EARLY
SCHOOL
WORKERS

NEW CURRICULA

Principles and
experiences

3

ESW
EARLY
SCHOOL
WORKERS

Erasmus+ KA2
Strategic Partnership
for vocational education
and training

Co-funded by the
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design by
yges.com - Davide Soncin

NEW CURRICULA

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Project Reference

Project code: 2018-1-IT01-KA202-006754

CUP: G34D18000020006

Programme

Programme: Erasmus+

Key Action: Cooperation for innovation and the exchange of good practices

Action Type: Strategic Partnerships for vocational education and training

Duration

3 years (01/10/2018 – 30/09/2021)

ESW PROJECT

VET systems need a radical renovation to be competitive. In fact, it is clear that Young people need to acquire specific competences to be successful in the world of work and it is necessary to address and prevent the Early School Leaving (ESL) problem, as well as the lack of key competences among young people.

The UTC (http://www.utcolleges.org) approach seems to be capable of addressing these challenges. In these schools knowledge and skills are acquired through the resolution of real problems or projects. Their approaches deliver an innovative training concept, which is able to narrow the gap between knowledge and competences acquired at school and those required by the companies. The aim is to tackle and solve the Early School Leaving problem, and to increase the competences of each student during IVET programmes.

The possibility to reach these excellent results has been possible thanks to innovative methodologies and by re-thinking spaces, times and learning approaches. Each UTC is backed by employers and a local university who work with staff to develop an innovative curriculum that gives students first-hand experience of what life is like after school, also integrating three types of learning: technical, practical and academic. A UTC curriculum includes one or two technical specialisms, which are linked to the skills gaps in the region.

All the aspects of these colleges are built around a specific methodology called PiXL Edge, namely a model that gives students the possibility to develop skills useful for the rest of their lives and for their future professional activity (Leadership, Organisation, Communication, Initiative and Resilience).

The project aims at supporting the renovation of VET systems in Europe with the ultimate goal of tackling Early School Leaving and increasing the employability of youngsters while fostering their active role in the society.

In order to reach this objective, **the project intends to further strength the key and technical-professional competences of young people attending the VET pathways, analysing and adapting the English UTC model to the Italian / German / Spanish context.**

In this way the project tries to provide an answer to a common issues faced by European VET system:

1. increase the level of key competences among the youngsters and reduce the skills gap;

2. promote new partnership and WBL organizational models/approaches

The idea is to transfer the English model to training realities in other countries to face the training gap and the ESL. On one side there will be the provider partners (schools from the UK) that will transfer their successful models and, on the other side, the user partners that will study these models and try to adapt these good practices to their national contexts.

The project aims at analysing the UTC model, with its theoretical and practical features, and it fulfils the following goals:

1. Elaboration of a model (organizational and educational variables) transferable to all contexts.

2. Transfer this model and adapt it to VET centres in other countries implementing new training pathways in professional sectors by combining national standards and the innovative aspects of UTC model

3. Test and validate the model

4. Monitoring and evaluating the learning outcomes

This project involves 8 Partner Organisations and 3 Associated Partners from 5 European countries.

PARTNERS

6
TRAINING ORGANIZATIONS

1
UNIVERSITY

1
EUROPEAN NETWORK

3
PUBLIC INSTITUTIONS

ENAC
enac.org

cjd
cjd.de

ENDO-FAP
endofap.it

IES Puerta Bonita
Centro para la formación audiovisual y gráfica
iespuertabonita.es

INSTITUTO VIRGEN DE LA PAZ
ies.lapaz.alcobendas.educa.madrid.org

UTC WARRINGTON
utcwarrington.org

UNIVERSITÀ CATTOLICA del Sacro Cuore
brescia.unicatt.it

EfVET
European Forum of Technical and Vocational Education and Training
efvet.org

Regione Emilia-Romagna
regione.emilia-romagna.it

Comunidad de Madrid
comunidad.madrid

REGIONE PUGLIA
regione.puglia.it

The projects foresees 4 main intellectual outputs:

- IO1 Critical Review on the UTC and Concept model
  Document aimed at explaining the UTC model and support VET provider to replicate it in their own contexts

- IO2 Methodological framework and common tools for developing new curriculum:
  Tools and supporting materials to create new curricula based on the UTC model

- IO3 New curricula
  6 new curricula based on the UTC model

- IO4 Final evaluation report
  A report highlighting the main project findings.

PROJECT OUTPUTS

INDEX

EARLY SCHOOL WORKERS: EVOLUTION OF A PROJECT

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1.
Early School Workers: evolution of a project

The Early School Workers Project supports the renewal of the vocational training system in Europe with the ultimate goal of **addressing the problem of Early School Leavers and increasing the employability of young people in society**. The difficult times we are experiencing as a result of the post COVID-19 situation have had a huge impact on schools and our teachers and students.

Following the COVID-19 pandemic and the closure of education and training institutions around the world, several initiatives have been launched to ensure continuity of learning and teaching during this period.

The post COVID-19 epidemic has brought to light an entrepreneurial spirit of renewal focused on new virtual ways of studying and working. Within vocational training, many teachers are working hard to develop innovative solutions that support their students during these uncertain times.

In addition, across Europe, professionals and policy makers are moving as fast as possible to implement distance learning.

This Intellectual Output 3, "Curriculum and guidelines design and development", must take this situation into account. In fact, it is developed both as a fulfillment of the previous two Outputs[*], and as a proposal for the transition of the project during the pandemic phase and for a more general reflection on the future developments of schools and vocational training.

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[*]   Critical Review on the UTC and Concept model and Methodological framework and common tools for developing new curriculum (https://earlyschoolworkers.eu/intellectual-outputs/).

THE SCRIPT OR FORMATIVE CANON: WHICH SCHOOL FOR WHICH INTELLIGENCE?

2.
The script or formative canon: which school for which intelligence?

In this Intellectual Output, the Early school Workers project enters into a dialogue with other documents elaborated during this period, aimed at rediscovering the essential in training. In particular, in a 2020 CON-FAP document[*] the idea of a "formative canon" that corroborates and substantiates what ESW has elaborated is promoted. Before examining this concept, let us examine its pedagogical foundations below.

A fairly frequent motto in speeches about education and training reform is that of "raising standards". The logic behind this apparently unassailable expression, is actually questionable, on two counts:

- **the curriculum must be the same for all, indicating a package of skills, knowledge and abilities that represent a cultural and professional profile at the outcome;**
- **the higher the standard, the more formative the school is.**

Regarding the first assumption, neurobiological research and the psychology of learning indicate a different route, open to multiple and diversified intelligences. Moreover, the experience of schools and vocational training centers reveals, with disarming evidence on a daily basis, the wide heterogeneity of educational needs and learning styles of students.

Finally, the context in which schools operate has changed. One or two standard profiles proved useful at a time in which the world of work was divided between white-collar and blue-collar workers. Con-versely, nowadays, the required profiles are not only very numerous, and involve "crafts", but it is likely enough that, in ten years, the required skills will change, therefore, it has become necessary to educate for change and flexibility, rather than directing education towards a single role.

As regards the second assumption, the question becomes the following: does raising standards really raise the quality of the education system? One possible answer lies in a simple and direct consideration: standard means "equal", and therefore standardization represents a dynamic opposite to that of personalization. According to this approach, the higher the standards, the greater the commitment of the educational and training institution to bring everyone in line with the same goals, and as a result, there is less time commitment for the personalization of training plans. Thus a choice is to be made to identify what significance to give to the standards and what significance, to assign instead to the customization of the routes.

As often happens in educational matters, one enters here into a kind of dilemma, that is, not concerning an (easy) choice between what is good and what is bad, but a (complex) choice between two goods, that is, of which may represent a greater good in a

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[*] CONFAP (CNOS-FAP, SCF, ENAC and ENDOFAP), CULTURAL AXES PROJECT AND TRAINING CANON - Vol. 1 - The foundational curriculum of work education, Version 2 ter, August, 2020.

given historical-geographical context. Raising the standards, bringing everyone to a high level of knowledge and skills, certainly has a value, and it certainly did it during the historical period the fight against illiteracy was the main objective.

However, in the current context, raising standards is probably not the best option. In fact, the prevailing educational problem does not seem to be linked to cultural poverty, and the consequent need to democratize culture, but is rather related to phenomena such as socio-emotional fragility, de-motivation, school drop-out and youth unemployment.

Moreover, as regards the skills required by social components (such as the world of work and society in general), the need to provide all young people with the same skills seems less pressing, while that of cultivating talents is more relevant, without dispersing the potential in any way. At a time when it is not foreseeable how work will evolve over the next five/ten years, it is less useful to provide a set of specific skills. On the contrary, it is more fruitful to educate young people to change, and to the personal qualities that it requires.

On a transversal level, then, while new media make knowledge easily accessible, this is not the case for critical thinking, the ability to collaborate, initiative, resilience and civic sense. In short, today it is probably necessary to elevate customization, not standardization.

From this perspective, we can better comprehend the European Recommendation on key competences for lifelong learning of 2018. It reaffirms the principle that learning should relate to competence, understood as a dynamic combination of knowledge, skills and attitudes, assigning unprecedented new significance to personal and social competence,

which may only be cultivated in contexts of cooperation and high customization.

As Giorgio Chiosso wrote, referencing Howard Gardner's "3 Es" (excellence, engagement, ethics), schools today have the task of promoting a good life, according to three principles: knowledge of the rules of civil life, the willingness to get personally involved, and the ability to make the right decisions. All this should occur in an environment which is culturally rich, to facilitate the study of feasibility, divergent thinking, and the ability to interpret reality according to critical and responsible categories.

On the other hand, considering the curriculum as a large, or rather a broad, set of knowledge, forces the practically exclusive use of lectures (the fastest means of safely transmitting large amounts of knowledge and controlling its reception) and rigid resources, such as the textbook. Conversely, considering the curriculum as a set of skills, to be cultivated in a culturally rich context, opens the space up to the dimensions of research, collaboration, design and the production of cultural and professional objects.

It is necessary, therefore, to avoid all misunderstanding, by further explaining that expected outcome of the educational process is not a "program," or a sequential scanning of knowledge and content, but some (few) personal, social, cultural, and professional skills, nurtured in a creative and flexible way by the comparison with items of knowledge and by the support of some essential skills, under the choice and the careful guidance of the teacher.

Also the final tests (qualification exams) as well as the mid-term evaluations should be inspired by this option. They should avoid asking the students for mnemonic and standardized per-

formance on large catalogues of serial knowledge, stimulating, rather, the active creation of cultural and professional products, to evaluate with different tools (skill rubrics) compared to traditional tests.

We now come to the concept of "training canon", presented by CONFAP as a fundamental innovation in the very conception of education and training:

In the past, the "canon" was considered a list of texts capable of enclosing all the wisdom of a tradition. On the contrary, the new canon is, first of all, open, and this requires a particular task, which consists in bringing the culture buried in books and museums back to life, comparing it with the present time, and do so by setting the young learners off on a fruitful adventure. At the heart of the canon is reality, to the positive discovery of which, young people are invited. They themselves are at the centre of the canon, with a humble and demanding attitude, because at stake is the personal self, its full consistency (CONFAP, 2020, P. 34).

