

Blended learning methodology

Part of the GREENT Project

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Partner: SEN/ JA Greece

Authors: Eleni Chelioti, Eliza Pavlidi, Georgia Gleoudi

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Introduction

This document presents the blended learning methodology that GREENT project is adopting in order to enable teachers from the project's countries to develop their lessons on the content included and produced by GREENT syllabus and sample lessons. It provides a review of existing blended learning models in order to identify an approach that could best serve the objectives of GREENT. Based on this review, the methodology proposes the self- blend model as the one that could serve the objectives of GREENT project in the most appropriate way. The self- blend model is also linked to the pedagogical principles that are suggested, which incorporate elements of the inquiry- based approach: the pupil is placed at the center of the learning process and is encouraged to learn in an active, exploratory way that promotes critical thinking, while the teacher supports the process as facilitator and educational co- designer. The learning model is described thus as a cyclic process, and each phase is explained, by providing indicative examples of green entrepreneurship topics and learning goals. The final section of this document presents the user roles (teachers, pupils and external experts of the field of Green Entrepreneurship) and the technical characteristics/ facilities that an online platform should provide in order to support the suggested learning model.

About blended learning

There are multiple definitions and variations of blended learning, otherwise described also as "hybrid learning", "technology-mediated instruction," "web-enhanced instruction," and "mixed-mode instruction". Powell et al. (2015) clearly state that "the blended learning approach combines the best elements of online and face-to-face learning. It is likely to emerge as the predominant model of the future and to become far more common than either one alone". Generally speaking, the term comes to represent a learning experience that can be adjustable for each student and is not constrained by geography or rigid rules. The Innosight Institute has adopted an umbrella definition, which is met in a big amount of the literature in this field. So, based on Staker's (2011) research, blended learning is defined as "any time a student learns at least in part at a supervised brick and-mortar location away from home and at least in part through online delivery with some element of student control over time, place, path, and/or pace" (p. 5).

This definition includes two key aspects that distinguish this mode of learning from traditional teaching and learning in physical schools or other physical learning settings: First, the student must learn in a "supervised brick-and-mortar location away from home" at least some of the time. Second, to qualify as blended learning, the student must experience online delivery with some control over the time, place, path, and/or pace. The student control element is crucial to the definition because it distinguishes online learning from other forms of tech-rich learning, such as when the teacher uses a laptop and projector to stream online media or textbooks to a classroom of students, or uses an electronic white board to make direct instruction livelier. Therefore, the above definition of blended learning is considered to be viewed from a student's perspective (Staker, *ibid.*) This is also important to bear in mind for the development of the specific learning model of GREENT project in order to support a student- centered approach as it will be explained in the following sections of this document.

Eryilmaz (2015) describes the differences between face to face and online learning in terms of 12 parameters presented in Table 1, which overall advocate that online learning provides opportunities for greater flexibility and student-centered learning.

	F2F	Online learning
Focus of course	Group	Group Individual
Focus of content	Teacher-centered	Student-centered
Form	Synchronous	Asynchronous
Time	Scheduled	Anytime
Place	Classroom	Anywhere
Flexibility	Standardized	Customized
Content	Content Stable	durable Dynamic, transitory
Number of students	Space delimited	Without limits
Instructor preparation	Some (transparencies)	Extensive pre-preparation
Distribution of materials	Hard copy	Electronic download
Interaction	Spontaneous	Structured
Range of interactivity	Full interactivity	Limited interactivity

Table 1. Differences between face to face and online learning environment (Eryilmaz, 2015)

What is more, he goes on to distinguish between “conventional” online learning and blended learning and identifies a set of advantages for blended learning in terms of student-teacher interaction and students’ readiness for the new knowledge before coming to school, which can thus contribute to more effective learning.

The main reason for this is that in blended learning the internet and the resources available are used as a means of preparing a lesson both for teachers as well as for students. Within an online classroom environment, students come and listen to the lesson and do the homework afterwards. In contrast, during blended learning, students have already got the information concerning the lesson (videos, texts, other multimedia materials) before they come to the class and are thus better prepared to consolidate what takes place in the classroom. Similarly, the educator uses the classroom for the purpose of creating an environment of reflection with the students on what they have already studied and in order to clarify points that have not been yet understood. This condition creates also opportunities and gives more time for classroom interaction and other hands-on classroom activities.

