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INCLU.MA.P.

Project No. 2019-1-IT02-KA201-062851

INCLU.MA.P. 'Inclusion Through Material Culture and Holographic Projections'.

IO3 - Intellectual Output 3
Tools and Practices of Work in multicultural and stratified neo-communities

Type of Output: OER - Open Educational Resource

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Introduction

The INCLU. MA. P. project involved 4 secondary schools (both general education and VET) with a percentage of foreign students, first or second generation migrants, between 10% and 30%, distributed between Italy, Spain, Portugal, South European countries that have been exposed to migration and cultural contamination for centuries thanks to contacts with Mediterranean populations, to which migratory flows from former colonies or by sea have been added, particularly in the last 10 years, making these countries a target for many migrants seeking access to the EU.

The overall aim of the project was to develop active citizenship and intercultural dialogue skills in about 320 secondary students, to enable all of them, native and migrant, to contribute to the formation of communities inspired by the values of respect, mutual knowledge and appreciation, and democracy, starting from school life, through the creation of multicultural and stratified learning communities.

The objective was pursued through the design and testing of four interdisciplinary didactic programmes, aimed at reconstructing, recovering and enhancing the traditional heritage related to the material culture of all the students, natives and migrants, who make up the melting-pot of the new multi-ethnic learning communities; each programme was dedicated to an indicator related to the Framework of Civilisation, according to the historiographic approach of the eminent French academic Fernand Braudel[1] :

Intellectual Output 1: Food and Nutrition

Intellectual Output 2: Clothing and Fashion

Intellectual Output 3: Work Tools and Practices;

Intellectual Output 4: Housing and Objects of Everyday Life.

Specific objectives of each of the four programmes were:

-collection, analysis and documentation of the specific indicator within the civilization framework, to be achieved through the historical-philosophical, linguistic, humanistic and religious curricular disciplines

[1]Essential bibliography on historiographical method, material culture and civilisation frameworks:
F. Braudel, *La Méditerranée et le Monde Méditerranéen a l'époque de Philippe II,* 1949
F. Braudel, *Ecrits sur l'Histoire*, 1969
F. Braudel, *Le Monde actuel - Histoire et civilisation,* 1963, reissued in 1987 with the title *Grammaire des civilisations*
F. Braudel, *Les Mémoires de la Méditerranée,* 1998

- reconstruction of the multi-ethnic/multicultural picture obtained for each indicator of civilization, carried out within the STEM curriculum, through the use of 3D digital image modelling and the holographic projector, organised as project work managed in increasing autonomy by the students themselves, aimed at reproducing a descriptive "multi-faceted" image of the multicultural new born community in which they learn and live.

The preferred methodological approach was Service Learning, which allows to combine the learning of curricular disciplines such as history/philosophy, linguistics on the one hand, and STEM on the other, with the approach of service to one's own community of reference, of which the students detect a need and together, in a collaborative way, work to offer a solution to the common problem of the whole social/civil group.

The reconstruction of the 4 indicators of material culture related to the civilization framework by the schools must be assisted, on the one hand, by an expert methodologist in learning and training processes, and by ethnographic / historical / material civilization museums belonging to the various regions or geographical areas and competent on at least one or more indicators, while on the other hand, from the technological point of view it must be supported at least by a partner expert in digital image modelling and holographic technologies applied to teaching.

IO3: Teaching programme on Work Tools and Practices, with a view to education for citizenship and intercultural dialogue

This product consists of a multidisciplinary didactic programme on the Tools and Practices of WORK in school classrooms, understood as new multicultural learning communities, where native and migrant students live and learn in a non-universal and non-unidirectional context, where valuing difference and inclusion are key factors for the academic and educational success of all pupils, especially those with fewer opportunities due to socio-cultural or economic disadvantage.

The programme is released as an OER (Open Educational Resource) and has been designed as a reusable model with a view to transferability and replicability.

The Output represents the synthesis of the convergences and divergences of the plural and delocalised experiences of the project partners, classified as follows:

Coordinator and expert Methodologist	Country	School Institute	Museum	Digital Technology Expert
Cisita Parma scarl, management and vocational training centre for young people and workers	Italy	IISS "C.E. Gadda" of Fornovo-Langhirano (Parma), scientific high school (applied sciences), technical economic institute, computer school and professional institute for Maintenance and Technical Assistance	Musei del Cibo della Provincia di Parma (Food Museums of the Province of Parma), dedicated to the collection of the food culture of the Emilia region	Gruppo Scuola Coop. Soc. of Parma, equipped with communal spaces and equipment dedicated to 3D modelling and printing, holographic projections
		IISS. "P. Carcano" of Como, scientific high school (applied science), artistic high school, technical institute of fashion system, graphics and communication, chemistry, materials and biotechnology	Como Silk Museum, dedicated to the history of the textile industry and tradition of the Lombardy region	
	Spain	Folgado" Vocational Training Centre in Valencia, dedicated to courses in metallurgy, welding, mechanical manufacturing,	Museu Comarcal de l'Horta Sud 'Josep Ferris March' in Torrent, Valencia, dedicated to the reconstruction of	

		electricity and electronics	Valencian ethnographic and agricultural heritage	
	Portugal	EPAQL - Escola Profissional Agricola "Quinta da Lageosa", Covilhã, dedicated to vocational courses in equine management, agricultural production management, agricultural machinery operator	Museu Camara Municipal de Povoa de Varzim, Oporto, dedicated to the recovery and enhancement of the material culture of ancient fishermen and farmers	

What is a framework of civilization? Following Fernand Braudel, whom we take as a scientific reference, a framework of civilization can be defined as "the set of characteristic features of the collective life of a human group or an age. Thus we can speak of the civilization of Athens in the 5th century, or of the French civilization in the century of Louis XIV.[2]
Within the characteristic features of an ethnic group, jobs and professions are certainly one of the main elements expressing the cultural identity of a people, through which people recognize their belonging and rootedness to a culture and a territory.
Today, class composition in schools is more heterogeneous than ever in terms of ethnic origin, and we are witnessing the emergence of new multicultural and stratified learning communities, where pupils come into contact with other professional practices and work traditions with which they contaminate each other, giving rise to a new sub-culture.

The tools and practices of WORK as a INDICATOR of CIVILIZATION are identified, taking as reference the so-called "ARTS" didactic disciplines, i.e. of a humanistic nature, relating to the historical-philosophical, legal-economic, linguistic-literary areas as well as to religious studies, for the definition of the criteria and conceptual perimeter that identify it.

The methodology adopted involves leading pupils towards a reflective analysis of the characteristics and components of the new multicultural communities in which they find themselves learning and living, as a priority theme in terms of inclusive teaching, encouraging them to get to know themselves and their own work culture of origin first and foremost, and at the same time to understand and appreciate, measuring them against their own identity and cultural system of

[2] F. Braudel, *Il mondo attuale*, Turin (Einaudi) 1963

reference, the work and job-related professional practices they see represented by their foreign classmates, first-generation immigrants or second-generation immigrants.

The INCLU.MA.P model, however, uses the STEAM approach for the multidisciplinary educational integration of mathematical-technical-scientific subjects (known as STEM at international level) in a *Service Learning* perspective. According to this methodology, pupils activate personal, extra-curricular resources and curricular knowledge/skills to address a problem *solving* issue, related to a problem that exists in the social context and whose solution can benefit themselves and their community. All of this is done through the regular STEM and ARTS curricular curriculum, delivered face-to-face and/or facilitated by teachers in an experiential *project work* mode.

Product Output 3, as well as all other project Outputs, has 3 basic phases:

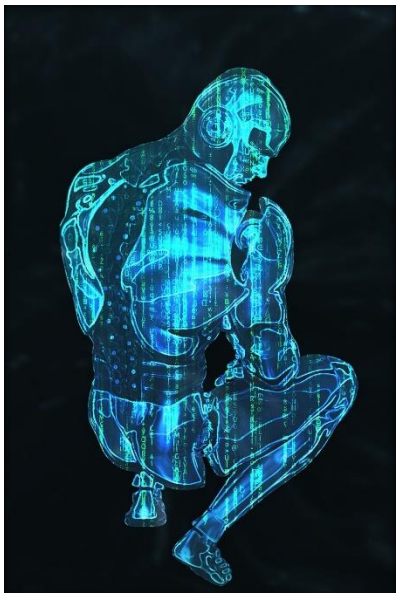
1) Phase of reflexive reconstruction of the constituent elements of the cultural heritage of the class group in its multicultural variety and diversity, according to an ARTS approach led by school teachers, in the form of brainstorming, moderated class discussions and *peer-to-peer* interviews
2) Systematization and interpretation of the elements emerging from the pupils' brainstorming activities. Using the anthropological, ethnographic and historiographic method of museum research, reconstruction of the framework of multiethnic civilization emerging in the new learning communities at school (museum operators)
3) With the help of the STEM disciplines, design, 3D drawing and digital modelling of the objects that emerged from the work, in order to create a varied and multivocal holographic image of the cultural artefacts, aimed at enhancing the pupils' digital skills (technological partner).

