as a Flagship Action of the "Cités Éducatives":** The most impactful awareness activity is to officially present the project to the steering committees of the "Cités Éducatives". By positioning it as a key action of their "Health and Well-being" component, local partners and families are directly mobilized.

2. **Cultural Adaptation of Content:** To generate buy-in from students and their families, a key activity is to adapt the VR content by integrating local products and food habits (tropical fruits, local vegetables, etc.). This makes the message more relevant and respectful of cultural identity.

3. **Targeted Institutional Communication:** The communication strategy must be tailored to different audiences.

   - **Towards students and parents:** Present the project as a fun and modern way to take care of one's health, in line with the PNNS goals.

   - **Towards academic authorities:** Position the project as an innovative "use case" for the DRANE, demonstrating the potential of VR to meet the academy's challenges (well-being, student success).

4. **Creating a Network of Ambassadors:** Mobilize the teachers trained via the eTwinning network and the "Constellations" to become project ambassadors in their respective schools, sharing their experiences and encouraging their colleagues to adopt the tool

3.4. Best practices from Italy:

Italy, and the Brescia region in Lombardy in particular, faces a paradox: a world-renowned gastronomic culture based on the Mediterranean diet coexists with a concerning rise in overweight and obesity among young people. This situation is recognized by the Ministero dell'Istruzione e del Merito (MIM) - Ministry of Education and Merit and the Ministry of Health, which have published guidelines for food education (Linee guida per l'educazione alimentare). These guidelines emphasize the need for an integrated approach that goes beyond the simple transmission of nutritional knowledge.
The "Network of Health-Promoting Schools" (Rete di Scuole che Promuovono Salute) in Lombardy is a concrete example of this commitment, encouraging institutions to become places of holistic well-being. This project fits perfectly within this dynamic by bringing an innovative and technological dimension to these objectives.

3.1. Good Practices: A Holistic and Participative Approach

The most effective Italian initiatives are based on an approach that integrates several dimensions of school and community life.

- Good Practice 1: Food Education as "Civic Education"
  The most successful projects, supported by the MIM, do not treat nutrition as an isolated subject but integrate it into Civic Education (Educazione Civica). This means linking food to broader themes such as environmental sustainability (short supply chains, reducing waste), culture (local culinary traditions of Lombardy), the economy (agri-food sectors), and social justice (the right to food).
- **Recommended approach:** Use this project's VR module as a starting point for broader discussions and projects. For example, after a VR lesson on macronutrients, students can research local products from the Brescia region that are rich in these nutrients, visit a local farm, or analyze the carbon footprint of different diets.

- Good Practice 2: The School-Family Co-responsibility Pact (Patto di Corresponsabilità Educativa)
  The success of any well-being initiative depends on the consistency between the messages received at school and habits at home. The MIM's guidelines stress the crucial importance of involving families.
- **Recommended approach:** Organize feedback sessions where students present what they have learned using the VR tool to their parents. Create family "health challenges" (e.g., "a week of healthy snacks") and share simple resources (recipes, tips) through the school's communication channels. The novelty of VR can serve as an excellent "hook" to attract parental participation.

3.2. Best ICT Solutions: From Information to Immersion

The use of Information and Communication Technologies (ICT) must go beyond a purely informational framework to create engaging and memorable experiences.

- ICT Solution 1: Virtual Reality (VR) for Experiential Learning
  Our project is at the forefront of this approach. Instead of reading diagrams about the digestive system, students can "travel" inside the human body. Instead of seeing pictures of food, they can interact with 3D models to build a balanced meal.
- **Recommended approach:** Position the project's VR solution as the central tool in a "digital toolkit" for health education. It does not replace the teacher but gives them a superpower: the ability to make the invisible visible and the abstract concrete. It should be presented as a safe virtual laboratory where students can experiment without real-world consequences.
- ICT Solution 2: Using Collaborative Platforms and Gamification
  Italian schools are increasingly using digital platforms (like those in the "Avanguardie Educative" network) for collaborative work. Gamification is also a strong trend for motivating students.
- **Recommended approach:** Connect the VR experience to a collaborative platform like eTwinning, which is already planned in the project. After the immersive phase, students from the four partner countries (Italy, Bulgaria, France, North Macedonia) can collaborate on joint projects: creating a transnational healthy recipe book, producing short videos to debunk misinformation about diets, or developing an interactive nutrition quiz for other students in their school.

