



Deliverable No 3:
Core Modules of the e-Assessment Model
University of Porto



Education and Culture DG

Lifelong Learning Programme



Table of Contents

Versioning table	Hiba! A könyvjelző
Short executive summary	Hiba! A könyvjelző
Process.....	Hiba! A könyvjelző
Table of Contents	2
Using ICT for teaching & learning	5
Aim of the module.....	5
Objectives of the module.....	5
Introduction	5
Using ICT for teaching & learning.....	5
1.1. Getting connected.....	6
1.2. New perspectives evolving through ICT.....	7
1.3. How to use the new tool for teaching and learning?	8
Activity.....	3
Exercise, Activity for advanced users	9
Conclusion.....	9
Further reading	10
Innovative didactics.....	11
Aim of the module.....	11
Objectives of the module.....	11
Introduction	11
Innovative didactics.....	11
1.1. Changes in teaching a creative knowledge society	11
1.2. What is an innovative assignment?	12
1.3. Creativity techniques.....	13
1.4. Characteristics of a creativity-enhancing task.....	16
1.5. Focus on adult education innovative didactics: a framework	17
1.6. The “virtual company” model	18
Self-assessment questions	20
Exercise, Activity	20
Further reading	21
References	21
Supporting learners and teachers in the creative process	22
Aim of the module.....	22
Objectives of the module.....	22

Introduction	22
Supporting learners and teachers in the creative process	23
1.1. Supporting learners	23
1.2. Supporting teachers	25
Self-assessment question	25
Exercise, Activity	25
Conclusion.....	26
Further reading	26
References	26
Assessing creative results.....	27
Objectives of the module.....	27
Introduction	27
Assessing creative results	27
1.1. What is new in assessing creative results?	27
1.2. Content of the feedback.....	28
1.3. Methods of assessing creative results.....	28
1.4. Basis of assessment	29
1.5. Web Social tools empower creativity. How to assess their use?.....	29
Self-assessment questions	30
Exercise, Activity	31
Conclusion.....	31
Further reading	31
References	31
Cooperation in an innovation process	32
Aim of this module.....	32
Introduction to open innovation	32
Cooperation in an innovation process	34
1.1. Career development.....	34
1.2. Bring R&D and education closer together	34
1.3. Trust and openness as pre-condition	35
1.4. Networking with „communities of interest“	35
Self-assessment questions	37
Exercise, activity	37
Conclusion.....	37
Further reading	38
References	38
Enhancing stable self-esteem and wellbeing	39

Aim of this module.....	39
Enhancing stable self-esteem and wellbeing.....	39
1.1. Wellbeing and creativity towards self-actualization	39
1.2. Students can actively participate in their education	43
1.3. How does a stable positive self-esteem evolve?	43
1.4. From assessment to self-esteem	45
Self-assessment questions	46
Exercise, activity	46
Conclusion.....	47
Further reading	47
References	47

Using ICT for teaching & learning

Aim of the module

This module intends to give a quick view of the state of the art of ICT used for Teaching & Learning together with some the educational models applied. We also suggest a set of questions to consider how ICT is used in your context: on your course or in your institution.



Objectives of the module

- Be aware of ICT for Teaching & Learning strengths'
- Reflect on the current usage of ICT in your own surroundings
- Get „in touch“ with the teaching models with ICT and their usage

Introduction

The literature dealing with ICT and pedagogy shows the powerful impact technology can have on the teaching and learning process. The research indicates that collaboration and communication skills are enhanced by the use of computers just like they build our knowledge and thinking skills. Research points out that students are more engaged when exploring, experimenting and expressing themselves (known as the 3X's) – this is precisely how technology can help teaching and learning.



Using ICT for teaching & learning

The use of new technologies reveals a range of opportunities that can transform teaching and offers improved possibilities for learning. Furthermore, with the appropriate approach, technology in classrooms can even enable teachers to be more successful in helping students to be more effective citizens.

Analysing some of the contributions that new technologies can make to teaching and learning, we find the following:

- Students who use new technologies concentrate more than students in traditional settings;
- Stimulation of the development of intellectual skills;
- Contribution to the ways of learning knowledge, skills and attitudes;
- New technologies spur spontaneous interest more than traditional approaches.

All these positive aspects must be considered but we also must be aware that the benefit of using new technologies for students is greatly dependent on the teachers' attitude to the presence of ICT in the teaching and learning process.

This attitude is very much related to the training that the teaching staff receives and the confidence in the use of ICT (it is fully embedded in the methodologies and approaches chosen.)

Many schools have introduced new resources and programs for ICT. We should be fully aware that effective integration of ICT into a daily pedagogic routine and/or classroom activity takes time and requires support.

If the integration is successful, very often one can find pupils consistently displaying high levels of interest, motivation and enjoyment when involved in activities which utilise ICT as well. If teachers redesign their approach in a creative and innovative way including ICT for classroom activities and for the students to explore themselves, usually they respond well to the challenges of taking more personal responsibility for their own learning, such as time-limited challenges and research exercises. ICT can also empower the collaboration and working in pairs or groups on shared tasks. There are very good examples of 'peer assistance' in shared ICT-based tasks.

The best ICT-based collaborative group tasks and longer-term assignments are open-ended and challenging and students tend to find these relevant for developing personal skills which are harder to explore in a traditional teaching scenario.

1.1. Getting connected

To get started in the use of ICT in teaching and learning activities' one should be aware of 4 main points:

- How is the use of ICT currently enhancing teaching and learning in your subject?

Look first in your institution for colleagues that are already using ICT in related subjects. Research the web to find best practices in the use of ICT.

- What further opportunities can be exploited?

Consider using ICT in the classroom, to enhance pedagogical activities and to develop technological skills in pupils. Are students positively motivated by social networking? If so, consider the use of web 2.0 tools in your curriculum. If the students have good ICT skills, and affine to playing games, consider implementing the use of serious games for experiential based learning, too.

- What is inhibiting the use of ICT?

Probably the main obstacle in using ICT is the lack of institutional support. Make sure the infrastructure is available and everybody has access to it, both teachers and students. Check if there are training programs for teachers to enhance the use of ICT. Such programs can be technical or pedagogical, exploring new possibilities in the use of new technologies for education. Teacher training and support is a key factor in the success of the use of ICT for teaching and learning.

- What are the next steps in moving the department forward?

Explore the possibilities of collaboration with other teachers, schools or institutions for improving the effective use of ICT in your daily teaching routine.

1.2. *New perspectives evolving through ICT*

The main objectives when introducing ICT into teaching and learning through the years have been:

1. The development of new capabilities in the students; acquiring new skills and attitudes towards ICT has a crucial importance in our society that has been drastically modified by new information technologies;
2. The transformation of the traditional curricula to embrace methodologies that are computer-related; the development of new content, tools, multimedia learning objects, new assessment methods, all these have been the subject of serious change to respond to, and embed ICT.

Both objectives have an implicit demand for new skills and competencies for teachers working in primary and secondary schools and in higher education institutions. Not only the teaching skills are redefined but we also need to rethink the curriculum structure to meet new strategies and methodologies. Analysing how ICT is used in classroom activities can produce significant changes both in the nature of the knowledge gained, and in the nature of the processes involved in acquiring this knowledge. One cannot think of success with the use of new technologies in education if the classroom setting remains unchanged. Fortunately, nowadays a more integrated vision with ICT and the whole educational strategy, content and activities are regarded as important in the majority of institutions that have a systematic and sustained approach to the use of ICT.

Firstly, for sharing ideas about ICT based learning systems three models are described. The aspects considered are the educational theories used, the main characteristics of ICT-based systems from the point of view of their use in the classroom and the interaction between the students and the systems.



The transmission model or associative model

It can be considered that learning is an activity. The first way that computers had been used in education were in *drill and practice* programs, allowing students to exercise the development of very specific abilities. They include some gaming to encourage participation and questioning for the assessment of their acquired knowledge. These types of computer-based activities are usually used in an after-class context for personal development and training and are unfortunately not integrated in the classroom.

Another example of an associative model approach is the tutorial design of courses. In this design, learning comes from reinforcement and association with an assessment of performance. This assessment can be formative where feedback is used for identifying processing errors and a recast of the instruction.

Again, the use in the classroom is limited since it is not a tool to help students in their work, but a tool that can somehow substitute a teacher.



The student centred model or cognitive model

Progressively constructivist theories changed the paradigm so that now the computer serves the aims in learning to a focus on the students' attitudes and behaviours. The computer in this

sense is understood as the tool that transforms a student internally at the cognitive level; this is what results in learning.

The use of ICT in this model is to empower learning as the transformation of experiences into emotions, skills, attitudes and knowledge.

One can approach this model using reflective case-studies, problem-based learning activities, experiential learning and other task-oriented activities. These activities allow students to build their own paths and mental structures. It also enables them to set goals together with the teacher or facilitator, design the means how to achieve these goals and continuously review how far they progressed compared to the previously agreed criteria. This new approach will strengthen their self-esteem, and ensure stability. They are empowered to have a view of themselves, and relevant self-reflection. Apart from a more realistic view, it makes them more resistant to some of the more common psychological hazards (such as depression, addiction, and aggression)



The participative model

The tools available nowadays allow us to explore social interactions through ICT that is changing our learning process to a wider experience in terms of social interaction. There are new forms of distribution, collaboration and communication, access to communities of practice and so on.

In the participative model, the design of new tools should also include the use of pictures, figures, drawings, films and sound, and should also offer learners the opportunity to interact with a variety of screen based objects to enable them to access knowledge from a different and more constructive perspective. It provides students with the opportunity to investigate open ended problems – problems, which do not have a closed defined answer – this is what new technological tools offer.