The Output 3 curriculum consists of 6 sub-activities, which are replicable and transferable to other contexts depending on the EQF levels (VET diploma, secondary school or tertiary level) and the fields of study:

a) identification of the criteria for defining, within the class group involved in the experiment, the boundaries and characteristics of the new multicultural learning communities (Activity led by school teachers)
b) design of a structured interview, to be administered to the pupils, concerning the material, value and identity elements linked to the tools and WORK practices of their own culture (activity led by the expert methodologist and the school teachers)
c) Provision of the interview in peer-to-peer mode, with a view to project work self-managed by the pupils with the facilitation of the teachers, in small mono-ethnic groups interviewing other small groups of different ethnicities, or in intergenerational mode (pupils interviewing their parents, uncles or grandparents on the subject of work traditions)

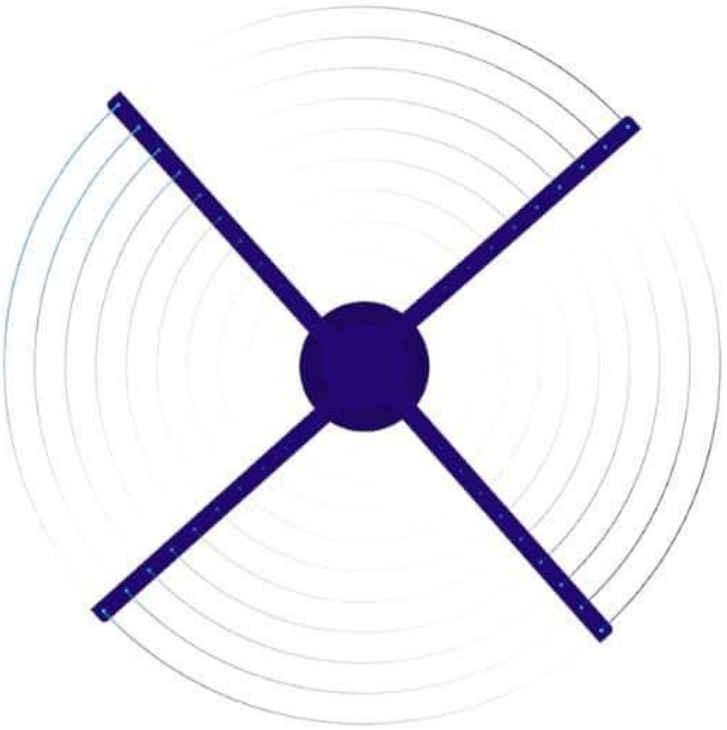
d) systematization of the elements emerging from the interviews and definition of the value and multi-ethnic framework emerging from the interviews by the partner museums, according to the ethnographic collection method
(e) design, from a STEM perspective, of digital experimentation for 3D drawing and 3D photogrammetry for the preparation of 3D digital images suitable for holographic projection (activity led by the technological expert)
f) provision of the STEM didactic experimentation on 3D drawing and photogrammetry as preparatory steps to the subsequent holographic projection, aimed at the restitution of a composite and multi-vocal image of the work culture of the new multicultural community represented by the class group, and for the acquisition of democratic participation and active citizenship skills (activity led by the teachers and the methodological expert)

Holograms and holographic projectors: what are they?



According to a simple, intuitive and useful definition for educational purposes, a hologram can be identified as an interfering wave figure (or pattern) obtained through the use of a laser, having the specificity of creating a three-dimensional photographic effect: a hologram, unlike normal photographs, shows us a three-dimensional representation of the projected object.
However, the holographic image must be designed with special software that can prepare the digital image itself to take on the 3D dimension that gives the typical effect that a hologram assumes, of being suspended and impalpable in the air.

The holographic projector, better known as the *Holofan*, can be a very sophisticated and expensive piece of equipment if you use it for professional purposes. However, for educational experimentation purposes, it is possible to use a four-bladed device, similar to a fan, which can be connected to computer software and is easily available on the market from around 400 euros.



The operation of the holographic projector[3] is quite simple to explain: on each of the four arms is installed a very high number of LED lights that turn on, change colour and turn off at very high speed. Speed is the key: the LEDs change colour quickly, and the blades turn quickly. At high rotation speed, the blades become invisible to the human eye, and the disc they form is a flat surface where the LEDs that turn on and off at high speed reproduce images and videos. The effect of depth, which is what explains how a 3D holographic projector works, is given by transparency.

The Holofan can be made up of several parts: the rotor (consisting of the 4 rotating blades), the motor module, a bracket to fix the holographic projector to a wall or panel, and possibly a remote control unit.

To protect the safety of users, especially students and minors, the area around the holographic projector should be cordoned off with Plexiglas panels or protective barriers to prevent inexperienced users from bringing their hands or faces close to the high-speed rotating blades and injuring themselves.

[3] The images depicting the holographic projector are taken from the https://vetrinadigitale.it/blog/come-funziona-un-proiettore-olografico-3d/ website.


Rotor
Motor Module
Wall Bracket
Remote control
ON
OFF

Phases and activities of the learning programme on the Indicator of Civilization "Work".

As mentioned above, the curriculum consists of three basic phases:

1) Exploratory phase, of investigation, reconstruction and re-appropriation of elements of native and migrant material culture by students
2) Phase of systematization of the data emerged and definition of the value and cultural framework of the new multicultural class communities, by the participating museums
3) Teaching experimentation phase, led by teachers, linked to 3D modelling and holographic projection of the objects identified in phase 1)

Each phase includes sub-activities led by the expert methodologist, the teachers and the technological expert, but also entrusted to the students' self-management and ability to work in groups.

Phase #1: Exploration, investigation, reconstruction of native and migrant material culture by students.

In this phase, the programme includes several sub-activities:

a) identification of the criteria for defining, within the class group involved in the experiment, the boundaries and characteristics of the new multicultural learning communities (Activity led by school teachers)

b) design of a structured interview, to be administered to the pupils, concerning the material, value and identity elements linked to the objects and practices of WORK of their own culture (activity led by the expert methodologist and the school teachers)

c) Provision of the interview in peer-to-peer mode, in a project work perspective self-managed by the pupils with the facilitation of the teachers, in small mono-ethnic groups interviewing other groups of different ethnicity, or in an intergenerational key (pupils interviewing their parents, uncles or grandparents on the topic of their professional and working history).

Criteria for defining the boundaries of new multicultural communities-classes.

It is particularly effective to involve class groups, or mixed groups of several classes, in which at least 30% of the students are of foreign origin, first or second generation migrants, in order to constitute an element of cultural diversity with respect to the native culture of the place where the school is located. In the case of greater cultural/ethnic uniformity of the group involved, it is possible to consider regional origins within a single country, highlighting phenomena of internal migration south/north or islands/continent. Moreover, the experimentation is particularly effective if at least 30% of the total number of pupils involved have a type of disadvantage that makes them at risk of dropping out of school or being marginalized - cultural, socio-economic, language barriers. It is

advisable for the activity to be conducted collectively by teachers belonging to the Class Council, in order to adopt widely shared criteria for the involvement of students in the experiment.
With regard to the groups involved in the experiment, the ethnic composition for each country was as follows:
-Italy: 70% of Italian origin. A majority is from Emilia and Lombardy, with a large number of students from southern and island Italy. 30% of migrant students are of Balkan and Eastern European origin (Romania, Moldova, Ukraine), North African (Tunisia and Morocco in particular), Central Africa (Nigeria, Ivory Coast, Senegal, Ghana), Central Asia (India, Pakistan, Bangladesh, Sri Lanka), Far East (China), Latin America.
-Spain: 60% of students are of Spanish origin, of which some are Castilian-speaking and most are Valencian and Catalan-speaking. The remaining 50% of students come from Latin America (Mexico in particular) and South America (former Spanish-speaking colonies), and from North Africa (Morocco in particular, due to geographical contiguity) and Central Africa (Nigeria, Ivory Coast, Senegal, Ghana).
-Portugal: 70% are of mainland Portuguese origin. The remaining 30% come from the islands (Madeira), the former African colonies of Sao Tome and Principe and Angola, while a part represents a Roma minority permanently settled in the country.

Planning of teaching activities and a structured interview on tools and practices of WORK in a multicultural perspective. The activity is carried out by the methodological coordinator, who is an expert in learning processes, together with the humanities teachers of the schools (language and literature, history and philosophy, religion) and the cultural operators involved in museum education.
The aim of the activity is to trigger in the students a reflective process on the personal, collective and cultural meaning of work, and on the practices and tools that characterise it in a synchronic perspective - different professions are practised by different peoples because of their different territorial conformation, geographical position and economic history - and in a diachronic perspective - working and social conditions and the scope of professional specialization evolve over time, through generations and especially from grandparents to grandchildren.
To maximize the opportunities for educational exploitation of Output 3, schools were given a customizable outline for setting up classroom research activities on the practices and objects of WORK and on how to discuss and collect evidence (brainstorming).
Teaching material[4] is available in the appendix and offers two possibilities for implementation:
-research into the various production and manufacturing chains typical of the territories represented by the project partners and the pupils of migrant origin (milk, cereals, meat, canned food; silk and craft industries; trade and industrial activities);

[4] The full format of the teaching materials can be found at the end of this document in the "Appendix" section.

-interviews conducted by students with their grandparents, to encourage them to recount the economic and working history of past generations, their social conditions, the objects and products of their work, personal values and expectations in terms of professional growth, and the links of certain professions or working practices with the local area
-social and gender roles related to professions and professional life, as well as processes of evolution and emancipation.

Comparative research activities and school-based interview administration with a view to project work. The activity should be planned and carried out by teachers of humanistic subjects (linguistic, historical-philosophical, religion), taking care to foresee several distinct moments in carrying out the activities:

-an initial brainstorming session and class discussion, led by the teachers, aimed at introducing the activity, getting students to reflect on the objects and work practices of their own family and cultural traditions, and to bring out the underlying identity and values, at a personal and collective level

-division of the class group (or group of participating students) into at least 3 sub-groups of at least 6/7 pupils each, each representing a different culture/ethnicity, of which one pertaining to the native/local culture and two pertaining to a migrant culture

-identification and proposal of comparative research or interview methods: it is possible to envisage peer-to-peer interviews conducted by students, in which each mono-ethnic group interviews another group from a different culture; it is also possible to design and conduct video-interviews, in which several students, representing a variety of national and regional cultures, tell their traditions and tell their stories, talking about family or local stories relating to their professions, work practices and the typical objects that represent them. Finally, a further possibility is to involve pupils and families in the structured interview, with pupils taking on the role of interviewers of their parents, uncles, grandparents or other relatives, from whom they collect testimonies, stories, objects and photographs relating to their work and professional history.

