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CCL GUIDE: LEARNING STORY COLLABORATION

What is the collaboration learning model and how to use it?

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Creative Classrooms Lab | http://creative.eun.org
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Table of contents

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Lifelong Learning Programme

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THE ORIGINS OF COLLABORATIVE LEARNING

The origins of the concept of collaborative learning are timeless and no doubt related to the activities human beings develop within society. However, in order to establish an common approach, we can use a definition from Smith and MacGregor (1992) in which it is established that "collaborative learning" is an umbrella term for a variety of educational approaches involving joint intellectual effort by students, or students and teachers together. In most collaborative learning situations students are working in groups of two or more, collaboratively searching for understanding, solutions, or meanings, or creating a product."(p. 11).

In education, collaborative learning has been highlighted in different knowledge areas. One can identify the works of Minnie Louie Abercrombie, in the 60s and 70s back in the 20th century, as fundamental to centre educational practices in group work. In "The Anatomy of Judgment", Abercrombie (1969) describes her work with medicine students and her teaching method through free group discussion. She let her students discuss x-ray results in groups, which allowed them to compare and discuss their observations. In the following decade, Abercrombie published a manual of application of her techniques, which was republished several times (Abercrombie, 1979). Kenneth Bruffee also investigated collaborative learning applied to academic writing and has published in the 1970s and 1980s several articles of great importance on collaborative learning (Bruffee, 1973, 1984, 1987, 1988). Bruffee supported Émile Durkheim's studies around social factors which state that "collaborative activity happens willy-nilly, even in an educational tradition which militates against it. It will certainly happen at an accelerating pace whenever a teacher conceives of teaching as a process of creating conditions in which collaborative learning can occur"(1973, pp. 636-637).To this sort of admonition, he adds that "[t]o create these conditions is not simply a matter of deciding 'how much' freedom or discipline a teacher should 'give' students. The teacher must reconceive his role. He must become an organizer of people into communities for a specific purpose-learning. He must restructure freedom and discipline within the class, thereby establishing a 'polycentralized' collaborative learning community in which the teacher moves to the perimeter of the action, once the scene is set" (Bruffee, 1973, p. 637).

The centre of educational activities is then directed to the learning of the people in which "[i]t is important to see that the teacher does not simply take a laissez-faire attitude, abrogating his responsibility to educate. He reinterprets this responsibility. The teacher understands that his primary job is to organize the learning community"(Bruffee, 1973, p. 637).

Kenneth Bruffee is one of the authors who most contributed to the construction of a methodology of learning associated with collaborative learning. In one of his main works he proposed a convention or an operational protocol that is still so relevant to today that we reproduce it in full.

A Collaborative-Learning Convention

1. The purpose of this convention is to organize class members to teach one another and support one another in learning. Mutual interest and responsibility - affinity, rather than autocratic control - is to create coherence among the members of the class.

2. The first week or two of the term may be a period of orientation. The teacher may direct the meetings, introduce the subject matter, and provide basic concepts which class members are likely to find useful in exploring the material, and in developing their own line of thought regarding it. Students will then declare their interest in units of the subject matter. The teacher will divide the class into collaborative groups of four to six students each, according to the interest declared by each member.

3. Each collaborative group will be responsible to the rest of the class for its own unit of material. Members of the group will decide how to teach the material to the rest of the class, and the emphasis to be made. The group will then direct and govern the class for one to two weeks of the term. Groups may aid discussion by providing supplementary information in written form.

4. Each class member will be responsible individually to the group which is in charge of the class. Each member will also be responsible for his own preparation and for contributing to class discussion. And each member will be responsible for the work his group undertakes in preparing material and directing the class.

5. The teacher's responsibility will be to determine before the term begins the subject matter and written requirements of the course. Both may be revised in negotiation with the class. The teacher will also provide orientation, and act as mediator, as judge in the process of evaluation, and as the class's resident resource. The teacher will provide resources and advice on request, to the limit of his ability, and may also provide unrequested resources he thinks may be useful to the class in their work. The teacher will be available for consultation on request to the class as a whole, to each learning group, and to each individual member of the class. He will hold individual conferences with members of the class at least once during the term. Any class member at any time may choose to learn independently with the teacher's guidance.

6. Class members will be responsible to each other and to the teacher for evaluation. Each student paper will be read and evaluated, in writing, by a jury of at least two class members; hence, each student will read two papers as a juror for every one paper he writes himself. After the student jury has considered each paper, the teacher will read and evaluate it, weighing student critical opinion with his own, providing his own written comment, and assigning a grade if necessary.

7. Twice during the term (mid-term and end of term) class members will evaluate their own work, the work of their group, the class as a whole, and the teacher's contribution. Also at these times the class as a whole will recapitulate the subject matter covered. Discussion of the nature and process of the course will be channeled to these limited periods in order to insure coherent, uninterrupted consideration of the subject matter during the balance of the term. (Bruffee, 1973, pp. 638-639)

COOPERATIVE LEARNING

Although today the concepts of collaborative learning and cooperative learning are almost indistinguishable, Smith and MacGregor, believe that "[c]ooperative learning represents the most carefully structured end of the collaborative learning continuum."(Smith & MacGregor, 1992, p. 15). Some decades ago, the Johnson brothers and peers clarified that "[c]ooperative learning is the instructional use of small groups so that students work together to maximize their own and each other's learning." (Johnson, Johnson, & Smith, 1991, p. iii). These authors point out as a main asset of cooperative learning the fact that "students who work together to get the job done develop positive relationships with each other" (Johnson, et al., 1991, p. 109) and define three categories of main strategies of the organization of the classroom: "formal cooperative learning groups, informal cooperative learning groups, and cooperative base groups" (Johnson, et al., 1991, p. 5). Despite the time distance that separate us from these works, it seems to be useful and relevant to use the clarification that the authors do for each group.