1.3. How to use the new tool for teaching and learning?

The Knowledge Generating House intends to be a portal that provides a mutual exchange of ideas between the several practitioners of the educational system. Reinforce innovation capacities and expanding learning opportunities of young talents by letting them exploit their intellectual capital and learn through creative expression, generate new ideas and solutions in real-life innovation with experts. The portal will contain within itself a place for collaborative learning, a space for uploading sketches of academic studies/thesis/portfolios for future innovative use and an area dedicated to the individual creativity assessment.

The best way to exploit its facilities in the teaching and learning process is by searching for a real-life problem submitted by an expert or uploading new questions and asking students to collaborate by sharing ideas and commenting on each others' solutions to find the best answers through peer assessment. It is best if the teacher is a facilitator in the process who helps students to evaluate the possible outcomes on their own.



Self-assessment questions

Consider the different approaches emphasized by the models. What usage of ICT tools to enhance knowledge on specific topics can be used in a course?



Exercise, Activity for advanced users

One approach could be to embrace a tool like Evernote, that allows one to write down simple notes, for instance in the Smartphone, and then sync them to all the devices of the class, including a browser based application. If the task was to write down ideas for an essay in the middle of the night, this note would be transferred to the cloud as soon as my device is connected to the web.

Furthermore, this tool allows sharing of these notes with the students' colleagues creating a collaborative environment that can stimulate creativity.

We know creativity is about liberty, the liberty to imagine anything, anytime, anywhere. This concept clashes with the traditional classroom in such a way that some say we are more creative in the morning shower or late at night when about to fall asleep !

This generation does not carry a pencil and paper everywhere to immediately write down any idea they might have. What the students carries for sure is their Smartphone or laptop.

Example: http://www.evernote.com/about/learn_more/ (vídeos)

Another approach is to use serious games as a part of your teaching. Depending on the type of game, this can be applied synchronously or asynchronously, in a distributed environment or in the classroom. The pupils/students could use this environment to work on a topic both in teams as well as individuals, but they will be actively involved in the process of building new knowledge, sharing ideas as well as competing, but in a safe environment.

Example tools and games for innovation



Conclusion

Our young students today are highly engaged in web 2.0 tools and social environments. If we focus on education, taking advantage of their natural motivation towards these tools we can make them work directly on the content, modifying it, rating other users' content and allowing the community to build itself and their knowledge.

These new tools also allow the easy production of different types of content that can be combined (text, picture, sound, videos, etc), allowing for creative and diverse forms of expression. Young people have mobile phones and access to technology that allows exploration of a wide range of content.

This use of the web, and web 2.0 in particular, is conducive to new forms of communication among learners and teachers/trainers: some tools explicitly promote new communication structures and processes.

In order to keep the focus on the learning, and not on the technological means chosen, it is important to define a good ICT-friendly learning environment; where teams are the fundamental learning unit, not individuals and bear in mind that the technology should serve the workforce - us, not the opposite.

It is possible to evaluate, what a student read in the chapter, and what the conclusions for his practical skills are. Web2.0 could encourage peer reviews and self-essment which contributes to a stronger and more stabile self-esteem.



Further reading

ICT didactics should be developed for innovative pedagogical approaches such as:

Playing games (<http://www.surgery-games.org/43/Dissect-a-Frog.html>)

Videoconferencing (Skype – <http://www.skype.com>; iVisit - <http://www.ivisit.com>)

Webcamnow (<http://www.webcamnow.com/>)

Online testing (Hot Potatoes - <http://hotpot.uvic.ca/> ; QuizStar - <http://quizstar.4teachers.org/> ;

Exam professor - <http://www.examprofessor.com/>)

Incorporation of social networks in daily academic activities (Facebook – www.facebook.com; ELGG – <http://elgg.org/> ; DeviantArt - <http://www.deviantart.com/> ;

Google+ - <https://plus.google.com/> ; EdModo - <http://www.edmodo.com/>)

Innovative didactics

Aim of the module

The aim of this module is to give an overview of how innovative didactics may enhance the creativity of learners. After reading this module you will know how to apply some innovative methods in the learning process to stimulate and enhance creativity.



Objectives of the module

- Define some of the most important methods of innovative didactics
- Introduce some ICT tools that may support the creative learning process

Introduction

When trying to go over the traditional front lesson as the only model of teaching methodology, you must face both some new didactical innovative models and the use of ICT tools as a different type of support for the learning process. The use of these technologies is by addressing the learners more than the teachers, it helps to overcome the passivity of the learners by stimulating their creativity. The teacher will not lose his/her role, but just change it: he/she will become the coach who guides the learning process through facilitating and supporting motivation and self esteem of the learners. Let's see how!



Innovative didactics

1.1. Changes in teaching a creative knowledge society

Our social context has changed quite a lot in recent years, and with that change there is a need for new competence requirements. Competences and skills must focus on the creative approach of an individual to his/her profession. Trained professionals must go into the market with the ability to find information, combine it, work in a team, have a fair digital literacy, and be open to mobility and international contacts.

In order to train these future professionals while students, they must be challenged with innovative tasks that focus on understanding and not only on memorization. The students should start a project which he/she is good at and the teacher must set both short term and long term goals. These goals must be supported by learning plans that direct the students to achieve educational and personal learning objectives. Keep in mind that when designing tasks that are playful and allow experiential learning, students maintain higher levels of motivation. High motivation obviously reflects on their work and they explore new directions and develop interests and understanding further.

The teacher is now a guide on the side and not so much the teaching leader with restricted pathways for learning.

Social web can be efficiently used to accomplish these objectives. Users of web 2.0 can work directly on the content itself: learning content can be generated, modified, commented and rated by a community of users; different types of content can be combined – text, pictures, sound, videos, animations/simulations, etc. – allowing creative and diverse forms of expression.

These new tools provide the perfect scenario for peer learning and peer assessment allowing students to collaborate with each other.

1.2. What is an innovative assignment?

An innovative assignment supports different learning styles. Here are several activities that can be assigned to students to challenge them to solve problems in an uncommon manner:

1. Prompt a theme and incite the debate as individuals or in groups;
2. Design a website, blog about a specific subject; develop a course wiki;
3. Discover/research any other relevant facts about a certain study area or individual integrating of students into small research teams;
4. Make a “what if” analysis of a case study;
5. Use web forums to discuss with students related current newspapers articles, a news on video or any other piece of information that has just got out;
6. Develop an e-portfolio;
7. Make an interview, a short video, a podcast, a poster, a newspaper or an online newsletter.

These activities can be adapted to the subject area one is working on. If, for example, you are teaching an artistic subject innovative assignments can be the production of a play, performance, a poetry evening (that can even be open to the society), or the planning of a building in the future or in the space or even an imaginary one. These types of assignments get students to go further on their performance and getting out of conventional thinking boxes. But even if the subject is more specific you can propose to the students the planning and conducting of a training session around a theme.

All these examples try to illustrate the learner-centred and participative learning approaches, group-work and peer learning with interactive forms of learning. It allows the students to be participative and learn by doing and designing a task.

1.3. Creativity techniques



Brainstorming

Is a group creativity technique by which a group tries to find a solution for a specific problem by gathering a list of ideas spontaneously contributed by its members. The term was popularized by Alex Faickney Osborn in 1953 through the book *Applied Imagination*. In the book, Osborn not only proposed the brainstorming method but also established effective rules for hosting brainstorming sessions. Brainstorming has become a popular group technique and has aroused attention in academia. Multiple studies have been conducted to test Osborn's postulation that brainstorming is more effective than individuals working alone in generating ideas. Some researchers have concluded that the statement is false (brainstorming is not effective), while others uncovered flaws in the research and determined that the results are inconclusive. Furthermore, researchers have made modifications or proposed variations of brainstorming in an attempt to improve the productivity of brainstorming. However, there is no empirical evidence to indicate that any variation is more effective than the original technique.

General suggestions for conducting a good ideation process:

Provide:

- A. adequate time for thinking and reflection
- B. social facilitation from seeing others working on the same task
- C. sufficient time for generation of ideas
- D. the benefit of remaining problem-centered

Avoid:

- A. interruptions
- B. an undue focusing on a small number of ideas
- C. competition, status pressures, and conformity pressures
- D. choosing between ideas prematurely

Some brainstorming techniques that can be useful in exploring a course assignment or taking the next level in a field by inspiring students to collaborate, are the following:



Nominal group technique

The nominal group technique is a type of brainstorming that encourages all participants to have an equal say in the process. It is also used to generate a ranked list of ideas. Participants are asked to write their ideas anonymously. Then the moderator collects the ideas and each is voted on by the group. The vote can be as simple as a show of hands in favor of a given idea.

After this voting, the top ranked ideas may be sent back to the group or to subgroups for further brainstorming. Sometimes ideas that were previously dropped may be brought forward again once the group has re-evaluated them.

It is important that the facilitator is trained in this process before attempting to facilitate this technique so that the evaluation of ideas will ensure better contacts between the students. The group should be primed and encouraged to embrace the process. Like all team efforts, it may take a few practice sessions to train the team in the method.

Procedures

1. Generating Ideas: Each individual in the group silently generates ideas and anonymously writes them down.
2. Voting on Ideas: Individuals vote privately on the priority of ideas, and the group decision is made based on these ratings.
3. Recording Ideas: Group members engage in a round-robin feedback session to concisely develop further each idea and record them.
4. Discussing Ideas: Each recorded idea is then discussed to obtain clarification and evaluation. The outcome of the discussion is a solid idea or idea-group that the group has chosen.