Example of a model programme carried out for phase #1.

The target group was students from the Liceo Scientifico (Applied Sciences option).

Lesson 1	Teacher: IRC teacher (alternatively, in order to ensure full inclusiveness, a similar and parallel programme has been planned to take place in the "Alternative to Catholic Religion" hour, to intercept students of other religions/cultures).
	Teachers who have followed the other project outputs (Food and Clothing) in other classes are preferably involved, introducing the project modalities especially in its cultural and sociological aspects.
Lesson 2	Teacher: History and Philosophy

	Objectives: To provide topics for family dialogue around working tools that pupils have found in cellars or attics. Preparation for the visit to the "Ettore Guatelli" Museum of Rural Life in Ozzano Taro, Parma
	Methodology: Frontal lesson.
	Contents: Material and social history of the local rural civilisation.
Lesson 3, 4.	Teacher: Mathematics
	Aims: Theoretical fundamentals of 3D scanning of different working tools in preparation for further processing with Zephyr 3D.
	Methodology: Work-based learning.
	Contents: Realisation of 3D scanning of different working tools, processing with Zephyr 3D.
Lesson 5.	Teacher: Italian.
	Objectives: Design of a paper by the students, relating the objects of past and present work, their mechanism, functioning and use. Verification of linguistic correctness in the drafting of a powerpoint document.
Lesson 6,7,8.	Teacher: Civic Education in the person of the English teacher.
	Objectives: To produce a bilingual summary .ppt document on the IO3 phase of the project.
	Methodology: Group work.
	Exercises/tasks for students: production of a bilingual summary .ppt document on the IO3 phase of the project.
	Assessment methods: Summative assessment in Civic Education.

Further example of a programme carried out for phase #1.

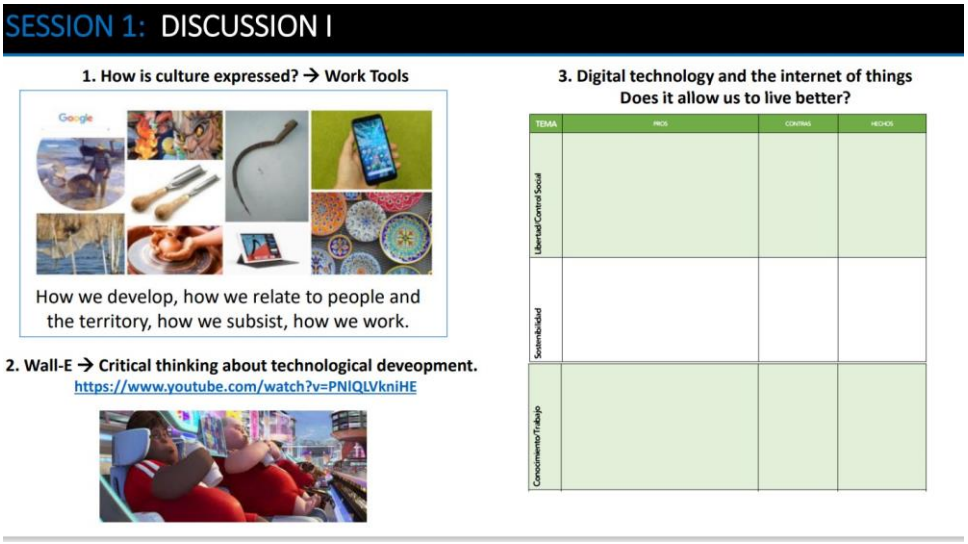
The recipients were students of the Metalworking Course of the C.F. Folgado Training Centre in Valencia (vocational course).

Lesson 1	Teachers: Communication and Society teacher
Inclu.ma.p: Introduction	Objectives**:** -Students understand the purpose of the project Inclu. ma. p. -Students engage in a cultural dialogue with their classmates and families. -Diagnosis of the cultural diversity of the class.
Discussion I	Methodology**:** - Frontal lesson to explain the Inclu.ma.p. project and its approach using infographics and Power Point presentation. - Group activity: brainstorming ideas and questions for the interview that will be given to the families. - Individual interviews on work tools and trades known to the families. In addition to this, the interview also asks for the opinion that students and families have technologies as tools. The questionnaire aims to make an initial diagnosis and to open a cultural dialogue between student-student and student-family.
	Contents**:** - Introduction to the Inclu. ma. p. project and the Work Tools IO3 programme. - Discussion on technologies: do they allow us to live better? - Creation of interviews

Exercises/tasks for students:

<u>Power point presentation. Activities:</u>

1. Introduction activities
2. Discussion I: Does digital technology and the internet of things allow us to live better?



<u>Designing an interview for families:</u>

INTERVIEWING A FAMILY MEMBER

Conduct an interview with the oldest member of your family. You can transcribe it on paper or record it on video, and if available, add a photo of the handicrafts produced by the interviewee.

During the interview, you should find out the following:

What job have you done or do you still do?

What tools did you use, what were they for, was it difficult to learn to use them and were the tools better in the past?

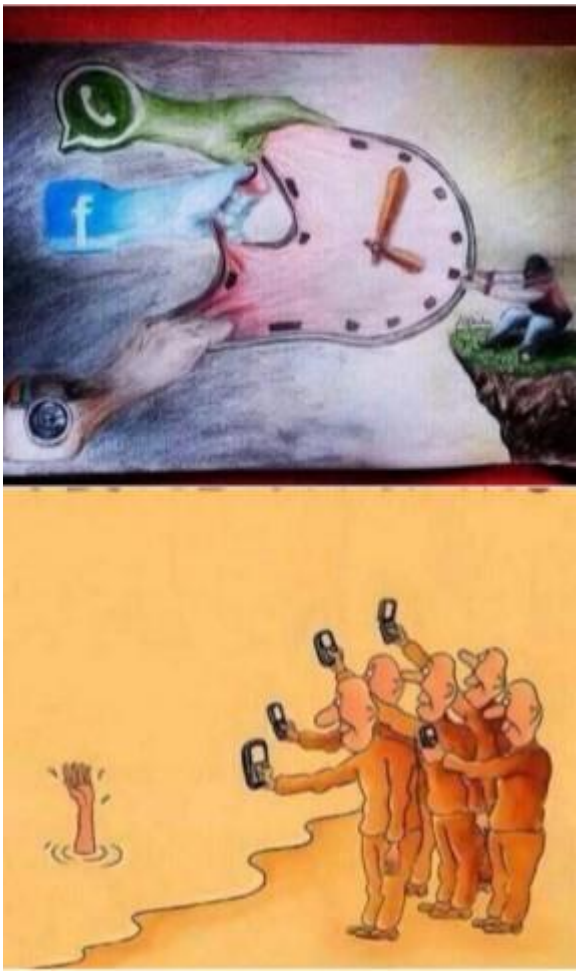
Were the working tools better before or now? Find out if there are any photos of the person interviewed working or of the tool itself, or if they remember any personal anecdotes with that tool?

Find out what your relative thinks about new digital technologies (internet, mobile phones, social networks...) Do you think life was better before without these technologies? What do you think about the future, will it be

	better or worse than now? You will need to understand well what the interviewee thinks in order to be able to explain it later in class and use the arguments in the debate. Add any questions related to the topic you think would be interesting to know.
	Evaluation methods: - Activity completed and solved as homework. - Motivation, participation and commitment to initial tasks.
	Results: Interview completed during the lesson (brainstorming of ideas)
	Problems: -Lack of commitment to the project and the required duties/tasks

Lesson 2	**Teachers**: Communication and Society teacher
Discussion II: Do students feel freer with technologies or, on the contrary, do they feel controlled?	Objectives: - Reflecting on new working tools. - Educating to create a media citizenship that is critical of the networks. - Distinguishing between wants and needs when working with certain tools. - Discuss and think about whether technologies and the Internet allow us to to live better.
	Methodology: - Frontal lesson: Power Point presentation to introduce the topic. - Group activities: - Interpretation of proposed images and class discussion. - In groups of four, students are asked to complete a chart differentiating the pros and cons of technologies. The issue is analysed from three points of view: freedom, environmental sustainability and work.
	Contents**:** - The power of social media - Technology as a tool to put the population to sleep. - Technology as a business tool, necessity or desire? - Pros and cons of technology in the context of environmental sustainability - Pros and cons of technology at work
	Exercises/tasks for students: Activity 1. Describe the following pictures and give your opinion about the situations.

