

RECOMMENDATIONS

BY

THE CREATIVE SCHOOL PROJECT

Erasmus+ partnership for schools (2019-2022)

FOR

EDUCATIONAL BODIES

CULTURAL INSTITUTIONS

POLICY MAKERS



SUMMARY

The rationale behind the project	2
Critical and creative thinking in Europe	3
The problem of a definition What are the 4C's?	
The Creative School experience	6
Crafted objectives The project activities A summary of the experiences Designed open educational resources The project in numbers	
Recommendations for educational	12
Summary - an introduction to recommendations How to use project's resources and tools How to support critical and creative thinking	

THE RATIONALE BEHIND THE PROJECT

In today's society, there is an increasing requirement for children and young people to develop higher level thinking skills to find solutions to social, emotional and economic problems, both personally and in the context of the wider world. They need to be equipped with the skills to be creative, innovative, enterprising and adaptable, with the motivation, confidence and skills to use creative and critical thinking purposefully.

The *Creative School* project has developed learning modules for children and school teachers, promoting self-directed, independent learning alongside critical and collaborative thinking skills. The *Creative School* promotes **creative and critical thinking educational approaches** to schools in partnership with museums, science centres and galleries.

This project has been a three-year strategic partnership (2019-2022) funded by the Erasmus+ Programme. It has been built on the outcomes of two previous Erasmus+ funded projects: the *Creative Museum* and the *Making Museum*, which provided opportunities to generate and evaluate knowledge, clarify concepts and ideas, explore possibilities, consider alternatives, and solve problems for museum professionals and audiences.

This report includes a set of recommendations for the educational sector, cultural sector and policy makers in how to create an environment that fosters and encourages creative and critical thinking.



**CREATIVE SCHOOL
PROMOTES CREATIVE
AND CRITICAL THINKING
EDUCATIONAL
APPROACHES TO
SCHOOLS**

CRITICAL AND CREATIVE THINKING IN EUROPE



There are undoubtedly many interpretations of creative and critical thinking skills in both informal and formal learning sectors.

THE PROBLEM OF A DEFINITION

Pose the question. “*What do we mean by creative and critical thinking?*” to a group of museum, science centre and cultural heritage professionals and then to a group of makers, the answers will vary depending on professional and cultural context. There are undoubtedly many interpretations of creative and critical thinking skills in both informal and formal learning sectors. These terms are increasingly being used in the formal education sector across Europe and too have several interpretations stemming from both educational policy, curriculum development, assessment and practice.

Our starting point has remained the definitions used in the *Creative Museum* and *Making Museum* projects.

As identified in the previous *Creative Museum* and *Making Museum* [1] **creativity** is defined as: “The ability to transcend traditional ideas, rules, patterns, and relationships to create new ideas; originality or imagination.” [2]

The simple definition of **critical thinking** is the ability to solve problems. In formal learning, critical thinking is often linked to inquiry-based learning.

WHAT ARE THE 4C'S?

In the 21st century classroom the 4C's are prevalent in the promotion and development of critical thinking skills. The 4C's include creative and critical thinking as well as collaboration and communication.

Critical thinking: it is the practice of solving problems, among other qualities. Critical thinking is a term used by educators to describe forms of learning, thought, and analysis that go beyond the memorization and recall of information and facts. Critical thinking occurs when students are analyzing, evaluating, interpreting, or synthesizing information and applying creative thought to form an argument, solve a problem, or reach a conclusion. [3]

Creativity: it is the practice of thinking outside the box. It is equally important as a means of adaptation. This skill

empowers students to see concepts in a different light, which leads to innovation. Creativity is the ability to produce new, diverse, and unique ideas. Thinking creatively means looking at things from a different perspective and not be restricted by rules, customs, or norms

While creativity is often treated like a you-have-it-or-you-don't quality, students can learn how to be creative by solving problems, creating systems, or just trying something they haven't tried before. It means students will be able to look at a problem from multiple perspectives — including those that others may not see. [4]

Collaboration: Collaboration is the practice of working together to achieve a common goal.