3.3. Awareness-Raising Activities: Creating a Culture of Well-being

To be effective, awareness-raising must be continuous, positive, and led by the students themselves.

- Activity 1: Students as Health Ambassadors (Peer Education)
  Peer education is a highly effective method, especially during adolescence. After being trained and using the project's tools, the students themselves become experts.
- **Recommended approach:** Establish an annual "Well-being Day" in each partner school. During this event, students from the project would run VR demonstration booths for their peers, organize healthy snack tastings, and present their research findings creatively (through plays, videos, posters).

- Activity 2: Positive and Critical Communication Campaigns
  Rather than adopting an anxiety-inducing discourse about the dangers of obesity, the most effective campaigns in Italy focus on the pleasure of eating well and being active. They also aim to develop critical thinking skills towards media.
- **Recommended approach:** Launch an inter-school competition to create the best communication campaign on the theme "Healthy Eating is Smart Living!". Students would use their digital skills to create content for social media (short videos like TikTok/ Reels, infographics for Instagram) that promotes a healthy lifestyle in a fun way and deconstructs ads for junk food or "miracle" products.

By combining these approaches, the project does not just introduce a new technological tool; it acts as a catalyst to sustainably transform the culture of well-being within the partner schools, in perfect alignment with Italian national and regional strategies.

CHAPTER 4 :

Action plan with min 10 future projects/actions

In the action plan, detailed examples, initiatives, and projects are implemented to raise awareness about implementing VR-based nutrition education in STEM lessons. These activities, to be carried out by project partners with stakeholder involvement, are outlined for the next 5 to 10 years. Tasks are uniformly defined, specifying the responsible executor(s), completion timeframe, expected outcomes, additional participants, staffing needs, and required conditions for executing the planned activities.

4.1. BULGARIA

Activity 1:

Activity description	A Week of Nutrition education in Schools. A week-long campaign including exhibitions, quizzes, experiments, open classes, and VR-related games to engage students.
Activity contractor	Local schools in collaboration with NGOs and local municipalities;
Expected results	Raise awareness of VR-based nutrition education in STEM classes; engage communities;
Implementation period	May 2026
Human resources	1 teacher coordinator per school, volunteers, NGO an municipal staff
Financial resources	School budget

Activity 2:

Activity description	**"Solve a nutrition-related problem"** Secondary school students collaborate in teams to creat projects to solve local problems on nutrition-related topics usin OER and VR tools.
Activity contractor	Vocational schools from the district of Sliven
Expected results	At least 5 Innovation projects with VR-based OER,
Implementation period	November 2027
Human Resources	Students, STEM teachers, IT staff, NGO volunteers
Financial resources	NGOs, schools budget

Activity 3

Activity description	Teacher Training Workshop on Integrating VR-based nutrition education in Curriculum of SEN students: Practical workshops on integrating nutrition education in STE subjects of SEN students using digital tools, OER, team work an cross-curricular strategies.
Activity contractor	Dobri Zhelyazkov Vocational High school for textile and apparel, Slive
Expected results	6 trained teachers; improved integration of VR –based learning methodologies
Implementation period	September–December 2026
Human Resources	2 trainers, 50 teachers per session
Financial resources	EU educational funding, Erasmus + KA1,

4. 2. THE REPUBLIC OF NORTH MACEDONIA

Activity 1:

Activity description	**Project Title: "STEMland Explorers: Discovering Science Through Augmented Reality"** The project provided a set of AR-based learning tools that allowed pupils to explore basic STEM topics such as the solar system, simple machines, plants, animals, measurements, and basic coding through 3D animated AR elements on tablets and smartphones. The AR experiences were designed in a game-like format to support learning-by-doing and exploration, while encouraging teamwork, creativity, and observation. This interdisciplinary and inclusive educational model was designed to be easily transferable to different schools and adaptable to national curricula. Target groups: · Pupils aged 6 to 10 in primary education · Primary school STEM teachers · School ICT coordinators and curriculum designers
Activity contractor	Schools, NGOs, Business sector, Donators
Expected results	Successfully piloted and implemented AR-based learning approach for young STEM learners Increased engagement and enthusiasm of pupils in STEM subjects Improved digital and pedagogical competences of primary school teachers Strengthened collaboration between schools, AR developers, and educational NGOs Created high-quality, transferable materials for wider European use
Implementation period	2025-2027
Human resources	teachers, IT experts
Financial resources	· Erasmus+ KA220-SCH – Cooperation Partnerships in School Education (as primary funding) · Co-funding or support by national education ministries or digital innovation foundations (e.g., Digital Europe Programme, LEGO Foundation, or private tech donors)

Activity 2.