Formal Cooperative Learning Groups

Formal cooperative learning groups have fixed membership, usually last from a few days to a few weeks, and have a well-defined task to accomplish. The types of formal cooperative learning groups vary widely and include the jigsaw strategy, peer editing, checking homework, cooperative learning and testing, structured academic controversies, cooperative reading pairs, class presentations, laboratory groups, and drill-review pairs (Johnson, et al., 1991, p. 73).

Informal Cooperative Learning Groups

Informal cooperative learning groups are temporary, ad hoc groups that last for only one discussion or one class period. Their purposes are to focus students' attention on the material to be learned, set a mood conducive to learning, help organize in advance the material to be covered in a class session, ensure that students cognitively process the material being taught, and provide closure to an instructional session (Johnson, et al., 1991, p. 7).

Cooperative Base Groups

1. Have heterogeneous membership so that they represent a cross section of the school's population in terms of gender, ability, and ethnic and cultural background.

2. Last for the duration of the class (a semester or year) and preferably from the freshman through the senior year. When students know that the cooperative base group will stay together until each member is graduated, they become committed to finding ways to motivate and encourage the other members of the group. Problems in working with each other cannot be ignored or waited out.

3. Meet regularly.

4. Personalize the work required and the learning experiences (Johnson, et al., 1991, pp. 118-119).

We can conclude that collaborative or cooperative learning is not a significantly valid option if one does not take into account different factors. It is not as simple as putting together a certain number of students, giving them a task and waiting. It is a lot more than that.

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WHAT ARE WE LOOKING FOR?

As one can see, the main objective of the model of collaborative learning is to put students in the centre of the learning. "Ideally, collaborative learning leads students to become much more directly immersed in the ideas of the class" (Smith & MacGregor, 1992, p. 29).

The organization of students in groups and the boosting of learning activities that involve team work, or cooperative work, is the main concern of this educational approach. Nevertheless, the teacher has to be aware and monitor three aspects of his/ her classroom: (a) the content or subjects of study, (b) the students' orientation and (c) the evaluation. Bruffee (1973) gives us a more concrete idea of these issues:

a) **Content.** Students should understand the subjects as profoundly as they do by the means of traditional teaching.
b) **Orientation.** Students should improve their self-esteem and the ability to learn by themselves. They should learn to define the objectives of their learning, and to develop and research issues and problems of their own conception.
c) **Evaluation.** Students should develop their self-reasoning and skills to critically evaluate their own and peer work, as well as the content studied.

WHAT CHANGES?

The most significant change in school is the reorganization of the big group, the class, into smaller groups. Some authors, like David Jaques and Gilly Salmon (Jaques & Salmon, 2007), distinguish group from team, considering that both concepts refer to groups but not all groups are teams. "[W]e use the term group for people who come together to share knowledge, for personal development or to learn from each other through discussion. We use team for groups that are engaged in a task or project geared towards an end product or decision"(p. 6).

HOW IS A GROUP DEFINED?

We have adopted the widest definition of a group, considering that a group is more than a simple collection of people. Taking into account Jaques and Salmon's (2007, p.6) proposal, a group should possess, in different stages, the following features:

1. **Collective perception:** the conscience of belonging to a group.
2. **Needs:** the group answers affirmatively to the needs of the member or offers it recognition.
3. **Shared aims:** the members share ideas, objectives or needs.
4. **Interdependence:** the successes or failures of the group affect each individual and the individual performance affects the results of the group.
5. **Social organisation:** is concerned with norms, roles, status, power and emotional relationship within the group.
6. **Interaction:** members influence each other mutually and dialogue with each other, questioning and answering one to the others.
7. **Cohesiveness:** members adopt the group, they like belonging to it and keep committed in the activities.
8. **Membership:** members identify themselves with the characteristics of the group, interact and invest in their development.

WHAT IS THE DIMENSION OF THE GROUP?

There is not a universal measure to form a group, but there are some factors that can help the teacher deciding on the ideal number of students, taking into account the different age range, general skills, socialization, gender and interest. Figure 1 helps us to find the adequate value of the group dimension, starting with a good knowledge of all potential members. Some teachers have adjusted their group forming strategies to the expertise the students gain while working in groups. So, starting with pairs who take on tasks and responsibilities can be a good strategy. Then, it is easy to join two groups of two, forming groups of four, which allows for a rich variety of combinations (cf. Figure 1) in terms of internal roles and reduces the risk of element loss by individual isolation. On the other hand, forming groups multiples of two allows a fast scattering in different pair groups.