	 Instagram



<table>
<tr><td></td><td>Activity 2. In a group of 4, discuss the pros and cons of technologies with regard to environmental sustainability, social control and knowledge. Produce examples that demonstrate these facts.</td></tr>
<tr><td rowspan="4"></td><td>
<table>
<tr><th>TEMA</th><th>PROS</th><th>CONTRAS</th><th>HECHOS</th></tr>
<tr><td>Libertad/Control Social</td><td></td><td></td><td></td></tr>
<tr><td>Sostenibilidad</td><td></td><td></td><td></td></tr>
<tr><td>Conocimiento/Trabajo</td><td></td><td></td><td></td></tr>
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</td></tr>
<tr><td>Evaluation methods:
- Active participation.
- Respect for peers while it is their turn to speak.
- Communication and respect with the team and different opinions</td></tr>
<tr><td>Results:
Both activities were completed. The results were collected orally.</td></tr>
<tr><td>Problems:
It is difficult for students to express themselves politely to one another and respect different opinions.</td></tr>
<tr><td rowspan="2">Lesson 3

Discussion III: Do digital technologies allow us to live better?</td><td>Teachers: Communication and Society teacher</td></tr>
<tr><td>Objectives:
- Reflecting on new working tools.
- Educating to create a media citizenship that is critical of the Internet.
- Distinguishing between wants and needs when working with digital working tools.
- Discuss and think about whether technologies and the Internet enable us to live better.</td></tr>
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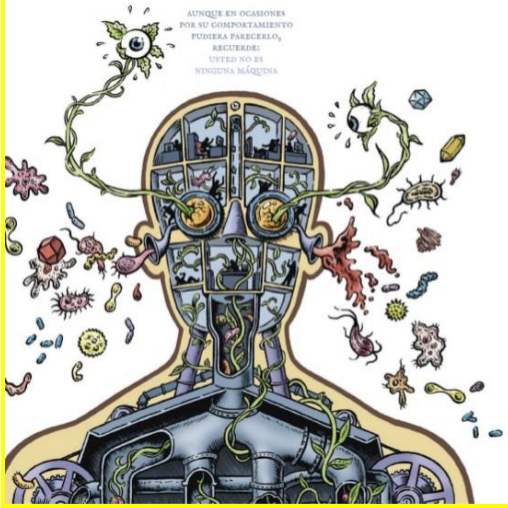
	Methodology: -Frontal lesson: Powerpoint presentation to introduce the topic. - Group activity: Role play and discussion.
	Contents: - Definition of 'social control - Advantages of the Internet versus the disadvantages of being controlled. - Permaculture as an example of working with traditional tools and preservation of traditional knowledge. - Communication and respect with the team and different opinions.
	Results: The group participated and led the debate.
	Problems: It is difficult for them to express themselves politely to each other, and respect different opinions.



SER HUMANO Y MÁQUINA

POSICIÓN 1. Es importante saber hacer las cosas por uno mismo, trabajar con las manos.

POSICIÓN 2. Si hay una máquina que sabe hacer las cosas por mí, no necesitamos saber hacerlo.

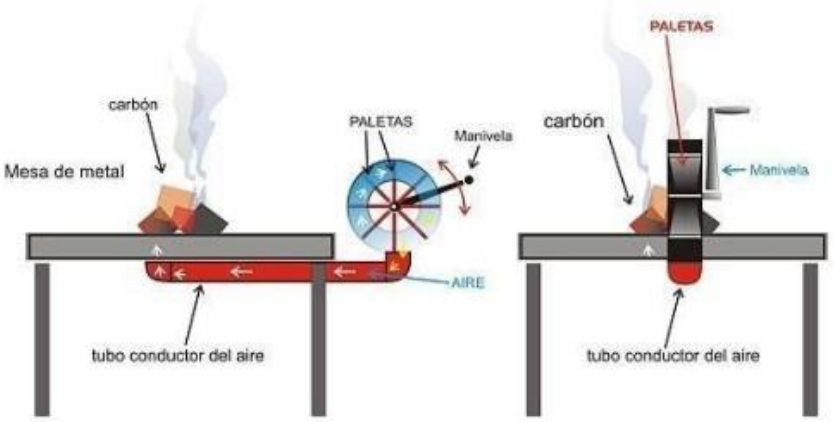
- Conocimiento. Perma-cultura
- Futuro colapsista. Fin de recursos naturales
- TRABAJO

Trabajo/Estudios	**Relaciones sociales: amistad, amor, sexo…**
Movilidad y Ocio	**Otros**

Lesson 4 Interview with the craftsman: Saddlery	**Teachers:** Vocational training teacher
	Objectives: - Getting to know a traditional craft at risk of extinction and the tools used. - Making students aware of the advantages and disadvantages of traditional trades. - Developing curiosity and respect for ancestral and craft knowledge.
	Methodology: - Participation in the speech and good conduct during it. - Facilitation of the debate so that each student asks at least one question to the host.
	Contents: Craftsman intervention
	Exercises/tasks for students: Listen to the testimony and put questions to the craftsman. The teacher is in charge of transcribing the speech and the students' questions.
	Evaluation methods: - Participation in the speech and good conduct during it. - Facilitation of the debate so that each student asks at least one question to the host.
	Results: The speech and the interview were transcribed by the teacher. TRANSCRIPTION: **Working tools: an interview with a saddle-maker.** Continuing with the Inclu.ma.p. project, students in the 2nd year of FP Basica at the Folgado Training Centre met Marcos Mínguez, a professional saddler. What is a saddler? We might think of it as a job related to trimming, in other words, a job in the hotel and restaurant industry, as was one of the answers given by one of the students when Marcos asked if they knew a saddler. But no, Marcos does not work with mixed dishes but with leather and animals such as horses.

	A saddler is the craftsman who works with saddlery, i.e. who produces harnesses and equipment for horses, mules, using leather as the main material. Marcos, a self-taught saddler who learned this trade because he liked it, has been doing it since he was 14 years old. He told us that there is no training centre linked to this trade, only a school in Seville that trains professionals to make saddles and hooves for horses, but that, nowadays, there are few artisans who make saddles. He also explained that the tools he uses are very expensive because to work with leather, which is a strong and thick material, they have to be of high quality, such as the punch (to pierce the leather) and the riveting machine (to fix the nails). He also said that leather is very suitable for making bags, clothes, hats, belts, wallets, shoes, etc. and that it is a durable material, which can last up to 5 times longer than other types of fabrics. On the other hand, he stressed that this profession is not studied but learned, that he works according to the client's request and that there are also some pieces that usually cost more than 2000€ as it is considered a "unique piece" because it has to be made to measure for the horse, which is why he usually travels constantly to the location of the horse, on many occasions he has gone to Andalusia but he also works in Valencia. There are only two saddlers in the Valencian Community: Marcos and another colleague from Castellón. The students asked him if he relies on new technologies for his work, to which he replied "that he has not yet tried modern tools and believes that perhaps in time he may use these new tools, but for now the quality of his creations depends largely on his talent and craftsmanship, which has made him one of the most renowned saddlers in the community". His craftsmanship, the experiences of his travels so far, his love and passion for his craft are remarkable assets of his trade.

	
	Problems: Students must be encouraged to participate, otherwise they do not.
Lesson 5 Forging workshop	Teacher: Teacher of Communication and Society, Teacher of Vocational Education and Teacher of Applied Sciences.
	Objectives: - Learn about the work of the craftsman. - To introduce students to the working techniques and tools used by blacksmiths. - It encourages students to reflect on why this work is disappearing.
	Methodology: - Frontal lesson Introduction to forge, anvil, risks and workshop processes. - Group activity: Forging practice

	Contents: Theory: Introduction to forge, anvil, hazards and workshop processes. Health and safety in forging work Practice: Shaping heated metal tools using the hammer (stretching, drilling, bending and curving)
	Exercises/tasks for students: The activity was completely hands-on. The blacksmiths called on the students to perform the different techniques used in this work: **CHARLA INICIACIÓN A LA FORJA** **FRAGUA**  (Dibujo orientativo) ➢ **Partes de la fragua:** 1. Parte superior de la fragua: • Tolva: Pirámide invertida de base plana. Tiene agujeros en la parte inferior que permiten que entre el aire e impide que se cuele la carbonilla. • Mesa: Donde apoyamos la pieza, se coloca el carbón y calentamos el material. Es el plano de trabajo para la forja. • Parte móvil del cajón: Sujeta la pieza si sus dimensiones son muy largas para poder apoyarla. • Fuelle: Puede ser eléctrico o manual. Es el encargado de aportar aire a presión a la fragua. 2. Parte inferior de la fragua: • Tiro del aire: Llave que permite el paso de la velocidad y cantidad del aire que va a la fragua. • Llave de la carbonilla: Llave para abrir y poder limpiar la carbonilla de la tobera. • Estructura que sirve de apoyo para la mesa.

	Evaluation methods: - Proactive participation - Interest and motivation through questions.
	Results: (Photo) 

	
	Problems**:** None. This activity worked very well. There was no disruptive behaviour. They participated in every moment, listened, asked questions and showed interest in the work of craftsmen.
Lesson 6 Wood carving workshop	Teachers: Teacher of Communication and Society, Teacher of Vocational Training and Applied Sciences.
	Objectives: - Bringing students closer to a woodcarver's craft. - It encourages students to reflect on why this work is disappearing.
	Methodology: - Frontal lesson Introduction to forge, anvil, risks and workshop processes. - Group activity: Woodcarving practice.

	Contents: - Wood carving, the art of sculpting reliefs and figures - Working tools used in woodcarving. - Wood carving techniques: sanding and polishing.
	Exercises/tasks for students: The activity was completely practical. The craftsman gave the students a piece of wood into which they carved figures.
	Evaluation methods**:** - Proactive participation - Interest and motivation through questions.
	Results: 

	
	Problems: None. This activity worked very well. There was no disruptive behaviour. The students participated at all times, listened, asked questions and showed interest in the work of the craftsmen.
Lesson 7 Drone workshop	Teachers: Communication and Society teacher, Vocational Education teacher and Applied Science teacher.
	Objectives: - Illustrate new technologies applied to agriculture. - Learn how to remotely control the drone and view the images being recorded on a portable screen. - To know the applications of drone image recording in welding work.

	Methodology: - Frontal lesson: initial introduction to these devices and their different aspects: concept, structure, functioning, typology, daily uses and regulations. - Group lesson: Practice with the drone.
	Contents: - Concept, structure, functioning, typology, daily uses and regulations. - Piloting drones - Drone uses in welding work
	Exercises/tasks for students: The activity was completely practical. Technicians taught the students how to handle and pilot the drone and how to display images on the screen.
	Evaluation methods: - Proactive participation - Interest and motivation through questions.
	Results: 

	
	Problems: None. This activity worked very well. There was no disruptive behaviour. The students participated at all times, listened, asked questions and showed interest in the work of the professionals.

Examples of teaching activities carried out.

