BRIDGE 21

Constructivist Teaching Methods Handbook

In association with the Erasmus+ project:

Teaching for Tomorrow (TfT)

Erasmus+

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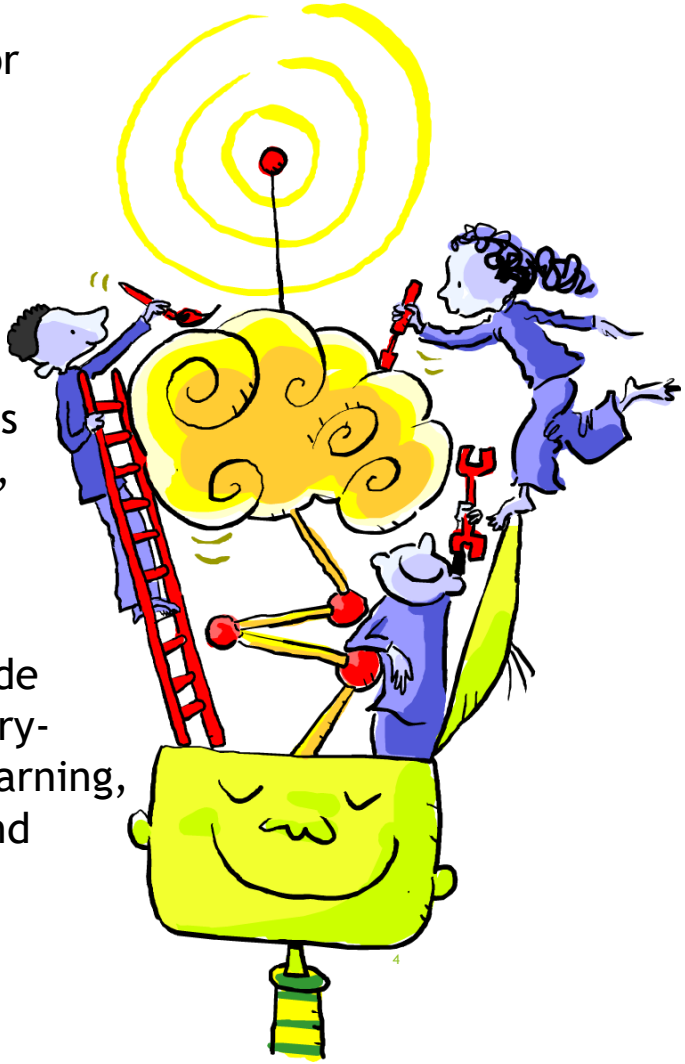
A Shift to a Constructivist Approach

In the last three decades there has been a paradigm shift from instruction to construction, from teacher-centred to student-centred teaching.

The teaching methods of the sixties and seventies were characterized by deductive learning and the idea that the learner was a vessel that had to be filled with knowledge by the teacher (the expert).

In contrast, the constructivist approach favours inductive learning, where learners are expected to discover or deduce rules from their own experience and experiments. In this scenario, the teacher functions more as a facilitator who coaches, prompts, and assists the students.



Increasingly constructivist, or 'open,' learning methods have found their way into the classroom, allowing pupils to engage in self-determined, independent and interest-guided learning.

Some of these methods include project-based learning, inquiry-based learning, age-mixed learning, learning through teaching, and flipped classrooms.

Bridge21 Approach & Teaching Methods

The Bridge21 approach is flexible. It provides structure and scaffolding to support practitioners in using methods that encourage the development of students' 21st century skills.

Because a social constructivist approach underpins the Bridge21 ethos, the approach aligns well with several constructivist teaching methods. These teaching methods can complement and enhance the learning process.

Project and inquiry-based learning, described in the following pages, form the basis of the Bridge21 approach. These can be integrated with a more traditional, didactic approach when appropriate, but can also incorporate the methods and strategies that will be discussed in the following sections of this handbook.