By formative Canon, what is intended is "what several authors call the 'essential' of cultural work, that which is indispensable to transmit to the new generations so that may be able to exercise their positive freedom in the 'time after' (p. 6).
Here, then, the educational canon must focus on essential issues, on the link between man and nature in its three major branches: the environment, social and demographic economic development, and lifestyle (p. 38).
Moreover, the educational canon must be inclusive (p. 22). The training Canon is a profound vision of training that also involves trainers and coordinators, who are no longer seen as mere technicians but must attend the cultural sources from which the canon springs (p. 34).
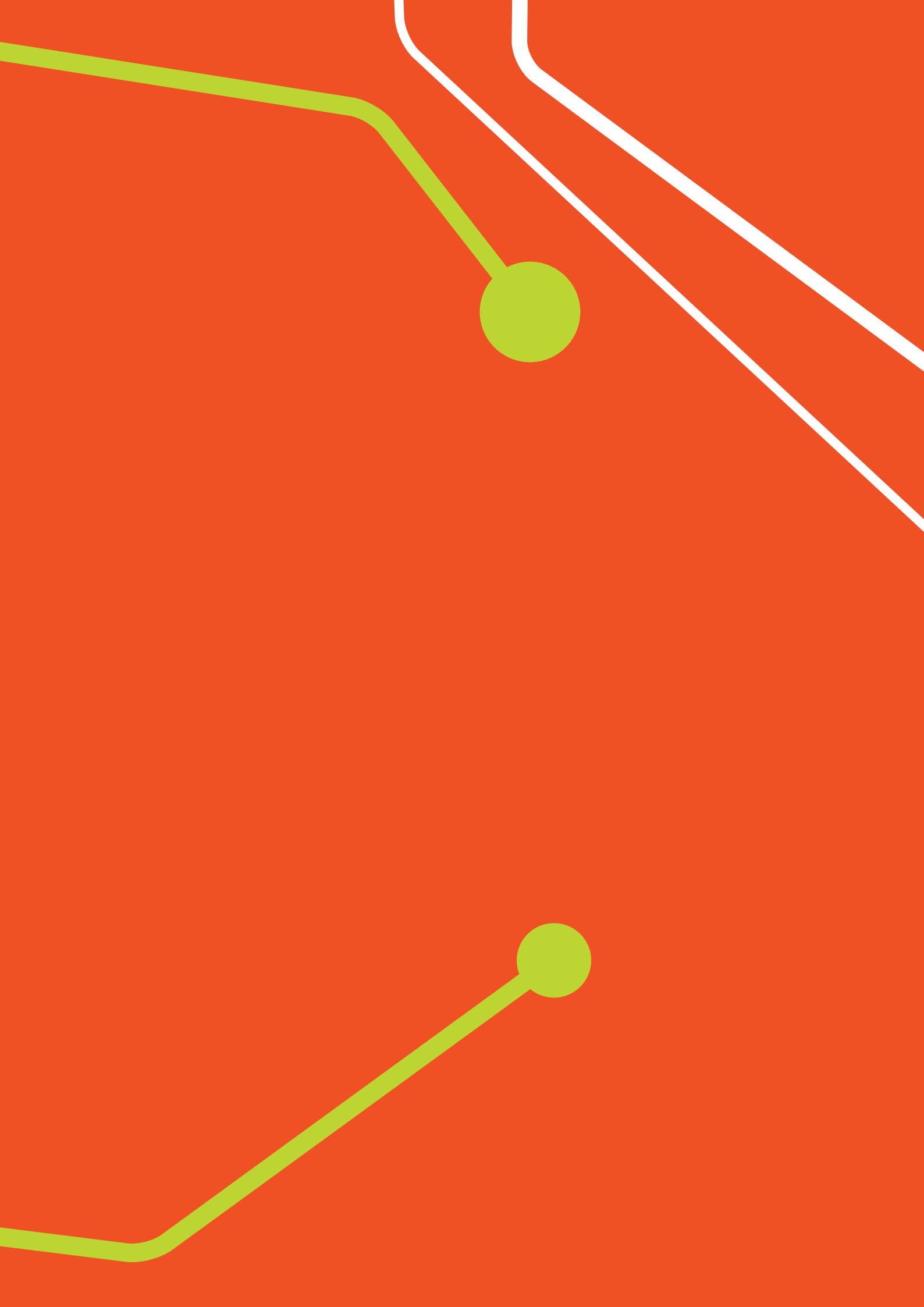
There are also, of course, clear methodological implications in the adoption of the perspective of the "training canon":

- **a weakening of the notion of "time" and linking the articulation of time to the types of work and tasks assigned to students** (p. 23);

- **the disappearance of the textbook, in those activities where cultural reproduction must lose power to foster the creative activity of the students** (p. 25);

- **the promotion of the responsible self-regulation and sense of maturity of students, increasing educational risk through delegation and trust** (p. 27).

Course design, in this pedagogical framework, obviously requires new generation decision-making and coordination tools, such as those that we will contemplate and analyse in the following document.

Customization, course design, real tasks, de-structuring of educational space and time, flexible use of class groupings, access to extensive and diversified learning resources, all of these elements require a strong coordination action, to give unity and direction to the contribution of each educator, within a shared and concrete scheme.

DESIGN EXPERIENCES IN ESW

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3.
Design experiences in ESW

As outlined in Intellectual Output 2, the ESW project is now in its third year having developed a repertoire of target skills and a methodology of course design based on these skills and structured in tables.

The repertoire consists of eight target skills, each of which is presented through:

- **a brief description;**
- **a stimulus-phrase or hashtag, aimed at involving young people more directly and immediately;**
- **a set of indicators for the trainer (Teaching outcomes), in order to share unequivocal learning objectives;**
- **a list of learning outcomes from the student's point of view, (Learning outcomes), i.e. easily recognizable behaviours or evidence.**

In the table shown in Fig. 1 is an example of a target skill analysed according to these items

Competence Goal	INITIATIVE
Description	Play an active role in your learning
Declination	When (in the second person sing.): - You are absorbed/focused and show interest (ask questions - Take on the challenge as an opportunity to learn - You can work well (find out if you work better) alone, as a couple or in company - Learn from mistakes and feedback, so you can improve - Apply to help you improve
Indicator	With respect to a problem to be solved or a cultural/professional product to be created, it is the first to propose a possible solution
Type of problem / project	▪ Propose a situation in which an external contractor reports a problem to be addressed on a supply ▪ Propose a situation in which he is faced with interpersonal conflict
Potential intersections with other skills	Languages, communications, negotiation skills, etc...
Areas of development	Training activities: Classroom, Internship, Guided tours, Tutoring Uda / Real Task (Internal) Real Task (Committente)
Problem / project example	(….)

Figure 1. Example of a preparatory table to the design on target skill "initiative".

The design methodology includes eight main tables, one for each of the defined target skills, which will be explained in more detail in 3.3. The Format allows you to record the scheduled activities and their intersections with the disciplinary areas (Evidences), linking them to the indicators of the eight key skills (Skills set) and with learning objectives (What that means). The application of the tool integrates with regular educational design and good practices, and allows to represent the curriculum in an innovative way.

3.1
Macro design guidelines: coordinating teaching against the myth of teacher autonomy

The UTC model's transferability guidelines highlight the need to develop and update the curriculum by building "clear links and integrations between the general and professional parts of the curriculum and between the various forms of learning" (4.3.1). Essential elements of the design according to ESW will therefore be:

- **the centrality of transversal and employability skills;**
- **the link between curriculum and teaching methodologies based on learning in context, Project and Problem Based Learning (PBL) and reality tasks.**

ESW's methodological proposal for training macro-design takes into account the organizational structure and recurring characteristics of Professional Institutes, putting them in touch with the Guidelines.

The first step of the design, which is located at the beginning of the school year, is the proposal by the coordinator of some macro-activities. The macro-activities proposed by the coordinator are a "boundary" within which the individual trainers will position themselves, and where the shared micro-design will take place. The proposed macro-activities already contain clear links to the key skills, and to their indicators. They are therefore already shaped according to a logic of "**backward design**" (cf. Grant Wiggins and Jay McTighe)[*]. In backward design:

1. One starts by identifying the desired results: **what should students be able to know, understand and do? What is deserving of deep understanding? What solid and lasting understanding is desirable?**

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[*]   Wiggins, G., & McTighe, J. (1998). Understanding by design. Alexandria, VA: Associa- tion for Supervision & Curriculum Development.; Wiggins G., McTighe J. (2004). Fare progettazione: la "teoria" di un percorso didattico per la comprensione significativa. Roma: LAS; Wiggins G., McTighe J. (2004). Fare progettazione: la "pratica" di un percorso didattico per la comprensione significativa. Roma: LAS.

2. One determines the evidence of acceptability: **what will we accept as evidence of students' high understanding and mastery?**

3. Only after the first two steps, education experiences are planned. **What activities will provide the necessary knowledge and skills? What will it necessary, in the light of the purposes, to teach, and what is the best way to teach it? What are the most suitable materials to achieve the purposes?**

To move in this direction means to tear from the root a misunderstood convention of the autonomy of the teacher, who would be free to choose content, time and mode of teaching. If, in the time of standardization, one could leverage on the parallel contribution of several different educators (due to the rigid notion of a syllabus), in the time of the customization, paradoxically, it is necessary to plan careful coordination, leading the team, step by step, in design, in education and in testing, to be able to really maintain a flexible and tailored curriculum and the subsequent planning in itinere.

One understands how the presence (the advent?) of a new generation of leaders would be desirable, able to hold together the educational team, making it converge on a common project, built around the draft curriculum and the real tasks it is composed of. It is not simply a matter of giving provisions, which the teacher can carry out in daily practice: this sort of directive approach, so to speak, may work in the times of stability and standardization. Conversely, in the time of personalization and change, it is necessary to motivate the team, by supporting them periodically with moments of dialogue, design and re-composition.

Moreover, it is the entire educational environment that must be kept permeable, with regards to all the elements that make up the organization, from its spaces to the structural equipment, from the curriculum to the vital relationship with the local communities.
One may focus on the qualities and attitudes of the school/centre managers/coordinators by referring to the contribution of Drysdale and Gurr[*], aimed at defining a model of leadership in times of crisis and uncertainty.

In the conceptualization of the authors, the crucial element of a leader's personality is the ability for strategic management, or of responsive orientation, understood as an attitude to direct the organization towards the future, maintaining a clear course but also a flexible trajectory, as sensitive to continuous contextual changes. Strategic orientation allows you to plan long-term projects, while maintaining the awareness that the path could change, if not in its purpose, at least in its concrete implementation. At the same time, responsive orientation weaves the plot of an indefatigable, continuous search for new ideas, in order to recursively reassess the course taken.