It also creates a shift in the role of the teacher and the relationship with the students: the educator plays the role of the guide/ facilitator and the students can get more active in comparison with face to face education. Eryilmaz (*ibid.*) also emphasizes the issue of student control in blended learning and its significance for more effective learning. He lists a set of attributes that enable the student to choose how and when to use the online material (e.g. how many times to watch a video) and can therefore contribute to deeper and more detailed understanding of the topic.

Review of blended learning models

Various blended learning models are being used and new versions continue to develop as technology and pedagogy evolve. These models vary in terms of several dimensions, including teacher roles, scheduling, physical space, and delivery methods. In most of the literature, the models used have been grouped in six clusters, with each sharing design elements that distinguish them from the others (Staker, 2011). In order to identify which model would be closer to the needs of GREENT project we reviewed the basic characteristics of each one found in the literature, as presented in the following table.

Model	Short description	Evaluation of Appropriateness for GREENT
1. Face-to-Face Driver Model	It is considered to be the closest to a typical school structure. With this approach, the introduction of online instruction is decided on a case-by-case basis, meaning only certain students in a given class will participate in any form of blended learning. The face-to-face driver approach allows students who are struggling or working above their grade level to progress at their own pace using technology in the classroom. It has been found to be effective for Language teaching.	The individualization of the access to online learning is positive. However, the fact that only a number of selected students would have access to online learning, regardless of the selection criteria, does not seem to be appropriate for the project's training, which does not include selecting specific pupils.
2. Rotation model	Students rotate between different stations on a fixed schedule – either working online or spending face-to-face time with the teacher. Variations of the rotation model are also met, in terms of various issues, e.g. timing, individual or group rotation etc.	Although the rotation model has been found to have positive results, these were met mostly in Elementary schools in California, according to Powell et al's study (2015), who suggest that a possible condition for the effectiveness of this model is that pupils are already familiar with other rotation learning practices. This condition cannot be assumed for the European schools participating in GREENT.
3. Flex model	With this approach, material is primarily delivered online. Although teachers are in the room to provide on-site support as needed, learning is primarily self-guided, as students independently learn and practice new concepts in a digital environment.	The overall process of online learning is done mainly in the school setting, which presupposes that the school must be adequately equipped with computers and/ or other devices. This could be challenging for schools where there is lack of resources and infrastructure.
4. Online Lab Model	In this model, students learn entirely online but travel to a dedicated computer lab to complete their coursework. Adults supervise the lab, but they are not trained teachers. This not only allows schools to offer courses for which they have no teacher or not enough teachers, but also allows students to work at a pace and in a	Similar to the Flex model, here again the availability of a well-equipped computer lab in the school could be a challenge.

Model	Short description	Evaluation of Appropriateness for GREENT
	subject area that suits them without affecting the learning environment of other students.	
5. Self- blend model	Self - Blended learning combines in-person instruction with online learning. Popular in high schools, the self-blend model gives students the opportunity to take classes beyond what is already offered at their school. While these individuals will attend a traditional school environment, they also opt to supplement their learning through online courses offered remotely. In order for this method of blended learning to be successful, students must be highly self-motivated. Self-blend is ideal for the student who wants to take additional Advanced Placement courses, or who has interest in a subject area that is not covered in the traditional course catalog.	This model provides an element of flexibility that could adjust to schools from different countries and with varying profiles that will participate in our training. It could also be compatible with the fact that the focus of GREENT, Green entrepreneurship, is not taught in most of the participating countries as a distinct curriculum subject in Secondary Schools. In addition, the fact that the online work is done as homework does not create the need for infrastructure in the school; it does however presuppose pupils' online access from home or other sites.
6. Online driver model	Online driver is at the opposite end of the spectrum from face-to-face driver, which is a form of blended learning in which students work remotely and material is primarily delivered via an online platform. Although face-to-face check-ins are optional, students can usually chat with teachers online if they have questions. This model of blended learning is ideal for students who need more flexibility and independence in their daily schedules.	Although here we have the maximum degree of flexibility out of all of the models described, the fact that this model is heavily reliant on online learning with optional and not regular face-to-face meetings seems to make it more appropriate for Tertiary/ University students or adult learners, than for Secondary School students, who go to school on a daily basis and meet face-to-face with the teacher.