Bridge21 Approach & Teaching Methods

Teaching method choices are frequently rooted in an individual teacher's own personality and beliefs. Yet, it is recommended that all available teaching methods (lecture/teacher-led instruction, individual work, pair work and group work) should be considered. Choices should be made in relation to learning objective and content and not just for their own sake (Meyer, 2007).

For example, in Germany, instead of favouring a certain teaching style or method, the key terms now are “Methodenvielfalt” (variety of methods) and “Methodenwechsel” (change of method). In fact, there are no predominant teaching styles and methods in Germany: the school system varies throughout the country with each state deciding its own educational policies, and the federal government playing only a minor role. Additionally, each school has its own curriculum and places emphasis on particular methods.

Some of the commonly used methods include Projektarbeit (project-based learning), Age-Mixed Learning, Lernen durch Lehrern (learning through teaching), and Flipped Classrooms.

Teacher's Guide to

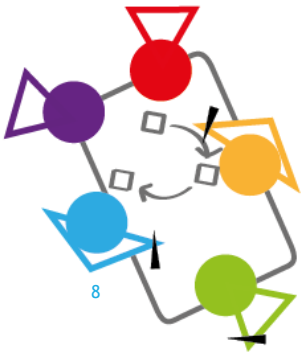
1. Project-Based Learning
2. Inquiry-Based Learning
3. Age-Mixed Learning
4. Learning through Teaching
5. Flipped Classroom

Project-based Learning (PBL)

PBL is a teaching method in which students gain knowledge and skills by working for an extended period of time to investigate and respond to an authentic, engaging and complex question, problem, or challenge (bie.org).

Projects are focused on student learning goals such as standards-based content and the development of key skills, and include the essential project design elements of:

- A challenging and meaningful **problem or question**
- **Sustained Inquiry** - a rigorous, extended process of asking questions, finding resources, and applying information.
- **Authenticity** - real-world context, tasks and tools, relevant to personal concerns, interests, and issues.
- **Student Voice & Choice** - Students make some decisions, including how they work and what they create.
- **Reflection** - Students and teachers reflect on learning, the effectiveness of their inquiry and project activities, the quality of student work, obstacles and how to overcome them.
- **Critique & Revision** - Students give, receive, and use feedback to improve their process and products.
- **Public Product** - Students share their project work by explaining, displaying and/or presenting it.



Inquiry-based Learning (IBL)

IBL begins with a question or problem, rather than presentation of established facts and rules (Breen & Fallon, 2005; Markham, 2013). It is characterised by active participation of students, and promotes creative engagement with processes such as:

- **identifying** the problem or area of inquiry,
- **critiquing** approaches, and distinguishing alternatives,
- **planning** investigations,
- searching for information, **researching**, and **justifying** conjectures, and
- **presenting** coherent arguments.

Age-mixed learning: What is it?

Age-mixed learning is an approach that involves having a mix of ages in one classroom, leading to peer learning and a pool of more able others. The primary value of age-mixed learning is the flexibility it provides to students whose cognitive growth is in a series of sudden spurts rather than a smooth, linear progression. By serving a range of students with a large chronological-age span, the norm becomes a wide range of abilities.

This approach requires high levels of differentiation and variation of teaching-styles in order to maintain learning for all students. It forces teachers to move away from the teacher-centred approach and opens up classes to partner and group-work

Age-mixed learning: How can you try it?

Why might you try it?

- Children learn from their peers
- It provides flexibility and opportunities for students of different abilities.
- Opportunities for more able others to take higher levels of responsibility.
- Opportunities for students to take on different roles in the classroom, such as role model or mentor.
- More able students can demonstrate or model good practice and specific skills

When might you try it with Bridge21?

- You can use it with a project that is theme-based, and not based only on previously learned content.
- It can be used as a revision period for older students, while introducing new material to younger students.

Learning through Teaching: What is it?

