Future Classroom Lab
by European Schoolnet

Future Classroom Lab Learning Zones

The Future Classroom Lab (FCL) has been created to help visualise how conventional classrooms and other learning spaces can be reorganised to support changing styles of teaching and learning. It has been designed as a "Living Lab" for how ICT can be implemented in schools and where policy makers, ICT suppliers, teachers and educational researchers can come together to:

- Rethink how new technologies can support the educational reform process at both national and European level;
- Engage in regular workshops, seminars and courses on how existing and emerging technologies can have a transformative effect on teaching and learning processes.

The Future Classroom Lab is formed by six different learning spaces. Each space highlights specific areas of learning and teaching and helps to rethink different points: physical space, resources, changing roles of student and teacher, and how to support different learning styles.

All together the spaces form a unique way to visualise a new, holistic view on teaching. The zones reflect what good teaching should be about: being connected, being involved, and being challenged. Education should result in a unique learning experience, engaging as many types of students as possible.

Investigate

In the future classroom, students are encouraged to discover for themselves; they are given the opportunity to be active participants rather than passive listeners. In the Investigate zone, teachers can promote inquiry- and project-based learning to enhance students' critical thinking skills. The flexible furniture supports this concept, and the physical zone can be reconfigured quickly to enable work in groups, pairs, or individually. New technology gives an added value to the research by providing rich, versatile and real-life data, and also by providing tools to examine and to analyse.

Key points for Investigate

- Developing critical thinking skills: students learn how to find quality resources and how to manage information.
- Developing problem-solving skills: students have a goal or a challenge to resolve. The challenge/question is set by the students themselves. This builds on their strengths, potentials and preferences.
- Learners become active researchers: research across varied media (text-based, video, audio, images, results of experiments, numbers, etc.) is the basis of the classroom activity. Investigation can take place by reading, observing, conducting science experiments, organising surveys, using robots, etc.
- Encouraging cross-curricular projects: learning across disciplines helps learners to analyse and understand things from multiple perspectives.
- Learning by exploring: students can construct models, test ideas and evaluate the results themselves. The technology provides different ways for the learners to get involved through hands-on learning activities.
- Connecting with the outside world: rather than working within the artificial boundaries of a school subject, the teachers and students select real-life challenges and data to investigate.

Useful equipment

- Data loggers
- Robots
- Microscopes
- Online laboratories
- 3D models

Resources

- The importance for a good question: http://www.youtube.com/watch?v=hqsTD4CzRYM
- FCL learning stories: http://fcl.eun.org/resources
- iTEC project: http://itec.eun.org/resources
- Teaching STEM in the FCL: http://fcl.eun.org/videos/-/blogs/33781
- Scientix portal: http://www.scientix.eu/resources

Create

The future classroom allows the students to plan, design, and produce their own work - for example, a multimedia production or a presentation. In the Create zone, simple repetition of information is not enough: students work with real knowledge-building activities. Interpretation, analysis, teamwork, and evaluation are important parts of the creative process.

Key points for Create

- Learning by creating: the learners are actively involved in producing and creating their own content. This allows learners to exercise their imaginations, and to innovate.
- Using engaging technology: ICT provides a number of ways to design, create and disseminate learner-generated content.
- Developing learners' soft skills: the students develop their soft skills through project-based work, including presentation, planning, and teamwork.
- Giving students independence and ownership over their learning: enhancing students' engagement with the task, and helping to foster their sense of personal responsibility.
- Creating for real-life: students' social entrepreneurship can be triggered by initiating and implementing projects aimed to increase the wellbeing of the school or local community.
- Showcasing student work: students can develop over time their learning portfolios, which can help them to link between different disciplines, and provide a real-life context to their classwork.

Useful equipment

- Chroma key
- High-definition video camera
- Digital camera (pocket)
- Flip camera
- Video editing software
- Audio recording equipment (e.g. microphones)
- Podcast software
- Animation software
- Streaming software

Resources

- FCL course: Creative use of multi-media and devices http://fcl.eun.org/videos/-/blogs/40375
- FCL learning stories: http://fcl.eun.org/resources
- iTEC project: http://itec.eun.org/resources

Present

The students of the classroom of the future will need a different set of tools and skills to present, deliver, and obtain feedback on their work. The presentation and delivery of the pupils' work has to be factored into the planning of lessons, allowing students to add a communicative dimension to their work. Sharing of the results can be supported by a dedicated area for interactive presentations that, through its design and layout, encourages interaction and feedback. Online publication and sharing are also encouraged, allowing the students to become accustomed to using online resources, and familiarising themselves with the principles of eSafety.

Key points for Present

- Learning to share and communicate: just as important as carrying out interesting work is the sharing of the results. ICT provides multiple ways to create interactive and engaging presentations, both face-to-face and online.
- Interacting with a wider audience: presentations are interactive actions, where peers and the teacher give feedback. The physical layout can support this process.
- Developing feedback skills: the listeners are given an active role as peer-reviewers, and they learn to provide constructive feedback. The presentations are not prepared for or aimed at the teacher only but for the whole class or even a wider community.
- Getting familiar with various methods of sharing: the students learn to use different sharing tools that are part of everyday communication in the 21st century.
- Communicating inclusively: students take into account the message, the audience, and resources available when selecting tools. They get to think about how to reach different audiences, and about the digital divide.
- Making the presentation a whole school activity: a presentation be can provided as part of the school's public space, e.g. in the school library (face-to-face) or the school website (online) which enables sharing among the whole school community.
- Embedding eSafety in schoolwork: before downloading and uploading, the students need to think about the responsible use of online resources. Being content-creators themselves, the students learn to evaluate online sources critically, and to apply necessary permissions and copyrights to the content they share themselves.