This 21st Century Skill, is about working together to reach a goal and putting talent, expertise, and smarts to work. Just like with communication, technology has made collaboration easier. Technology takes this skill a step farther, making types of collaboration possible that weren't before technology. Just like with communication though, the same breakdowns can happen. The number of choices can get overwhelming, and the actual collaboration can get lost while we pay too much attention to the tool we're using to collaborate. As the world goes more interconnected, the collaboration will become a more and more essential

skill than it already is, which is why it makes the list of the 4 Cs for 21st Century skills. Collaboration is important because whether students realize it or not, they'll probably work with other people for the rest of their lives. Practicing collaboration and teamwork helps students understand how to address a problem, pitch solutions, and decide the best course of action. It's also helpful for them to learn that other people don't always have the same ideas that they do. [5]

Communication: Communication is the practice of conveying ideas quickly and clearly. [6] It is expressing thoughts clearly, crisply articulating opinions, communicating coherent instructions, motivating others through powerful speech. [7]

In the education and school sectors, creative and critical thinking is often supported by inquiry based learning, Socratic questioning, empathy, and decision making. Educators are encouraged to embed the 4C's in their curriculum planning as part of their approach to developing creative and critical thinking for example in Junior Cycle Key Skills in Ireland. [8]



Ars Electronica / Martin Hieslmair

The background of the entire page is a photograph of two young girls running away from the camera on a paved surface. They are wearing backpacks and shorts. The image has a warm, golden-hour lighting. A light blue rectangular box is positioned in the upper left, containing the title. A purple rectangular box is in the lower right, containing a quote. The page number '6' is at the bottom center.

THE CREATIVE SCHOOL EXPERIENCE

”

To become active learners,
the students must nourish their
senses, body, intellect, and mind.

“

CRAFTED OBJECTIVES



**CROSS-CURRICULAR AND INTERDISCIPLINARY,
RESPECTFUL, ADAPTABLE, FLEXIBLE, THINKING
ROUTINES AND STRATEGIES, ELETRONIC
AND DIGITAL, DIFFERENTIATED**

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Creative and critical thinking relates to pupils' (in reality to all of us) thought processes: how they take decisions, how they use their personal ideas, and how they act to solve problems.

Through creative and critical thinking students will become problem-solvers, tending to apply the same thinking processes to identify and implement the solutions to their own problems. This process works for any kind of problem - large or small. Experimenting through creativity, the students will become active learners.

To reach this result they must nourish their senses, body, intellect, and mind.

The project developed a suite of Open Education Resources (OER) which focussed on creative and critical thinking. These OER's were developed with some guiding principles in mind - these are our CRAFTED objectives.

The Open Education Resources (OER) developed by the Creative School project consist of a CRAFTED educational toolbox, with the following characteristics:

CROSS-CURRICULAR AND INTERDISCIPLINARY

Embedding creative thinking across the curriculum.

RESPECTFUL

There is a transformative learning experience when children and young people are encouraged to share their voices, opinions and personal experiences when exploring information in an open, holistic, and safe environment.

ADAPTABLE

Each teacher should be able to work with the resource and adapt it according to the needs of the school cycle (primary, middle school, or post-primary school).

FLEXIBLE

Provide flexible methods of evaluation that allow teachers to find their way around and construct their own evaluation grid. The overall objective is to determine the students' ability to follow a project.

THINKING ROUTINES AND STRATEGIES

Learners should be encouraged to think speculatively, to acknowledge and build on what members of their peer group are saying, and to build confidence and competence in their own ideas and evidence building.

ELECTRONIC AND DIGITAL

OER should be in digital format; simple to use and with concise instructions; no need to download applications; quick to assimilate; using images and videos, also augmented reality and virtual reality especially in the future; adopting a gameplay solution; using digital storytelling and personal stories; participatory; active involvement of the student for producing knowledge; no need for special tools.

DIFFERENTIATED

Allow for teachers to interpret and adapt the resources for student's learning needs. [9]

One of the aims of the OER's was to explore the conditions for developing a learning environment and activities for participants to develop creative and critical thinking. Such considerations included socially mediated activity design, a learner or student-centred approach, focus on participant voice, dialogic learning, inquiry, questioning, inclusion and empathy.