Benefits

1. Builds commitment to the team's choice;
2. Produces more creative ideas than interacting groups;
3. Puts quiet members on an equal footing with more dominant members;
4. Makes a team's consensus (or lack of it) visible which leads to a greater discussion between participants;
5. Results in greater satisfaction for participants;
6. Leads to greater sense of closure and accomplishment;
7. Decreases pressure on the participants.

Limitations

1. Requires extended advance preparation, which means that it cannot be a spontaneous technique.
2. Tends to be limited to a single-purpose, single-topic meeting; it is difficult to change topics in the middle of the meeting.
3. Needs agreement from all participants to use the same structured method, which some people might resist.



Group passing technique/brainwriting

Brainwriting is an approach that stimulates a group of reticent individuals to contribute to the brainstorming process. When a facilitator is having trouble gaining input from all participants, the brainwriting technique provides an approach that requires all people to participate.

Procedures

1. Generating ideas: each person in a circular group writes down one idea, and then passes the piece of paper to the next person in a clockwise direction;
2. Discussion of the ideas: actually there is no oral discussion. After receiving the piece of paper from the person before, the one who receives it adds some thoughts, reframes the idea or writes a new one.
3. Circulating of papers: passing over the papers continues until everybody gets his or her original piece of paper back. By this time, it is likely that the group will have extensively elaborated on each idea.

4. Reading the ideas: we make the papers with the ideas visible for the whole team and ask them to read them silently without discussing them yet.
 5. Choosing ideas: each participant chooses 3 ideas they liked the most. The chosen ideas are added up and the one that got the most votes will be the choice of the class.
- This technique allows individuals time to think deeply about the problem.

Benefits

1. Produces more creative ideas than discussing in interacting groups;
2. Each person gets written oral feedback for their ideas, on how inspiring they were
3. Puts quiet members on an equal footing with more dominant members;
4. Everyone can choose the best possible solution instead of a few dominant people
5. Results in greater satisfaction for participants;
6. Decreases pressure on the participants.

Limitations

1. Requires preparation in advance, which means that it cannot be a spontaneous technique.
2. There is a lack of discussion, so it is a risk that participants will not agree or get to the same level of understanding
3. The ideas are not deeply elaborated, so there is a risk of staying on the surface of a problem



Team idea mapping

This method of brainstorming works by the method of association. It may improve collaboration and increase the quantity of ideas, and is designed so that all attendees participate and no ideas are rejected.

Procedures

1. Generating ideas: the process begins with a well-defined topic. Each participant brainstorms individually;
2. Recording ideas: after the individual brainstorming all the ideas are merged onto one large idea map. During this consolidation phase, participants may discover a common understanding of the issues as they share the meanings behind their ideas. During this sharing, new ideas may arise by association, and they are added to the map.
3. Voting on ideas: Once all the ideas are captured, the group can prioritize and/or take action.



Electronic brainstorming

Electronic brainstorming outperforms both regular brainstorming and nominal group brainstorming. It is a computerized version of the manual brainstorming technique typically supported by an electronic meeting system (EMS) but simpler forms can also be constructed via email and may be browser based, or use peer-to-peer software.



Directed brainstorming

Directed brainstorming is a variation of electronic brainstorming. It can be done manually or with computers. Directed brainstorming works when the criteria for evaluating a good idea is known prior to the session. If known, that criteria can be used to intentionally constrain the ideation process.

In an online brainstorming a limited number of people take part in one session, where they share their ideas on small notes, then connect and react to each others ideas generating new ones. Sometimes online brainstorming contains techniques, such as random words or inspiring pictures to help the participants think outside the box.

In directed brainstorming, each participant is given one sheet of paper (or electronic form) and told the brainstorming question. They are asked to produce one response and stop, then all of the papers (or forms) are randomly swapped among the participants. The participants are asked to look at the idea they received and to create a new idea that improves on that idea based on the initial criteria. The forms are then swapped again and respondents are asked to improve upon the ideas, and the process is repeated for three or more rounds.

1.4. Characteristics of a creativity-enhancing task

Although there shouldn't be restricted rules to establish creativity-enhancing tasks, there are a few steps, when establishing a framework, that might help the process. It is common to establish **4 steps**. These steps are used by many artists, creatives, and problem solvers, either individually or in group settings.

Start with a question to answer or a problem to solve. (Examples: designing a logo, writing a story)

Step 1. Preparation and research

We all employ a range of strategies for engaging with a problem but we need to acquire a certain amount of knowledge and understanding before we can make sense of it and work with it intelligently, imaginatively and productively. You can browse the web, search for realted books and articles or examine the related object in real life. *Helping students to recognise how they acquire new knowledge to work with new problems or situations is important in designs for this type of learning.*

Step 2. Incubation

The generation of frameworks, reference points and criteria for the appraisal of ideas, options and possible solutions is integral to the creative process. *Designs to encourage creative thinking need to help students use and develop for themselves frameworks and criteria to help them evaluate their ideas.* In work contexts we often test ideas with colleagues or peers. So within student learning contexts peer group discussion on the merits of ideas and the criteria that might be used to judge them are important.

Step 3. Percolation

Mulling over collected information, relaxation or taking a walk in nature. Exceed the resources, combine information in new ways.

Step 4. Implementation

After ideas have been generated they are reviewed, analysed, clustered and evaluated. The evaluation leads to plans to convert the most valuable ideas for the particular circumstances

into actions that are then implemented. This moves us from creative thinking into the domain of innovation where ideas are turned into products, processes or performance.

Designs for creative student learning should incorporate opportunities for students to turn their ideas into things or other outcomes.

Actual Making, creating and elaboration.

After reading through these seemingly common-sense steps, you might wonder if they must be followed in order, or if they are all even necessary in every creative project you do.

Being aware of the creative process and making the most of it works to your advantage. Do you have to? No, you can do whatever you want as long as you encourage students to explore a problem in new ways! And you might even find that the steps don't always happen in order and sometimes are repeated in the process. That would be the non-linear nature of creativity at work!

Evaluation of results / projects – towards the end of any creative learning process a teacher may encourage students to stand back and examine the whole process, the results and what they learned through the experience. Being creative is to some extent a state of mind and being aware of how you have done it is important personal knowledge for doing it again in a different context.

1.5. Focus on adult education innovative didactics: a framework

Focusing on non-formal adult education, we might outline some considerations about innovative didactics. Non-formal adult learning is designed to give the groups of adults who need learning a new learning experience that will differ from these adults' very often somehow negative school experiences. They could be called socially, educationally or economically disadvantaged, but whatever their background, they might be defined as groups of adults who are reluctant to participate in lifelong learning, and often have a low self-esteem when it comes to education and traditional qualifications.

Therefore, it is a huge challenge to develop learning environments that are attractive to these groups of adults, avoiding the offer of just sitting in a class room listening to a teacher. Innovative non-formal adult learning should be designed quite differently. That is not to say that the environment or the trainers should not use pedagogical methods, but because traditional pedagogies are not supposed to deal with basic learning resistance. So maybe it would be more correct to talk about the development of an extra pedagogical dimension in non-formal adult learning. That is: innovative didactics.

Didactics is about the learning set-up, the organization of different kinds of learning – the infrastructures of the learning environments – whereas pedagogies are more linked to teaching techniques, i.e. how to teach a specific subject in the most efficient way to a specific target group. In short, didactics could be called the framework of the learning situation, in which different pedagogical techniques might be practiced. So dissolving the safe structures of the traditional classroom, we should start reflecting on the very basic organization of the learning activities.

One of the most important didactical elements in non-formal adult set-ups is the personal approach. We are no longer dealing with a class of students; we are dealing with adults with complex relations, perhaps with some social or economic problems, and perhaps with very little self-confidence. The adults might be quite different from each other, and one of the learning principles is to base the activities on the adults' personal needs, interests and talents.

The trainers and mentors should be following up on this personal dialogue throughout the project activities. BUT, the trainer is not supposed to do all the organizing himself. The adults should always be involved in the planning of the activities, so that: - they take responsibility for their activities; - because that is a sort of empowerment training; to be involved in the very organization of the activities.

One of the strong empowerment approaches to organizing this kind of learning is called problem-based learning. The entire learning activity starts with the identification of a problem (based on the interests of the adults). It could be all kinds of problems, relevant to the participants, perhaps even of the utmost importance to the participants. The participants will not only be concerned with the content, the knowledge, of the subject, but will also be involved in HOW to get to that knowledge. The adults will train their ability to find ways of solving problems or getting answers to important questions: guided and inspired by the trainer or a mentor, the adults will start their activities. The serious interest in the subject (maybe some of them have children who eat too much and do not take part in physical activities?) will motivate them to go on involving themselves, and they will be supported all the way by their group and by the trainers. The problem-based learning can be developed in many directions. It depends on the local circumstances, on the adults, on the resources, etc. It is very interesting to experiment with different versions of these didactics, but it is also important to try to hold on to the basic principles, because these basic principles are at the very heart of the empowerment process.

The new roles of the teachers and trainers are extremely important: the teacher moves away from the teacher's desk and a trainer locates in the middle of the adults' working group. Because that is what the trainer is, a trainer, not a teacher. The trainer is not supposed to know all the answers, but is supposed to guide, help, council and support the adult groups, working on finding the answers. It can be called the facilitation of the adults' learning activities.

It is very important for the trainers to be able to motivate the adults and to treat them with respect. Half of the required trainer competences will be related to the way the trainers approach and communicate with and understand the needs of the adults. The other half is related to the trainer's ability to guide and inspire the adults as they work their way through the learning processes. The most important competence an empowerment trainer can offer the learning process is the competence to facilitate and enjoy the learning progress of other people, instead of taking the scene on every possible occasion.