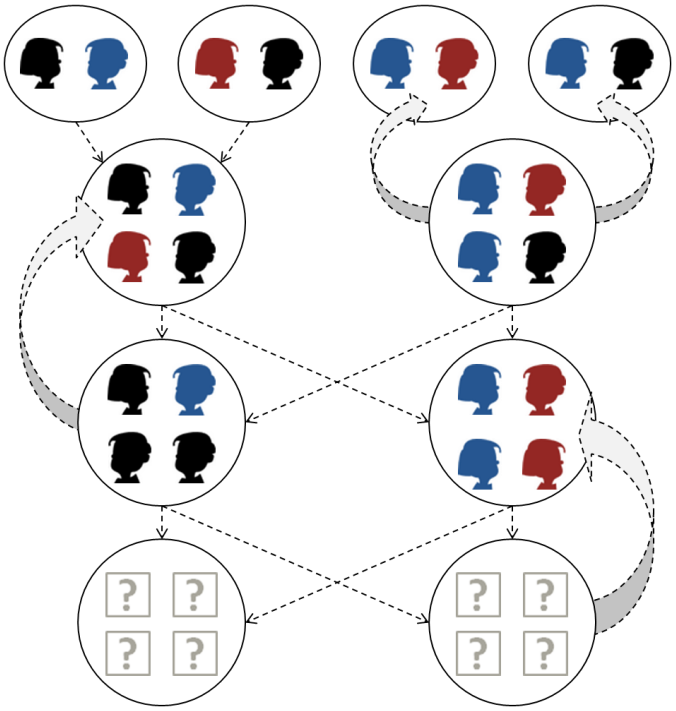

FIGURE 1 COMBINATION IN FORMING GROUPS

Even numbers in groups are rather more competitive than odd numbers in groups. They depend much on its members' social skills to work well. It should be emphasized that the bigger the group, the bigger the chance of inactive members, who tend to be overshadowed by those who are more active. By observing Figure 2 one can conclude that it is necessary to look for a balance between internal cohesion of the group and tension, adjusting the numbers of elements to these two dynamic factors. The teacher is responsible for studying the best formation for his/ her specific case, taking into account the criteria that should be clearly defined and that are adequate to the objectives and duration of the activities.

Number of members	Changing characteristics
2-6	Little structure or organisation required; leadership fluid
7-12	Structure and differentiation of roles begins; face-to-face interaction less frequent
13-25	Structure and role differentiation vital; sub-groups emerge; face-to-face interaction more difficult
26-?	Positive leadership vital to success; sub-groups form; greater anonymity; stereotyping, projections and 'flight/fight' occur

More cohesion ↑ ↓ More tension

FIGURE 2 CHANGING CHARACTERISTICS OF GROUPS WITH INCREASE IN MEMBERSHIP (JAQUES & SALMON, 2007)

The formation of the groups as well as the allocation of the tasks of the activities in the class is one of the main aspects of the work of Bruce Tuckman since the 1960s. This author firstly defined four stages in the preparation of group learning, having added a fifth stage later, summarized in the expressions "**forming**," "**storming**," "**norming**," "**performing**" and "**adjourning**" (Tuckman, 1965; Tuckman & Jensen, 1977, 2010). Although Tuckman has emphasized the fact that this development model is simply conceptual, it seems important to understand that it is not enough to put together a group of students to start a collaborative learning.

Supported by Tuckman, we can conclude that matters related to group formation (**"forming"**), namely the number of elements and their characteristics, including social and intellectual characteristics, should be the teachers main worries. The second stage (**"storming"**), matches the emotional release of the group, some sort of catharsis in which the single rivalries and the negativism of the group members are overcome. The next phase (**"norming"**) refers to the internal organization of the group, the focus on the activities and the role given to the tasks. This phase is followed by the making of the activities (**"performing"**) where leaders come up, internal criticism among the group is developed, performance optimism is created and the cohesion of the group is raised. The final stage (**"adjourning"**) is the disintegration and extinction of the group.

POSSIBLE OBSTACLES

Starting from the knowledge we have about collaborative work, it becomes evident that forming learning groups that actually work as team is a complex task.

In the same way, it is very important that the teacher has a domain over all stages of the formation and working of the groups and recognizes that his/ her intervention is better if he/ she adopts the role of an exterior element negotiator. The groups seem to work better when they are self-governed (Moreland, Argote, & Krishnan, 2002) because their members have higher autonomy, though, that efficiency is only reachable when the group becomes a team.

The difficulties with implementing the activities in collaborative learning are of different nature, but frequently relate to the inability of the teacher to organize cooperative groups effectively and to transfer the findings of the investigation in this area of knowledge and its practical use in the classroom (Gillies, Ashman, & Terwel, 2008, p. 2). Beyond the difficulty of transferring theory to practice, we can also highlight that "[m]any teachers noted that constraints to moving beyond pedagogy included lack of time and the need to cover the curriculum"(Cohen, Brody, & Sapon-Shevin, 2004, p. 63).

WHAT IS ESSENTIAL?

In collaborative work it is fundamental to develop the conscience that by sharing objectives and responsibilities, the members of the group benefit as a group and individually of the success they have. This notion of positive interdependence (cf. Figure 3) is a main aspect of collaborative learning and occurs according to a psychological process of expansion of individual interest towards common interest. All this is related to the way new objectives and motivations are established, both in situations of cooperation and competition, as Johnson and Johnson (1995) have described.

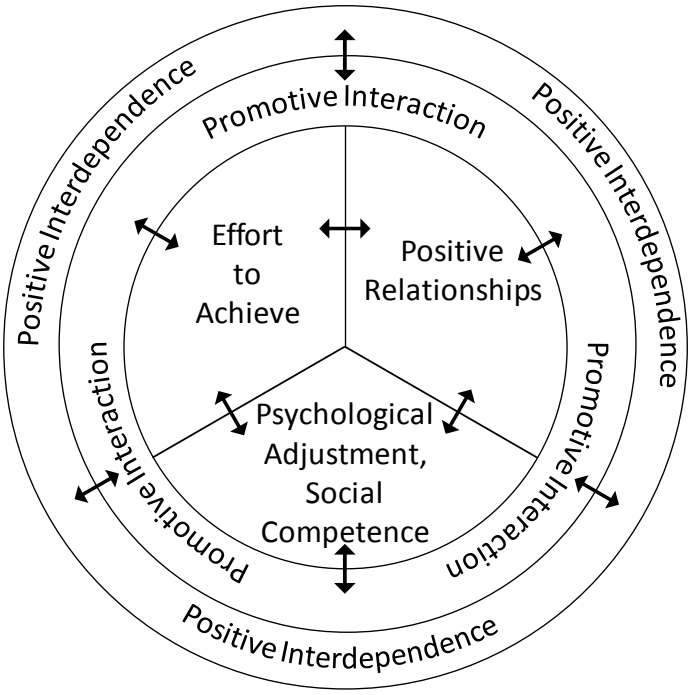

FIGURE 3 POSITIVE INTERDEPENDENCE (SOURCE: OUTCOMES OF COOPERATION, JOHNSON & JOHNSON, 1995, P. 47)

We have adjusted a short checklist, in order to make the life of teachers easier when creating working groups. This checklist follows the working conditions according to a collaborative learning proposed by Westberg and Jason (1996, p. 52).