Based on this review of existing blended- learning models, the one that is considered to be more appropriate for the GREENT methodology is the self- blend model, mainly due to the following reasons:

- It provides a good balance between online and face-to-face learning, without overlying on either of them. Thus, compared to other models, such as the rotation one, it is more likely to be compatible with more traditional ways of teaching met in an 'average' school and could therefore be easier to adjust into the regular school schedule.
- Most (if not all) of the online learning is done at home, therefore:
 - It is not dependent on issues of technical infrastructure in the school (computer lab, availability of computers and other devices for all pupils).
 - It saves classroom time for elaboration of the content prepared/ studied beforehand online at home and for focus on creative hands- on activities.
- It is considered most appropriate for our target group, i.e. High School students, since it provides them with a certain amount of control over their learning at home, acknowledging teenagers' need for (some amount) of independency and initiative, which is at the same time supplemented by regular teacher support at school.

What needs to be stressed however is that self- blended learning does presuppose that students are motivated enough to do the online learning at home and that there is access to personal computers.

Also, the flex model could also be a supplementary option, provided that the necessary technical equipment is available in the participating schools and - most importantly- that the students are in the position to work independently, with a lesser amount of guidance from the teacher. In this sense, a suggestion for the GREENT syllabus could be to include some elements/ modules that could be used in a more independent way by the pupils, depending on the profiles, learning needs, experience and learning styles of a certain class. Another issue that needs to be taken into account is the type of elements that are included in the online part of a blended learning approach. Carman (2005) identifies 5 key ingredients for a successful blended learning design:

- Live events
- Online content that is available for self- paced learning
- Collaboration (peer to peer and peer to mentor)
- Assessment
- Reference material for further reflection on what has been learnt

All these aspects will be included in the GREENT model in the following formats:

- Live events can take the form of web- conferences between pupils and various stakeholders or experts that can support pupils' activities, such as green entrepreneurs, scientists, environmental organization stakeholders or policy makers.
- Online content will be available not only in the form of training material delivered by the teacher to the students, but will also be produced by pupils as part of their homework and will be shared online through web 2.0 tools.
- Collaboration will take place among pupils in groups by using private collaborative online environments in order to work in groups on a joint task.
- Assessment may take place at the beginning of a lesson or project in the form mainly of pupils' self- assessment and at the end of the project, in order to help them reflect on their own learning.
- Reference material (other additional/ supplementary resources) may be given in order to support pupils' current and ongoing engagement in the topic studied.

More specific examples of how these aspects can be included in practice are given in the "GREENT Blended Learning Model" section.

Pedagogical principles

Like other blended-learning models, self- blend includes a number of variations in terms of pupils' interactivity, teachers' and pupils' roles, practices of face to-face work etc.

In order, therefore, to design the blended learning model of the project, what is important to define is not only the amount of the use of online learning in combination with face-to-face, but the overall pedagogical principles that will underpin it. In order to do so, it is important to bear in mind that the project aims are not simply to inform pupils on green entrepreneurship topics but to actively involve them, so that:

- They develop the green mindset of future generations of EU entrepreneurs
- They develop new skills required for green jobs and green entrepreneurship
- They increase their understanding of the new realities of the world of work and business.
- Teachers' performance is improved in delivering high-quality education

To this direction, the following aspects should be addressed by the blended learning model:

- Raising pupils' interest/ motivation
- Creating opportunities for collaboration among pupils and teacher
- Pupils acting as active contributors of knowledge
- Pupils reflecting on their own learning – self evaluation
- Enhancement of critical thinking
- Pupils' improvement of digital skills
- Networking with other schools- sharing of content

Indeed, the self- blend model enables the use of several practices that support these objectives of a student- centered approach, such as group-work among pupils, face-to-face learning with group-based student generated content, classroom face-to-face teaching followed by individual online content generation by the pupils.

All these examples enable the pupils to act as self-directed learners who take the initiative, become co-designers of the learning environment. They are not passive participants of an instructor-controlled context, but are active creators that connect and extend their learning beyond the domain of the instructor.