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[*]   Drysdale, L., & Gurr, D. (2017). Leadership in uncertain times. International Studies in Educational Administration, 45(2), 131-159. The reflection of the two authors has been further updated on the wave of the pandemic emergency, with the release of a further essay significantly entitled Leadership in uncertain times, CF. Gurr D., & Drysdale L. (2020), Leadership for challenging times. International Studies in Educational Administration, 48(1), 24-30

Beyond these general characteristics, the Drysdale and Gurr model (see Fig. 2) revolves around a clear orientation towards results, in terms of student learning. From this centre, understood as a value and an educational mission, the concept of strategic direction unravels in seven domains:

- **Understanding the context**
- **Setting direction**
- **Developing staff competence**
- **Influencing the community**
- **Improving teaching and learning**
- **Leading and improving oneself**
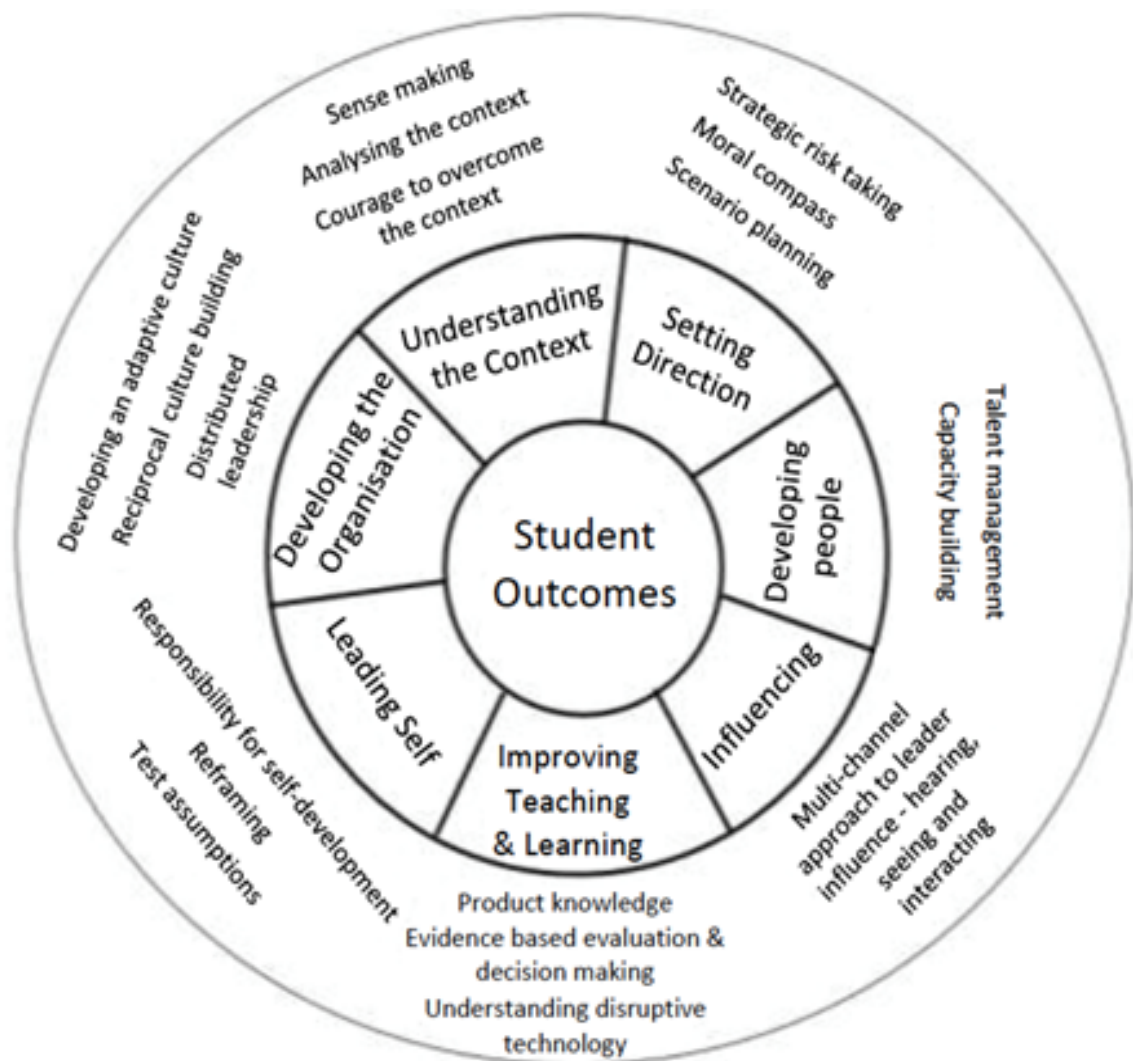- **Developing the organization**

Figure 2. The strategic competence of the leader

First of all, in Drysdale and Gurrs' model, is the ability to understand the context. The strategic leader is able to interpret the main factors that challenge educational systems, building frameworks of meaning not only in so-called ordinary periods, but also, and above all, in critical, and even ambiguous, situations. The attribution of meaning to what is happening around them is probably one of the skills most valuable to the leader. They are skilled in deciding what, in the current contingency, is important, taking into account the trends that they deem able of positively renewing the educational organization. The development of a scenario allows them to fit the objective circumstances into an overall sense, overcoming its possible disaggregating effects. In this way, the leader and his organization do not suffer the context, being forced to change, or blindly rejecting it, but somehow govern the context, drawing elements of success from it, even in dangerously critical circumstances.

Once the context has been analysed and one of the possible meanings imagined, the leader sets a clear direction also assuming the inevitable risks associated with decision-making processes. It is not uncommon in the world of education and training to take a glimpse at people and leadership styles focused primarily or exclusively on the management of processes (legislative, administrative, bureaucratic, or accounting), as if educational purposes and objectives were somehow discounted, and did not need to be governed, but simply be declared (for example, in the training projects).

In practice, it is almost never possible for a leader to limit themselves to managing the present: they must be oriented to the future, not in an arbitrary way, but through a project capable of holding together values, objectives, and contextual and organizational elements. The leader, therefore, starts from the values

and mission of the education system, and having appraised them within the context, must make decisions. The latter must be based not only on the available evidence, but also on probabilistic analysis, which takes possible unexpected consequences into account, thus developing alternative plans to change direction, if necessary.

In the third element of the model, the leader must be able to develop staff skills, putting their organization in a position to attract, grow and retain quality teachers and trainers. In this respect, two aspects are decisive: the search for talent and the ability to facilitate professional growth. You need to be wary of the trap related to the tendency to regard teachers and trainers, as the gears of an organization, routinely replaceable. Although it is difficult, if not impossible, to imagine the use of incentives and career paths, as training continues, one should not stop there. Even in the form of supervision, the adoption of the mode of distributed leadership and attention to climate-oriented relations and innovation can be some of the factors that make staff wish to stay and to increase their skills, in order to actively contribute to the success of their institution.

The fourth aspect, linked to the third, is the intentional and systematic commitment to improving the quality of teaching and learning. This is a delicate area, as it may not be clear what is actually capable of improving educational practices until it has been untangled from the dense forest of fashions and professional fads. Who has not heard of one or the other teaching model as the decisive novelty, able to have a clear impact on the motivation and learning of students? In fact, great care must be taken not to waste time and resources on improvised approaches, operating a serious discernment on what to invest, through the criterion ofevidence-based, and avoiding ve-

ering from one year to the next on ever-different content, in the name of "what novel thing could we do this year" (and then proceed to note that practices actually do not change, just as their effects do not).

The fifth domain of the model is the style of presence and influence on the various components of the educational institution. In this area, the authors emphasize three critical skills:

- **the first consists of "making yourself heard" through deliberate and careful communication. The leader must be able to galvanize people and the environment, exploiting the power of language, using metaphors, slogans and arguments can reach both its staff from both a rational and emotional point of view, evoking values and goals clearly, and concrete routes to reach them; in the face of changes in context, they will be able to show you where you're going and why, providing frameworks of meaning and foreseeing potential issues;**

- **the second consists of "showing yourself": the leader is present in critical moments and situations, becoming an example of solidity and tenacity, and supporting the people who work with him with intelligence;**

- **the third consists of "interacting and listening": to influence people, in fact, it is necessary that those people are aware of being able to influence the leaders, in a two-way relationship, where, within the boundaries of clear roles and diversified responsibilities, you feel the freedom to speak and also to speak up to the contrary.**

The sixth domain concerns the willingness to be a leader of yourself, guiding and shaping your professional growth, avoiding thinking that it is always others who have to change. The ability to revise one's convictions and beliefs, care for one's own improvement, openness to comparison with other experiences and opinions are other key elements of a good leader.

The last domain consists of the development of their own institution, which consists in the ability to be hands on in organizational matters, adapting them to contextual changes and aligning them with educational purposes. This is the so-called educational setting, a concept that denotes the physical and relational space in which the educational relationship is played out, summing up a complex of intentional actions aimed at preparing spaces, scheduling times, articulating groupings, predisposing resources. The above-mentioned capacity of the leader to decide and take risks must also be spent on organizational matters: from classrooms to learning zones, from schedules to working times, from classes to cooperative groups, from textbooks to multiple and diversified learning resources.

3.2

The cultural and professional axis at the service of creativity: guidelines for microplanning

Once the macro-activities that will take place during the year have been determined, teachers are asked to design "**Multidisciplinary training units / Real tasks**" based on transversal skills and divided into nine main tables:

- An introductory table that presents the **final product** of the Training Unit and summarizes the objectives and scheduling; the table is drawn up by the educational coordinator.

- Four tables dedicated to each **Cultural Axis** (ref. Ministerial Decree 2007) and four tables referring to the technical-professional skills of the regional IeFP qualifications (example reported: Standard qualification Graphic designer). The tables are compiled by the trainers involved, who, from each table, may select the Skill related to their disciplinary field and then fill in the Knowledge and Abilities sections related to the selected Skill.

In Fig. 3 the format of the design tables is shown. To allow participatory and shared design, it is advisable to use sharing technologies at the beginning of the year, for example, deciding that tables are shared in the cloud. The final collection of the tables is, however, the job of the educational coordinator.

Figure 3. Short introductory table of macro-activity (top left), two tables dedicated to Cultural Axes and (bottom right) one dedicated to Technical-professional skills.

SUMMARY DOCUMENT - TRAINING UNIT

Title	
Annuity	
Final Product	
Period and duration of implementation	
Objectives/Activities	
Phases	

Programming

Phases/Skills	Month				Month				Month				Month			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1																
2																
3																
4																
5																
6																

BASIC SKILLS

MATHEMATICS

Transversal Skills

- ☐ Awereness
- ☐ Communication
- ☐ Motivation
- ☐ Participation

- ☐ Organisation
- ☐ Initiative
- ☐ Digital expertise
- ☐ Sustainability

Mathematical Skills (Biennium)

- ☐ Use the techniques and procedures of arithmetic and algebraic calculus, also representing them in graphic form.
- ☐ Compare and analyze geometric figures, identifying invariants and relationships.
- ☐ Identify the appropriate strategies for solving problems.
- ☐ Analyze the data and interpret them by developing deductions and reasoning on them, also with the help of graphic interweaving, consciously using the calculation and potential tools offered by computer applications.