Checklist about the working conditions of group work

☐ Is the size of the groups clearly defined?

☐ Do the groups have mixed features?

☐ Do the groups respect the students' interests, their strengths and weaknesses and their learning needs?

☐ Is the experience of the group elements well integrated in the curriculum?

☐ Were the objectives and results of the learning clearly established?

☐ Are the learning results specific, clear, interesting, real and reachable?

☐ Are the group activities defined to allow for an active learning?

☐ Are the needed resources for each session clearly identified?

☐ Does the planning of the sessions give enough time to the performance of the key activities?

☐ Is the balance between the learning activities and interaction adequate?

☐ Is the kind of leadership to provide (e.g. more directive or more facilitative), clearly defined?

☐ Are the tasks and the roles of the members established, before, during and after the sessions?

☐ Is there a clear relationship between the learning and the responsibility of each member?

☐ Is it clear how to make decisions among the group?

☐ Is it clear how and when groups are to be evaluated?

☐ Is the organization of the classroom defined?

☐ Are there any ways of monitoring the tasks of the teachers planned to get and give feedback?

☐ Are tools or mechanisms planned to encourage the development of leadership skills?

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WHY CHANGE?

Studies of collaborative learning have identified social and educational benefits. These benefits include the importance of sharing ideas, wisdom and resources with peers, gaining experience in conflict resolution, collective learning and leadership competences. It also favours self- criticism, self-evaluation and self-reflection. “Learning in groups in both face-to-face and online contexts allows students to have more room to negotiate meanings and to express themselves and their own ideas. It also helps them to establish more effective relationships and can play a central role in developing key professional skills, such as listening, presenting ideas, persuasion, self-direction, self-monitoring and team working.”(Jaques & Salmon, 2007, p. i).

Working within a group favours self-discipline and socialization, helping to raise friendship boundaries (Gillies & Ashman, 2003; Gillies, et al., 2008) among students and“[t]he interpersonal and interactive nature of small groups makes them a challenging and appropriate vehicle for engaging students in their own learning. Students are engaged in small groups, both as learners and as collaborators in their own intellectual, personal and professional development.” (Griffiths, 2003, p. 93).

Working collaboratively is effective because it involves students and enables a higher interaction between teachers and students. Cohen refers in his studies that some teachers highlighted occasionally the affective results as one of the motivations to propose collaborative activities to their students (Cohen, et al., 2004).

ACTIVITIES

In this section some guidelines and ideas are proposed to develop collaborative learning activities in planning activities like Dream, Explore, Map, Make, Ask, Re-Make and Show.

Dream

Preparing a dream activity for the scenario of collaborative learning, one should start by creating working teams and distributing roles to each member of the group. By looking at the interests of each member, the students can organize themselves in groups, whose characteristics have been previously negotiated with the teacher.

Students should choose between the following roles:

- Team Leader – planning the activities and helping each team member to complete its work.
- Team Reporter – reporting on the team's progress and individual progress. The Team Reporter is in charge of producing progress updates explaining what each of the other team members is doing.
- Organiser – organising the online tools, meetings and webinars.
- Lead Researcher – leading most of the research.

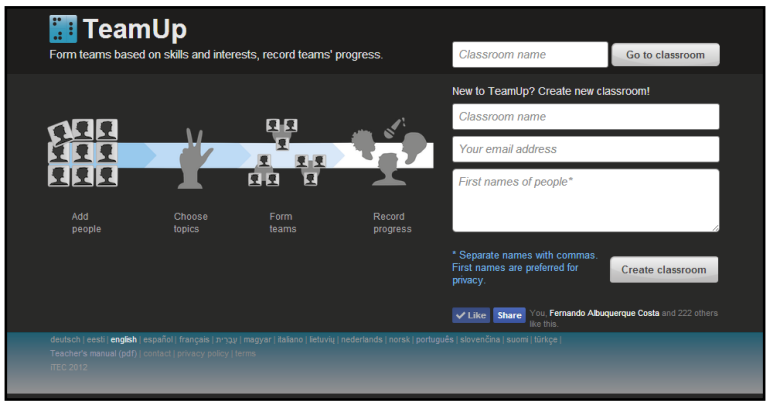
Each team selects a team name and creates a team blog where they will report on their progress.

The teacher should provide students with a challenge to research a topic on a controversial issue which they are interested in and which fits within the curriculum. The teacher's role is very different from the traditional role. He/she animates, coaches and provides online tutoring and mentoring which requires the rethinking of management and teaching techniques. He/she ensures the project does not take up too much time, that all students contribute, and that students learn how to work independently.

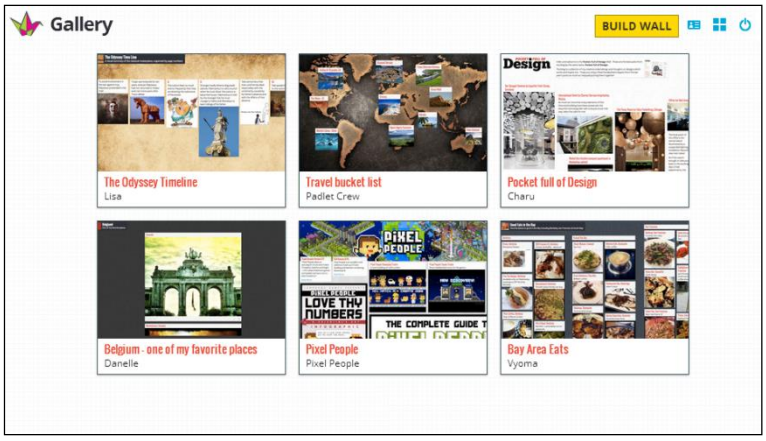
Throughout the activity students and teacher should reflect upon the importance of formative assessment and progress monitoring, using for example blogs and e-portfolios for learning journals to report on their own collaboration skills development. In addition, a collective e-portfolio can provide evidence of achievement.