What is more, in order to serve the student- centered approach and the role of the teacher as facilitator, the GREENT blended learning model incorporates elements of the inquiry based learning model that promotes:

- 1) a learner-centered approach (Kember, 1997) in which the focus of the teaching is on student learning rather than on communicating defined bodies of content or knowledge;
- 2) active learning, i.e. learning by doing (Gibbs, 1988, Healey & Roberts, 2004) and may involve, for example, students discussing questions and solving problems (Prince & Felder 2006);
- 3) development of self-directed learning skills in which students take responsibility for their own learning;
- 4) a constructivist theoretical basis (e.g. see Bruner, 1990) which proposes that students construct their own meaning of reality; it is the students who create knowledge rather than knowledge being imposed or transmitted by direct instruction.

Many of these inductive methods also utilise collaborative or cooperative learning with much work both in and out of formal class time being done by students working in groups.

In terms also of promoting entrepreneurship education and entrepreneurial mindsets, Omolayo Olajide & James (2011) clearly state that such competences (involving, for example the ability to

plan, organise, manage, lead and delegate, analyse, take risks, etc) are highly associated and can be ideally developed through an inquiry based model.

This approach also presupposes that in order to promote innovative learning, it is important to recognize the needs of each school setting, classroom and student, instead of adopting a one-size-fits-all approach. In order to do so, the blended learning model should include elements of self-evaluation and educational design so that the teacher does not merely “deliver” an already given curriculum, rather designs and adjusts the learning materials available to the profile of his/her pupils. At the same time, we should take into account that not all teachers are prepared or trained in educational design in order to make adaptations to the given material. In this case it is important to enable the exchange of practices among teachers through an online network in order to share ideas, experiences and ways of adjusting the syllabus and the lessons to different classroom contexts.

The GREENT blended learning model

Based on the considerations explained above in terms of the blended learning models found in the literature and the pedagogical principles that are considered as most appropriate for the objectives of the project, we designed a cycle-based blended learning model that promotes:

- A balanced and meaningful combination of face-to-face and online work, which incorporates all five of Carman’s (2005) blended learning design key ingredients.
- A student-centered and inquiry approach to learning
- A teacher-as-facilitator and educational designer approach

The steps of this cyclic learning process are presented in Figure 1, and are then explained in Table 1.