Partly because of the Covid emergency, which has interrupted school activities on several occasions, various types of educational activities have been proposed, which can also be used remotely, all aimed at collecting testimonies, experiences and personal or group reflections on the theme of work in a cultural and intercultural context. All the teaching documentation is accessible for consultation and downloading in open mode, in the folder called "Inclumap EU Project - Open Material": https://drive.google.com/drive/folders/1yerNYB9UvOO0DBq8RnrFP6VwLs1ZjdYk

Geographical Area "Emilia-Romagna", Italy:

-students' work, in the form of a powerpoint presentation, on the work objects of the local peasant civilisation, as well as their evolution into the tools of modern use; as a representation of non-local cultures, there are objects related to olive harvesting in southern Italy and Tunisia, and date harvesting in Tunisia itself.

Geographical area 'Lombardia', Italy:

-interviews with grandparents and parents, in written form, individually elaborated by the students through the narration, enriched by photos and drawings, of the professional and working history of their relatives, through the economic and family history of a territory and of the internal and external migrations of a given nation.

video in English, self-produced by the students themselves, of photographs and drawings of the work tools collected through the interviews, accessible from the YouTube channel "Inclumap Erasmus".

Geographical area "Generalitat Valenciana", Spain:

The Inclumap EU project - Open Material folder hosts the didactic material, presentations and photographs relating to the debates on technology and its impact on society, as well as on the meetings with craftsmen who carry out traditional professions such as saddlery and blacksmithing, and the workshop on drones. The methodology adopted here is particularly useful in cases where the target students are resistant to being involved in interviews, either in video or written form, because they are reluctant or embarrassed to expose their beliefs or experiences about their family members' work history, especially in the case of migrant students. The activities proposed below, set up and guided by teachers but with a strong interactive and experiential component, can prove capable of encouraging the involvement and participation of students even with a low level of literacy, schooling and motivation to study.

Geographical Area "Castelo Branco" and "Povoa de Varzim", Portugal:

-didactic programme relating to the reconstruction of traditional economic activities in the mountain area of Castelo Branco, and the fishermen's civilisation of Povoa de Varzim, located on the Atlantic Ocean.

- Video on the process of traditional bread making, self-made by the students in traditional dress, documenting the steps of kneading, stuffing and baking in the stone oven.

Phase #2. Systematization of the data emerged and definition of the value and cultural framework of the new multicultural class communities, by the participating museums. Starting from the raw, unaggregated and unprocessed data that emerges from the educational activities carried out at school, the museums, together with the Methodological Coordinator, can propose a critical reading of the values of the family tradition, the personal and collective experience of the students, determined by the cultural belonging of each, around the theme of professions, objects and work practices, in a multi-ethnic comparison.

As a methodological approach, it is preferred to assign to each territorial museum the task of evaluating the work of the school located in the same area, in a regional or national logic. However, it is also possible to match museum and school on the basis of the sector most covered by the museum (e.g. Ethnographic Museum, Food Museum, Silk Museum, Museum of Agricultural Civilisation) and of the study courses offered by the educational institutions, also in a transnational logic.

The elements that the museums, each according to its specificity and vocation, have sought out, identified and valorised in the students' work are the following:

a. students' ability to identify with a culture or territory. In general, students are aware of their cultural origin. However, the sense of identification is greater for students with a migrant or mixed origin, while native students have a greater need to be prompted on the subject in order to produce reflections on it.

b. ability, on the part of the students, to corroborate the family history and the evolution through the generations of the economic, professional, social, technological conditions related to the tools and practices of work. Also in this case, in general, once they have received the outline of the interview to be submitted to their relatives, pupils easily manage to reconstruct the family history and the economic and technological evolution of their own culture. This process is more immediate for students of non-EU origin or for native students (Italian, Spanish, Portuguese) who have a family history characterised by internal migration within the same country, or who have experienced significant socio-economic progress or cultural emancipation. Conversely, native students with families that have been in the country for at least two generations are more unlikely to grasp the cultural depth and personal relevance of work and professional practices.

c. students' ability to identify the link between tools and work practices and the territory of origin, or the link with the history, geographical conformation and economic development of a given region. This is an aspect that is not immediately understood by students, and requires special explanation by teachers so that students grasp the link between territory, history and work traditions. Generally, students with a migrant background are more aware of and attentive to putting the evolution of the livelihoods, technology, economy and social structure of their own culture into diachronic perspective, as the physical distance from their country of origin prompts them to reflect on the significance of their roots.

As an example of the activities carried out, it is possible to consult and download the documentation, released in open mode, at the following links, within the folder called "Inclumap EU Project - Open Material":
https://drive.google.com/drive/folders/1yerNYB9UvOO0DBq8RnrFP6VwLs1ZjdYk

- Audiovisual materials and videos produced by the Museu Comarcal de l'Horta Sud in Valencia are available, documenting the processes of harvesting wheat and pressing olives to produce oil, typical work activities of the rural economy of the Valencian area.
- A collection of photographs of work objects typical of the local maritime civilisation, kept at the Museu Municipal da Povoa de Varzim, Portugal.

Phase #3. Didactic experimentation, led by the teachers, linked to 3D modelling and holographic projection of the objects identified in phase #1.

This experimentation phase must, at least initially, be planned and set up by the teachers, from a teacher-led perspective. There are in fact many variables which determine the objectives, the contents, the approach and ultimately the educational success of the teaching activity.

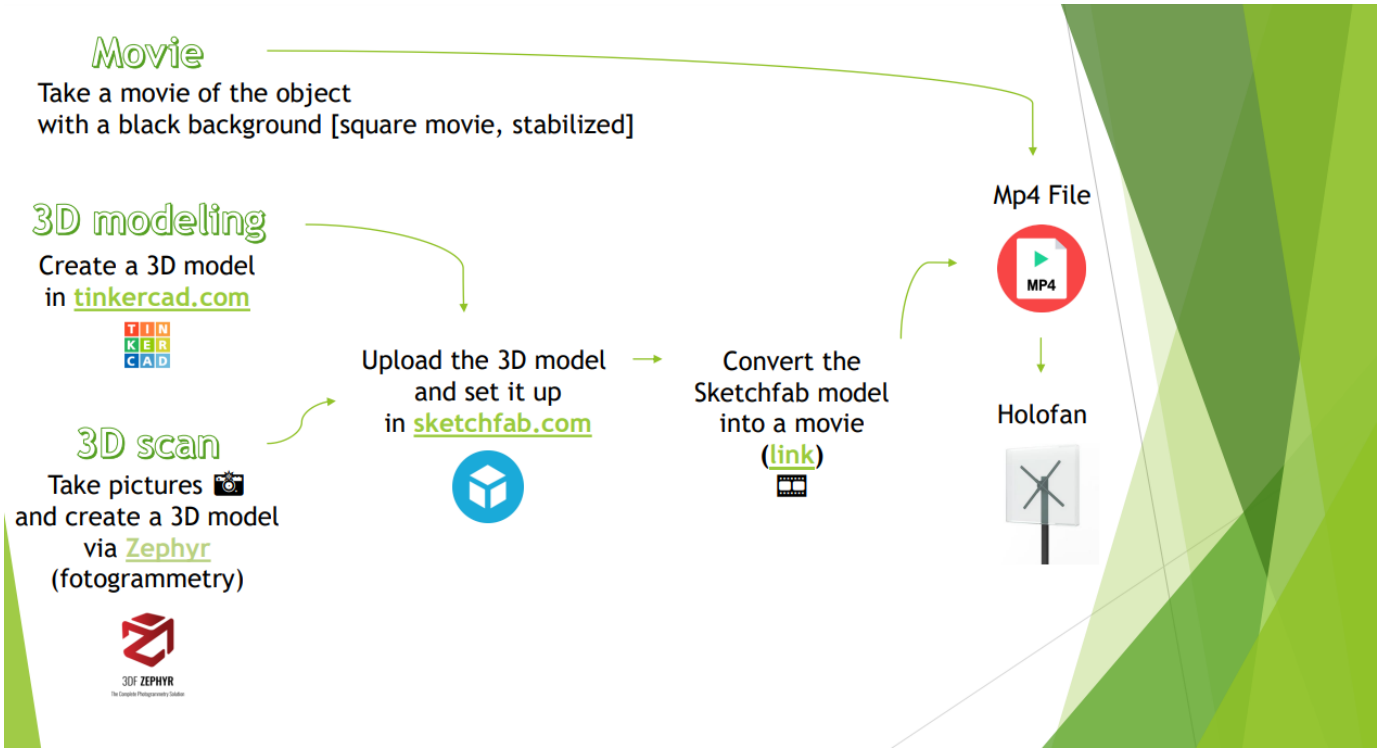
First and foremost, it is essential that the teachers in charge of planning and delivering teaching activities are trained in the use of technology, and that they are familiar with a variety of methodologies, teaching approaches and techniques to achieve the educational objective, depending on the level of competence of the students, the course they are attending, and their willingness to learn and to get involved.

The hologram and holographic projection as a point of arrival, not of departure.

The first fundamental concept that teachers themselves should understand is that the hologram, or holographic projection, is the result of modelling three-dimensional digital images. The hologram is obtained through a series of more or less complex steps linked to the disciplines of 3D design, photogrammetry and digital video.

Therefore, it is essential that at least one IT and/or technology teacher is involved in the design and delivery of the activity.

There are three main ways of achieving holographic projection, illustrated in the in-depth material available in open mode in the Google Drive Tutorials folder - 3D Modelling, Photogrammetry & Holograms.