THE PROJECT ACTIVITIES

KEY MILESTONES AND OUTPUTS

1

Analysis of good practices, training and information needs of teachers, educators, children and parents.

2

Development of a set of training materials (OER) focusing on the development of creative and critical thinking skills through engagement with cultural heritage. The Creative School project developed learning modules for children and school teachers, promoting self-directed learning, creative and critical thinking skills by using cultural heritage content made available by the partner organisations.

3

Development of guidelines and recommendations aimed at influencing policy makers and curriculum decision makers.

A SUMMARY OF THE EXPERIENCES

The first stage of the Creative school project was to analyse good practices from museums, science centres and cultural heritage which explored creative and critical thinking and to identify and understand teachers and educators needs. This global background work helped define the CRAFTED objective that can be used to engineer Open Educational Resources (OER).









Then, the partners designed a total of 12 OER with different subject matters (art history; citizenship and philosophy; geography...) and adapted to the age of the students (7 to 11; 11 to 14; 14 to 18).

After designing the resources, the partners of the Creative school project tested them in real conditions.

Each partner tested its own resource and then tested a partner's designed resource to see what worked well, what didn't and if the resource needed to be adapted. From this experience, the partners were able to identify key recommendations for critical and creative thinking.

The full list of OERs are presented in the following page.

DESIGNED OPEN EDUCATIONAL RESOURCES

	7-11 years old	11-14 years old	14-18 years old
ART HISTORY 		<i>Let them live again</i>	<i>Let them live again</i>
CITIZENSHIP AND PHILOSOPHY 	<i>Ethical Dilemmas</i>	<i>Ethical Dilemmas</i>	<i>Ethical Dilemmas</i>
ENVIRONMENT 	<i>Biodiversity and visual arts</i>	<i>Biodiversity and visual arts</i>	
FACILITATION 	<i>Object based learning</i>	<i>Object based learning</i>	<i>Object based learning</i>
GEOGRAPHY 	<i>Urban walks</i>	<i>Urban walks</i>	
HISTORY 	<i>Photos as memories of the past</i>	<i>Photos as memories of the past</i>	<i>How did young people live?</i> <i>Photos as memories of the past</i>
STEAM 	<i>#Empowering YouthVoices</i>	<i>Hungry Algorithms</i> <i>#Empowering YouthVoices</i>	<i>Climate Change Investigation</i> <i>Hungry Algorithms</i> <i>#Empowering YouthVoices</i>
TEACHER TRAININGS 	<i>Europeana as a learning tool</i> <i>Practical approaches to teaching with objects</i>	<i>Europeana as a learning tool</i> <i>Practical approaches to teaching with objects</i>	<i>Europeana as a learning tool</i> <i>Practical approaches to teaching with objects</i>

THE PROJECT NUMBERS

26

PILOT SESSIONS

—

500

**STUDENTS
8 TO 18 YEARS OLD**

—

12

OERs DEVELOPED

—

14

**INTERNATIONAL
PRESENTATIONS**

RECOMMENDATIONS

“

The recommendations are designed as a set of ideas for educators to use, adapt and create resources relevant in their own practice.

”

SUMMARY

AN INTRODUCTION TO RECOMMENDATIONS

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“DEVELOPING CREATIVE AND CRITICAL THINKING CREATES BONDS”

Creativity and critical thinking are linked: they make intellectual autonomy possible. The work undertaken in the Creative School project has reminded us of the essential link between Creativity and Critical Thinking which is also underlined in the OECD report (Fostering Students' Creativity and Critical Thinking). [10]

Critical thinking is a common notion that allows us to overcome the educator/student gap. This creates community between them as both educators/students exercise critical thinking through the axis of creativity. Creativity allows us to approach the question of the autonomy of thought and to get out of an abstract critical spirit that it is difficult to assimilate in isolation.

Critical thinking and creativity are transversal notions that allow us to enter into any scientific content, cultural content, to encourage our curiosity, our intellectual nomadism and to work in transversality between disciplines.