Knowledge*

Skilss*

Activities:

***Note: Insert Knowledge and Skills of Competence - Ministerial Decree 139/2007 Attachment "Cultural Axes"**

BASIC SKILLS

LANGUAGES

Transversal Skills:

- ☐ Awereness
- ☐ Communication
- ☐ Motivation
- ☐ Participation
- ☐ Organisation
- ☐ Initiative
- ☐ Digital expertise
- ☐ Sustainability

Language Skills (Biennium)

- ☐ Master the expressive and argumentative tools necessary to manage the communicative interaction in various
- ☐ Reading, understanding and interpreting written texts of various kinds
- ☐ Produce texts of various types in relation to the different communicative purposes
- ☐ Communicating in a foreign language for the main communicative purposes
- ☐ Use the fundamental tools for a conscious fruition of the artistic heritage
- ☐ Use and produce multimedia texts

Knowledge*

Skills*

Activities:

*Note: Insert Knowledge and Skills of Competence - Ministerial Decree 139/2007 Attachment "Cultural Axes"

TECHNICAL PROFESSIONAL SKILLS

UC1 GRAPHIC PRODUCT REPRESENTATION

Transversal Skills:

- ☐ Awereness
- ☐ Communication
- ☐ Motivation
- ☐ Participation
- ☐ Organisation
- ☐ Initiative
- ☐ Digital expertise
- ☐ Sustainability

Skills:

- ☐ Recognize the characteristics and technical specifications defined in the graphic design taking into account the support through which it must be conveyed
- ☐ identify the documentation and all the information concerning the different elements that make up the project
- ☐ Understand the technical indications relating to the graphic project in order to prefigure the interventions to be followed
- ☐ Incorporate the distinctive characteristics, the communication purposes and the intended use of the graphic product (book, paperbacks, CDs, DVD catalogs)

Knowledge*

- ☐ The process of making a graphic product: phases, activities, technologies
- ☐ Principles of graphic design
- ☐ Educational principles and target supports

Activities:

3.3
Design experiences

Several activities were undertaken within the ESW project, although the piloting phase was interrupted due to the "hard lockdown" that occurred during the second year of activity. The following is an account of some experiments, outlining the original project, the adaptations made in view of the pandemic situation, and some results in terms of strengths and critical points useful for future designs.

3.3.1
T-Shirt (ENDOFAP Piacenza)

The "T-SHIRT" Project was conceived at EN-DOFAP of Piacenza, during the course for "Graphic and Printing Operator". This professional figure has the ability to intervene in the various stages of the printing and graphic production process, to process a graphic product and to manage a printed product following the the technical and stylistic specifications in the project design and taking into account the type of media on which it must be conveyed.

The expected product of the "T-Shirt" activity is a line of T-shirts for future sale on the web. The activity included elaboration and development of designs, realization of drawings with the arts teacher, to then proceed with the other teachers to the production, photography (of the students wearing their T-shirts), networking and marketing.

The activity was part of the "simulation activity" always present in the school's Gantt in the "third year"[*] together with the beginning of the internship, after the planned activities in the "second year" dedicated to socialization and to the basics of graphics. For the design, a shared document (Google Spreadsheet)

was prepared, with the structure of the UDA (Learning Unit), the general description of the activity, the timing, the disciplinary areas of the teachers involved. Each teacher was called to fill in their part with professional goals and soft skills.

Despite the decision to involve two classes in parallel instead of one (due to uncertainties concerning the presence of the students), the closure of the school in October 2020 – due to the presence of a pupil found COVID-19 positive – led to a major crisis, also due to the still unripe capability for unitary planning of the teaching staff. The impossibility of meeting, the distance lessons, the only partial resumption of the workshops in the classroom, required the Coordinator to undertake individual tutoring of the teachers in order for the project to go ahead.

Also with students the work was much more individual than in group format. Each student thought up subjects with the arts teacher, developed an idea and created drawings. The most creative initial stage, which involved the hand drawing of sketches, was replaced by the vector realization of drawings, from the study of different types of printing. However, T-shirts for students were still made, a catalogue has been created, and a website and a small promotional campaign on social networks have been planned. The online sale stage will not

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[*]   THIRD YEARS are actually the second years.

occur. A "videomaking" module saw students make stop motion videos depicting T-shirts.

The coordinator, Silvia Fava, interviewed on the progress of this experience, noted its strengths, criticalities and learning opportunities.

As for the strengths, certainly the "T-Shirt" Project is based on an idea with a high level of engagement, on a real and concrete product. In addition, the project was flexible enough to provide the opportunity to use many digital tools. This allowed not only to carry out certain parts of the activity, but also – thanks to the regional project "Divario digitale" (digital gap) – the free provision of suitable digital technology (PCs) to students who needed them. The work was also able to adapt to individual work, not only in the design phase of the T-shirts but also in the realization of the catalogue.

Let us now come to the critical points, which were also due to the extreme situation caused by the pandemic. First of all, micro-design is a necessary but also complex activity for trainers. For example, it is necessary due to the multiple possible overlaps of skills between teachers. The division of tasks is essential, but the tables prepared, which proved very effective for the evaluation and documentation of the experience, were not evaluated as positively in relation to planning and design. Nonetheless, the tables are useful because they make things explicit, possibly also with the help and support – agreed beforehand – of the tutors of the course. Another criticality concerns distance teaching specifically. Teachers have experienced that it is one thing to do a FAD lesson (and even do it well) also by creating working groups; but that it is much more complex to carry out a challenging project needing contributions from students who are active and involved. Another fundamental li-

mit was the time available. It was not possible to work effectively on the topic of goal-skills, introduced in January 2020, through the Boston questionnaire too, but then not taken up with sufficient attention given the emergency situation.

Let us finally come to the learning. The difficulty of involving teachers probably goes beyond the health emergency situation. Teachers are often those of vocational subjects and come from the world of work. They are very important, also for the internship and work experience opportunities that they offer, but they have little time and familiarity with didactics, are therefore not autonomous and proactive in the design and planning, although very motivated and attentive to the needs of the children. They are also used to a very flexible schedule and not being part of a stable working group. The situation of "chasing up" teachers, who, in their turn, felt poorly coordinated, with a few moments of tension, therefore, is certainly due to the pandemic situation (which, however, did also make these professionals appreciate the benefits of a teaching position), but also to structural and physiological factors. On reopening, and when restarting from the backward design approach to the curriculum, it will be necessary to share with more open means, better articulating the design with a more unified evaluation (information that translates into a vote, transforming the activity into an aesthetic/training process).

3.3.2
Crowdfunding (ENAC Puglia)

In 2020 ENAC Puglia (with its Agri-food Transformation Operator, Pastry Chef, Baker, and "Pastaio" courses) set up a brand new pastry, bakery and pizzeria laboratory. Then, a collaboration with an association for the social inclusion of people with disabilities opened the possibility of creating a new laboratory for the production of dry pasta. More precisely, the project foresaw a "proximity pasta factory" available to citizens and aimed at enhancing wheat, one of the most important products of the area. The solidarity pasta factory would be a new laboratory for students in vocational training and socio-educational centers, but users with disabilities at the upcoming inclusion center will also be actively involved in the production.

In order to make this dream a reality, economic resources and construction works to adapt the plants were needed. Students were involved in all aspects of a crowdfunding project with the ultimate aim of creating the proximity pasta factory. The medium for crowdfunding was decided to be an "agrobox" to be sold: a box of food products donated by various companies in the area, which the students curated in all aspects of information, packaging and communication. The school subjects involved were Marketing and communication of food production, Technologies and Italian.
Some of the products in the box (taralli and biscuits) were made directly by the students in the school laboratories.

The logo of the initiative (an ear of wheat that was present on the very first coins minted in Foggia) was created by the students through a work of historical reconstruction that replaced the normal teaching activity for a few weeks. The students took care of creating the package, involving the companies and presenting through a flyer. The project lasted a month and a half, and ended with presentations to teachers and the public.

The project enjoyed a "covid free" period for the Puglia Region, and was a success from an organizational and educational point of view, despite the fact that the economic result was not up to expectations (highlighting some critical issues in communication).

The ENAC Puglia school of Foggia continues its experiments with PBL based on Christmas sweets, panettone and pandoro, constantly relying on previous experiences constantly improve the PBL approach.

3.3.3
Shooting/recording week (Puerta Bonita, Spain)

A week in which six short fiction films have been produced as a workout joint practices of the first year. Theoretical classes has been transformed in practical sessions during the week and five intensive recording days of six hours each have been held. Students from the different courses of the Image and Sound field have joined and developed a common project.

Students from five different courses have participated in these joint practices. The courses involved in this activity were:

- **Higher Technician in Production of Audiovisual Projects and Shows**
- **Higher Technician Management for Audiovisual Productions and Shows**
- **Higher Technician in Lighting, Capture and Processing of Images**
- **Higher Technician in Audiovisual and Show Production**
- **Technician in video Disc Jockey and Sound**

Management students have organized groups of 5/6 people who became part of an interdisciplinary team (made up of students from the five courses) and worked on a specific project, a fiction short film that has previously been selected through a competition by the students themselves in each work group.

The venues for the different shooting sets have been located in different places at school.

The different steps of the project have been recaptured hereunder:
- Preparation of the scripts by 1st year students of the different courses during the first term.
- Delivery of scripts by the students: first week of the month of January.
- Selection of scripts for the development of projects by the teaching staff: second week of January.
- Training of interdisciplinary work teams.
- General Meeting to start "Joint Practices" teachers and students in the assembly hall for the start-up of the Project.
- Pre-production phase: February, March, April and part of May.
- Pre-Production Meetings of the work teams formed by the students of the different Courses.
- Shooting / Recording Week: Monday May 17th to Friday 21st
- Editing/ Postproduction: month of May

3.3.4
Autumn Move (CJD, Germany)
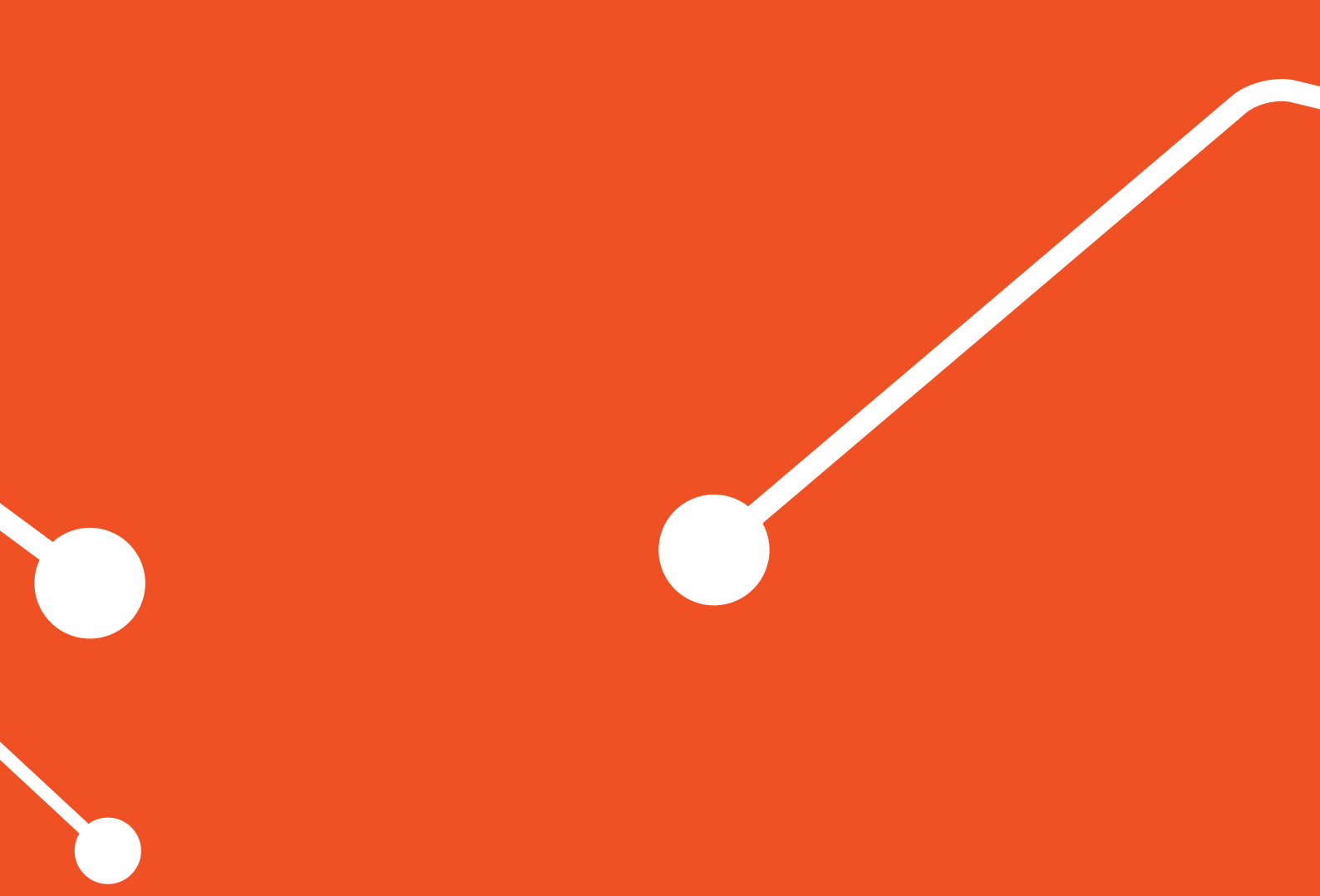
The students participated in the" Autumn Move " at the REWE supermarket in Bergneustadt. Having a real work experience for three weeks in the supermarket gave the young adults, who are completing a vocational training course as salesman at the CJD in Gummersbach, the chance to gain initial experience in the supermarket and have their first working experience in dealing with real customers.