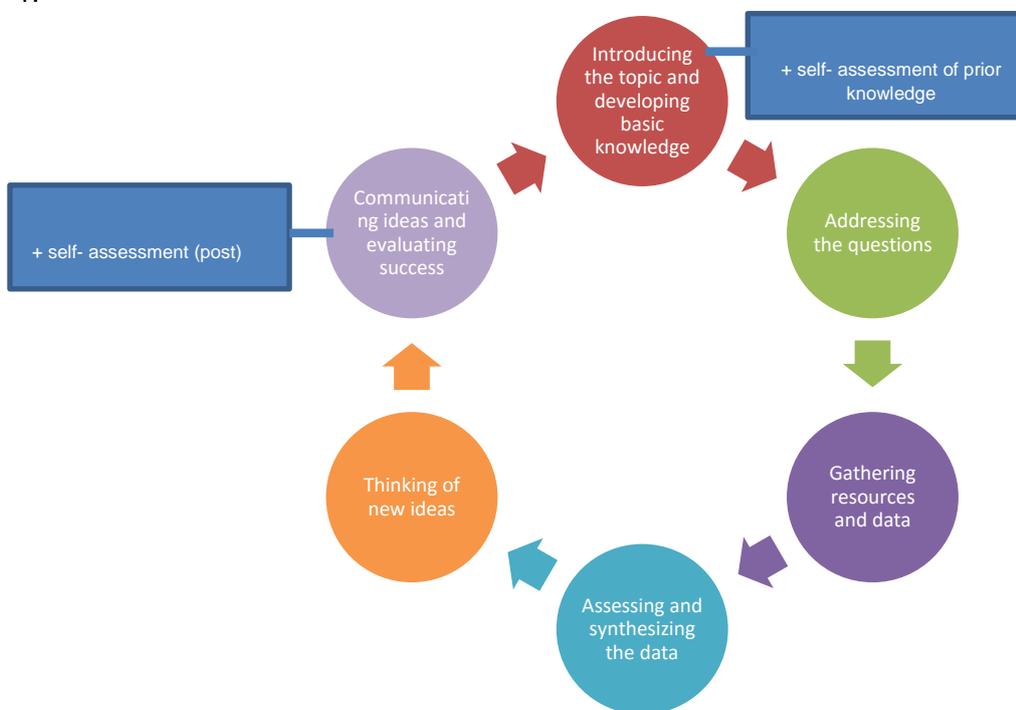


Figure 1

Since one of the basic principles of the model is that no one size fits all, the model is designed to provide general guidelines to teachers instead of giving them fixed solutions. It describes the steps/ phases that guide the students, under the facilitation of the teacher, through an exploratory phase in order to address the topics and objectives of the GREENT syllabus. To this direction the following table explains the steps along with indicative examples from the topics that the project addresses. It should be however noted that the cyclic shape of the model in Figure 1 denotes that this process could be ongoing and that the 'final' phase could be the beginning of a new exploratory/ learning venture. The model distinguishes between the pedagogical and educational goals of each phase. The pedagogical goals refer to the wider learning objectives; they correspond to the inquiry based model and could be applied in several curriculum areas. The educational goals refer to the specific learning goals of GREENT in the field of green entrepreneurship. The latter are used here as an example and could be adjusted by the teacher to other goals addressed by the GREENT syllabus, depending on students' ages, interests or needs. The model is also indicative in terms of duration: it could be adjusted by the teacher to a 2 or 3 teaching hours (excluding the online work done by the pupils at home) or be extended to the format of a longer project that addresses multiple educational goals and involves a bigger number of activities.

Phase	Pedagogical goal(s)	Educational goal (Example)	Medium (Online/ Face-to-face) & Examples of use
1. Engaging the topic and developing basic knowledge + Self- assessment of prior knowledge	<ul style="list-style-type: none"> To attract pupils' attention and engage them in the topic before coming to the classroom. To create a foundation of knowledge for further elaboration in the classroom. To provide them with some initial knowledge that will make them feel confident for the new topic that is to be addressed. To help them assess what they already know about the topic or what their pre-existing beliefs/ attitudes are. 	Pupils are encouraged to start thinking about the connection between industry and environment.	Online: Pupils watch a video at home before coming to classroom, e.g. a video on the negative effects of specific industries on the environment or, vice versa, a company that advertises its environmentally friendly policy. This could be accompanied by a set of preliminary questions that are intended to self- assess their knowledge and record their initial views.
2. Addressing the questions	<ul style="list-style-type: none"> Pupils discuss and reflect on their initial ideas on the topic addressed in Phase 1 and specific questions are raised by the teacher, e.g. "What is the difference between a genuinely green business and a simply greenwashed business that upholds a green 	<p>Pupils elaborate on the link between business activities and diminishing the effects of climate change.</p> <p>They share their own perceptions of green entrepreneurship.</p>	F2F: Teacher asks questions. Pupils work in groups, share their views and one member of each group reports to the rest of the classroom. Teacher initiates discussion, records responses, and

Phase	Pedagogical goal(s)	Educational goal (Example)	Medium (Online/ Face-to-face) & Examples of use
	image?"- "How would you define green entrepreneurship?" <ul style="list-style-type: none"> Pupils realize the importance of understanding the meaning of green entrepreneurship. 	A final research question is raised, e.g. Which criteria can we use in order to recognize that a business is truly green?	motivates pupils to discuss the meaning and importance of green entrepreneurship.
3. Gathering resources and data	<ul style="list-style-type: none"> Pupils collect and explore resources to respond to the questions addressed previously in the classroom. 	Pupils' initial assumptions on the link between business and environment are validated.	F2F or online (via web-conferencing): Pupils can be split into two groups. Group A does desk/ online research to identify 'green businesses' and collect evidence on what makes them truly environmentally friendly. Group B interviews a green entrepreneur to address the same question. Other target groups can also be involved/ interviewed, e.g. environmental scientists, social responsibility executives, other experts. Teacher can support online in terms of contacting the interviewee, organizing the interview, or accessing the resources.
4. Assessing and synthesizing the data	<ul style="list-style-type: none"> Evaluating the validity of the resources gathered Using critical thinking Sharing the meaning with peers 	Making meaning and drawing conclusions on what a successful green business is. Understanding risks, limitations, positive and negative implications.	F2F: Pupils share their findings in the classroom (each group presents to the other). Teacher facilitates discussion and gradually guides pupils to think on how their own green company would be like: what aspects would they take into account/ which priorities would