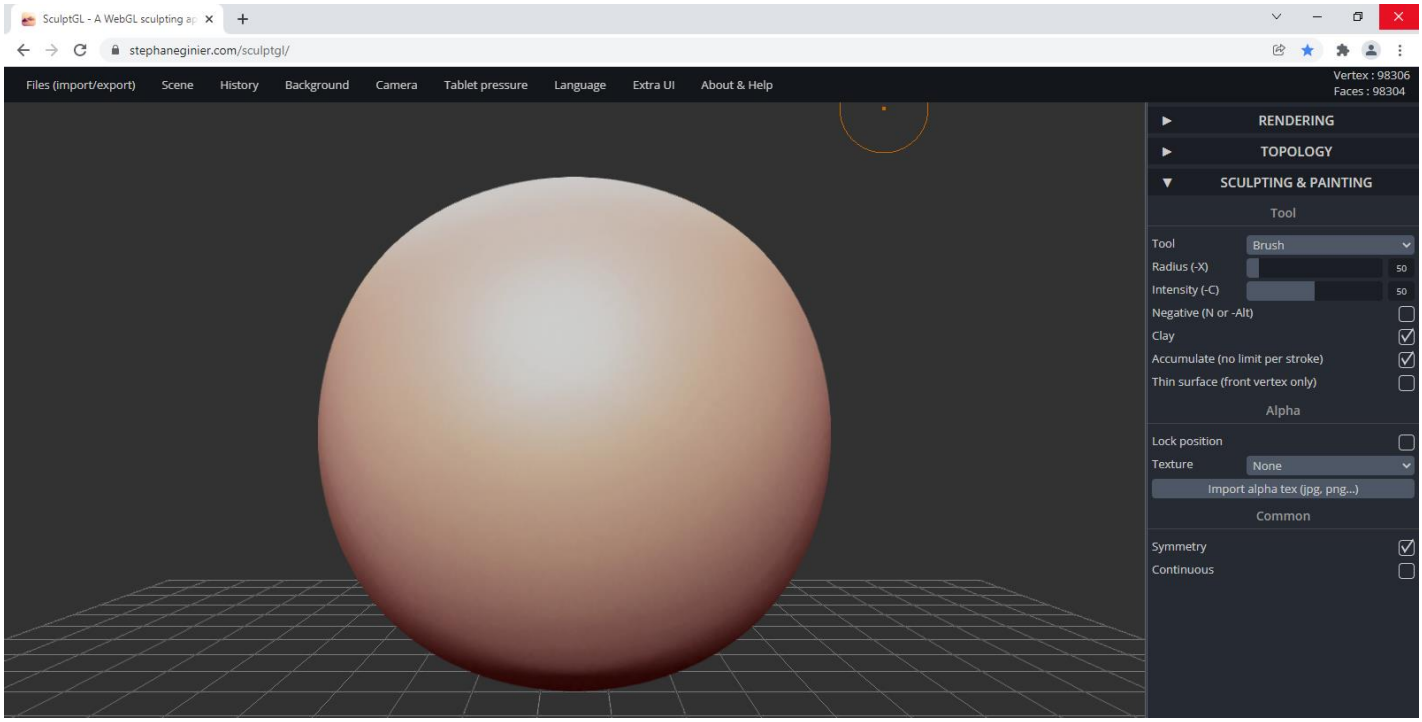


In order of increasing difficulty, they can be listed:

Methodology #1	Procedure	Material	Target students	Minimum Duration
Rotating video of selected object	A 360° video, lasting approximately 10 seconds, of the object to be holographically projected is shot. The object must rotate on itself and the background must be completely black.	Camera, camcorder or smartphone Rotating plate to allow 360° shooting of the object (e.g. an old record player)	Students with basic level skills, with little aptitude for 3D modelling and computer skills. Students attending non-STEM fields of study or EQF levels below 3.	1 hour

Methodology #2	Procedure	Material	Target students	Minimum Duration
3D drawing in Tinkercad  	The teacher proposes that the class draw three-dimensional objects on Tinkercad, an open and free platform for simplified 3D modelling, from solids and geometric shapes that can be modelled. 2. The model can then be exported locally in .obj or .stl file format (this functionality is included in the Tinkercad platform). 3.The file must be uploaded to the free Sketchfab repository, which allows you to create a personal portfolio that can be shared with the community. 4.Once the model has been created on Sketchfab, you need to access Sketchfab Labs/Experiments, to create a video format file. 5. The video is ready to be transmitted to the HoloFan and to launch the hologram	Computer station with access to internet browsing. Creation of a free Tinkercad and Sketchfab account for each user by registering on the portal or logging in with a Google account	Students with good basic level skills, good aptitude for 3D modelling and computer skills. Students in STEM or non-STEM fields of study, including those at EQF levels below 3.	8 hours

An alternative, but essentially equivalent 3D modelling tool to Tinkercad is the free SculptGL portal, dedicated to Stephan Eginier's **3D Sculpting** technique.



The portal, which is freely accessible without a login and at no cost, allows you to work on the sphere by modelling it with your computer mouse, shaping shapes and objects of various types, adding special visual effects, material, rendering, colour, transparency and brightness.

The special import/export function allows you to save your work in .obj or .stl format, or even export the model directly to Sketchfab, and then proceed to generate the video for subsequent holographic projection.

Methodology #3	Procedure	Material	Target students	Minimum Duration
Photogrammetry and 3D Scanning with Zephyr 3D Free software 3DF ZEPHYR The Complete Photogrammetry Solution 	1. The teacher proposes that the class take 360° photographs of a three-dimensional object, taking care to note all the angles and taking at least 50 photographs of each object. 2. From Zephyr 3D interface, create a new project importing the set of pictures taken at point 1), obtaining in this way a "sparse point cloud". 3. Click on the Workflow menu→ 3D Model Generation to obtain the "mesh" of the object, i.e. its 3D scan, which can be improved with the "textured mesh generation" function. The model can then be exported locally in .obj or . glb file format. 3.The file must be uploaded to the free Sketchfab repository, which allows you to create a personal portfolio that can be shared with the community. 4.Once the model has been created on Sketchfab, you need to access Sketchfab	Digital camera Computer station with access to internet browsing. Free version of Zephyr 3D software to download to your computer or laptop Creation of a free Sketchfab account for each user by registering on the portal or logging in with a Google account	Students with medium to high basic level skills, with excellent motivation and a flair for 3D modelling and computer skills. Students attending STEM or non-STEM fields of study, of EQF levels not lower than 3.	12 hours

	Labs/Experiments, to create a video format file. 5. The video is ready to be transmitted to the HoloFan and to launch the hologram			

Models of the educational programme carried out for phase #3. Example 1.

The programme proposed below was implemented by students in the three-year course of the Liceo Artistico's Graphic Design/Communication curriculum, which already includes the teaching of information technology. From the point of view of programming and teaching methodology, three different criteria can be distinguished, including phase #1 of cultural investigation.

Frontal lessons	Interactive lessons	Project work pupil led (Self-managed work by students)
20% of the total Teachers introduce: - working method -project objectives -project development	60% of total -Use of the holographic projector -Use of 3D programmes (CAD, Tinkercad, Sketchfab) -Videomaking (interviews, videos and preparatory photos for holograms)	20% of the total Students worked at home and at school both in groups and individually to: -interviews with relatives -writing and editing of interview texts -research, collection and revision of texts and images

In order to replicate the course of holographic experimentation, the following programme model can be implemented.

Input prerequisites	Skills/knowledge that students should have in order to participate effectively in the experiment: -skills in the use of basic software -Proficiency in **IT** tools

Specific learning objectives related to the 3D drawing / holographic projection part	-use computer tools to solve significant problems in general but, in particular, related to the study of the other disciplines -Use Tinkercad and Sketchfab software; -start image processing with Zephyr 3D
Learning outcomes [Technical skills]	3D modelling: use of TinkerCad and Sketchfab software; 3D scanning: image processing with Zephyr 3D; Video: processing video images to be projected with the holographic projector
Implementation	1) 3D Design: TinkerCad, Sketchfab 2) Image processing - photogrammetry: Zephyr 3D 3) Video processing to be projected in later stages with the holographic projector
Practical/Logistics Organisation	The activities took place in the computer lab and in the photo lab; access to tools and equipment was controlled by the teachers in charge of this part of the project. The current rules displayed in the laboratories were followed in addition to the protocol for the pandemic
Problems	The topics proposed were not particularly difficult for the students as they had already dealt with some of them in the curriculum lessons. However, the use of Zephyr 3D is long and more complex for the students. Behaviour was always correct and commitment adequate. A small group is particularly interested in pursuing the development of images and holograms.
Duration	30 hours

Models of the educational programme carried out for phase #3. Example 2.

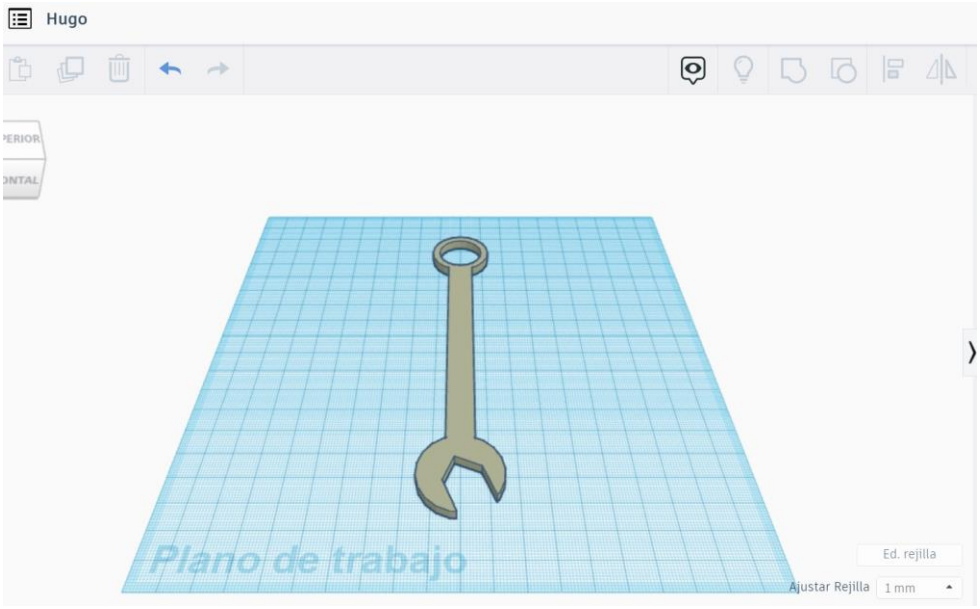
The programme proposed below was implemented by students in the upper three years of vocational training in the metalworking sector. From the point of view of programming and teaching methodology, three different criteria can be distinguished, including phase #1 of cultural investigation.