Activity description	"MindTech: Understanding Mental Health Through STEM and Smart Technologies" The project integrated STEM education with mental health literacy by using Augmented Reality (AR) and Artificial Intelligence (AI) to help secondary school students (aged 13–17) explore the science behind emotions, brain function, and stress management. Students participated in STEM-based workshops where they used AR apps to visualize how the brain responds to different emotional stimuli, and how hormones like cortisol or serotonin affect physical and mental health. AI-driven journaling tools and emotion-recognition simulations allowed them to better understand their own emotional states while learning about psychology, neuroscience, biology, and data science. The project promoted both scientific inquiry and emotional intelligence by encouraging students to collect data, analyze it (basic AI models for mood tracking), and present findings in teams. It also addressed digital wellbeing, AI ethics, and the role of technology in supporting — or harming — mental health. **Target Groups** Secondary school students (13–17 years old) STEM and health/psychology education teachers School psychologists or counselors Digital learning specialists and AI developers
Activity contractor	Schools, NGOs, Business sector, Donators
Expected results	Secondary schools Mental health-focused NGOs and youth organizations Universities (neuroscience, computer science departments) EdTech companies (AI or AR tools) Private foundations supporting digital wellbeing and youth mental health
Implementation period	2025-2027
Human resources	STEM and health education teachers School psychologists/counselors IT and AI/AR content developers External experts in neuroscience, psychology, and ethics in AI
Financial resources	· Erasmus+ KA220-SCH – Cooperation Partnerships in School Education Additional support from: European Commission's Digital Education Action Plan National Ministries of Health or Youth Private donations from tech companies focused on AI and wellbeing (e.g., Mindful Tech initiatives) NGOs promoting mental health in schools (e.g., Mental Health Europe)

4. 3. FRANCE

This action plan outlines a series of future projects and initiatives designed to build upon the success of the initial VR-based nutrition education project. The plan aims to sustainably embed this innovative pedagogical approach within the educational systems of the partner regions, with a particular focus on the Guadeloupe academy. Grounded in the identified needs and strategic goals of the "Projet d'académie 2024-2027", this roadmap leverages partnerships with key stakeholders to ensure long-term impact on student health and success.

Each action is defined according to a uniform structure to ensure clarity and feasibility.

Activity 1:

Action / Project Title	**Official Integration of Project Outputs into the Academy's Digital Resource**
Executor(s) Responsible	Guadeloupe Academy (DRANE), Project Partners
Completion Timeframe	Year 1-2
Expected Outcomes	The VR software and the Teacher's Handbook are officially validated and made available on the academy's Digital Workspace (ENT) [2]. - A dedicated section on the academy's website promotes the project's results[3].
Additional Participants	DRANE (Regional Delegation for Digital Education), school IT administrators.
Additional Participants	- 1 Project Coordinator. - 1 Webmaster/IT Technician
Required Conditions	- Official validation of the pedagogical content by the academy's inspectors. - Technical compatibility with the ENT platform.

Activity 2:

Action / Project Title	**Creation of a "Magistère" Online Training Module**
Executor(s) Responsible	Guadeloupe Academy, Project Partners
Completion Timeframe	Year 2
Expected Outcomes	A certified online training course for the VR nutrition tool is available to all teachers on the national
Additional Participants	*Magistère* platform[4]. - Minimum of 100 teachers complete the training in the first year. I
Additional Participants	NSPÉ (Teacher Training Institute).
Required Conditions	1 Pedagogical Engineer. - Lead STEM teachers from the pilot phase.
Allocation of resources for pedagogical engineering. - Promotion of the course within the academy's official training catalogue.	