ONLINE TOOLS YOU MIGHT USE:

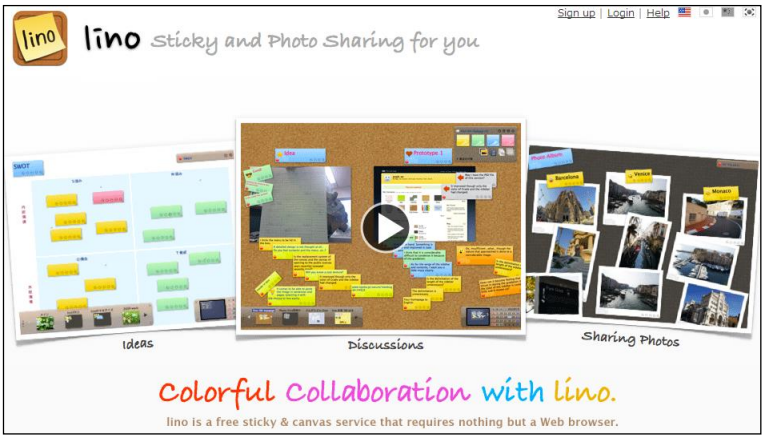
TeamUp (http://teamup.aalto.fi/) is a tool that helps organizing group work online, following the criteria established by the teacher. The rapid reorganization and interactive characterization of the grouped members is one of the main advantages of TeamUp.



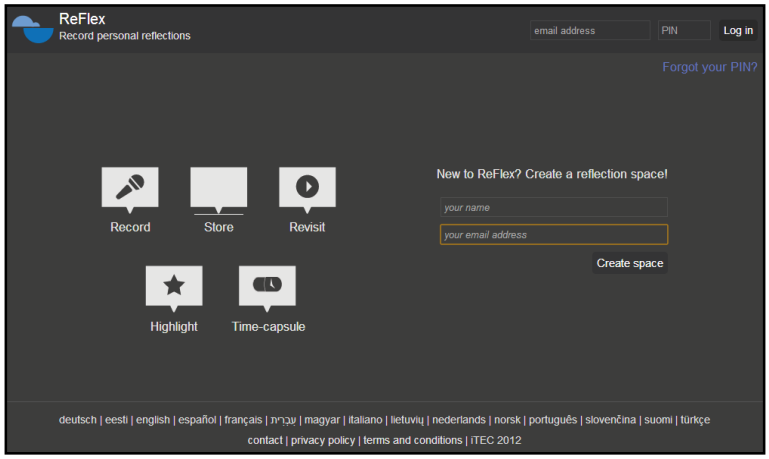
Padlet (http://padlet.com/) is a web application which enables students to express and organise their ideas on a topic in an easy way. It may be useful for presenting a proposal for a project work, for designing a project or learning scenario. Padlet allows for embedding online documents (e.g. images, video, pdf, etc.), and documents uploaded from a computer.



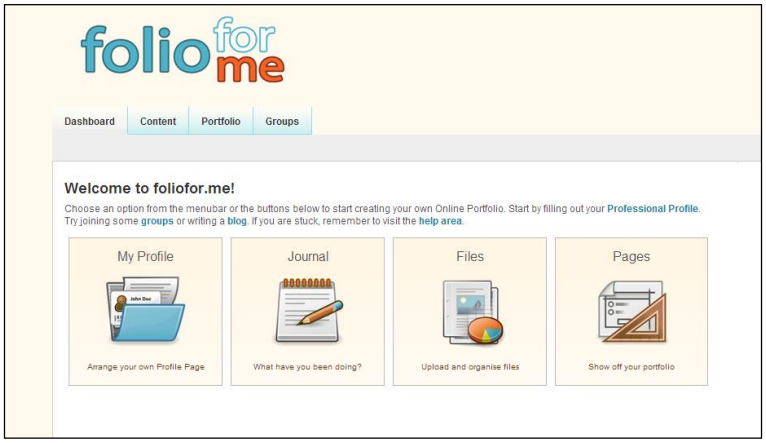
Lino-it (http://en.linoit.com/) is a web application similar to a corkboard where you can post sticky notes and create a structure of information you collect. One can express with texts or graphics, videos or files (online or uploaded from computers).



Reflex (http://reflex.aalto.fi/) can be used to register in audio the daily or weekly views of the students and build a time line with those reflections. Its didactic use can focus on the systematic recording of the progress (evaluation) or ideas about new projects, developments and creative suggestions that make learning easy.



FolioFor.me (http://foliofor.me/) is an online system for creating e-portfolios based on Mahara. It allows for uploading documents (from the computer or online documents).



Explore

Learning activities related to "Explore" are intended to develop students' team-working and interpersonal skills and learning how to learn beyond other 21st century skills. This may involve changing the physical learning space.