The aim of these processes and didactics is to allow adult learners to have a new experience of what learning can be like and how learning can enlighten one's life – and make it possible to attend further education or find an interesting job. The learning activities should produce a number of changes in the attitudes of the adults, as to their life perspectives, their interest in learning, their ability to learn, their self-esteem, etc.

1.6. The "virtual company" model

The motivation for people who want to enrol in a course can be different: desire to learn something new, social contact need, find a new job, or simply they fear to be "left behind" or lose some privileged social position. The stronger the motivation, the stronger is the commitment of the learner in trying to satisfy the need for participating in a formative course. An innovative didactic method could be the building up of a "virtual company" in an educational context with the aim to create in the learner a strong intrinsic motivation:

Intrinsic Motivation: "Stimulation that drives an individual to adopt or change a behaviour for his or her own internal satisfaction or fulfilment. Intrinsic motivation is usually self-applied,

and springs from a direct relationship between the individual and the situation. It is very important factor in the design of a learning or training course."

The main roles are: the teacher as a coach and the classroom as a team. The role of the coach is to guide the team through a series of processes to define and reach a common goal defined by the team itself in the early stage of the course, and to support the whole process that will guide the team to the goal. The roles in the team are based on personal vocation and ambition of each learner in the team. The coach will guide the learners in choosing their role and promoting mutual support among the learners.

The first step is to set the basic rules and to share them with the learners. Each student gives her/his definition for every point of the list below and shares it with his/her classmates in the Values Document:

- be a team
- be yourself
- be creative
- it's a serious game
- have fun
- commitment
- defer judgment
- give mutual support

The document with a short description of each point can be published on a blog and will mark the starting point. When the Values are shared and validated, the class becomes a team.

In the first phase the main area where the team wants to start working is defined through a brain writing session, with the help of Google Docs where each learner will independently put his/her ideas. At this stage the team defines a common goal. The characteristics of the common goal follow the PURE SMART model:

P personal and positively expressed (going towards something and not avoid it)

U (You) it depends on your care, on your actions, on yourselves

R it must be real and realistic

E ecologic (defining the whole set of consequences for those who are involved in reaching the goal)

S specific (defined in a precise way without any generalization)

M measurable (what I should do and how do I know when I reach it)

A concrete team action is required

R realize it (real and strong basis is required)

T time-defined (deadline for reaching the goal must be set in order not to have just a dream)

The coach will verify through questions to the team how the goal follows the model. Then the team builds up a list with some points where the "positive things" are defined. The list is written on Google Docs. This phase is focused on the very positive aspects to create a good feeling that will help building up the next phase. The team then analyzes what aspects are to improve to create a turning point that helps achieving the goal defined.

For the meetings, the team could meet in class or through Skype or Gtalk programs. In the classroom students can share, check, test, support, and are supported by the coach. The virtual meetings are for the students who need to check the status of their work at home. During these

meetings the team can work simultaneously on the same document in a “wiki” format on Google Docs.

During the final lesson conclusions are made, and learners analyze the work evaluating:

- the state of art
- what has been created
- what has been learnt
- what about the goal
- follow up of the project



Self-assessment questions

Exercises for the “Virtual company” model:

1. The relationship between students and teacher is
 - A. Inverted: students teach the teacher
 - B. Learners-Mentor
 - C. **Team-Coach**
 - D. Team-Counselor

2. The PURE SMART method aims to:
 - A. Make the student smarter in defining the goal
 - B. Make the brain writing easy
 - C. **Help team to define their object**
 - D. Enhance the team self confidence

3. In the Reality Phase the team jots a list of:
 - A. **“Positive things” they own before creating a strategy**
 - B. Competitors
 - C. Strengths and weaknesses
 - D. At least 10 things to do to get things done

4. In the virtual company contest the teacher, like an employer define the draft of the goal to be reached by the end of the course
 - True
 - False



Exercise, Activity

Designs for creative student learning should encourage students to reflect on their overall experience and results and ask questions like:

- Did your idea work out as you intended?

- How active were the learners in the process?
- What happened and what did you learn through the process?
- Where would you take the idea next?



Further reading

Innovative assignment examples on the web:

<http://wacblog2010.blogspot.com/p/innovative-assignments.html>

http://mendota.english.wisc.edu/~WAC/page.jsp?id=21&c_type=category&c_id=16



References

Applied Imagination: Principles and Procedures of Creative Problem Solving, Alex F. Osborn, New York: Charles Scribner's Sons, 1953

Coaching, John Whitmore, Sperling & Kupfer, 2003

101 activities for teaching creativity and problem solving, Arthur B. Van Gundy, Pfeiffer, 2005

http://en.wikipedia.org/wiki/Neuro-linguistic_programming last visit January 8 2012

http://en.wikipedia.org/wiki/GROW_model last visit January 8 2012

http://en.wikipedia.org/wiki/Creativity_technique last visit January 8 2012

[http://en.wikipedia.org/wiki/Association_\(psychology\)](http://en.wikipedia.org/wiki/Association_(psychology)) last visit January 8 2012

Infinite Innovations Ltd: Creating a creative environment for brainstorming.

<http://www.brainstorming.co.uk/tutorials/creativeenvironment.html>, viewed 10 January 2012.

Supporting learners and teachers in the creative process

Aim of the module

This module is intended to clarify the concept of creativity that must be recognized and valued at the level of individuals, peer-groups or society in general, and considered as an essential element to participate and contribute to the life and culture of society. It is important to give teachers and students tools that describe and promote the interaction between the qualities in people and communities, creative processes, and social contexts. Creativity in education may include learning to be creative, to produce a work that has originality and value for individuals, their peers and society, as well as learning to make choices and decisions in general life.



Objectives of the module

- Know the concept of creativity and know its involvement in a learning context;
- Encourage and develop the creativity of students and teachers for training and selection of the best tools to use;
- Recognize that creativity requires the assumption of risk attitudes and involves the use of different strategies in the classroom.

Introduction

Recently, there is an expression of displeasure in many sectors of society of a lack of creativity. From art to painting, through artists, teachers, psychologists, philosophers and representatives of cultural industries and trade warned against the consequences of children and restricting the creative potential of young people.

Creativity can be considered a skill that not everyone has, but you can work on it and it is considered essential to life. Each person can develop their potential to use their imagination to express themselves, and make original and valued choices in their lives. Today's

society is strong, technological and requires active participation. It requires an interaction between people, communities, creative processes, knowledge areas and larger social contexts.



Supporting learners and teachers in the creative process

Let us first of all discuss the notion of creativity. What is creativity? Creativity involves first imagining something and then doing something with this imagination. This exercise of imagining and doing what is imagined it's a very personal act and it gives you a sense of satisfaction and achievement when you've done it. It is the dream come true in a realised project.

Creativity is difficult to define and it is rarely articulated as an explicit learning objective in the academic curriculum. Teachers tend to assess creativity in different ways:

1. Newness - novelty or originality for an individual or group of individuals.
2. Excitement – its stimulating because it is different
3. Useful – it works, at least at present
4. Pleasurable - aesthetic satisfaction
5. Moral – an essence of creativity is that its results are ‘constructive’
6. Hard work – what you get out reflects what you put in.

A research study of creativity in school teaching Fryer (1995 p10) shows that the conceptions held by higher education teachers are similar to those held by school teachers e.g.

‘Creativity is being original, being able to take an idea forward and develop it in your own way.’

‘Creativity is the ability to look at things in different ways, to find satisfaction in making or creating something and persevering with it until the end product. It involves hard work...’

1.1. Supporting learners

To meet needs of being creative, learners should: be able to **visualise ideas** and transform them. Characteristics like flexibility, fluency and adaptability are important to the transformation of ideas. Do an **effective use of memory**, and make connections and associations with and through their knowledge. Have **convergent and divergent thinking**, since creativity involves both convergent thinking (focused, analytical, judgemental and detailed thinking) and divergent thinking (diffuse, free flowing, associated, perceptual and imaginative).

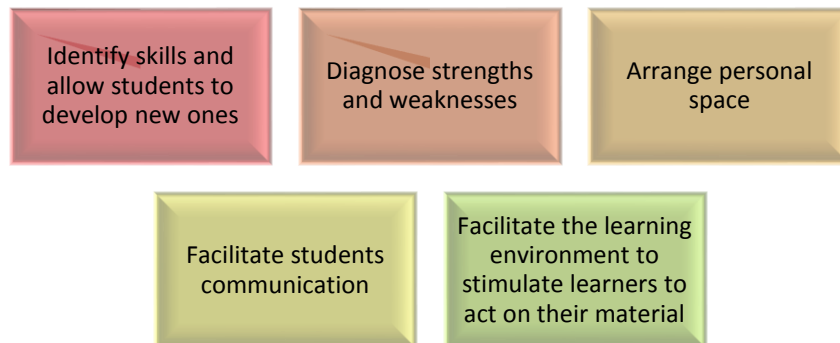
Learning processes to foster creativity must develop self-confidence and self-esteem, encourage risk taking in safe environments and help students to be ‘comfortable’ in messy/complex and unpredictable situations where there are no right and wrong answers.

A curriculum that promotes complex learning involves mastery of four categories of attitudes and behaviors:

1. Positive beliefs, emotions and attitudes: you have to be self-motivated to be creative.

2. Self-regulating skills: you have the opportunity to be creative and you have to know how to go about being creative.
3. A well organized knowledge: you have to know about a subject before being creative about it.
4. Global strategy approach of problem analysis and transformation

To support learners teachers should:



The communication processes also changes, as new forms of communication among learners and teachers also suffer alterations.