Besides understanding how it really feels to work daily for several hours during an assigned time and to assigned tasks, this helped the young adults to think about which departments of a market they will see themselves in the future.

In addition to getting to know a work routine in such a market, the students carried out special activities and e.g. sold pretzels and other seasonal delicacies at their CJD stand.

They were professionally guided and supported by the REWE team as well as accompanied by their teachers from the vocational school, and their VET instructor.

THE CHALLENGE OF THE PANDEMIC: THE EDUCATIONAL SCRIPT IN DISTANCE EDUCATION

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4.1.
Challenges and opportunities for distance and "digitally augmented" learning"

According to a research report based on focus groups among teachers[*], among the experiences that emerged from the teachers during the pandemic some are recurrent. A sense of suspension, uncertainty regarding the future, feeling lost in the current situation, fear, loneliness, de-motivation, a sense of inability. Even after the initial phase of the closure of schools and suspension of teaching activities in person, in the reorganization phase, some experiences have endured leaving at the same time, space for new awareness, emotions and positive feelings, also on the grounds of the discoveries that were gradually taking shape.

One element found was the deepening of frailties in students already in difficulty: the risk of "losing" children who were already at risk of dropping out of school has increased. The difficulties that were already present (e.g. disabilities and special needs, language difficulties for foreign students, socio-economic conditions) have increased. Another relevant phenomenon is that of the "new excluded": those students for whom the lack of adequate technological support and the difficulty and/or poor presence of the family in accompanying their path have suddenly become relevant. However, there have also been "new included". Students who, are perhaps more "invisible" in person (SLD, children with pathologies that lead to isolation and social withdrawal), have been

more active in online teaching, through which they have managed to integrate and follow lessons better.

Also with regard to teachers, we can see a differentiated impact of the pandemic and distance learning. On one hand, teachers have been seen struggling, who have told of their great efforts and put forward resistance, fears, blocks; on the other, teachers who have put themselves to the test and have expressed the desire to react, some of them, simultaneously appreciating the value of collegiality. The timing of the changes was sudden and the changes were introduced in emergency. Changes and experiments were made that would normally take a long time and arouse a lot of resistance, with the risk of not being realized. People found themselves to be resilient.

Opposite views also cropped up in the relationship with families: if some have felt the absence of the families a lot ("the vacant space left by families has become a chasm") or their judgment (performance anxiety due to parents listening to teaching from home and judging), others have enhanced their collaboration with the families. In any case, the role of families has been reassessed and new and different forms of participation have been discovered ("they have come out into the open"). There was also a learning process on the part of families, who

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[*]	The focus group and the report come from the Smart School 2.0 project, selected by the social enterprise Con i Bambini within the scope of the Fund for the fight against child educational poverty and co-financed by the Fondazione Comunità Bresciana Foundation (https://percorsiconibambini.it/smartschool/scheda-progetto/). The project, which runs for the period October 2019-March 2022, is carried out locally in the province of Brescia but, especially in the pandemic period, listening to various interlocutors has provided more generalizable insights and reflection.

rediscovered the role and value of teachers, and comprehended resources and skills that they had not been able to see before. In the educating community, connecting roles too, such as parent class representatives, have acquired and increased their significance.

On the one hand, children and young people have been deprived because they have lost socialization and their relationship with peers, on the other, the value of the group-class and its educational function is better understood.

In distance education, many teachers noted less relations and observations in context, resulting in difficulties in assigning meaning to student behaviour. Some events that affected the students, such as bereavements or intra-family conflicts, could not be immediately known by the teachers; their impact on the learning path of the students was grasped by the teachers a posteriori. Some teachers shared the perception of being in a suspended space and time, but still changing ("children grow up even if everything is still"). The chance to catch a glimpse of the domestic environments, to go beyond the classroom walls, to see the students in other settings, has allowed teachers to take a more systemic look at the students, who can no longer be considered as removed from their own contexts.

A generalized difficulty was that of engaging students during the course of the lessons, ensuring their real and active presence: very often a "presence-absence" (perception of "talking to the wall") was perceived. Hence the active research and experimentation of new previously unknown tools and platforms, of bespoke spaces for dialogue with the students, of individualized moments and paths (for example, to support the preparation of final elaborations and exams).

The lack of non-verbal level of communication becomes particularly significant and it helped some students (such as in the case of foreign students), but it is also true, as mentioned above, that for some students, the screen was a facilitator in the communication (the screen as a protective element). After all, it was a period of discovery and rediscovery of some dimensions of communication that were previously little valued (one became aware of the importance of "seeing each other, but also of perceiving oneself with all the senses"). Technology requires a different management of times that are longer in some cases (for meetings or the preparation of the work to be done during the lesson; extra hours for the support teachers to devote to the support of students with disabilities), shorter in others (some of the tools and platforms impose term limits e.g. Zoom allows lessons of 40 minutes). One learned to grasp the essence of what should be taught: teachers made efforts to summarize, be clearer and to better manage time. This has forced us to question our established practices, looking for their meaning and meaning.

Finally, if, on the one hand, some projects that were taking place at school (eg. projects on sexuality and affectivity) were abruptly interrupted and were virtually impossible to complete, on the other hand, their role and importance were rediscovered. The same can be said about the psychological help desk, both for students and teachers: its role has been rediscovered and work is being done on the need for new expert figures within the school and the rethinking of existing ones.

From the analysis of the stories, the experiences, the lived moments, several needs were ascertained, some of which are configured as educational needs, which can, therefore, find fulfilment in accompanying educational practices:

- **Need for listening and sharing times/spaces/opportunities** for re-elaboration (personal and shared): entities such as family counseling centres, that registered a sharp decline in access during the period of total lockdown, now perceive a strong increase in the need of students, teachers, and families to receive support for the return to the "new normal" and these entities are exploring potential new ways to satisfy this need. In supporting the return, significance is ascribed to work on emotions through dedicated means (eg. psychodrama).

- **Need for awareness in this period, not to disperse the discoveries/experiences/new knowledge**, to reorganize the acquisitions and the learnings experienced during the emergency period to give them a meaning and a form that may also be useful for the continuation of the work.

- **Need to find new modes of interaction with external realities** useful for the continuation of the work, and to use the existing synergies to continue working in the direction of the educating community.

To accommodate these needs, training must take its cue from the experiences of the participants, giving them opportunities to "stop and think", to stop their activities, their practices, and analyse them thoughtfully. The composition of the training group will be fundamental, in order to activate comparison and sharing on these issues. To follow are some pedagogical guidelines and educational proposals aimed at offering theoretical and operational guidelines [*].

The pedagogical guidelines:

- Promote **forms of generative adaptation** that take complexity into account, avoiding polarizing on the dichotomies "it went well/it went badly", "positive outcome/negative outcome".

- Enhance the **acquired knowledge**, the **skills developed** (by teachers, students, families). It is important not to forget what we have discovered, to value it and make it into pedagogical heritage. To do this, it is essential to take a reflective look back, which allows both to gain awareness of what has been learned and to share it. The ability to reflect, in addition to being applied in reflective practice, could be extended to the research process that each reality has had to activate to cope with the situation, to how observational processes, evaluative processes, tools have changed.

- **Create networks** and open up to the local territory

- **Continue to bond even at a distance**; always putting the educational relationship at the heart of things and as a priority (also in view of constraints and distances)

- The **group** must remain a fundamental device for **inclusion**: how to maintain it in its value as an inclusive context?

- Work on the relationship with **families** in the awareness of the important role they have played in this period, in order to promote renewed forms of participation and, at the same time, make visions and criteria

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[*] Outlined by the research group of the Centro Studi di Pedagogia della Famiglia e dell'infanzia (CeSPeFI) of the Università Cattolica on the basis of the contributions of the participants in the focus groups and on the basis of the main results within the Smart School 2.0 project.

for curriculum design accessible.

- **Strengthen and re-assign meaning to training processes** ("rather than design new things, review existing ones"), but also to supervision and coordination processes

- Do not shirk from the **digital citizenship** challenge and work on broad-spectrum media education

- Maintain the **principle of essentiality**: summarize and use time well, share with students a more careful and explicit planning of time

Educational proposals:

- Create spaces, occasions, intentionally targeted devices to **listening** (to children, teachers, families), to give voice to resources and resistances, discoveries and fears.

- **Keep**, also for future use, teaching **approaches and tools which have been used during this phase** (perhaps to support learning processes in off-line classes and for students who may not be able to attend school regularly for some periods). An example is one-to-one meetings ("appointments") for orientation purposes, done "out of necessity" but which proved very useful (to be maintained). Maintain some forms of sharing the materials with the students that have proved particularly effective, allowing them greater autonomy of use and re-elaboration of the former and favouring peer interaction and with the teachers.

- **Continue remote modes** even in collegiate work: less dispersive even if they risk being less inclusive (watch out for this aspect)

- **Create "databases"** in which the different schools can collect and network guidelines, good practices, projects, educational experiences that are shareable and exportable.

- Rethink training, giving order to many confusing proposals and rediscovering the meaning of projects (in response to new needs); harmonizing training proposals, selecting and building coherent pathways within educational institutions. The multiplicity of proposals that emerged during the emergency, often disjointed and "schizophrenic", led to the risk of fragmentation of training processes. Instead, it is important to have a "shared reflexivity beyond doing".

- From the onset, **design pathways that take into account possible interruptions** in order to offer continuity and avoid the premature and incomplete conclusion of the same.