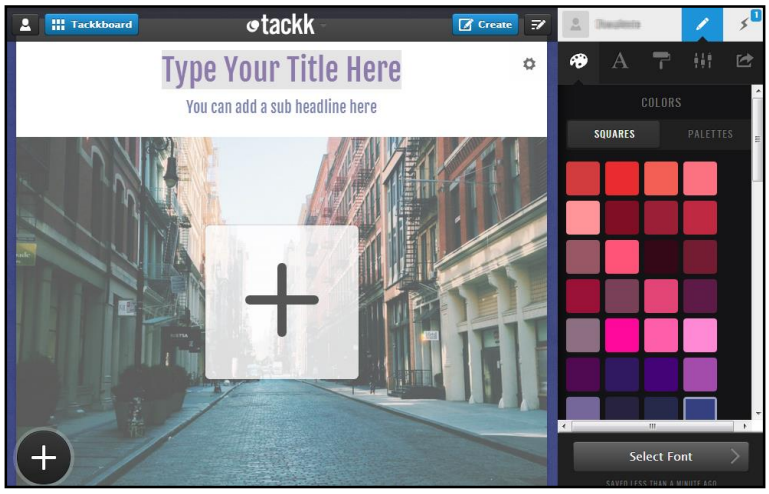
Students should search the internet or libraries for relevant information. It is recommended that the Lead Researcher starts by identifying people who have strong views on the issue they are researching, and takes responsibility for using social media and the Internet to identify suitable people, and, for example, posts a list of these people with their profiles on the project blog.

In a collaborative learning environment, a good distribution of tasks and roles among team members is essential. Students need to work in teams to carry out the research, and each student in a team needs to take a different role.

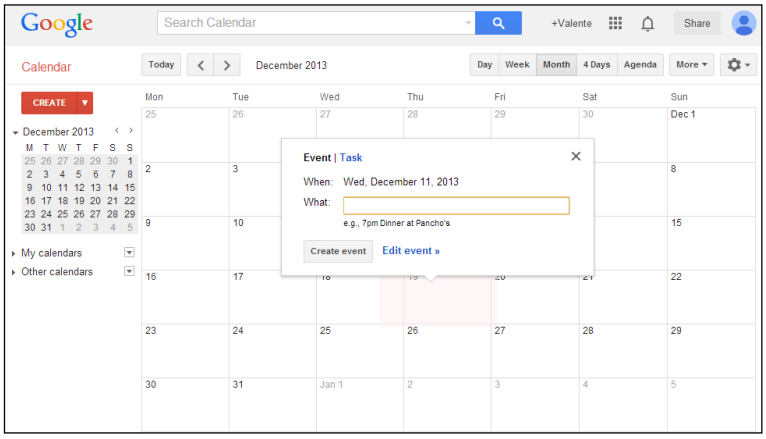
The activities take place in the classroom, at home or other places of students' choice.

ONLINE TOOLS YOU MIGHT USE:

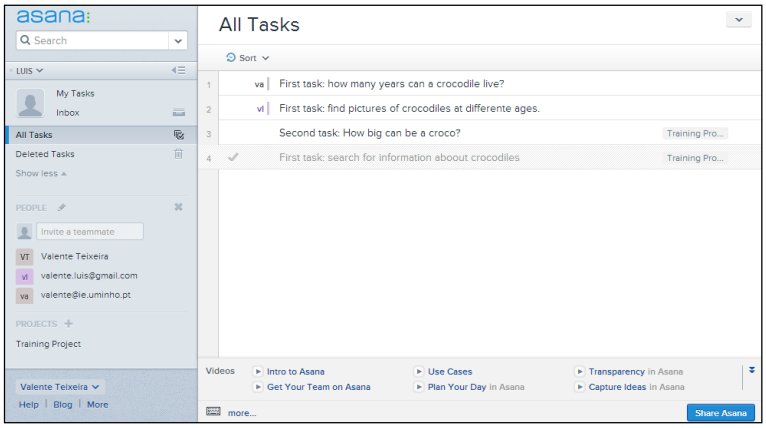
TACKK (http://tackk.com/) is a very easy and fast blog system, which does not need a login. It allows for customizing and sharing the contents one wishes to publish and activate comments. One can upload photos, videos, maps and sound tracks.



Google Calendar (https://www.google.com/calendar/) is an open source tool that can be used online to manage shared activities. The calendar can be synchronized with some desk software with similar features.



Asana (https://app.asana.com/) is a free and easy to use online Project manager which allows for managing tasks given to different elements of the working group. Although it is oriented towards a professional group of people, it seems practicable with adolescents' students.

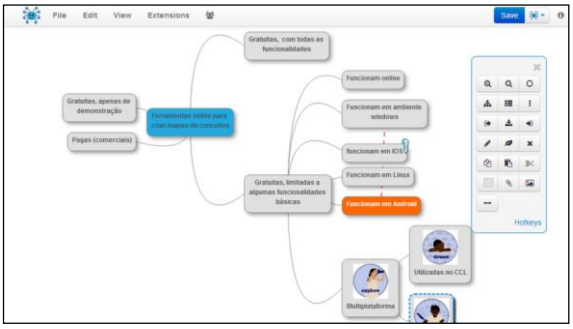


Map

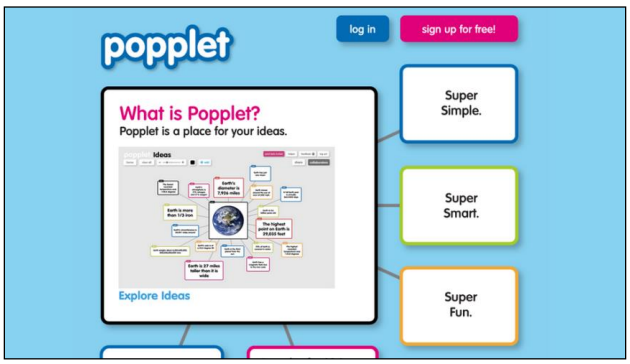
The activity Map is for students to organize their learning tasks in a logical way, sharing them later with their peers. While working in small groups, students can use existing tools in Virtual Learning Environments like Edmodo or Moodle or can take advantage of tools like Padlet and Lino-it, as shown above, or other tools to build concept maps as MindMup. Peer learning and peer support among students support valuable learning experiences. At the end of the mapping activity, the Lead Researcher shares the findings with the group, e.g. using tablets.