Teacher act like:	Teachers & students:
<ul style="list-style-type: none"> •Mentor •Mediator •Facilitator •Guide •Moderator •Coordinator •Designer •More experienced friend 	<ul style="list-style-type: none"> •Form the rules together •Discuss informal topics •Explore new tools to promote new processes and communication structures •Change their roles sometimes

In primary and secondary schools the role of the parent in the educational process, and by enhancing creativity is crucial. If the environment at home is safe and stable, if the parent encourages the child to be creative and successful, the teacher/student work will have a better result. Also the communication between the teacher and parent is of significant importance for the creativity of the child – if they look in one direction and their interests are common, so the student feels secure and can show the best of his/her knowledge and skills.

1.2. Supporting teachers

Designing for creativity involves thinking about the whole programme and the particular opportunities and contexts for learning within the programme (modules/units).

Teachers can gain experience and training in developing such curricula while participating in exchange programmes, engaging in virtual or physical excursions to other institutions and establishing partnerships with local communities or even industry.

In order to embed ICT, videoconferencing tools for example, academic staff must receive proper training and the schools management must be aware of the continuous support needed for the success of these new projects.

This support may come in the form of technical or pedagogical training, since the technical aspect of technology although important is not the only one needed for achieving goals. A teacher must feel comfortable with technicalities but most of all must be very much aware of how to approach the pedagogical methodology of the new tools that he/she now has available.

The school community must find space for teachers to present and discuss new methodologies. This exchange of experiences is very enriching for an educational practitioner, allowing them to acknowledge resources and the real experiences of peers.



Self-assessment question

What paper/pencil activities do you think can be empowered by the introduction of ICT?
While enhancing a creative process in the students how should a teacher act?



Exercise, Activity

As a teacher, what are the creativity enhancing tasks that you already promote in the classroom? How can you insert ICT in those activities?

The think-pair-share activity: this activity is when learners take a minute to ponder the previous lesson, later to discuss it with one or more of their peers, finally to share it with the class as part of a formal discussion. During the discussion the instructor should clarify misconceptions. Preparation is the key. Prepare learners with clear instructions before expecting them to discuss it on their own.

Video activity: a reaction to a video is also an example of active learning because most students love to watch movies. The video helps the student to understand what they are learning in an alternative presentation mode. The video should reflect and relate to the topic. Try to give them a few questions before watching the video. This will make them focus on some aspects of the video whilst paying attention to it. After the video is complete, divide students into groups or pairs so that they may discuss what they learned and write a review or reaction to the video. There are several videos on youtube, for example, that can be used in the classroom.



Conclusion

Digital information and communication technologies (ICT) can be seen as a set of tools that can be chosen as and when they are appropriate in the creative process. Students and teachers can use ICT to support creative expression, autonomy and collaboration, and form, be unique and add value. ICT can offer opportunities to be creative in authentic contexts in ways that were not accessible without new technologies. This accessibility and flexibility for innovation presents challenges for teachers and schools to meet the current models of teaching and learning. Creativity can be promoted and expanded through the use of new technologies where there are opportunities for students to participate more. An important issue is to provide students the best tools to be creative.



Further reading

Online version of an idea-generating technique: <http://watizit.dufourcreative.com/>



References

- Bonwell, C.; Eison, J. (1991). Active learning: creating excitement in the classroom. AEHE-ERIC higher Education, report n1, Washington, DC; Jossey Bass. ISBN 1-87838-00-87
- Sternberg, R. J., & Williams, W. M. (1996). How to develop student creativity. Alexandria, VA: Association for Supervision and Curriculum Development.
- Schank, R. C. (1988). The Creative Attitude: Learning to Ask and Answer the Right Questions. New York: Macmillan.
- McKinney, Kathleen. (2001) Active learning. Normal, IL. Center for Teaching, learning and technology.
- Jackson, N. (2006) Developing creativity in HE: An imaginative curriculum, Psychology Press

Assessing creative results



Objectives of the module

- How to assess creativity
- Show the content of feedback for enhancing creativity

Introduction

People tend to say that one cannot assess creativity, but creativity is not an abstraction. To be creative you should be doing something new.

Here is a 2010 video by Sir Ken Robinson that we suggest you to watch on assessing creativity: <http://www.youtube.com/watch?v=4pHXH5fmCCs>

In the creative processes teachers are more open to negotiation. Assessment is a process, it starts at the beginning of a task or subject, when teachers and learners agree on the goals to be reach and the requirements, criteria that will indicate for the learner and the teacher or peers how far the result reached its goal. Creativity is not a stand-alone requirement, the creative outcome should be useful for a purpose, it should meet a goal or requirement. Even in arts, the goal could be to inspire people, to create a feeling or indicate a thought. Usually teachers introduce the tools — concepts, strategies, information sources — and then have students practice them on problems and situations that they choose/identify.

This new approach requires new methods of assessment that are more flexible and adapted to the strategy chosen that embraces the whole learning process.



Assessing creative results

1.1. What is new in assessing creative results?

The first main idea mentioned in the introduction is that assessment is a process and not an outcome. Taking this into consideration, the function of the teacher easily shifts from an evaluator of performance to a reinforcement agent whose feedback guides and develops the students' work self-concept or stabile self-esteem even further. Summative assessment

practices that do not recognise individual results of new learning methodologies will stifle creativity.

1.2. Content of the feedback

Projects of creative learning usually require planning and development over a long period of time. Assessment must be an element of the project and has to be seen as a part of it. It should provide support to think of new ideas, identifying problems and suggesting solutions through the process. The traditional modular assessment models do not allow students to improve along the learning path but more to be informed of the learning outcomes at the end. A creative process assessment is complex, sometimes seemingly subjective because it is not that a single right or wrong answer is possible. On the other hand, every assessment should contain an oral feedback about how the solution met the goals and criteria previously set. For example, in a web 2.0 environment we could ask the learners themselves together with peers to review and reflect on the solutions, provide feedback and comments about how it met the goals and what could be the ways for developing it further. Self-reflection is extremely important for stable self-esteem to evolve because it empowers the learners with the capability to rely on their own senses and the teachers' and peers' role is only to enhance the learners' senses to be maybe slightly optimistic but remain close to reality. It is a problem if learners completely rely on the evaluation of the teacher about their performance without having a sense of how realistic feedback is for their own development – especially when they face a creative problem.

This is why feedback assumes a major importance when assessing creative results.

The role of feedback in the learning process is to inform the student of where and how their performance and learning can be improved. Written or oral feedback must highlight the strengths and weaknesses of the project, motivate students to reflect and discuss problems during the implementation and push students to consider new possibilities: what to do next? What other ideas arose from the process so far?

Marks are not suitable for this feedback type. It is better for a teacher to use written feedback.

Practical feedback methods

- Generic feedback
- Self assessment
- Student steered feedback
- Feedback statement banks
- Electronic feedback
- Class marking
- Peer marking and feedback
- Individual verbal feedback

1.3. Methods of assessing creative results

Portfolios describing and evidencing learning as well as the process of learning are more suited when assessing creative results. They encourage learners to reflect about their learning and to be critical about their project planning.

To assess these outcomes one should consider not only individual assessment but also an interactive peer assessment that can help weaker learners to get support (take care it doesn't end up in a flow of critiques) to overcome their issues and difficulties.

1.4. Basis of assessment

For the appreciation of the creative work a teacher has to consider:

1. The initial idea
2. The number of ideas emerged as a result of the perspective change
3. The exploration of the subject which has to be significant
4. The outcome: in terms of novelty, usability, solutions proposed for the problems during the process.

1.5. Web Social tools empower creativity. How to assess their use?

Today the so-called "Web 2.0" offers an infinite potential with respect to the provision of work tools or social tools.

“Writing becomes not merely a tool associated with homework, but also a tool which a student can utilize to network with other students, to share and co-produce material and to communicate with a wide audience with all its consequences. The processes involved in appropriating such new technologies suggest that users learn how to learn in new, creative ways. The potential of technology for creative learning and innovative teaching can also be exploited in schools.”

Anusca Ferrari, Romina Cachia, Yves Punie

“Blogging is an example of how youngsters are using technologies to express their creativity and to be innovative. Creativity can be both at the individual level, as well as the collective level. These applications demonstrate variety of means of how users learn how to learn, which according to Rogers (1983) is a major component of creativity. The example of blogging shows that there are various ways in which children learn how to write for a public, how to link their work to other works, how to network with other bloggers and how to utilize the blog for their eventual career paths.”

Anusca Ferrari, Romina Cachia, Yves Punie

These new tools are accessible to everyone, and provide tools to enhance individual creativity. This creativity can correspond to different levels of familiarity with the tool used; this will dictate different approaches and different results.

The individual creativity here assumes a leading role, because it is this creativity that will be the main differentiator in the middle of the community network.

“Technological skills are important not only for children at schools but also for lifelong learning (European Commission, 2008). The different levels of interaction and collaboration characteristic of new technologies facilitate personalization of learning paths: learners becoming active stakeholders who are ‘empowered to shape their own learning spaces and

resources' and collaborative learning processes: knowledgeable actors acting as scaffolding for the development of new abilities and competences by the learners"

*Ala-Mutka, Bacigalupo et al., 2008
Anusca Ferrari, Romina Cachia, Yves Punie*

In this context Elliott suggests that a new evaluation model "Assessment 2.0" has to be followed.



Characteristics of Assessment 2.0

The **type of assessment activity** best suited to the digital native would exhibit some or all of the following characteristics.

Authentic: involving real-world knowledge and skills.

Personalized: tailored to the knowledge, skills and interests of each student.