- **Focus on strategies for re-articulating class-groups** yet still recreating the size of the group (both in off-line and distance learning).

- **Focus on strategies for enhancing experiential knowledge of the individual** student and of the group

4.2.
Generative teaching in the presence of technologies

The pandemic first delivered awareness of how 'didactic affordances' are influential on learning and showed the previously known limitations of traditional didactics, questioning the 'transmission of knowledge' as a privileged activity and indeed as an educational model tout court. Perhaps some teachers dream of a return to 'normality', but that normality probably no longer exists, and we must follow the paths of innovation also through strategic choices that include the training and updating of teachers, to make them open up to innovation. What will remain of these changes? Are they desirable and sustainable in the long run? How much of this set up will remain after the pandemic?

The discussion is very open in educational institutions: surely digitally enhanced teaching is destined to continue steadily, but how will it be integrated with the teaching face-to-face? In what follows, we argue the centering on students and on their activation and the focus on skills may become the most important and lasting teaching and pedagogical legacies of the pandemic, also in the training of teachers.

The teacher-student relationship has been completely reconfigured, and it is now under the scrutiny of time. The ideas of 'distance' and 'presence' have changed their meaning: the physical presence can be pervaded by a great teaching 'distance', while a new kind of 'presence' has emerged, which consists in the mobilization of energy and of change in the students even without a physical encounter. In a condition of reduced socialization and risk of isolation, small group methodologies have helped students get to know each other.

Paradoxically, in some teaching situations, there has been much more exchange between students than before. Are these didactic situations also to be carried over in off-line classes, for example in the reorganization of physical spaces? Will the 'new teaching' go back to a more active role for students and the centrality of peer group activities?

The design of engaging and well-structured educational activities that use quality resources, however challenging for the teacher and for the students, is based on the pedagogical conviction that these activities are the main way to develop fundamental skills. In fact, in addition to reading and comprehension skills and to curiosity, students can be stimulated to develop analytical thinking, reasoning and problem solving. For this to happen, students must approach the study materials, with the support of the teacher, with objectives that stimulate and challenge them. They must be inspired not to be passive recipients of information, but proactive thinkers who "feed" their thought by moving actively in the search for answers. As the educationalist John Dewey had already explained in the first half of the Twentieth century, "thinking is an ordering of subject-matter with reference to discovering what it signifies or indicates. Thinking no longer exists apart from this arranging of subject-matter, than digestion occurs apart from the assimilating of food, so thought has no existence outside this orderly arrangement of its object" (Dewey 1933, p. 235). In every teaching activity, thought is built up by expertly dosing the space for autonomous student activity and discreet but structuring guidance from the teacher.

In addition, in group finalized work, and in the communication of its results, students can practice the construction of leadership in the group, decision-making and group creativity, effective and even personal communication with a view to personal branding and networking, all skills considered fundamental for the worker of the future. Indeed, the potential activities are not so much about memorization and repetition, but rather about critical reworking, meta-reflection, and the creation of original products.

Exchanging views in a free but guided way to produce artefacts and answer questions helps the teacher on the one hand to arouse curiosity, on the other to appreciate and stimulate those skills of innovation already present in the students.

The construction of "real tasks", will thus respond to the long documented need to help students to sense the relevance of their studies and to connect the learning to real life and the future professionalism for which they are preparing. In short, to connect academic knowledge with the social and professional world around them.

We often talk about the urgency of building connections between theory and practice, of giving concreteness to knowledge, of updating study subjects. In higher education too the "Dublin descriptors"[*] for example, increasingly require every teacher, of any subject, to reflect very seriously on the contribution that their subject, whatever it may be, brings to the competence of the student, and to explain this contribution in official documents.

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* The Dublin descriptors are general statements of the typical results achieved by students who have obtained a title after having successfully completed a study cycle; thus they define the learning outcomes common to all graduates from a course of study. It is therefore required that each individual subject states the contribution it makes to this final result of the course of study. For this reason, teachers should undertake work that is collegial – and not individual/individualist – on this topic. The Dublin Descriptors were created as part of the Bologna Process, a process of international reform of the higher education systems of the EU, which began in 1999. There are five major areas in which teaching can contribute: (1) knowledge and understanding; (2) applying knowledge and understanding; (3) making judgments; (4) communication skills; and (5) learning skills. For a teacher, using these descriptors means striving to define how their teaching contributes to enhancing the five areas: expected results and methodologies that support their achievement. Often teachers focus on the first two areas, which – although complex and advanced – are in line with the fairly traditional descriptions of the teachings. The first area asks you to describe what knowledge and understanding the student will be capable of at the end of the course (as much about the "state of the art" as about the most innovative aspects of the area of knowledge considered). The second asks how, and how much, teaching will enable the students to become capable of devising and sustaining arguments, solving problems, having a professional approach. As mentioned above, there is already considerable complexity in these first two areas, which perhaps is even greater in the subsequent ones. The fourth descriptor encourages teachers to often create opportunities in which students present work done in a group or individually, receiving feedback from both the teacher and by their peers on the language used, on the clarity of presentation, on the strength of the arguments, imagining having to communicate to different stakeholders. Undoubtedly, all this is already something more and very different from a final assessment of an oral exam. However, how can I support students in developing autonomy of judgment (3) and learning ability (5)? In every teaching, the student may develop their ability to gather and interpret data deemed useful to determine independent opinions, and this includes reflection on social, scientific and ethical values related to them. Supported by the teacher, the student may also acquire the learning skills to undertake further studies with a high degree of autonomy. For all these purposes, being able to indicate in one's "syllabus" (the training pact with the students) that students will be able to rely on extensive and exclusive access to quality information sources certainly appears an added value, which also opens up a series of potential autonomous activities for students.

However, there is more. Each teaching contributes to forming a person, a citizen, a professional who, in turn, will collaborate to build the future of society and humanity. Perhaps with a routine made up of lessons, exams, quantifications, scores this simple yet dizzying existential aspect of teaching risks being forgotten. According to the pedagogue and philosopher Gert Biesta teaching is a "gift" that happens between teacher and students: the teacher's contribution to the students is something that even "transcends" knowledge , a legitimation that leads them to believe in teaching and knowledge. The teacher is therefore first and foremost a person of their own time who encounters the students, accompanying them on their discovery of themselves, of a part of the world and of a viewpoint on it.

4.3.
Remote learning at UTC Warrington

4.3.1.
Context

During the final year of the ESW project, Baker Dearing Trust – the promoter of UTCs – is pioneering a Technical Baccalaureate (T-Bacc), with the following objectives: involving local employers and higher education providers, setting up at least one creative and one technical pathway, providing specialised equipment, make sure KS4 and 5 are "highly digitalized" (take a level 2 digital qualification), create the fundamentals for technical education at age 11, devoting 50% of teaching time seeks to developing the interests and aptitudes of pupils.

This is essentially the UTC model, scaled up to a fairly standard >2.000 students school. Overall, this is a way to expand the influence of the UTC model, and an opportunity to export most of UTC methodology and good practices in a standard school. Rudheath Senior Academy[*] is one of these experimental schools.

In the same period of time, lockdowns and closures following the COVID-19 pandemics determined the English Government's expectations that schools develop a full remote learning package, a request made explicit by the Department of Education. Rudheath was able to start with remote learning within 4-5 days after lockdown. Lockdowns following the first one found the transition went really smooth.

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[*]   https://rudheathsenioracademy.org.uk/curriculum/remote-learning/

4.3.2.
Shifting to remote learning

In the UTC and T-Bacc experience there are some important steps in shifting from in-presence to remote learning:

1. **IT Audit**: all students must have the right digital access, and school is responsible for surveying and supporting, especially vulnerable children who for domestic reasons don't have access and for students with special educational needs. In the UK, government funding for laptops helped out with a number of students from backgrounds of poverty but issues remain in terms of compatibility (see below). Some pupils with special educational needs and disabilities (SEND) may not be able to access remote education without support from adults at home, or they might need paper activities. Different strategies available for different children. Some SEND actually prefer remote learning under some respects: this might be something that we bring with us after the pandemy.

2. **Visioning**: the first thing to do is creating a vision for remote learning. UTC and T-Bacc have headed towards a blended model of synchronous and asynchronous (online) activities: they want to "ensure continuity of education [...] during any period where remote learning is essential" and "ensure consistency in the approach to remote learning for pupils who are not in school for a minimum of 5 hours per day" . Many philosophical, pedagogical and technical aspects of the vision surface on every choice made.

3. **Creating a policy**, i.e., a shared, agreed upon and detailed description of all the elements involved in remote learning: curriculum, approach to learning, roles and responsibilities of teachers, teaching assistants, middle leaders, senior leaders, Designated Safeguaridng Lead (DSL), IT staff, pupils and parents, governing body and academy trust. The policy describes measures for data protection and safeguarding, and nominates responsible persons to contact in case of need. The policy branches up in other related documents, for example there is a specific remote learning guide for parents.

4. **Training**: the school needs to assess and integrate the technological skills of teachers and staff.

5. **Implementing the policy**: this is the step (actually, the continuous process) by which practical choices are made concerning the approach, tools, scheduling, teaching methods. At Rudheath, students and teachers are provided with lots of supporting tools, rooted in cognitive sciences. At the technological level, whole school calendar is replicated in MS Teams, every class has a room. Teachers are encouraged to make lots of prerecorded videos, demonstrate the practical aspects etc. Lesson may start at the computer but go OFFSCREEN, SCREENTIME is shorter, that is why is blended. All is enclosed in "blended cycles" composed by

full live lesson, couple of asynchronous lessons with resources, then assessment tools (snapshot of students' learning and feedback to improve).

6. **Monitoring**: there are multiple tools for monitoring students', teachers' and family's experience in remote learning. Students are given behavioral and ethical protocols (example in Fig.), and their engagement level is acquired every week. Parents survey are also used to make school-wide decisions: for example in the first period a survey made clear that parents wanted 5 hours of remote learning a day, so that children could enter a new routine.