Learning through teaching involves the students in the generation and use of their own didactic materials. They need to thoroughly research the content that they want to explain, and think of appropriate ways to present their findings. The teacher acts as their assistant, helping them to achieve their goals and giving them feedback on their progress.

This method of learning can be a very powerful motivational tool, particularly if the “learners” who will be taught by the students have relevance for them – they might be other students in the school, parents who are unfamiliar with the content, or visitors to the school.

Learning through Teaching: How can you try it?

Why might you try it?

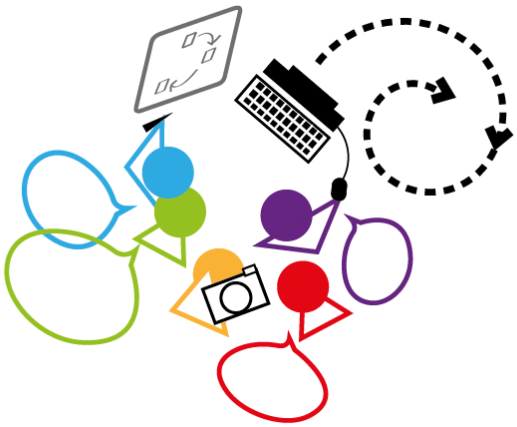
- It encourages students to be more aware of their own approach to learning, as well as that of others, through the process of didactic reduction within a team.
- This can provide an opportunity for teachers to help a particular group of students to deepen their understanding.
- The teacher has time to observe and assess students understanding
- It is motivating for the students
- It can lead to deeper understanding and better recall, as if the student teaches something, they tend to remember it.

When might you try it with Bridge21?

- This is an effective method for the revision of core concepts
- Older students might teach younger students some fundamental subject information.
- Language students could teach parents/novices some basic concepts

Flipped Classroom: What is it?

The “Flipped classroom“ is a popular educational model in which the traditional way of teaching - teacher as locus of information and learning - is substituted by pupils watching instructional videos outside of class time, and reinforcing the new material with the teacher’s or other pupils’ help.



There are many advantages of this model. Firstly, every pupil can pause or restart the video as often as they like, which enables them to work at their own pace. Secondly, having the content delivered out of class time frees up the students to do the more creative, practical, and communicative tasks with in school, while the teacher monitors and supports them.

Flipped Classroom: How can you try it?

How should you start?

- Teachers who want to use this model should first watch some videos themselves to familiarise themselves with existing videos and how they are structured.
- Then might shoot a video themselves to learn about the challenges their students will face. The editing and final completion of these products depend on the school's equipment and the teacher's skills.
- Finally, they should start with short, simple videos in order to assess their students' understanding of the model and how it works.