Lectures	Interactive lessons	Project work pupil led (Self-managed work by students)
Total: 20 % (4 h)	Total: 35% (7 hours)	Total: 45% (9 h)
- The importance of working tools as a further expression of material culture. - Introduction to woodcarving (history, tools and their use). - Introduction to forging (history, tools and its use) - Introduction to drones: handling and use. - Introduction to the craft profession of saddlery - Fundamental concepts of TinkerCAD and SketchFAB.	- The holographic projector was used to display the final output of the work carried out during the whole IO3 (5%) - TinkerCAD and SketchFAB were used to design, edit features and publish a spanner and a hammer. Before designing the final output (hammer) some preparation and practice lessons were needed (25%) - The 3D video (mp4) was made after the woodcarving workshop (5%)	- 30% of the class work was reflective through debate (under an assembly approach) and problem-solving through collaborative games. - 5% of the workshops were carried out individually after the expert's explanation. - 10% of the group work was devoted to thinking about how to make the final video.

In order to replicate the course of holographic experimentation, the following programme model can be implemented.

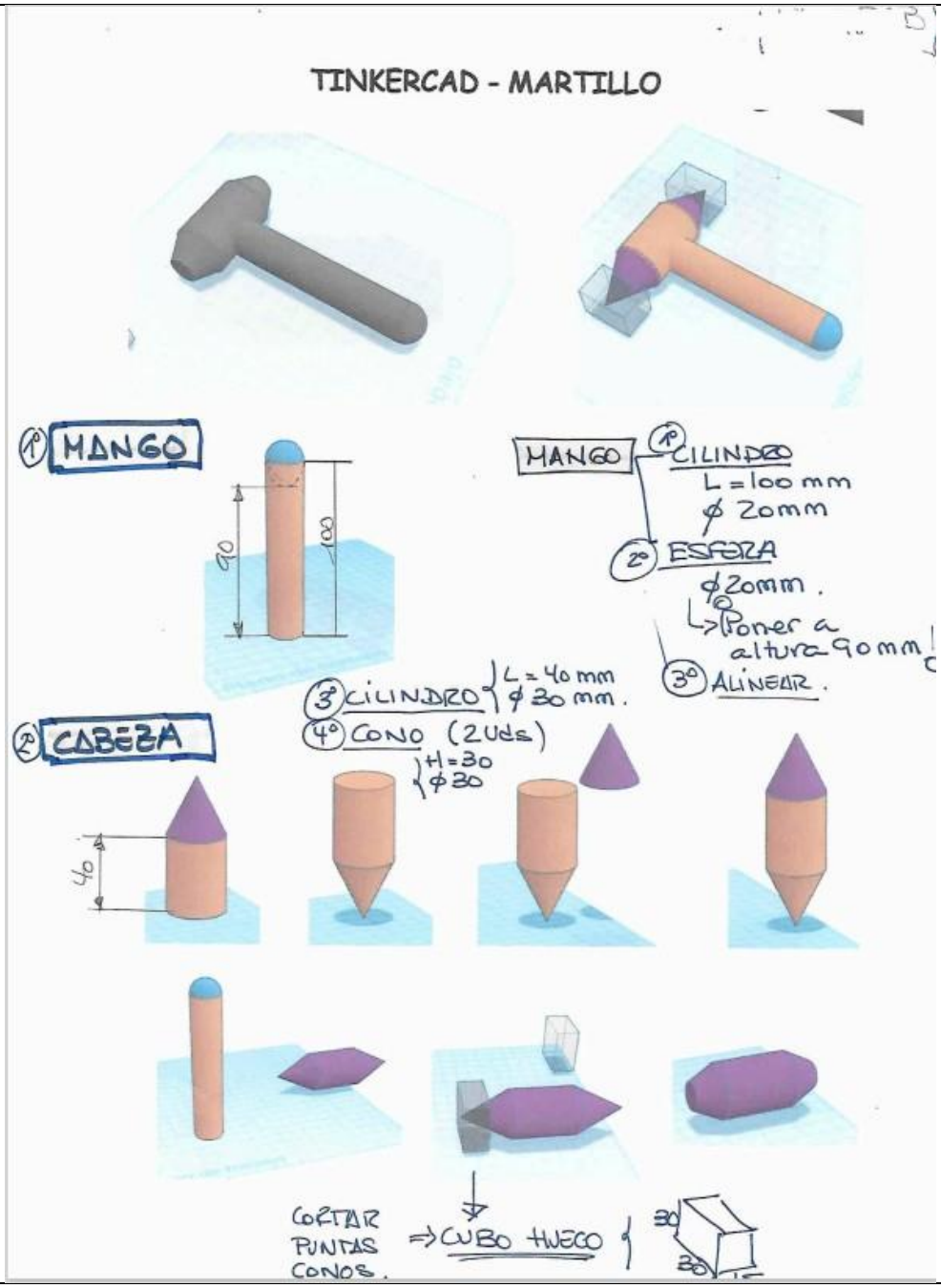
<table>
<tr><td rowspan="6">Lesson 1:

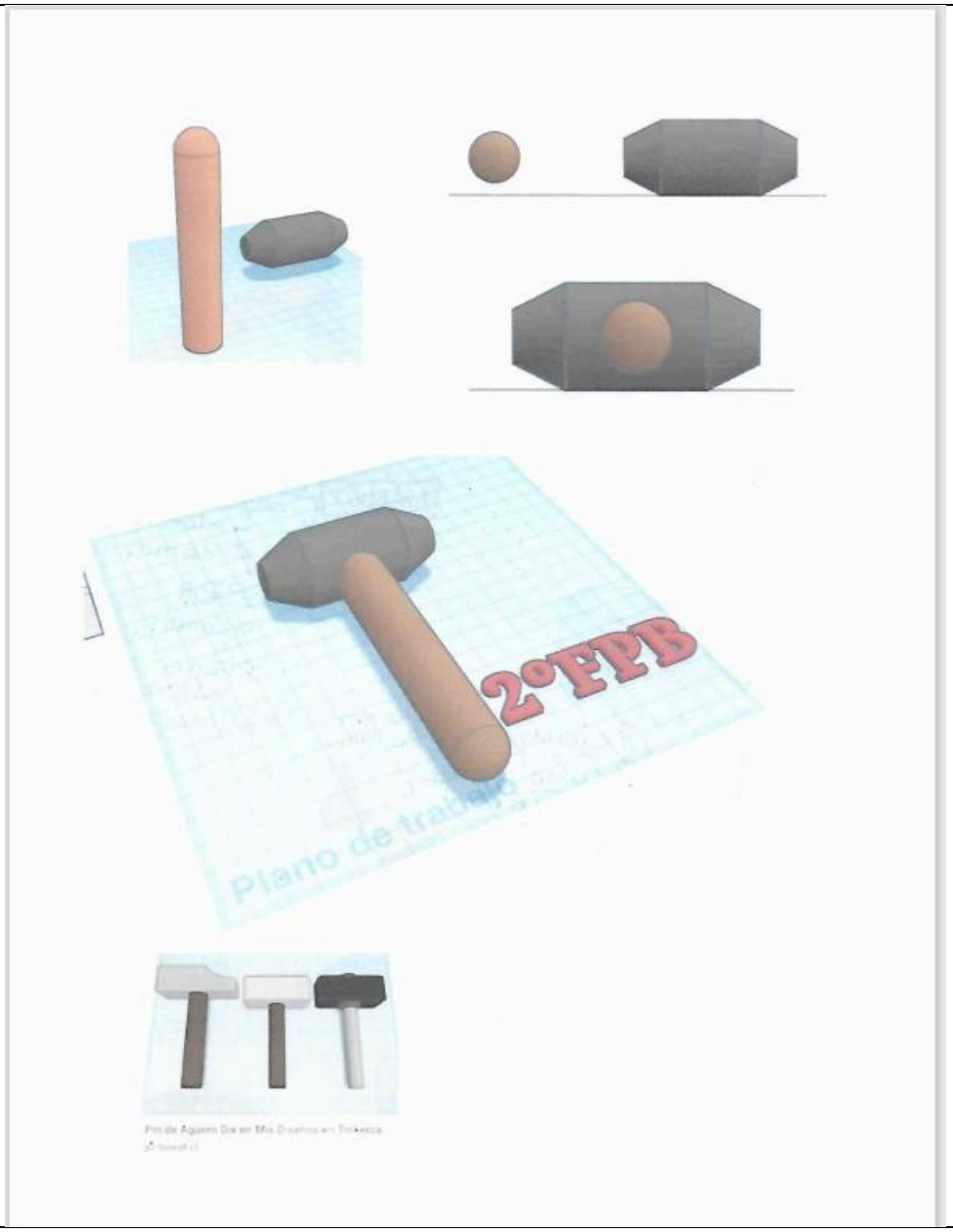
Tinkercad fundamentals

Drawing of a wrench /spanner (Tinkercad)</td><td>Teachers: Applied science teachers</td></tr>
<tr><td>Objectives:
- Introduction and review of how to use Tinkercad
- Instructions on how to make a tool (spanner) with measurements and some tips</td></tr>
<tr><td>Methodology:
Experiential learning with digital methods</td></tr>
<tr><td>Contents:
-3D modelling (Tinkercad)</td></tr>
<tr><td>Exercises/tasks for students:</td></tr>
<tr><td>- Building simple objects for practice.
- Finish or try to make an adjustable key.</td></tr>
<tr><td rowspan="2"></td><td>Evaluation methods:
- Completion of the task.
- Attitude: Proactivity and commitment in class, responsibility for the task at hand.</td></tr>
<tr><td>Results:
 
</td></tr>
<tr><td></td><td>Problems:</td></tr>
</table>

	It is difficult for them to concentrate on the task for a long time. They talk and interrupt in class and have problems following instructions.