RSA Remote Learning Overview

Achieving a blended approach to maximise learning opportunites for students

Secondary Tiers		Tier 1: All children learning in school unless SI Tier 2: Rota in place- some years groups learing onsite	Tier 1: Some children / bubbles SI and learning from home Tier 2: Rota system in place - some years learning onsite / some learning from home	Tier 2: Rota in place- some year groups learning from home Tier 3: All children learning from home except key year group, vulnerable and keys works Tier 4: All children learning from home excet vulnerable/ key works
Pedagocical focus	**Method**	**Onsite face-to-face**	**Hybrid**	**Remote**
Direct Instruction	Synchronous (toghether / F2F)	• F2F onsite delivery following school TT, similar to pre-COVID • SD In place, 2m from front • Approaches: mastery classes, visualisers, record lesson for later use, onsite lessons can be accessed remotely by those off site		• F2F delivery following school TT via MS Teams (live lessons) • Focus: clear instruction, modelling, effective questioning (Blooms) and discussion to address misconceptions • Approaches: live lecutre, live lesson, paired teaching, live chat/feedback
			• F2F online delivery following school TT via MS Teams (live lessons) • Focus: Teach, model, challenge learning amd offer support	
	Asynchronous (Independent)	• Structured lesson/tasks and learning materials posted online via MS Teams (asignments, class notebook, post board, etc..) • Focus: opportunity to develop metacognitive strategies in preparation for full remote learning • Focus: tasks to develop K&U (allowing F2F to challenge learning and offer support). Consider flipped learning		• Pre-recorded delivery of new content and instructions shared via MS Teams • Structure of lesson: active knowledge/Explain/Pratice/Reflect/Review (EEF) • Tools: Loom, voice over PPP, pre-recorded video, Oak National Academy videos, BBC Teach, MS Stream • Paper packs available for those without a devise
			Recorded lessons posted on MS Teams	
Practice and collaboration	Synchronous	• Practice tasks to be completed in exercise books or via IT as normal • Knowledge retrieval practice such as knowledge drills to completed via F2F quiz or using online tools such as MS Forms, Kahoot, SamL, socrative • Collaboration Tools: Jamboard, Padlet, MS Teams/Class Notebook • SD checking of work can be achieved by placing student work under visualiser		• Use of collaboration tools such as MS Teams, class notebook, Jamboard, Padlet • 'Live' monitoring by teacher to ensure misconceptions are addressed
	Asynchronous	• Homework set via Ms Teams • Tools: Ms Assignments, MS Forms, share link for orther sites such as Seneca and SAML • Opportunity to develop metacognitive strategies to prepare for remove learning	• Students can share work via camera/ posted photograph via MS Team post board/Classe Notebook	• Student practice content and skill in own time following direct instruction and upload work into MS Teams-Class Notebook
Assessment and feedback	Synchronous	• Target questioning-verbal responses from students either F2F in classroom or using live chat fuction if at home. • Knowledge activation tasks • Retrieval practice activites • Self and peer assessment • Whole class feedback		• Live response tools: polling, Kahoot, Pixel • Live feddback- paired teaching/ online Q&A alongside content delivery • Live feedback using collaborative tools allowing whole class feedback e.g. on class notebook/ post board • Peer marking
	Asynchronous	• MS Forms, SamL, Seneca, Quizlet, Socrative, Plickers, MyMaths Kerboodle • Ms Insights- detailed participation log/ attendance • Feedback using shared comments on class notebook/ Teams • Audio/ Video feedback tools/ apps/ extensions • Audio feedback on Ms Teams - wholeclass or personal • Self and peer assessment • Whole class feedback		

Home Learning - Daily Checklist

1 09:15 - 10:15	Subject: Teacher: Work Set/Live Lesson	Attended live lesson? Work Completed? Has work been submitted/emailed to teacher?
2 10:15 - 11:15	Subject: Teacher: Work Set/Live Lesson	Attended live lesson? Work Completed? Has work been submitted/emailed to teacher?
3 11:30 - 12:30	Subject: Teacher: Work Set/Live Lesson	Attended live lesson? Work Completed? Has work been submitted/emailed to teacher?
4 12:30 - 13:30	Subject: Teacher: Work Set/Live Lesson	Attended live lesson? Work Completed? Has work been submitted/emailed to teacher?
5 14:00 - 15:00	Subject: Teacher: Work Set/Live Lesson	Attended live lesson? Work Completed? Has work been submitted/emailed to teacher?

Let's Reflect....

What went well today and what could you improve on tomorrow/over the coming days?

4.3.3.

PBL and remote learning: examples

We now provide some example of specific project-based learning activities and, more generally, the types of activities that you could expect to see in a UTC style environment whilst working from distance and working remotely. We will briefly describe the following examples:

- **"Creative media" course**
~ *Creation of an advertisement about the local area*
~ *Encouragement of careers in the healthcare sector*

- **Construction and built environment course**
~ *Virtual building through Building Information Modelling*

In the Figure we see Barber's Bistro, a full PBL acitivity that was still possibile in remote learning (see Table).

Part of Project	Assessment	Number of Lessons	Guide question	Links with the curriculum
Barber's Bistro Engagement	Self assessment		What determines the success of a restaurant?	
Barber's Bistro Engagement	Forms Quiz / WWW	10	What roles should we assume?	Understand simple Boolean logic (for example AND OR and NOT). Links with literacy: how to ask effective questions. Speak and listen
Barber's Bistro Food Technology-Tapas	Forms Quiz / Self-Assessment	5	What kind of cuisine can be made and sold?	Cook a repertoire of mostly savory dishes so that students can feed themselves and others with a healthy and varied diet.
Barber's Bistro (MFL) Spansh	Forms Quiz / LanguagesNut	5	How can we adopt an authentic language about cooking?	Listen to a variety of forms of spoken language to obtain information and respond appropriately. Transcribe short words and sentences with increasing precision. Write creatively to express your thoughts and opinions.
Barber's Bistro I.C.T	Forms Quiz / Self-Assessment	5	Can we manage the money?	Design, use, and evaluate computational abstractions that model the state and behavior of real-world problems and physical systems. Solve mathematical equations applied to a real life scenario.
Barber's Bistro -Art&Design	Forms Quiz / WWW / EBI	5	Can we make the restaurant environment attractive?	Analyze and evaluate your own work and that of others, in order to reinforce the visual impact or applications of your work. Use a variety of techniques to record your observations on notebooks, journals, and other media as a basis for exploring your ideas.
Barber's Bistro -Design Technology	Peer Review		Can we package our food?	Select and use a wider and more complex range of materials, components and ingredients, taking into account their properties. Understand and use the material properties and performance of structural elements to achieve working solutions.
Barber's Bistro - Design Technology	Forms Quiz / WWW / EBI	10	Can we keep our restaurant environmentally sustainable?	Test, evaluate and refine your ideas and products against a specification, taking into account the views of intended users and other interested groups. Understand developments in design and technology, their impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists.
Barber's Bistro -Drama	Forms Quiz / Self-Assessment	5	Can we advertise our restaurant?	Investigate how skills developed through drama such as empathy, self-confidence, communication skills are vital for life / work situations and for a range of professions. Develop scripts and use dramatic forms and strategies effectively to explore and present ideas.
Barber's Bistro -Drama & ICT	WWW/EBI	5	Can we advertise our restaurant?	Explore the effects of media and ITCs. Use programs like Moviemaker to demonstrate collaborative presentation skills.
Barber's Bistro - Exhibition	Peer Review		Can we improve?	
Barber's Bistro - Exhibition	Exhibition presentation	10	What determines the success of a restaurant?	Demonstrate speaking and listening skills during the presentation. Use ITCs to show and explain our findings.

"**Creative media**" is 75% course work, so there is a vast incidence of practical learning. The main bulk of learning takes place in lessons. Moreover, the 25% exam cannot take place due to the fact that schools were closed. The exam board has therefore made certain adjustments, so that the practical learning side will determine the overall qualification. The school has delivered a couple of projects using mainly online packages, which required new ways of approaching.

Among the softwares and platforms that were found useful, there was Canva (an online digital graphic software which can be used to produce digital designs), Go Daddy (which allows people to create websites), and Animaker for animations. Teams breakout rooms were intensely used.

In a first sample project, students are asket **to create an A5 advertisement** which provides photography around their local area so students are expected to go out, take pictures and edit these pictures using certain softwares, get feedback off people and improve their work on the feedback. The project is thus very practical, it involves a research task, planning, feedback and evaluation.

Another project came from contact with one of the local home care companies, called "**Care Concept**". Students are assigned the task to encourage more people to explore careers in the healthcare sector. They have some base footage that needs editing into a perfect promotional video. All students have access to Microsoft Office 365 and Microsoft Teams. Within Microsoft Teams there is a function called Class Notebook where you can add voice notes, which is quite a quick way of providing feedback.

Now let us pass to "**Construction and built environment course**", which is basically aimed at involving students and making them learn about BIM. The acronym BIM stands for **Building Information Modelling**: that is a process or a way of working. Within the building information modeling process, a project team contributes information and data about a proposed building or structure in a shared digital space called a common data environment so that everyone that needs to see it can. The digital information contributed could include specifications, schedules, performance, requirements, programs, cost, plans and so on and of course some drawings. Those drawings are created in 3D by different members of the project team in private. The information we mentioned earlier – the non-graphical information – is linked to the graphical 3D model by exploring and clicking on different parts of the 3D representation one accesses the information about it. Thanks to this model, information is more clearly structured and easier to find in one place that enables project teams to deliver higher quality buildings more efficiently.

By the end of the course the students are kind of expected to put together a portfolio that includes a 3D model and all the information that goes with that and to the BIM model. Learners develop, design, deliver and evaluate a fit for purpose, functional building and can be based on their own interpretation of a 'real' project brief. Their building should be highly sustainable and inclusive and enable learners to demonstrate advanced knowledge and use a range of industry process and digital skills. The qualification fosters the knowledge and skills required to define, develop, deliver and evaluate a digital construction project from concept to handover. It encourages learners to focus on the impact on the end user, the wider community and the environment, setting standards for resource efficiency, and committing to sustainable procurement. Learners will understand the need for accurate technical

information regarding the proposed site, and the constraints and challenges a site can present.

Building types they might consider are:

- **an office block**
- **a housing project e.g. for the elderly, sheltered accommodation**
- **an outdoor activity centre**
- **a mixed-use development e.g. apartments and integrated cafe**
- **a school for special educational needs e.g. Pictor schools**

Learners can use an existing site as the 'building site' location of their building and/or use web based mapping programmes and other technology platforms to access a range of industry specific site information. Learners are empowered to take ownership of their own project, focusing on a justifiable need for the end users they have identified.

Learners must successfully complete all six mandatory units to achieve the qualification. The qualification is assessed as follows: internally assessed and externally moderated porfolio (50%), externally set and externally marked examination (50%), grades (A/B/C/D/E).

4.3.4
PBL and remote learning: challenges and solutions

Remote learning runs through a number of challenges. Solving this challenges is an ongoing process.

Technological challenges include students lacking internet access, but also the variety of different devices with different levels of compatibility.

Student engagement is one of the major challenges. Sometimes students logging on but not engaging. Teachers need to ensure tasks set are engaging and are self paced to allow students to complete work to the best of their ability.

Sometimes there is also a problem of **attendance**: students fail to log on. Certain students obviously self-isolate due to Covid. Constant communication with both students and parents is part of the solution. Meetings should be set in advance to ensure that students are aware of when they are expected online.

Quality of work is another critical area: when they are called to, students produce work of minimum standard. With remote learning, staff is less able to provide quick verbal feedback. One solution is the large use of exemplar work, to ensure students know what they are expected for each task.

An advanced use of **cloud-based apps** seems to be a solution to many of these challenges at the same time. Take for example cloud-based 3D modelling apps, such as Onshape, that are actually cloud-based which enables students to use that on a chromebook. Now the aim here is to upskill them and make sure that, by the time they come back to school, they will be using the correct software, they will have skills that are easily transferable over.

Onshape has a very complete teacher's guide that can be shared with the students because it allows them to see what is required for the portfolios, page by page, and it gives them some student work examples so they can see what their page should look like, it also gives them the assessment criteria. **Wikis** and **pre-recorded video tutorials** are also very useful.

Then also **Microsoft Teams** and other platforms do have specific educational features, such the assignment function, through which students submit their work and they get feedback through that and then they can resubmit their work.