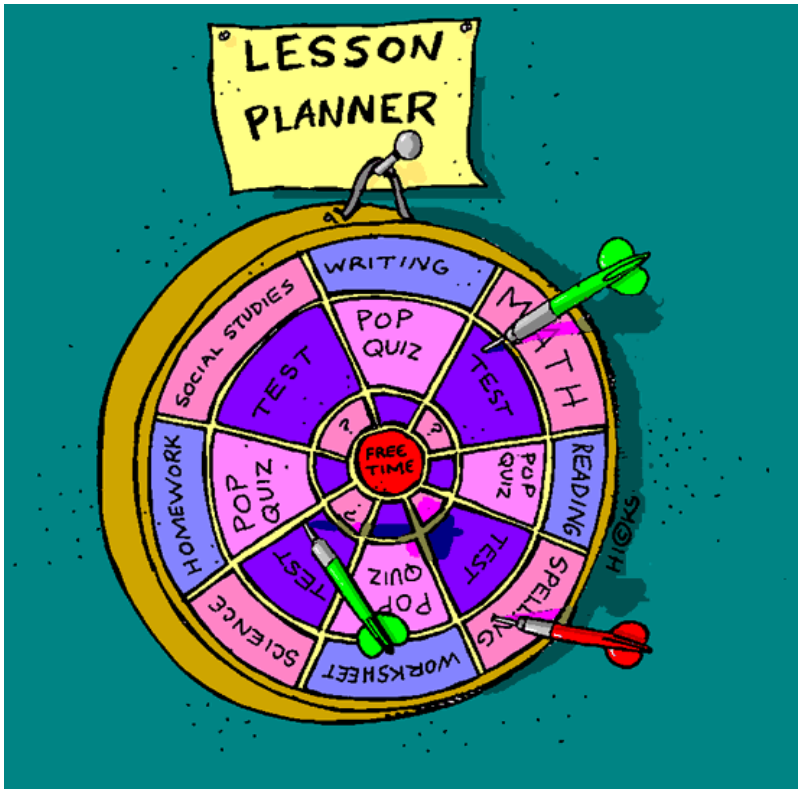
When might you try it with Bridge21?
This method is useful when the Bridge21 activity requires that certain content be covered in advance. A useful technique to use is the "Jigsaw" technique, in which different students in each team are assigned aspects of a topic to cover. Group members then join with members of other groups assigned the same piece of information, and research and/or share ideas about the topic. Students then return to their original groups to try to "piece together" a clear picture of the topic.

Resources

Lesson Plans

The following pages provide lesson plans which illustrates how some of the various contructivist teaching styles discussed in this handbook can be implemented in the classroom.

It involves 2nd year students teaching 1st year students ICT/digital media literacy skills. It occurs over the course of 4 lessons/4 teaching hours.



Activity Design Template

Topic/Theme: ICT / Digital Media Literacy

Class/Year Group: 1st and 2nd year (ages 12 - 14)

Teaching Method: Learning through teaching

Outline

What is the **challenge** your students will tackle?	Why is this **meaningful** to the students - what's the hook?	What are the **key ideas** that the students will remember?
2nd year students, who have already gained a level of proficiency in using ICT, will teach new students in the school (1st years) how to use ICT and digital media responsibly and safely.	For 2nd year students, the act of teaching and being in a position of responsibility is engaging. The 1st year students will enjoy interaction with their fellow students.	An awareness of Internet safety and good practice. How to deconstruct a topic in order to effectively share it with others.

Learning Objectives

What **curriculum content** will be addressed?

Internet Safety
Digital Media Literacy Skills including:
- Word Docs
- Powerpoint presentations
- Schoology - folder arrangement and creating portfolios
- One Drive\ Google Drive - Managing information and thinking

By the end of this activity students *will be able to:*

- *Use and navigate the Internet safely and responsibly*
- *Develop critical thinking skills*
- *Manage, analyse and store information*
- *Share documents and projects*
- *Work collaboratively on digital media tasks*
- *Communicate effectively using digital media*

How are four key **21st Century Skills** addressed?

Creativity

2nd year students will need to think creatively about how to deliver the content- students redefine what they have already learned.
Students who are learning will learn new ways to produce and present their work.

Communication

2nd year students will have to clearly and positively articulate to younger students the content. Learning students will improve their listening, eye-contact and positive body language skills.

Collaboration

1st and 2nd year students will need to work effectively and efficiently with each other.

Critical Thinking

- 2nd year students will need to analyse content and decide what are most important factors to teach.
- 1st year students will need to identify what they have learned and how to apply it to their everyday learning