Phase	Pedagogical goal(s)	Educational goal (Example)	Medium (Online/ Face-to-face) & Examples of use
			they set given the local and social conditions.
5. Thinking of new ideas	<ul style="list-style-type: none"> Enhancing pupils' creativity 	Understanding pupils' own responsibility towards sustainability as citizens and future professionals/ entrepreneurs	Online: Pupils work online in group in order to design their own small scale businesses based on the principles and conclusions drawn so far. The teacher provides an online template for describing the business that includes: a) Scope, b) Social need addressed, c) Sustainability strategy of the business
6. Communicating ideas, evaluating success and self-assessment	<ul style="list-style-type: none"> Presentation and negotiation skills Peer evaluation Self- evaluation and reflection Critical thinking 	Pupils learn from each other's ideas and experiences through a process of designing their own green companies.	F2F and online: Each group presents its company both online and F2F in the classroom. This can be followed by a voting process, through which the pupils vote for the "Best Green Idea" award, which can be done both among the groups/ 'companies' of the same school as well as online among groups from different schools, so that pupil's ideas are widely shared. A self- evaluation test can be given by the teacher online at this stage in order to help pupils reflect on their learning through the overall process. This can be used either exclusively for pupils' self- reflection or also be shared with the teacher in order to give feedback for the effectiveness of the

Phase	Pedagogical goal(s)	Educational goal (Example)	Medium (Online/ Face-to-face) & Examples of use
			whole process.

Table 1

The online learning part of the process described above will be implemented through an interactive online platform that should facilitate the key aspects of the model which are:

- group- work
- access to online resources
- uploading tools
- sharing of resources by pupils and teachers
- collaboration and support by external experts
- authoring facilities for both teachers and pupils
- social networking

In order to support some of the key- aspects of the blended learning model, the online platform should be able to provide:

- Collaborative working spaces for pupils and teachers with adjustable privacy levels, e.g. accessible by a whole classroom, accessible by specific group members working on a common task/ project/ activity.
- A common, international public space where all GREENT schools can share their content. This could be also supplemented by social networking facilities: commenting, sharing through social media (Facebook, Twitter etc.)
- Forums/ communication facilities between pupils and their teacher. Here again the privacy/ accessibility level should be adjustable, e.g. the discussion can be viewable by all pupils of the same classroom or by the members of a sub- group.
- Tools for uploading various formats of content (text, videos, images and other multimedia). These should be made available to both pupils (e.g. uploading of homework assignments) and teachers (e.g. sharing of suggested resources with pupils).
- Repositories where green entrepreneurship resources can be searched and accessed by pupils. A common international repository should be available to all platform users, while teachers should also have the ability to create their own “sub- repositories” where they can share and upload resources that are most relevant to the topics they are working on with their pupils.
- Collaborative spaces where pupils can interact with stakeholders from the field of green entrepreneurship. This could be especially useful in cases, activities of lesson plans that include collaboration with green entrepreneurs, policy makers, scientists and any other external experts. The content of these digital environments should be adaptable in terms of privacy: depending on the objective of the interaction the teacher should be able to choose whether it should be publicly available to other schools or private.
- Connection/ networking facilities among users, e.g. pupils of the same classroom may be connected as peers/ ‘friends’ or members of a certain working group. Such connections could be also available among pupils from different schools and countries.

- A user profile/ e-portfolio that records self- assessment scores and online activities (comments, resources uploaded, ratings given and received, connections with peers, group- memberships). This would be particularly useful for pupils, in terms of their own self- assessment as well as for the monitoring of their learning by the teacher.
- A “help” section that contains technical support on how to use the platform and its facilities.