Useful equipment

- Presentation area with reconfigurable furniture
- A dedicated HD projector/screen to provide more quality to the presentations
- Online publication tools (blog, VLE, online sharing sites)

Resources

- FCL interview series: http://fcl.eun.org/fcl-interview-series
- iTEC project: http://itec.eun.org/resources

Interact

In the future classroom, the teacher can use technology to enhance interactivity and student participation in traditional learning spaces. One challenge of the traditional classroom setting is getting all students actively involved; technology enables each and every pupil to contribute. Solutions vary from individual devices like tablets and smartphones, to interactive whiteboards and interactive learning content. In the Interact zone, learning involves both teachers' and students' active engagement.

Key points for Interact

- Rearranging physical space: to break the traditional classroom paradigm of rows, the students are seated in different can try out different settings, e.g. a horseshoe shape, or in small groups.
- From spectators to active learners: ICT provides opportunities for students to be active in different ways that support their own learning styles. This also can help the teacher to move away from the teacher-led lessons.
- Interacting with the learning content: the interactive whiteboards can be used together with media rich content and learner response devices.
- 1:1 computing for a motivated classroom: 1:1 computing with netbooks, tablets, or smartphones, allows for more personalised learning, and enhances student motivation.
- From supervision to communication: many software now permit new collaboration and communication functionalities, in addition to classroom management function, when students are using their own devices.

Useful equipment

- Interactive whiteboard
- Learner response system and devices
- Mobile learning devices: laptop, netbook, tablet, smartphones
- OER content for IWB
- Classroom management system

Resources

- CPDLab project - Teacher professional development in the digital age: http://cpdlab.eun.org/
- 21st century skills - UNESCO framework: http://unesdoc.unesco.org/images/0021/002134/213475e.pdf
- iTEC project: http://itec.eun.org/resources

Exchange

Future classroom learning places much importance on the ability to collaborate with others. The teamwork takes place while investigating, creating and presenting. The quality of collaboration is composed of ownership, shared responsibility and decision-making process within groups. ICT can help to create a richer way of communication and collaboration. Collaboration in the 21st century classroom is not limited to face-to-face and synchronous communication, but can take place online and also asynchronously.

Key points for Exchange

- Peer-to-peer collaboration: learning to communicate and work with others is probably one of the most valuable skills a child can learn. Extending this across the school (e.g. older students coaching younger students) can reinforce pupils' sense of social responsibility.
- Teamwork for better inclusion: working in groups can teach children to take into account differences between learners (e.g. gifted – less gifted).
- Learning by playing: playing is common to all children. Digital games and simulations can be used to introduce more engaging learning.
- Collaborating online: the exchange can be extended to after-school tasks with the aid of an online learning environment and supervised use of social networks.
- Letting ideas fly: brainstorming is a great group activity, allowing pupils to exercise their natural creativity and imagination.

Useful equipment

- Interactive whiteboards
- Collaborative table with projector
- Mind-mapping software
- Brainstorming board/wall

Resources

- Learning Resource Exchange: http://lreforschools.eun.org/
- iTEC - Working in teams: http://vimeo.com/35777113
- iTEC Learning Activity: working with outside experts: http://itec.eun.org/web/guest/la4
- iTEC project: http://itec.eun.org/resources
- eSkills: http://eskills.eun.org/

Develop

The Develop zone is a space for informal learning and self-reflection. Students can carry out school work independently at their own pace, but they can also learn informally while concentrating on their own interests outside of the formal classroom settings both at school and at home. By providing ways to foster self-directed learning, the school supports learners' self-reflection and meta-cognition skills. The school encourages its students towards true lifelong learning by acknowledging and validating informal learning.

Key points for Develop

- Allowing for an informal environment: the informal learning space at the school can be a more home-like environment, allowing for a more relaxed and non-monitored space.
- Supporting motivation and self-expression: teachers can support personalised learning, for example, with tailored learning activities, or by allowing more freedom to learners in selecting their topics of investigation. Students can also develop their personal learning portfolios.
- Using personal learning devices: personal learning devices, like netbooks and tablets, provide access to online resources and virtual learning environments both at home and at school
- Adopting ways to recognise informal learning: learning diaries and portfolios can be used to keep track of informal learning.
- Flipped classroom: students engage in well-structured independent learning at home, allowing the teacher to devote the time in the classroom to project work and collaboration.
- Learning through play: providing educational games for pupils to use during breaks and after school.

Useful equipment

- Informal furniture
- Study corners
- Portable devices
- Audio devices and headphones
- Books and e-books
- Games (analogue and digital)

Resources

- iTEC project: http://itec.eun.org/resources
- Learning Resource Exchange: http://lreforschools.eun.org/

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Future Classroom Lab

The Future Classroom Lab in Brussels is a fully equipped, reconfigurable, teaching and learning space developed by European Schoolnet, its 30 supporting Ministries of Education and leading educational technology providers. To know more, please see the website at http://fcl.eun.org or contact us at fcl@eun.org

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