Activity 3 :

Action / Project Title	**Expansion of the Project to all "Cités Éducatives"**
Executor(s) Responsible	Project Partners, Steering Committees of the 5 "Cités Éducatives" in Guadeloupe
Completion Timeframe	Year 2-4
Expected Outcomes	- The VR nutrition program is implemented in all priority schools within the 5 "Cités Éducatives". - Minimum 500 new students and their families are reached.
Additional Participants	Local municipalities, parents' associations, social centers.
Additional Participants	- 1 Coordinator per "Cité Éducative". - Social mediators.
Required Conditions	- Formal agreement with the steering committees of the "Cités Éducatives". - Securing a dedicated budget for equipment and coordination.

Activity 4 :

Action / Project Title	Annual Transnational "VR Nutrition & Health Challenge"
Executor(s) Responsible	All Project Partners (Guadeloupe, Bulgaria, Italy, North Macedonia)
Completion Timeframe	Annually, starting Year 2
Expected Outcomes	- An annual online competition engaging teams from all partner countries. - Creation of an eTwinning community with at least 20 active schools
Additional Participants	eTwinning National Agencies.
Additional Participants	- 1 International Project Manager. - 4 National Coordinators
Required Conditions	- A robust online platform for the competition. - Active promotion in all partner countries.

Activity 5:

Action / Project Title	5. Development of a VR Module on "Sustainable Food & Local Agriculture"
Executor(s) Responsible	All Project Partners, Agricultural High Schools
Completion Timeframe	Year 3-5
Expected Outcomes	- A new VR module focusing on the benefits of local supply chains, seasonality, and sustainable farming is created. - The module is adapted to the specific agricultural context of each partner region.
Additional Participants	Chambers of Agriculture, farmers' associations, environmental NGOs.
Additional Participants	- 1 VR Developer. - 1 Agronomist/Environmental Expert. - STEM teachers.
Required Conditions	- Partnership agreements with agricultural institutions. - Research on local sustainable food practices.

Activity 6 :

Action / Project Title	Creation of a "Parent-Child" VR Nutrition Workshop
Executor(s) Responsible	Project Partners, Parents' Associations
Completion Timeframe	Year 3
Expected Outcomes	- A workshop format is developed for use during school events or in "Espaces Parents". - Minimum 10 workshops conducted per year in Guadeloupe, fostering family dialogue on nutrition.
Additional Participants	School nurses, dietitians.
Additional Participants	- Workshop facilitators (trained teachers or health professionals).
Required Conditions	- Simplified, user-friendly version of the VR experience. - Active communication and mobilization of parents.

Activity 7 :

Action / Project Title	**Academic Partnership for Research & Development**
Executor(s) Responsible	Project Partners, University of the Antilles
Completion Timeframe	Year 3-6
Expected Outcomes	- A formal partnership is established with the university to study the project's impact on student learning and health behaviors. - University students (Education, Health, IT) are involved in internships or research projects.
Additional Participants	Universities in partner countries.
Additional Participants	- University research supervisors. - PhD or Master's students.
Required Conditions	- Signed convention between the Rectorat and the University. - Access to anonymized data for research purposes.

Activity 8 :

Action / Project Title	Targeted VR Module on the "Dangers of Dietary Supplements & Unhealthy Diets"
Executor(s) Responsible	Project Partners, Regional Health Agencies (ARS)
Completion Timeframe	Year 4
Expected Outcomes	- A specific VR scenario is developed to educate teenagers on the risks of supplements and fad diets, as mentioned in the initial project rationale. - The module is validated by health authorities.
Additional Participants	Health professionals, anti-addiction associations.
Additional Participants	- 1 VR Developer. - Medical experts/toxicologists.
Required Conditions	- Scientific content validated by the Regional Health Agency. - Ethical review of the scenario.

Activity 9:

Action / Project Title	**Establishment of a "Train the Trainer" Certification Program**
Executor(s) Responsible	All Project Partners
Completion Timeframe	Year 4-5
Expected Outcomes	- A certification program is created to empower expert teachers to train their peers. - A pool of at least 20 certified "VR Education" trainers is established across the partner regions.
Additional Participants	National education authorities in each country.
Additional Participants	- A lead certification board composed of project experts.
Required Conditions	- Definition of a clear set of skills and a certification process. - Recognition of the certification by the educational authorities.

Activity 10:

Action / Project Title	Long-term Comparative Study on Academic & Health Impact
Executor(s) Responsible	All Project Partners, National Research Institutes (e.g., INSERM)
Completion Timeframe	Year 5-10
Expected Outcomes	- A longitudinal study is launched to measure the long-term effects of the project on students' academic results in STEM, health choices, and well-being. - Publication of results in scientific journals
Additional Participants	National statistical offices (e.g., INSEE).
Additional Participants	- Lead researchers. - Data analysts.
Required Conditions	- Long-term funding secured through national or EU research grants (e.g., Horizon Europe). - Protocols for long-term data collection.