ONLINE TOOLS YOU MIGHT USE:

MindMup (http://www.mindmup.com) is an Internet application to construct concept maps, which easily integrate with Google Drive. We might collaboratively edit, share and export concept maps in different formats (e.g. PNG, HTML, FreeMind).



Popplet (http://popplet.com/) is an Internet application that might be used to register a brainstorming session, allowing people to express their thoughts about a certain topic in an easy and visual way, organizing ideas and concepts and their relations by linking them, creating a mapped structure of concepts, ideas or flow options. The application allows for collaborative use by different users, from any kind of device. It is a kind of multimedia friendly tool, free-form or a real-time wiki.



Make

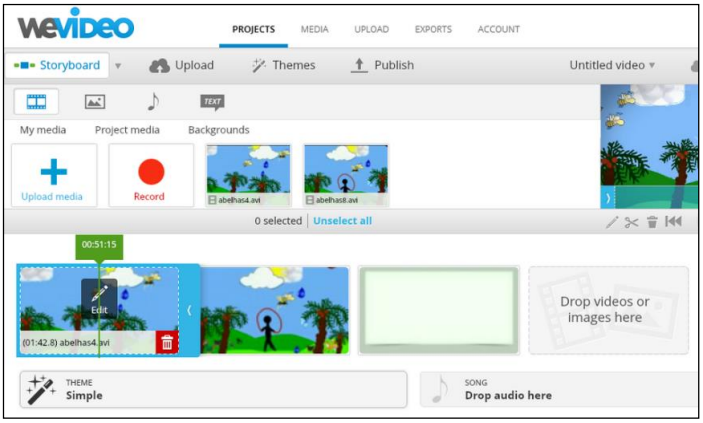
The goal of the Make activity is to develop digital competences, e.g. creating audio and video clips. Students also learn how to use ICT safely and act in a responsible way by understanding data protection and privacy issues.

Once students have understood the objectives of their work, they will be able to organize and record their investigations and share the conclusions they have achieved in their discussions. The use of tablets and other digital tools for the registration, as well as cameras and video cameras, such as editing software for audio and video annotation, becomes very relevant at that point. Students need to take notes and record facts and information that will help them to deepen the knowledge on the studied topics. Students can formulate questions to ask schoolmates and others and make online surveys.

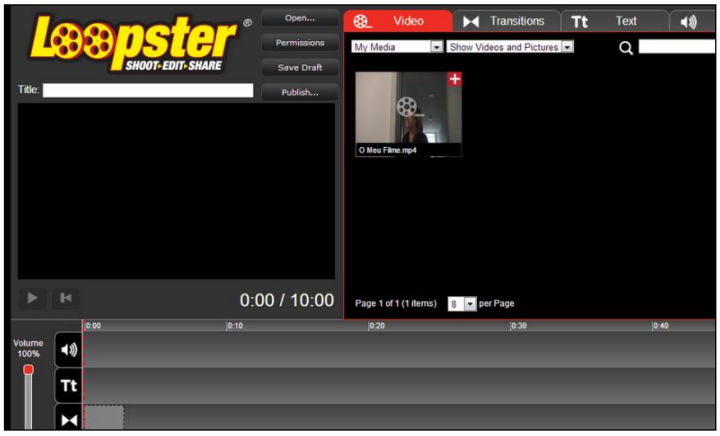
Teacher should encourage the use of digital tools to record. While monitoring progress and inquiring teams working in class he/she can encourage discussions between groups. By supporting their learning, evaluating and suggesting alternative strategies or tools, the teacher starts to have an advisory, specialist and manager role, crucial to the success of the project.

ONLINE TOOLS YOU MIGHT USE:

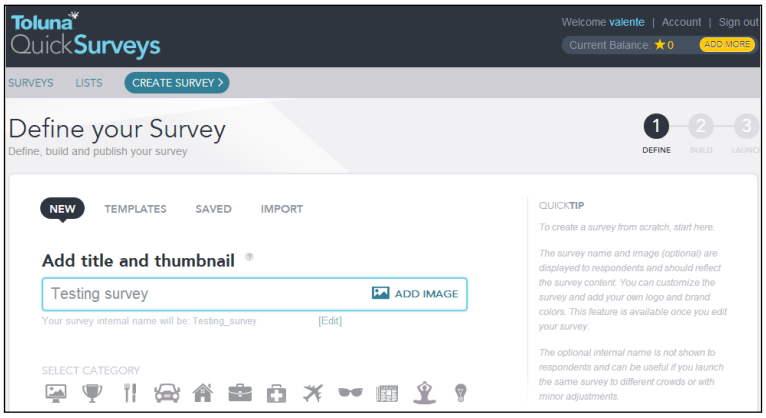
WeVideo (https://www.wevideo.com/) is an online video editing enabling the use of our own resources (sources of video, images and audio). The interface is simple and intuitive. Once the video is rendered, the publication can be made directly in some video distributors like YouTube or Vimeo or shared online through Google Drive or DropBox for instance.



Loopster (http://www.loopster.com) is an online application for nonlinear editing of videos, using a traditional interface. Resources like audio, video and images can be transferred from the user's computer. The storage capacity is 2.5 GB and the lifetime of the resources is 1 month only. After editing, the system renders the video and sends an email message with a link to the video. Users can decide if the publication is public, personal, or restricted.



Quick Surveys (https://www.quicksurveys.com/) is a free online surveying service, ease to use and powerful.



Ask

The Ask activity could include an online debate or poll based on survey and interview results, to collect opinions or support a position.