Negotiated: agreed between the learner and the teacher.

Problem oriented: original tasks requiring genuine problem solving skills.

Socially constructed: using the student's social networks.

Collaboratively produced: produced in partnership with fellow students.

Recognize existing skills: willing to accredit the student's existing work.

And the **type of evidence or channel** that best fits this type of assessment would be:

Naturally occurring: already in existence or generated out of personal interest

Digital: such as e-mail, instant message logs, blog posts, wiki contributions, audio and video recordings

Multimedia: existing in text, audio and video format

Distributed: may be scattered across various sources (such as websites, blogs, inbox, iPod).

Feel free to experiment with any, just check whether the assessment process is related to the above mentioned criteria. Whether self-assessment, peer-assessment or assessment by the teacher is a learning process to provide reinforcing feedback. Our creative skill is fragile, and we should keep in mind, there are no good or wrong answers in a creative task. It is important to be familiar with the criteria for assessing creative solutions and learn how to inspire and support each other through reinforcing our creative capabilities, strengths while giving feedback from different perspectives and showing alternative ways for development that the learner themselves can either build in or move towards another direction they want to explore.



Self-assessment questions

What are the main differences between web 2.0 tools and web 1.0?

Which tools (web 2.0 or web 1.0) do you think empowers the assessment of creative results?

Exercise, Activity

How could I integrate in the curriculum activities an individual or group blog on a topic?
What would be important to assess? When and how provide feedback?

Here you can find suggestions of activities:

http://www.creativelearning.com/free-sample-activities/view_category.html



Conclusion

The pedagogical approaches, either to involve innovate teaching methods, or to improve creativity of students in the learning process. This must be accompanied by new assessment methods.

We are not necessarily talking about the ICT introduction to the teaching techniques. If we elaborate a new collaborative and innovative task in the classroom we should be prepared to assess, and/or give feedback to students. To be innovative is not just saying „go and write a blog“: a teacher must provide feedback during the task depending on how new ways were explored and how the solution met the initial goals. Teachers should know exactly how the selected method is going to assess the work. This way, assessing creativity is not any more or less subjective than assessing knowledge.



Further reading

<http://www.creativelearning.com>



References

O'Reilly (2005) - What Is Web 2.0 (2005) - O'Reilly Media

(<http://oreilly.com/pub/a/web2/archive/what-is-web-20.html?page=3>)

Anusca Ferrari, Romina Cachia, Yves Punie (2011)

(<http://ec.europa.eu/education/lifelong-learning-olicy/doc/creativity/report/ict.pdf>)

Bobby Elliott (2007) Modernising assessment: the use of web 2.0 for formative and summative assessment.

(<https://dspace.lboro.ac.uk/dspace-jspui/bitstream/2134/4543/1/Elliott%20B.pdf>)

Cooperation in an innovation process



Aim of this module

The aim of this module is to provide methods and share examples with teachers and facilitators on how to link teaching and learning with the business field of innovation. By the end of the module you will get to know different open innovation models in contrast with the closed innovation of many companies nowadays. You will get tips on how to motivate learners to take part in this process and which communities are of interest. This module takes around 45 minutes to go through.



Introduction to open innovation

What is open innovation, and how does it differ from previous models, like the closed innovation systems?

Before being open, innovation happened in closed environments often performed by individuals, scientists or employees. In **a closed innovation, organizations strictly control processes and outcomes, they develop the know-how internally** and keep the innovative technologies within the company or network until the new product is on the market.

The expression „closed innovation“ came later, not before the paradigm of open innovation was popularised by the works of Henry Chesbrough, Don Tapscott and Anthony D. Williams. Closed innovation is perhaps best described by the innovation methods of old automotive giants such as Chrysler and Ford Motor Companies.

Closed Innovation has its own benefits: When the internal network is big and significant enough to have all the resources to develop a constantly new product or service for a global market, it is reasonable to use closed innovation methods within a selected network. Some characteristic attitudes of closed innovation systems are shown in the following diagram



Open innovation, on the other hand, is **more flexible**, it means that ideas can come from outside of the organization and ideas from inside the organization can also go out. It involves networking with other organizations like universities, individuals, companies, interacting with start-up ventures, public research institutes, universities, external suppliers sharing and accessing outside information and technology in an open-ended way. This way it is far more **fluid, adaptable and organic**.

In contrast, **open innovation does not refer to free knowledge or technology**. It only refers to collaborative networking, and it might also involve even significant payments of license fees for Intellectual Properties. Essential factors of open innovation are:

- Brainstorming on development possibilities in a diverse group that involves individuals from inside and outside of the organization
- Networking and collaboration, building contacts, creating opportunities
- Entrepreneurship, thinking creatively to find solutions
- Access to finance, learning how to be a magnet for investment
- Access to information
- Development attitude
- Building on research
- New perspectives, thinking outside the box



Cooperation in an innovation process

1.1. Career development

HR should be based on testing the applicants' contributions to a company's real activities. Currently, students face problems in self-knowledge, finding the best career-path for themselves. Career development **should be a continuum which starts within the school-years and leads directly to finding the position which suits the person's potentials best.** It should support finding real interests and self-realization. If this is ensured, then students will have a better way to getting to know themselves as well. Today, students usually face several difficulties in career management because of the fact that schools teach in a theoretical way and knowledge is sometimes hardly transferable into practice.

Most times career development is separated from the practice of teaching. The subjects, the exam papers and deadlines are not yet connected to business opportunities. Career management in general starts only after finishing one's studies, in a passive way. Applicants send their CV-s to job offers and the company selects the best potential candidate based on what is passively shown in the CV. It is not natural this way, though. **HR management could go hand in hand with education, in an interactive way.**

1.2. Bring R&D and education closer together

The emphasis is getting bigger on the significance of **becoming a learning organization.** However, answering the constantly changing needs of the market is already not enough for success. **Organizations are to be more open to society, more transparent, dynamic and flexible.** Social computing both requires and promotes an organizational innovation: schools are becoming open learning centres, universities learning centre providers, companies learning organizations and cities learning support environments. The staff, students or any stakeholders are empowered to influence learning and innovation within the organization.

They can motivate the leadership to take new perspectives into account. They can give feedback in real-life or on an interactive communication platform, where they are free to recommend alternatives for solutions or share ideas about present and future trends.

We should set goals: **education is the first step and career is the following on a chain to realize our potentials**, try ourselves and find the best career for self-realization. Schools need more contact with the current business trends to be up-to-date and useful. Research should be channelled into development to support and secure innovation from more sides. It is obvious that research and development should go in parallel. They are the most effective if **research is not a stand-alone activity. The goal is to channel the results into real development plans.** Research should not only be done in secret in factories or the research laboratories of companies, but they should be connected to universities. Companies can better develop with the involvement of the **fresh mind of youth seeing more view-points which also leads to thinking outside the box.**

1.3. Trust and openness as a pre-condition

A dynamic environment and a more open, flat society urges us to realize the need to be treated and to **treat with trust and respect.** This could take place **in a safe environment, where people feel safe to experiment, explore and innovate.** If trust and respect are combined with getting the control ourselves, we might have less fear of being judged, used or ridiculed.

Trust is ensured by openness and both are preconditions of open innovation. It is the basis of working together and these preconditions are in a chain. **If there are open goals, open conditions and open criteria, then people feel responsible for their own decisions and feel secure in the environment.** If the person sees the possibilities and conditions beforehand, then they can decide how much they would like to give or be involved with bearing in mind the possible consequences. Neither of us wants to be exposed and subordinate our wellbeing to the situation or to other people.

1.4. Networking with „communities of interest“

In innovative companies and schools, these online spaces and novel open innovation methods are just being tapped. The learner is involved in a process of dynamic exchange of information about current development concepts mostly through an online network as innovation is now the key factor to face international competitiveness. It is likely that this process will go hand in hand with shifts in managerial culture. Building a culture of open innovation requires rewarded teamwork and organizational changes that foster internal and external collaboration. Global innovation networks are forming. Nevertheless, SMEs are about to recognize that within the next decades risk is manageable, shareable and reduced by a global innovation network.

Innovation networks can be clusters, business ecosystems, communities of practice, strategic alliances or living labs as well.



Clusters have usually different business structures such as national-regional-cross-border *clusters*, *clusters of competence*, industrial or production systems and innovation systems. It is also used for different reasons: to increase the competitiveness of SMEs, support collective research, change a whole industry, implement *environment* management system... Even though there are a huge number of definitions most of them share the idea of proximity, networking and specialisation.

Clusters sometimes contain schools from various fields: vocational, higher education or adult education.



Communities of practice: The concept of a community of practice (often abbreviated as CoP) refers to the process of social learning that occurs when people who have a common interest in some subject or problem collaborate over an extended period to share ideas, find solutions and build innovations. It refers to the stable group that is formed from regular interactions. CoP's are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly. In relation to knowledge management, communities of practice refer to ways of sharing soft (and hard) knowledge, developing new knowledge, stimulating innovation etc. A short definition is that communities of practice” provide an environment for people to develop knowledge through interaction with others in an environment where knowledge is created, nurtured and sustained”.



Business Ecosystems of innovation link global networks with people, institutions (universities, government agencies, etc.) and other companies, in their own or different countries, to solve problems, source knowledge, generate ideas and drive innovation. The business ecosystem concept first appeared in Harvard Business Review in May/June 1993, and won the McKinsey Award for article of the year.

What Does *Business Ecosystem* Mean? “The network of organizations including suppliers, distributors, customers, competitors, government agencies and so on – involved in the delivery of a specific product or service through both competition and cooperation. The idea is that each business in the “ecosystem” affects and is affected by the others, creating a constantly evolving relationship in which each business must be flexible and adaptable in order to survive, as in a biological ecosystem.”