Activity 11:

Action / Project Title	"VR for Well-being": Expansion to Psycho-Social Skills
Executor(s) Responsible	Project Partners, School Psychology Services
Completion Timeframe	Year 6-8
Expected Outcomes	- The VR methodology is adapted to create new modules addressing other well-being issues identified in the "Projet d'académie", such as empathy courses to combat harassment.
Additional Participants	Experts in social-emotional learning, psychologists.
Additional Participants	- VR developers with expertise in serious games. - Child psychologists.
Required Conditions	- Proven success and sustainability of the nutrition model. - New funding dedicated to mental health and well-being in schools.

4.4. ITALY

This action plan constitutes the strategic roadmap for the sustainability and expansion of the initiatives developed within this project. It aims to sustainably embed health and well-being education, through immersive technologies, at the heart of the educational processes in the partner regions and beyond. Each action is designed to be led by the project partners, in synergy with an expanded network of stakeholders, thereby ensuring a systemic and long-term impact. The plan represents a 5 to 10-year vision, transforming a successful innovation into an educational standard.

Axis 1: Deepening and Deploying Pedagogical Content (Years 1-4)

Activity 1

Action / Project Title	**VR Expansion Pack "From Nutrition to Planetary Health"**
Description	• **Description:** Creation of new VR modules connecting nutrition to global issues: sustainability of food systems, impact of agriculture on the climate, food waste, and the link between mental health and diet. •
Responsible Executor (s)	The project partner consortium, with a technical lead (e.g., the organization that developed the initial software).
Timeframe	Timeframe: Years 1-3.
Expected Outcomes	3-4 new VR modules available and tested. An enriched STEM curriculum with global citizenship themes.
Additional Participants	Sustainable development experts, environmental NGOs, universities (faculties of agronomy, psychology).
Staffing Needs	VR developers, instructional designers, subject-matter experts, translators.
Required Conditions	Additional funding (e.g., Erasmus+, Horizon Europe calls), continuous access to scientific expertise.

Activity 2: Primary School Adaptation "VR-Kids: Healthy Habits from the Start »

Action / Project Title	**Primary School Adaptation "VR-Kids: Healthy Habits from the Start »**
Description	Development of a simplified and gamified version of the VR modules for primary school students (ages 8-11), focusing on discovering food groups and the importance of physical activity.
Responsible Executor (s)	School partners, in collaboration with educators specializing in childhood development.
Timeframe	Years 2-4.
Expected Outcomes	A "VR-Kids" version of the software, tested in at least 10 primary school classrooms in the partner regions.
Additional Participants	Primary school teachers, child psychologists, parent-teacher associations.
Staffing Needs	Game designers, UI/UX designers for children, teacher-testers.
Required Conditions	Approval from educational authorities, VR hardware suitable for children (lighter, safer).

Activity 3:

Action / Project Title	**Regional Roll-out Program "VR-Nutri-STEM in the Region »**
Description	Creation of a "Deployment Kit" (pedagogical guide, technical tutorials, training plan) to facilitate the adoption of the approach by other secondary schools in the Brescia, Sliven, Guadeloupe, and Kochani regi
Responsible Executor (s)	Local/regional educational authorities in partnership with the project's pilot schools.
Timeframe	Years 3-5.
Expected Outcomes	At least 20 new schools per region using the approach. Creation of a regional network of teacher-trainers.
Additional Participants	Training departments of regional education authorities, school principals.
Staffing Needs	Regional coordinators, master trainers (trainers of trainers).
Required Conditions	Political and financial support from regional authorities, inclusion of the training in official continuous professional development plans.

Axis 2: Professional Development and Networking (Ongoing)

Activity 4:

Action / Project Title	**"Expert Teacher in Immersive Pedagogy" Certification Program**
Description	Establishment of an advanced training program, co-designed with a university, leading to a recognized certification for teachers who master the integration of VR in STEM subjects.
Responsible Executor (s)	The project consortium and a partner university in each country.
Timeframe	Launch in Year 3
Expected Outcomes	An operational certification program. At least 50 certified teachers within 5 years.
Additional Participants	National skills validation agencies, university departments of education.
Staffing Needs	University professors, instructional designers, tutors.
Required Conditions	Accreditation of the certification program by the relevant authorities.