Lesson 9: Fundamentals of 3D design (TinkerCAD) 3D hammer drawing (TinkerCAD)	Teachers: Applied science teachers
	Objectives: - Review of how to use TinkerCAD. - Instructions on how to make a tool (hammer) with measurements and some tips
	Methodology: Experiential learning with digital methods
	Contents: - 3D modelling (TinkerCAD) - Exporting and sharing (SketchFAB)
	Evaluation methods: - Completion of the assignment. Delivery of a 3D drawing for each student. - Attitude: Proactivity and commitment to the task in class
	Problems: It is difficult for them to concentrate on the task for a long time. They talk and interrupt in class and have problems following instructions.

Exercises/tasks for students:	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Plano de trabalho

Lesson 10: Designing hammers on 3D (TinkerCAD) Video conversion and publishing (SketchFAB)	Teachers: Applied science teachers
	Objectives: - Review of how to use Tinkercad - Instructions on how to make a tool (hammer) with measurements and some tips
	Methodology: Experiential learning with digital methods
	Contents: - 3D modelling (Tinkercad) - Exporting and sharing (SketchFab) - Video editing (SketchFAB) - Display as holograms
	Evaluation methods: - Completion of the assignment. Delivery of a 3D drawing for each student. - Attitude: Proactivity and commitment to the task in class
	Problems: It is difficult for them to concentrate on the task for a long time. They talk and interrupt in class and have problems following instructions.

Examples of teaching activities carried out.

Partly because of the Covid emergency, which has interrupted school activities on several occasions, various types of teaching activities have been proposed, including those that can be used remotely, all aimed at developing 3D digital images on the theme of work in a cultural and intercultural context. All the teaching documentation is accessible for consultation and download in open mode, in the folder called "Inclu.ma.p. EU Project - Open Material":
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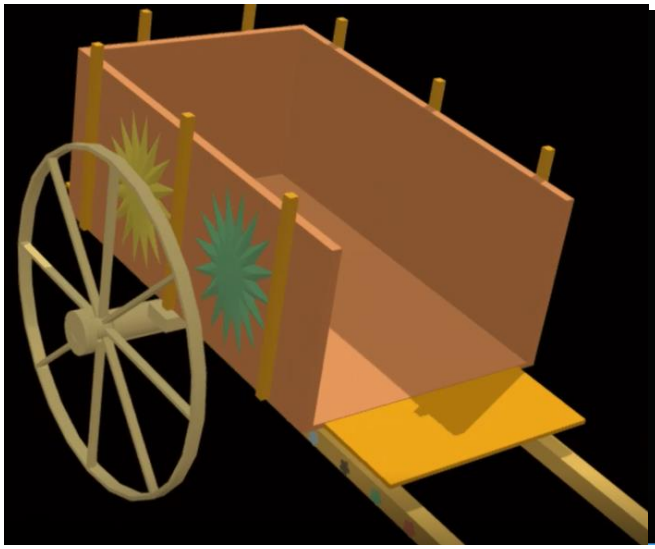
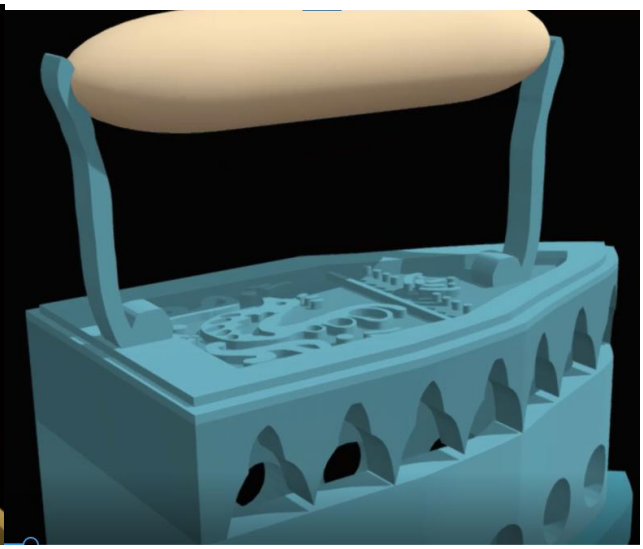
Geographical Area "Emilia-Romagna", Italy:

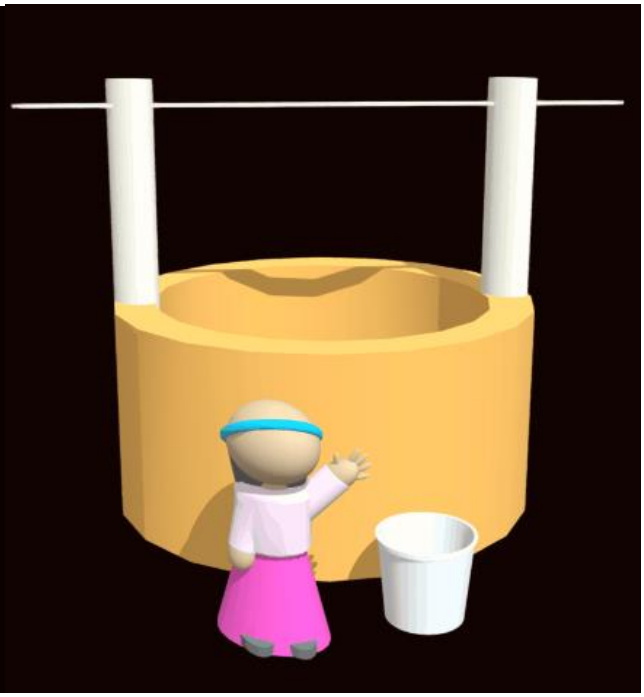
Photogrammetric reconstructions of agricultural tools typical of the Italian territory, both through photographic reproduction and through video exported by Zephyr 3D software and transmitted to the holographic projector. Below is an example of a whetstone horn and bellows reproduced by 3D scanning (photogrammetry):

Geographical area 'Lombardia', Italy:

3D drawings and photogrammetric reproductions of work objects and tools designed by the students using Tinkercad and Zephyr 3D software, with videos transmitted to the holographic projector.







Geographical area "Generalitat Valenciana", Spain:

Tutorials are available for the design and drawing in Tinkercad of work objects typical of metalworking professions, such as hammer, spanner and screwdriver.

Geographical Area " Castelo Branco" and "Povoa de Varzim", Portugal :

Photographic and photogrammetric reproductions of work objects typical of the fishing civilisation of the North Atlantic coast, such as a sailor's bottle and a life jacket made of cork. The models can be exported by Tinkercad or Zephyr 3D software and transmitted to the holographic projector.

Conclusion

This document is intended to offer secondary school teachers, both general and technical-professional, and educational and training process staff, open-ended teaching material to be replicated in order to design, in educational contexts, teaching programmes aimed at developing intercultural dialogue and active citizenship skills.

Indeed, given the growing trends towards multiculturalism and the formation of ethnically and culturally heterogeneous classrooms throughout Europe, it is believed that educating students to know how to live in multi-stratified societies and to know how to relate to peers, and adults, of different origins, cultures and backgrounds from their own, provides young people with the tools to live at ease and integrate into civil society, participating fully in it and contributing to its developments with confidence and purposefulness.

Given the general objectives of the project, i.e. the development of multicultural competences, the Inclu.ma.p. project aims to achieve them through the implementation of a didactic programme that can be delivered according to the STEAM approach, involving both humanistic subjects and technical-scientific curricular subjects in any field of study or educational level.

Humanistic subjects such as local or foreign language and literature, history, civic education, geography, religion, offer the possibility to identify cultural aspects related to different civilizations, as well as to validate them in a perspective of mutual knowledge and appreciation: To this end, ethnographic research activities involving students and their families in interviews on the economic-social history of their families are useful, with a view to historical and intergenerational comparison, through the telling of trades, how a profession is undertaken, how the apprenticeship period takes place, and the tools or objects typical of a given profession, typical of their culture of origin or belonging.

STEM subjects, in particular computer science and technical drawing disciplines, are useful for creating visible and concrete images of the more theoretical and general cultural and civilization framework that emerges from ethnographic research activity. 3D drawing, 3D modelling and holographic projection of multicultural work-related traditions, in fact, makes it possible to create a composite image, or a set of images, that renders the complexity, variety and thick description of the civil society in which young people find themselves learning and living.

Appendix

INTELLECTUAL OUTPUT 3 - "TOOLS AND WORK PRACTICES".

Proposed approaches to designing teaching activities, as chosen by schools

involving the humanities and the arts,

aimed at identifying objects and practices related to work and professions,

with a view to highlighting past traditions and different ethnic groups

that make up the class group or civil society

Possible approaches

a) Comparative analysis, at historical level (i.e. difference between present and past) and intercultural level concerning one of the **traditional work processes**, widespread in various civilisations, such as:

milk chain
bread production
agricultural work
breeding of animals
coffee
cocoa
silk and textiles
metalworking (welding, carpentry, blacksmithing, etc.)
woodworking (joinery)
....

E collection of images relating to machinery, tools or processes

b) **Intergenerational comparison** with respect to work: interviews of young people (from various ethnic groups) with their families of origin, especially grandparents, in relation to the early age of entry into the world of work or to the exercise of craft jobs that now no longer exist or are disappearing, or have been automated

and collection of photographs, stories, life stories