„**Living Labs** are open innovation ecosystems in real-life settings in which user-driven innovation is fully integrated in the co-creative process of new services, products and societal infrastructures.” The Living Labs model opens up the phases of development for end-user participation from an early stage of the creative process. Living Lab-systems are expected to enable micro, small and medium-sized enterprises (SMEs) to create lead markets by overcoming existing barriers on various local and regional markets in Europe by this end-user involvement and co-creation. What ensures the success of the Living Lab model is that the special needs of the end-users in one local area can be easily tackled in throughout the development. This way, region-specific versions of the same product can be produced. The

European Network of Living Labs , that was founded in 2006 and includes 212 members, is continuously supported through the LLL(Lifelong Learning) and other programmes. It is shown in various studies that networking brings its own benefits to both innovation and education. This networking should be extended to circles of schools to channel in research results or give real business or production challenges to students. It does not really matter which form of cooperation a school or teacher chooses. The most important fact is to start negotiations and link education with the business world of open innovation.



Self-assessment questions

Here you will find questions to help you decide how far you reached with the topic of taking part in cooperation within the innovation process. You can go back to those sections about which you were not sure of your answer.

- What is the difference between a closed and open innovation?
- What are the benefits of sharing innovation capacities with a larger community and allow them influence product and service development?
- What is usually the role of an educational institution in an open innovation process?
- How can you reach trust and openness as the basis of collaboration?
- How many communities of interest can you list? Name as many as you know.



Exercise, activity

Think about your own learners. What could be the goal of involving them in a real business challenge to participate in developing something? What could be their motivation and in which part of the learning phase would it fit in? Who are you in connection with representing a real expertise and responsibility in a company where learners could be involved? Elaborate your own case and contact responsible parties to start a negotiation.



Conclusion

Learners are motivated to solve real-life challenges in an existing business environment instead of an imaginary exercise in a book, while companies need the research and feedback for their innovation phase. Open innovation methods started to be popular in the beginning of the 21st century, which means that enterprises involve parties outside of the company building on their ideas, feedback and research results to innovate faster and more effectively along several predefined goals, conditions and criterial guidelines. If you find possibilities that learners find the business themes and challenges which match their skills and interests and there is a chance to be part of the company later, the most efficient person with the best innovation idea can even get hired. Learners will be more motivated to give high quality

results and they will enjoy what they do. Sometimes it is better to contact an already existing open innovation group, cluster or living lab which will help you in the process.



Further reading

- Jolly, A. (2005) – From Idea to Profit How to market innovative product and services. Kogan Page Publishers
- Pyka, A., Küppers P. (2002) – Innovation Networks Theory and Practice. Edward Elgar Publishing
- Scheff, J. (1999). Lernende Regionen – Regionale Netzwerke als Antwort auf globale Herausforderungen. Wien: Linde Verlag
- Weber, M.(2004). Innovationsnetzwerke – Typologie und Management. Köln: Josef Eul Verlag.



References

- Chesbrough, H.W. (2003). Open Innovation: The new imperative for creating and profiting from technology. Boston: Harvard Business School Press ; and Tapscott: Wikinomics: How Mass Collaboration Changes Everything.
- Kowalsky S. P.: SMES, Open Innovation and IP Management: Advancing Global Development
- Várnagy (2009) : Beyond the level of self-esteem: stability as an individual factor
- Wikinomics – How Mass Collaboration changes everything
- Open Innovation <http://www.openinnovation.eu/openinnovatie.php>
- Kowalsky S. P.: SMES, Open Innovation and IP Management: Advancing Global Development
- Kowalsky S. P.: SMES, Open Innovation and IP Management: Advancing Global Development
- Business Ecosystems, in Wikipedia.
- Business Ecosystem in Investopedia
- Living Labs for user-driven open innovation; European Commission.
http://ec.europa.eu/information_society/activities/livinglabs/index_en.htm
- Living Labs for user-driven open innovation; European Commission.
http://ec.europa.eu/information_society/activities/livinglabs/index_en.htm

Enhancing stable self-esteem and wellbeing



Aim of this module

This module aims to make teachers and facilitators understand the root of creativity in self-esteem and wellbeing. Through the module you can understand the link between motivation, curiosity in a subject, self-efficacy, stable self-esteem and creativity. You will see how the evaluation process, learner mentor relationships and autonomy play a great part in fostering a creative environment that strengthens learners' self-esteem. You will understand the steps in which stable positive self-esteem of every human is born with time and how we can strengthen it in any phase of our lives, especially in an educational field.

Enhancing stable self-esteem and wellbeing

1.1. Wellbeing and creativity towards self-actualization

The basis of our creativity is illustrated by the two figures below. Due to the support, acceptance and provided opportunities for self-expression, learners will be able to trust and rely generally on their own thoughts and feelings. It means, self-esteem and self-actualisation are preconditions of creativity. In a creative learning environment, students will not only master the already existing knowledge and practises, but also exceed them as well by developing new associations and novel ideas. If we have unique ideas and associations, we need self-esteem and confidence to express these ideas, say them out loud or show them to other people. Intrinsic motivation, curiosity in a subject, self-efficacy and to love the flow of what you are doing is essential for being creative as well. In a state of flow, motivation and self-confidence the creative sparks fly (Figure 1). We can only be creative if we are interested in what we do apart from any type of reward. According to Csíkszentmihályi, we experience flow in completely focused motivation, when we feel full involvement, spontaneous joy and energized while performing a task. It does not matter whether this task is writing, thinking, organizing, managing or any artistic, sport activity. They found that those people who are creative generally love what they do and how they do it. In these types of creative activities we feel self-efficacy when we are able to achieve our goal, or create something useful. If we experience self-efficacy often, our self-esteem will be stable and positive as well; which is needed to express unique and novel ideas. This way the cycle is complete which is needed for creativity. There is a need for self-acceptance and positive self-esteem as a stable base for

creativity. Stability is not equal to unchanging, though! **The self-concept and self-esteem is stable, yet flexible, capable of adjusting to the current situation.** The individual can re-create their self-concept adjusting it actively and spontaneously to the current environment. Stability means that in an instance or because of a small influence, the whole of the self-esteem will not change in a significant way. Just because a person tells us they don't like the way we dress, we should not feel completely worthless, not even ugly. On the contrary, **the self-concept and self-esteem is vulnerable if it is unstable or rigid** and there are huge fluctuations in the self-esteem and the emotions. If the self-esteem is unstable, the individual is exposed to the environment. If they put all information into their self-esteem without processing them, the picture will not be congruent because of its controversial details, thus it becomes vulnerable and fragile. On the other hand, if none of the information coming from the environment is built in the self-esteem, the self-concept needs to be compensatory with self-defence methods to defend the vulnerable self-esteem from the threat of the Self-destruction / suicide

controversial information. A rigid self-esteem becomes very fragile as well. If there is a problem, it won't affect just a part, but will be transferred to the whole feeling of the self.

„The stability of the self-esteem is the rate of the short-term fluctuations that the individual experiences in their actual context-based self-esteem.” (Kernis, 1991)

Self-esteem has two basic dimensions:

- **Level** (high self-esteem or low self-esteem)
- **Stability** (the way it flexibly adjusts to the current situations and own feelings).

Stability and thus flexibility of the self-esteem depends also on 4 sub-dimensions in one current time (Várnagy, 2009): **Area** (Which competences, knowledge areas and roles does it concern, how much it is general or specific), **Consciousness** (Big differences between implicit (unknown) and explicit (known) self-esteem makes it unstable), its **Basis** (How much is it based on other people's feedbacks or how much is it real, based on inner feelings?), **Way of reaction** (Genuin as stable or self-defensive). The stability of the self-esteem can be misinterpreted by the **Time-perspective** (Global self-esteem concerning long time intervals makes it look more stable than it is for the actual, momentary self-esteem)

Examples of psychological problems which evolve less probably with a stable and flexible self-esteem:

Impulsive
Depression
Defensive personality disorder
Paranoid disorder
Avoiding behavioural patterns
Borderline personality disorder
Immature self-defence mechanisms
Aggressive behavioural patterns
Self-destruction / suicide

A stable self-esteem is a protective factor, which leads to:

- Intrinsic motivation, interest and curiosity while learning
- Self-efficacy, the feeling of being competent

- Optimism
- Self-awareness, flexibility and reality in processing assessment
- Well-being: greater autonomy-level, better evolved life-goals and faith in life, self-acceptance, positive relationships and competence for personal development
- Self-actualisation

These factors are also the basis of creativity and innovation capacities:

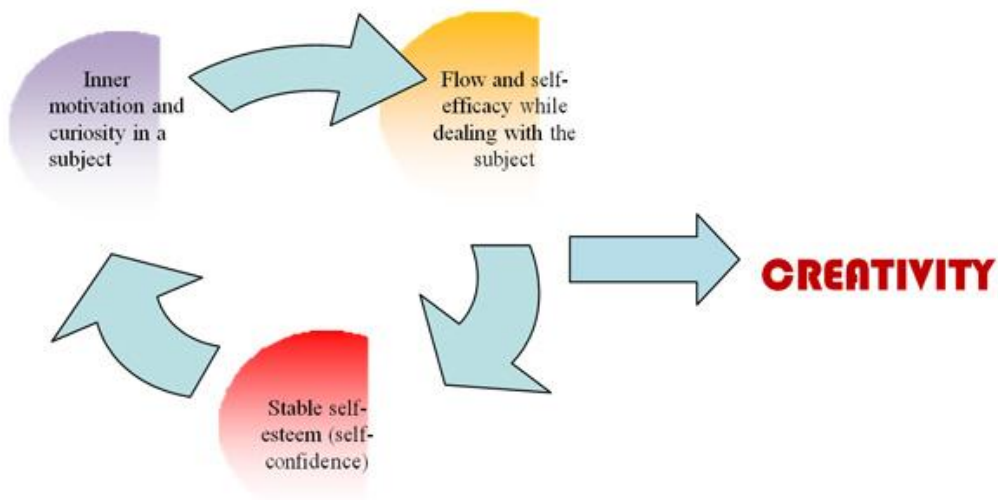


Figure 1: Personal factors, skills needed for creativity. The creative cycle



Figure 2: The base and root of creativity

1.2. Students can actively participate in their education

The self-esteem can be affected to be more stable and flexible and students to be more creative if we let students actively participate in their own learning. We can especially see the following factors as the most important:

The evaluation system

(Differentiated assessment, learners get detailed, verbal feedback about their activities, and assessment is formed together with the learners based on discussed aims and criteria)

Learner-mentor relationships

(**Well-balanced**, partner-like personal relationships between learner and their mentor)

Possibilities for autonomy of the learners

(Learners get opportunities and autonomy for creative expression, choosing some methods and themes themselves)

The learners'

self-esteem will be stable as well.