As the partners tested the project's resources with schools, they were able to highlight some key recommendations for replicability and guidelines for supporting creative and critical thinking in formal and informal educational environments. The recommendations are designed as a set of ideas for educators to use, adapt and create resources relevant in their own practice.

HOW TO USE PROJECT'S RESOURCES AND TOOLS

IN AN EDUCATIONAL ENVIRONMENT



COMPLEMENT INDIVIDUAL TEACHING STYLE AND STUDENT NEEDS

Teachers need to be able to adapt educational resources according to their curriculum, needs, facilitation style or teaching sequence.

The educational resources developed within our model can be used to complement already existing curricula around the specific topics addressed in the OER and should not substitute the curricula itself.

Always keep in mind that the resources offer a checklist of practices that the teachers should respect but they can work around it and create a workshop that is best adapted to their students' needs. The teacher should use the proposed materials to help stimulate the students to create new materials based on the same CRAFTED principles.

TAKE TIME AND BE PREPARED

It takes time to assimilate all the material needed for the successful delivery of an OER. Be sure to read the content and instructions carefully, prepare all the materials needed in advance and check technology. This will ensure more effectiveness during the workshop and allow to be reactive if some parts do not work or are relevant to the curricula being taught.

It also takes time to get to the right format. A few test sessions could be used to test and prototype on how to connect them altogether. This way, the workshop can be easily re-adapted, and its format cleaned.

Be sure to make time for the activity to take place: don't rush it! To engage in creativity and critical thinking, students should feel that they have time to express themselves.

RUNNING VISUAL CLASSROOMS AND ENGAGING IN REMOTE LEARNING

Our experience took place during the Covid pandemic: it disrupted the way the OER were going to be tested. As in person experiments were not possible, the partners had to deal with virtual classrooms. It highlighted two problems:

- Unreliability of internet connections
 - As connection problems can occur, be sure to find a way to accommodate glitches (ie: allow for more time than required).
- Difficulties with engaging students
 - Virtual classrooms make it not easy to connect with students. They can be used to be in a listening position instead of an active participating mindset. It can take time for them to get used to this change of tone and should be acknowledged when beginning the workshop. Maximise the teacher's relationship with the students to assist in the facilitation.

It makes it also difficult to read people's facial expressions and therefore "read the room" (nuances, relationships dynamics between students etc.). It is helpful to have a support facilitator or educator to assist with this and to handle chat, address glitches etc.

IMPORTANCE OF THE TEACHER'S ROLE

Teachers are the coordinator of the class, and their role is crucial for the good execution of the OER. They are the ones knowing all about their students and how to engage with them. If the OER is taking place with facilitators, they should not be overlooked and should be at the centre of the workshop.

It is important to implicate them in the preparation process.

"BRILLIANT LINK TO HISTORY, GEOGRAPHY, ORAL ENGLISH, ART AND MANY OTHER CURRICULAR AREAS. THE CHILDREN WERE VERY INTERESTED AND SAD WHEN THE ZOOM ENDED."



HOW TO SUPPORT CRITICAL AND CREATIVE THINKING

IN AN EDUCATIONAL SETTING



USE NON-CONVENTIONAL WAYS OF LEARNING

By going off the beaten tracks and providing a different kind of learning, students will be in a better mindset to experience critical and creative thinking.

As an example, Object-based Learning (OBL) is a student-centred learning approach that uses objects to facilitate deep learning. The use of objects can act as a multi-sensory “thinking tool” to promote learning.

The objects are used to stimulate the learners’ imagination and to help them apply their understanding to other contexts and problems. The central proposition of OBL is that working with objects mediates and strengthens learning. [11]

MAKE IT PERSONAL AND RELEVANT

It can be difficult for students to open their minds to allow them to explore their creativity or develop critical thinking. A good way to ensure they can freely discuss with each other and express themselves is to use role play as a tool. Putting themselves in someone else’s shoes creates empathy and stimulates the imagination so that they can approach and tackle problems from another perspective.

It’s also recommended to help students by making them address problems close to them, as students are more interested in stories and personal perspectives. Tasks that will make students empathise and step into the role of another person will help develop empathy and hence also creative and critical thinking. Drama education or debate/argumentation practices are also useful methods.