Activity 5:

Action / Project Title	**Annual Transnational "Innov-Ed Health" Symposium**
Description	Formalizing the "Teachers' Network" into an annual event (in-person or hybrid), hosted on a rotating basis by the partners, to share best practices in digital health education.
Responsible Executor (s)	All project partners.
Timeframe	Annually, starting from Year 2.
Expected Outcomes	An annual symposium with over 100 participants. Annual publication of a compendium of good practices.
Additional Participants	Policymakers, researchers, EdTech companies, health professionals.
Staffing Needs	Organizing committee, event managers.
Required Conditions	A sustainable funding model for the event (sponsors, modest registration fees).

Axis 3: Community Engagement and Action-Research (Years 3-8)

Activity 6:

Action / Project Title	**"Open School for Community Health" Initiative**
Description	Using the school's VR equipment outside of school hours to organize nutrition awareness workshops for parents and local citizens.
Responsible Executor (s)	Partner schools
Timeframe	Starting from Year 3
Expected Outcomes	At least 4 community workshops per year per school. A strengthened school-family-community bond.
Additional Participants	Neighborhood associations, municipalities (social and health services), local health centers.
Staffing Needs	Facilitators (can be teachers or trained student ambassadors), security staff.
Required Conditions	Agreement for use of premises, insurance, effective local communication.

Activity 7:

Action / Project Title	**Longitudinal Impact Study**
Description	Launch of a formal research study to track the cohorts of students who have benefited from the program over 5 to 10 years, in order to measure the impact on their lifestyle habits, health, STEM performance, and career choices.
Responsible Executor (s)	An academic partner (university) in collaboration with the consortium.
Timeframe	Years 3-10
Expected Outcomes	Publication of evidence-based scientific data on the approach's effectiveness. Evidence-based policy recommendations.
Additional Participants	National statistics institutes, public health observatories.
Staffing Needs	Researchers, statisticians, PhD students.
Required Conditions	Research funding, approval from ethics committees, agreements for cohort tracking.

Activity 8 :

Action / Project Title	**Annual "Health-Tech Innovators" Challenge**
Description	Organization of a competition where student teams, mentored by professionals, develop prototypes of digital solutions (app, website, game) to address a local health challenge.
Responsible Executor (s)	Partners (NGOs and schools).
Timeframe	Annually, starting from Year 4.
Expected Outcomes	Stimulation of students' entrepreneurial spirit and digital skills. Emergence of innovative solutions.
Additional Participants	Startup incubators, local tech companies, health professionals.
Staffing Needs	Mentors (engineers, designers, marketers), a jury of experts.
Required Conditions	Partnerships with the private sector for mentoring and prizes.

Axis 4 : Technological Innovation and Sustainability (Years 5-10)

Activity 9:

Action / Project Title	**Integration of an AI-Personalized Tutoring System**
Description	Development of an Artificial Intelligence layer within the VR software, capable of adapting the difficulty of nutritional challenges in real-time, providing personalized feedback, and suggesting individualized learning pathways.
Responsible Executor (s)	Technical partner and an AI research lab.
Timeframe	Years 5-7.
Expected Outcomes	A functional VR-AI prototype. Increased learning efficiency and student engagement.
Additional Participants	Researchers in AI and cognitive sciences.
Staffing Needs	AI/Machine Learning engineers, data scientists, AI ethics experts.
Required Conditions	Substantial R&D funding, access to anonymized learning data.

Activity 10:

Action / Project Title	**"Digital Health Curriculum" Policy Proposal**
Description	Based on the results of the impact study (Action 7), formalize a public policy proposal to integrate the validated modules into the official curriculum for STEM and Civic Education at the national/ regional level.
Responsible Executor (s)	The project consortium, led by the partner educational authorities.
Timeframe	Years 8-10.
Expected Outcomes	Submission of a policy proposal to the relevant ministries. Institutional anchoring of the innovation.
Additional Participants	Teacher unions, parent associations, members of parliament.
Staffing Needs	Public policy experts, lobbyists, legal advisors.
Required Conditions	Solid impact data, political support, broad stakeholder consensus.

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