Reflection

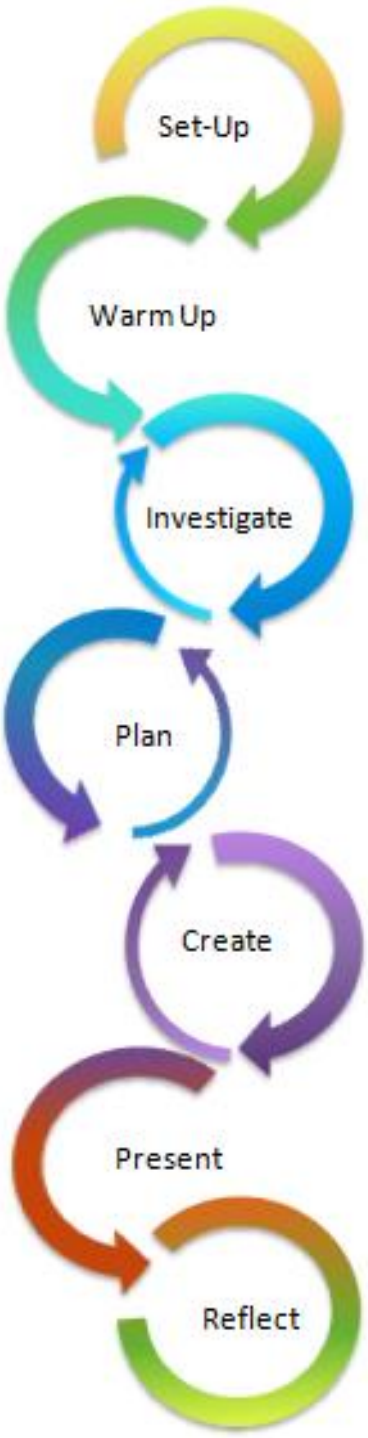
How will you know that they are learning?

The teacher will assess progress through regular checking and monitoring, class observation and questioning.
2nd year students will need to produce resources.
1st year students must produce digital media project to demonstrate their understanding

In what ways will students reflect on progress?

KWL is an instructional strategy that can be used to guide students through a topic. Students begin by brainstorming everything they Know about a topic (recorded in the K column of a K-W-L chart). they then generate a list of questions about what they Want to Know about the topic (in the W column). New information that they learn is recorded in the L column.

Activity Design Template

Possible Aspects	Description	Time
	Session 1: 2nd year students investigation & preparation Session 2: 2nd year students Session 3: 2nd year students and 1st year students Session 4: 1st year students present and reflect	4 hours in total
	2nd Year Set up: 2nd year students explore how to teach ICT Digital Media Literacy skills to younger students (e.g. ICT Lesson Plan). They identify relevant content and methodologies for teaching.	30 mins
	Create: 2nd year students create materials and resources to best teach content and assess student understanding.	30 mins and collaborative homework
	Set up: Groups will comprise of two 2nd year students and two 1st year students: A picture will be cut in 4 and students must find their corresponding team members by completing the picture.	5 mins
	Warm up: Getting to know your team members exercise. Set of questions to ask each other and give feedback on to class later.	10 mins
	Investigate & Plan: 2nd year students will teach and present their materials and resources to 1st year students. 2nd years will mentor the 1st years during their create phase	15 mins
	Create: The 1st year student group create a digital project to demonstrate grasp of new digital media literacy skills.	45 mins
	Present: 1st year students present digital media projects to their own peers and class teacher will assess their abilities.	40 mins
	Reflect: Group and individual reflections using 2 stars and a wish, Google forms survey, etc.	20 mins

Research

- Breen, E., Fallon, H., 9 (2005) “Developing student information literacy to support project and problem-based learning” in Barrett, T., Mac Labhrainn, I., Fallon, H., (eds.) Handbook of Enquiry and Problem Based Learning, Galway: CELT. http://eprints.teachingandlearning.ie/2208/1/Fallon%20and%20Breen%202005.pdf

- Markham, T., (2013) Inquiry Learning Vs. Standardised Content: Can they Coexist? http://ww2.kqed.org/mindshift/2013/05/20/inquiry-learning-vs-standardized-content-can-they-coexist/

- Meyer, H. (2014, November). The German tradition of didactics and recent research findings about teaching and learning. Speech given at the 12th Shanghai International Curriculum Forum.

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