DEVELOP DYNAMIC CONTENT

Don't hesitate to use pictures and videos from digital archives. There are plenty of free and ready to use learning activities (for example in Europeana / Historiana).

It is also very important to design content in line with contemporary challenges, such as climate change, sustainability, urbanization, digital etc. That way, other resources can be used, like newspaper articles or news to introduce these topics. It will help the students relate more to the activity and be more implicated as these topics concern everyone.

THINK ABOUT THE FUTURE OF CREATIVE AND CRITICAL THINKING

To support creative and critical thinking, it is of the highest importance to do knowledge transfer to future teachers: today's students are tomorrow's teachers, and it is crucial for them to learn and develop these skills right now, as it might be too late later.

Regarding the future, it might be interesting to start creating programs that are targeting teachers to be. It would be very relevant if teachers could be trained and have a concrete toolbox and exercises to support the students in developing their own critical thinking.

CREATE A SAFE AND PLAYFUL SPACE

Providing an open, innovative and creative workshop can be a destabilising moment for students, who could be sceptical and may not be comfortable with being challenging or with working outside conventional classroom boundaries.

Therefore, it is the teacher's responsibility to provide a safe environment for students. This allows them to be comfortable sharing their ideas, thinking and state of mind. Let them take some time to get used to this new situation and do not try to force them to react immediately. It is also important to be in a playful mindset, to support the students in getting into the activity more easily. Establish and implement some groundrules about listening to each other, accepting what the other students are doing or thinking and most of all, allow space and time for questioning. It is an important step towards creative and critical thinking.



“USING MULTICULTURAL AND MULTI BELIEF ARTWORK WAS REALLY GOOD. CHILDREN COULD MAKE CONNECTIONS TO THEIR OWN LIVES.”

MEET THE PARTNERS

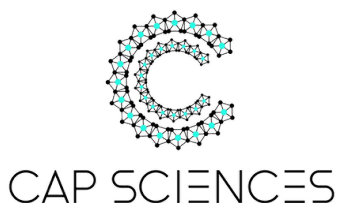
THE ORGANISATIONS IN THE CONSORTIUM

The project brings together 9 different organisations from 8 European countries: Finland, Belgium, France, Croatia, Italy, Ireland, Austria and United Kingdom. The partnership therefor provides a trans-domain approach from cultural, educational, digital and creative organisations, from national to european levels.

The **Creative School project**, through the expertise of its partners, aims to develop **co-created programmes** and to encourage citizens, students and schools to **engage with cultural collections in different ways**.



Chester
Beatty



NOTES

- [1] Siung, Jenny, and Jo-Anne Sunderland Bowe. *Methods to Include a Creative and Critical Thinking Approach in Education*. The Creative School Project, 2020, <http://www.creative-school.eu/resources>. Accessed 20 July 2022.
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- [4] SCSA Southwest Charlotte STEM Academy. "What Are the 4 C's of 21st-Century Skills?" scstemacademy.org/4-cs-of-21st-century-skills/. Accessed 20 July 2022.
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- [6] Ridgeview Charter School. "What Are the 4 C's of 21st-Century Skills?" ridgeviewcharter.org/4-cs-of-21st-century-skills/#:~:text=4.-. Accessed 20 July 2022.
- [7] National Education Association. *Preparing 21st Century Students for a Global Society an Educator's Guide to the "Four Cs."* National Education Association, 2010, d1.icdst.org/pdfs/files3/0d3e72e9b873e0ef2ed780bf53a347b4.pdf. Accessed 20 July 2022.
- [8] Op. Cit., no.1, p. 8
- [9] Ibid, p. 41
- [10] See <https://www.oecd.org/education/fostering-students-creativity-and-critical-thinking-62212c37-en.htm>
- [11] Romanek, Deborah, and Bernadette Lynch. "Touch and the Value of Object Handling: Final Conclusions for a New Sensory Museology." In *Touch in Museums: Policy and Practice in Object Handling*, edited by Helen J. Chatterjee, Oxford & New York, Berg, 2008.

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