User roles

Based on the blended- learning model suggested above and the facilities that an online platform should be able to support, the following user roles can be distinguished in terms of both their wider educational/ pedagogical role, as well as in terms of their online access rights:

User	Educational/ pedagogical role	Technical characteristics/ platform accessibility rights
Teacher	- Assesses pupils' prior knowledge, attitudes and skills regarding the topic of the activity/ lesson plan/ project.	- Access to and editing/ authoring of online evaluation tools, such as surveys. - Access to pupils' profiles / e-portfolios where self-assessment results and all other activities are recorded (uploads of resources, comments, ratings) are recorded.
	- Adjusts ready- made lesson plans or activities to the needs of his/ her pupils or accordingly designs his/her own resources	- Full access to a repository with online resources - Access to editing and authoring tools that enable possible adaptations of these resources - Access to "homework assignment" tools, e.g. multiple choice questions that motivate pupils to investigate the question.
	- Facilitates the pupils' learning in the classroom and online, e.g. coordinates collaboration among pupils, team work, guides pupils throughout the step of the inquiry process, stimulates curiosity and interest.	- Access to pupils' collaborative spaces and interaction rights (answering to pupils' possible questions online, providing online feedback during the implementation of an activity/ homework task).
	- Monitors and provides ongoing feedback to pupils in the classroom and online- formative assessment	- Access to pupils' collaborative spaces and interaction rights (answering to pupils' possible questions online, providing online feedback during the implementation of an activity/ homework task). - Access to pupils' profiles/ e-

User	Educational/ pedagogical role	Technical characteristics/ platform accessibility rights
		portfolio.
	- Shares his/ her resources with the rest of the GREENT network of schools	- Access to uploading and authoring tools with various degrees of privacy- can be either viewable by their own pupils only or by the rest of the GREENT network as well.
	- Assesses the impact of an activity/ lesson plan – summative assessment	- Access to ready- made online tools or facilities for developing their own summative self-assessment tools, in order to implement or design a final evaluation of the learning outcomes.
	- Creates conditions for pupils’ ongoing interest in the topic studied and explored.	- Uploading of further resources for future reference
Pupil	- Self- assesses his/ her prior knowledge, attitudes and skills regarding the topic of an activity/ lesson plan/ project.	- Access to self- evaluation tools administered online by the teacher and to his/ her own results. - Administration of a personal user profile/ pupil e-portfolio where self- assessment results and all other activities are recorded (uploads of resources, comments, ratings) are recorded.
	- Understands the significance/ relevance of the subject matter and gets initially motivated.	- Access to resources provided and suggested by the teacher
	- Collects data and resources	- Access to all resources provided in a common repository (regardless of whether they are strictly connected with the subject-matter of the activity/ lesson plan/ project). - Interaction rights with external experts within a collaborative learning space.
	- Assesses and synthesizes the data	- Mainly face to face in the classroom.

User	Educational/ pedagogical role	Technical characteristics/ platform accessibility rights
		- Interaction and collaboration rights with peers online in a private collaborative environment
	- Creates new ideas	- Interaction and collaboration rights with peers in an online private collaborative environment
	- Shares and communicates ideas	- Face to face in the classroom - Rights for uploading new resources online and sharing with peers from the same school, other pupils and teachers of the GREENT network, and experts in a communal public space. - Sharing rights via social networking tools (Facebook, Twitter etc).
	- Engages in peer- to- peer evaluation	- Access to voting and rating tools so that pupils can assess each other's resources/ ideas/ outputs.
	- Reflects on the new knowledge and skills he/ she acquired during the activity	- Access to summative self-evaluation tools administered by the teacher online - Constant access to his/ her own results through the personal user profile/ e-portfolio.
External expert/ mentor	- Shares his/ her expertise and experience with pupils in order to engage them to the specific topic of the activity/ project/ lesson.	- Interaction rights with pupils either in a public or in a private collaboration space that is administered and supervised by the teacher. - Access to online call facilities with pupils, under the supervision and administration of the teacher.
	- Provides ongoing support to pupils' new ideas/ project	- Interaction rights with pupils either in a public or in a private collaboration space that is

User	Educational/ pedagogical role	Technical characteristics/ platform accessibility rights
		administered and supervised by the teacher. - Access to new outputs/resources produced by the pupils online, so that the external expert can provide feedback.

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