4.3.5.
Employer-led virtual work experience

The UTC has an expectation for students in normal times to complete two weeks of work experience if they are in year 10 or year 12. Due to the pandemic, in Summer 2021 some **virtual work experience** placements were experimnted. Live tasks and live briefs were set through Microsoft Teams, and students had access to various industry professionals who supported them in the the work they had to do.

As part of "developing relationships", UTC staff called many companies and illustrated the opportunities and best practices of **virtual work experiences through Microsoft Teams.** With any interested employer, UTC staff developed a remote learning program and sized it to a particular number of students (5-10).

Russell Ritter is leading on for multinational engineering company AECOM. Russell has been through the process of recruiting students from the UTC for a new 10-week project. In his words, the company said to students: "okay, this building is abandoned , it's in Manchester. Can you develop this into a community center? can you actually come up with a design to make this into something that will bless the community?". Students were to be joined by industry experts and have a reality-based work experience, receiving feedback on their work from week to week.

The employer is always available to the students by a dedicated email and a Q&A session is scheduled every week, really trying to make the task as realistic as possible.

Most challenges to this kind of project – Russell says – are internal ones. Everyone is really busy, with many projects to develop, but there is a will to find time for the students too.
Are the students ready for this project based experience? Russell answers "We've only had the interview around so far. We delayed the beginning of the project for Covid-relates reasons. They will certainly learn something from this experience. I can't wait to see if our expectations are too high or too low".
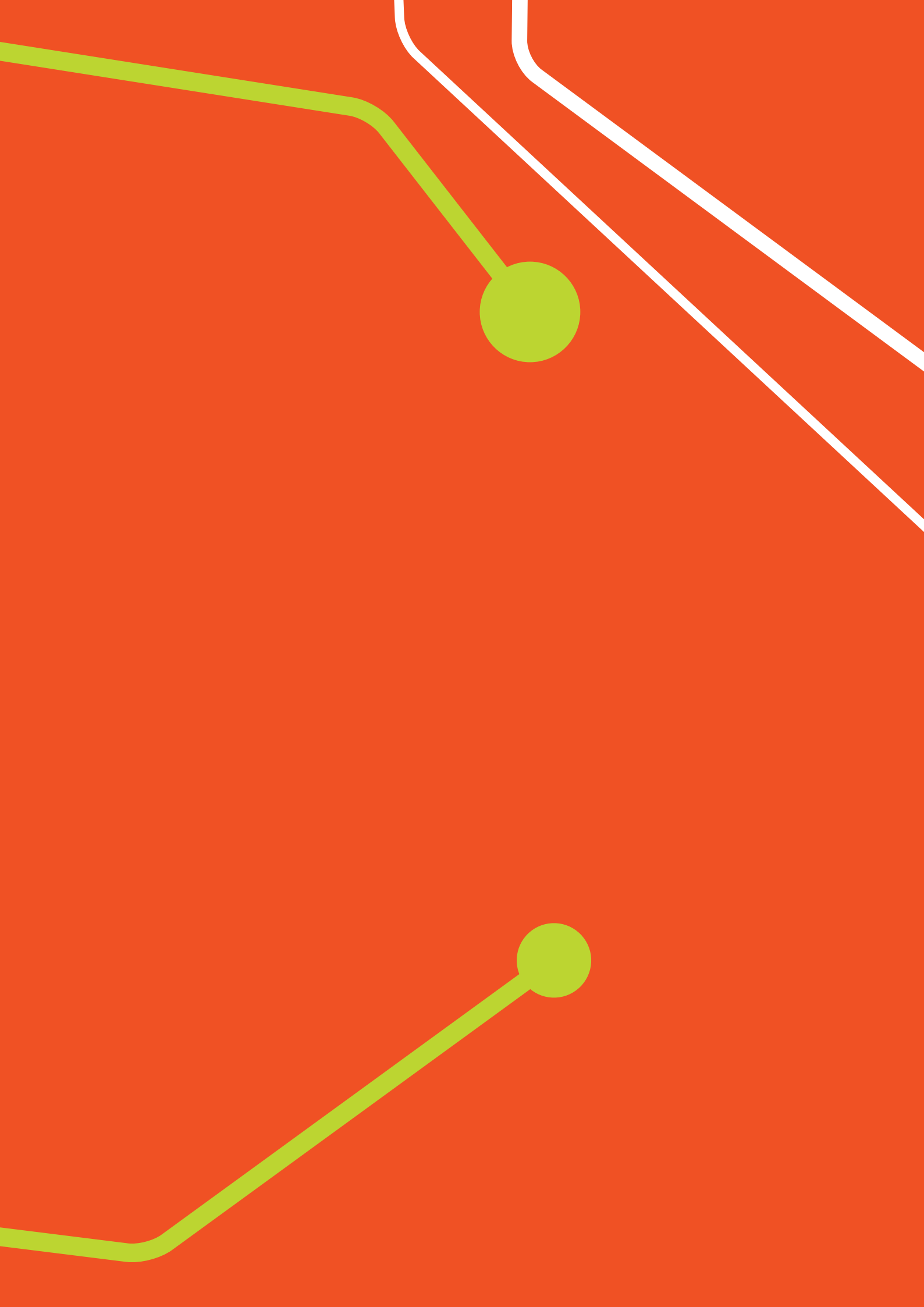
CONCLUSION: A CRISIS NOT TO BE WASTED

5

5.
Conclusion: a crisis not to be wasted

In many national contexts, schools before CO-VID-19 tended to resist change, perched upon their traditional literacy task, that is, on a rather standardized idea of education. Naturally, all schools and all teachers express consensus on the main underlying pedagogical principles: values such as personalization, attentiveness to all the dimensions of the student and the broadening of the curriculum to encompass a wide range of skills, including civic, social, and emotional ones, are not disputed. At the same time, however, they may merely be empty words if they are not accompanied by coherent methodological reflection, to identify ways of putting these concepts into practice, and, therefore, also taking the context into ac-count.

The real situation, amplified by the pandemic, leaves little room for the imagination: schools and teachers are too busy and the situation is too problematic to be able to also address the issue of innovation. Moreover, there would be no economic, organizational and instrumental resources to step onto the path of change.
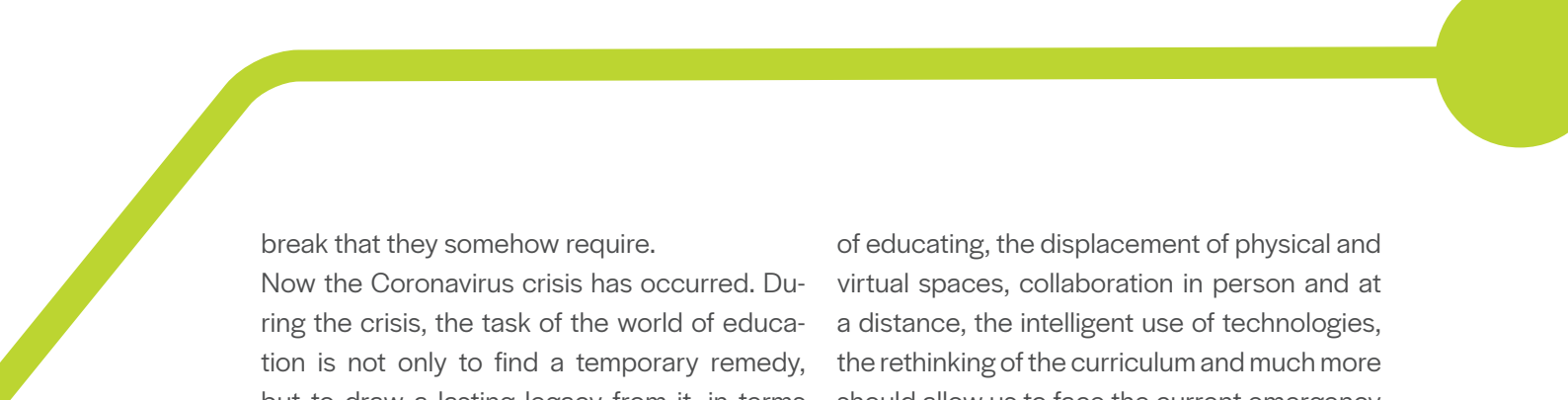Before the pandemic, the advent of technolo-gies already constituted a first potential (heal-thy?) threat to the educational routine. What happens to schools when the traditional task of transmitting knowledge is challenged by a society caught up in a whirlwind of informa-tion? Is the traditional way of organizing edu-cation suitable for today's young people, the so-called digital natives? What kind of authori-ty can the teacher have, when the information of which they used to be an exclusive source is accessible today in an extraordinarily rapid and free manner? Can we still discuss the con-cept of educational standards, when the histo-

rical process of mass literacy is to be deemed concluded, while other issues are imposing themselves, such as demotivation, disper-sion, emotional and critical illiteracy and the slaughter of talent? Would it not be better to veer from the concept of standards to those, pedagogically denser, of personalization and education to citizenship?

As stated in the European Recommendation on the modernisation of education systems (2018), "schools, traditionally the place of knowledge acquisition, are now sided by nu-merous other sources of accessible infor-mation. Modern technologies have freed up education, created opportunities for multidi-mensional educational activities and created an educational space. An important challenge is to make school the most interesting place wi-thin this space. The role of education systems is to educate a person as a whole, someone who may fulfil themselves in the professional, social, cultural and civic sphere in a diverse and global environment".

The Recommendation summarily calls for a change both in objectives (from content to skills, from instruction to education) and in method (multidimensional educational activi-ties). These instances were already alive befo-re the Coronavirus, although very often feared and pushed to one side.

On the other hand, a flexible, non-standardi-zed and personalizing school was proposed by great educators long before the advent of new technologies. Conversely, it is also true that technologies may be used to replicate traditional teaching, ignoring the paradigmatic

break that they somehow require.

Now the Coronavirus crisis has occurred. During the crisis, the task of the world of education is not only to find a temporary remedy, but to draw a lasting legacy from it, in terms of changing the education system. In fact, the current contingency may represent an extraordinary opportunity, to rethink the variables of the so-called implicit curriculum: spaces, times, groupings. The Pandemic Emergency can function as an unprecedented amplifier (or accelerator) of change, moving from health reasons to soon reach the level of pedagogical and didactic instances.

The ESW project, which took place and ended at the turn of the pandemic emergency, valuing the experience of the University Technical College, has provided numerous concrete and sustainable elements to face the time ahead with pedagogical optimism and a clear, formalized operational and shared path. The active forms

of educating, the displacement of physical and virtual spaces, collaboration in person and at a distance, the intelligent use of technologies, the rethinking of the curriculum and much more should allow us to face the current emergency from a non-defensive, but active and creative perspective, not limiting educational opportunities, but amplifying them to a great extent.

Organizational flexibility and a blended model will help us not to see the changes as a pure response to the virus, but as the future of educational institutions, capable of going beyond mere regulations implemented in the name of safety. Instead, schools may be capable of revival and transformation, imagining a new organizational model, in the name of education and educational success. In short, it is not simply a question of managing a crisis, but of drawing from it those indications that propel us forward, instead of defending the status quo.

As Albert Einstein said, **a crisis is always an opportunity**.

This work would not have been possible without the presentations, tables and documents delivered and provided by UTC Warrington leadership and staff, especially Lee Barber, John Ferguson and Kris Burge. In addition, research was conducted on the following publicly available documents:

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