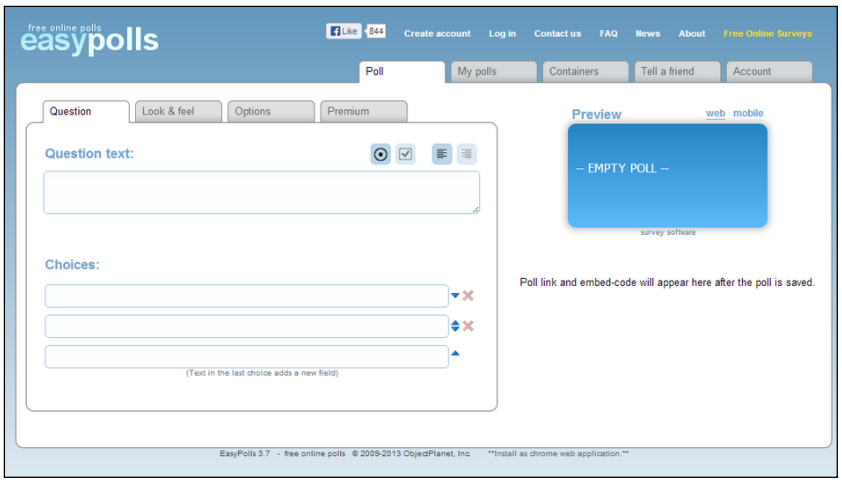
The Team Leader allocates each team member with further work to complete, including interviews with some local experts that have been identified, e.g. a celebrity, someone from a hospital, a parent who works in the area being researched, and a local university lecturer who lectures on the subject.

The Organiser arranges a meeting outside school time to plan how they are going to contact the people they have identified. He finds a number of locations on an online map e.g. a local community centre, and checks for availability. Finally, he gives the others details of the meeting via the project blog.

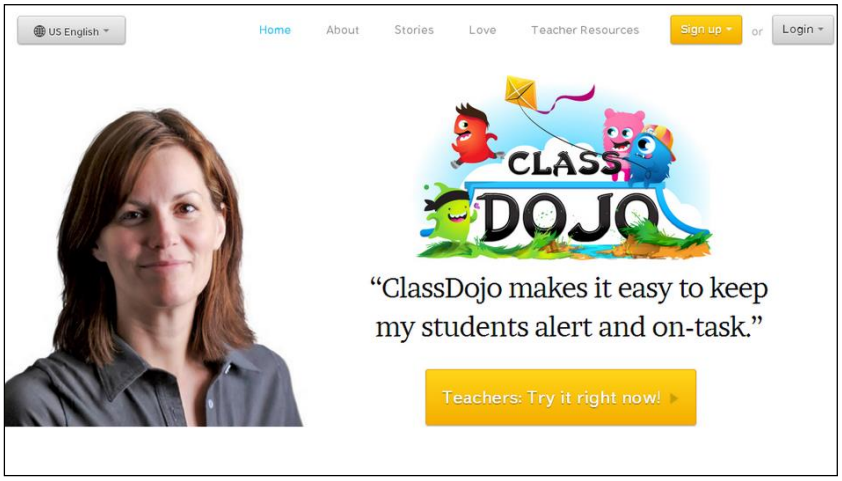
Tasks involve online discussion, where students' families can take part as well as other external people, considered experts. Students must lead the process, while teacher and/ or family members or experts should support, monitor and evaluate their tasks. Virtual Learning Environments such as Moodle can be used to enable distance collaboration between the different stakeholders. Other tools for online voting and organizing ideas, comments and reflections can also be useful. In the classroom or in a small lab, interactive devices can be used by students to present their work.

ONLINE TOOLS YOU MIGHT USE:

EasyPolls (http://www.easypolls.net/) is a very effective and comprehensive system to conduct online polls. Students can use this feature to decide on various options or to choose the subjects of their discussions.



ClassDojo (http://www.classdojo.com/) is a class manager and students' progress track fully online. Teachers can use it to record student learning and share it with them and with their families, while maintaining a level of assessment and information updated and accessible. Students can access a set of reviews and information about their performance which contributes to self-regulation of their attitudes and behaviours. Family members can also track the progress of students, accessing information and records that the teacher records on the platform.



Re-make

During the Re-make learning activity, students do further research including emailing the experts and famous people identified, to get their opinions on the topic.

As a reflection exercise, the Lead Reporter reviews the work they did, e.g. blog and audio reports, provides each student with a progress report, a team report and guidance on what additional work they should do with support materials. During the meetings the students all agree on who has achieved what, and who needs to make more of a contribution for the following activities, so that everyone makes a good contribution. The Lead Reporter guides them to assure they are critical about the information they receive, and think carefully about whether the sources are reliable and expert.

The teacher should monitor the activities, ensuring that all students are involved in the redesign of tasks, assessing their redesign suggestions and motivating them to improve their proposals.

Show

This activity corresponds to the completion of the project, and is set out to present the process and the results to the class and eventually to classmates, family and community.

Students show their conclusions built on the information collected. They organize a webinar or online debate, for example, which they deliver to the other students in the school. The other students who participate in the webinar are able to vote on the issue being discussed, and the results of this are put into a final report. Students present their work and answer questions about the work done.

The teacher observes and assesses the work done. The students' final grade is based on the contributions they have made, which can be accessed in the project blog.

The use of multimedia materials, video and other documents constitutes an appealing strategy that works well. In addition, it improves students' self-esteem as authors of the project. We should not forget the need to reflect upon the process and outcomes and seek future developments. The publication of the resulting products and projects can be carried through blogs, delivery video channels and learning platforms such as Moodle, Edmodo, etc. The teacher has a prominent role in the dissemination and evaluation of student work and their encouragement to improve future projects. The feedback he/she gives is also very important for other stakeholders of the school community and family or experts who have been involved, because it shows the institutional recognition of the importance of the learning model.

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