1.3. How does a stable positive self-esteem evolve?



Secure environment, accepting, supporting relationships.

In the beginning, for a child's secure personality development, as a baby it is very important to be attached to the parent or to the person who takes care of the child and develop a strong relationship while relying on the parent. This secure environment together with the accepting, growth supporting social connections can strengthen the feeling of security in the child. This feeling of security means:

"I am acceptable the way I am, there is place for me in the world".

Accepting and creating security doesn't mean approving all and letting everything for the child even at the age of 5. It also doesn't mean giving all they want for a lifetime. It only means understanding and reacting to their needs constantly, and yes, it means that in the first months parents should try everything to give all the baby would like. They only express their needs in those early times. For a baby, there is no "you" and "me" and "them". For the baby the world is the mother and he or she is one with mother. They cannot separate themselves as an individual being. Because of this, whatever the mother does, the baby particularly takes it on themselves as a reason as well.

From a pedagogical perspective, that is why it is important that the teacher acts as a person who takes care, who accepts the unique value of each individual student without trying to push them fit in the frames existing in his or her mind. It is important that the teacher would **know everyone personally**; in other words, he or she would develop favourably fewer

contacts with students but on a deeper level. These relationships with the students would be **based on trust** instead of power. This way they will know those questions and issues the **children are interested in**, there is **space to talk about it**, and when the child needs it, **there is always someone to talk to** in the person of their teacher.

This acceptance, trust and secure feeling are the base of our self-esteem, self-expression and self-actualisation. By these criteria the child can learn that he or she is good and loveable, so their basic self-esteem will be positive as well.



Providing opportunities. As we are creating a secure and receptive environment, parents and mentors should pay attention to the characteristics and needs of the child, providing opportunities for him or her **to arrange and organize their own personal space**. This is how they discover themselves as a separate individual. In the school, it could happen with decorating the table, cupboard, shelf, mirror or bench, place their own photos on the wall or in any other way. When the child starts to initiate autonomous actions, his or her **competences can develop. This is when the self-esteem is formulated for specific competences.**



Experiencing success. During this period it is extremely important that the child experiences success in the activities they do driven by their intrinsic motivation. In the school, it is the duty of the teacher to plan the **tasks allowing enough space for redesigning the exercise according to the different needs and states of the students**, or at least take them into consideration instead of trying to ignore them. If the tasks are tailored partially to the individual (their skills, capabilities, motivation, knowledge), it is much more probable that the child will be able to succeed in them. This is the great advantage and significance of **creativity enhancing games**, where it is very easy to feel success. In these games, students can spontaneously act and express their inner state and rely on their curiosity. The games usually involve movement, role-play or artistic activities. It is also essential that the children get involved in projects or competence-developing tasks according to their own interests. If children can develop their competencies in an environment that is acceptive and supportive, then this competence-based self-esteem will be positive as well, which is important for an evolving stable self-esteem.



Integration. As a conclusion, the stability of the self-esteem is constantly forming up till adulthood. This way, around the end of adolescence will youth be able to **integrate these specific competence-based self-esteems in one complete picture**. Up till adulthood, competences can easily exist next to each other without the child aware of their relationships. The personality is still forming and flexible. If the personality, together with the specific competences are united in a complex whole picture, then the real, genuine stabile self-esteem can finally be born, which is already not exposed to the reactions, the environment and the everyday problems. Due to the complexity, even if one part of the personality is injured, it won't affect the rest. Just because someone tells you that you did very badly on a specific task, you will not feel that you are a complete disaster. The individual relies on their own

inner signals and feelings instead of generalising the current feedback of others, thus they can proceed better on the way of self-actualisation.

It is **never too late to strengthen the self-esteem**, which we see clearly from the results of humanistic psychotherapy. The person whose personality was seriously injured in childhood can still go to a psychotherapist with whom he or she gets a chance to start over or continue their lives - even with the aim of self-actualisation. What are effective in this therapy are mostly those factors that are also important for a stable self-esteem to evolve. The therapist satisfies the basic needs deriving from infancy: to **accept the client unconditionally** and **provide a secure, stable base** for him or her. This way, when the client has accepted themselves together with their feelings of the moment and generic personality traits, they will **start to initiate new actions** functioning well as a **competent individual**. It is logical that if the self-concept and self-esteem is basically ready to be formed even in adulthood, then it is essential to strengthen, support and have a positive effect on the learners' self-concept and forming self-esteem in the learning environment as well.

1.4. From assessment to self-esteem



Some examples of current assessment methods to be improved:

Today there are huge differences in the pedagogical practises of Europe regarding the way students receive evaluation or feedback for their activities and achievements. For example, there is a custom in the institutions of many Central-European and Southern countries that the teachers are the ones to mark the students' achievements usually from the age of 10 with a number or letter usually on a scale of 5-7. The teachers usually do not have enough time to get to know the students well, they hardly get to know anything about their background, personal motives and interests. The teachers are the ones higher in the hierarchy as they are to set the rules, control how these rules are kept, they give assignments and evaluate their results sometimes with a visible aim to discipline the students. This means that the children usually get poor and controversial information that is based only on parts or segments of their activities – but they relate it to their whole personality. Moreover, these ready-made evaluations should be fully accepted by the students because of the hierarchy. In these early years the personality, with the complexity of the competences are not yet formed. What is happening currently is what the children identify them with. Most of the time the personality is still forming until the age of 21-22. In these cases, students usually construct their self-concept from little information and the lack of complexity makes them especially vulnerable to the mortifications coming from outside, and their subjective well-being becomes unstable.



Success criteria for a stabile self-esteem in the learning process:

The stability of the self-esteem evolves if the **supervisors teach the students how to evaluate themselves**. This way the learners continuously get to know and interiorise the process of evaluating themselves in a differentiated self-tailored way based on the previously set goals. They **build in the information into their complex personality** thanks to the variety and complexity of how they acquired the viewing of themselves. They will also develop a healthier personality that is not exposed to the circumstances; it is complex, detailed

and thus stable enough. They are continuously reshaping specific details about their self-concept and self-esteem themselves, instead of also changing the whole self-concept.

One of the most important factors here is that the **control is in their hands**. They cope with the reactions, feedback, impulses - let it be a praise or a critique, punishment or reward - as information they manage, process and build it into the appropriate part of their self-concept without automatically overwriting all information that has been settled before. They insert it into the whole picture with the necessary modifications of the involved parts, thus their self-esteem will be more stable.

Stable self-esteem is much more enhanced and supported by the evaluation method applied in most Scandinavian countries, institutions applying reform or alternative pedagogies.

Students get used to evaluating themselves together with their teachers based on specific criteria they have settled together – such as the previously set goal or the students' performance in earlier tasks.

Students and teachers are partners, and teachers usually have the possibility to get to know the students' personalities as well, they formulate the rules, set goals and tasks together.

The students have lots of projects, individual and group-work, where they choose the topic and content for themselves.

Before finishing with a project or task, during and after, the learners continuously receive differentiated personal feedback which they formulate together with their supervisor. The prior aim of the feedback is not to label but to develop the learners' competences.



Self-assessment questions

Here you can find questions that help you decide whether you successfully completed this module or you could improve in some parts of it:

How is self-esteem and creativity connected to each other?

What factors would you consider to fulfil when giving learners a creative task?

How can an evaluation system strengthen the self-esteem?

In what phases does a positive self-esteem evolve?

What is the role of integrating our strengths to our personality in achieving stable self-esteem and wellbeing?

What is a supporting relationship like?



Exercise, activity

Make pairs within the class based on personal choices and let them share one field in which they would like to progress. Let one person be the mentor, while the other talks so that the mentor helps finding one single creative product the person can show as proof of development within one week. The pairs should be encouraged to discuss the goals and criteria according to which the person will feel successful. The next week let them discuss the progress and draw conclusions about their own strengths.



Conclusion

The root of creativity is in inner motivation and curiosity in a subject, flow and self-efficacy while dealing with the subject and stable positive self-esteem (self-confidence) to share our thoughts and solutions within the subject. Learners' self-esteem can be strengthened any time in the learning environment if the evaluation process self-tailored and the learners get used to evaluating themselves according to the previously discussed goals and criteria, there is a supporting and personal relationship between learners and mentors, and students have autonomy in finding their own topics and project themes within a subject. Stable positive self-esteem of every human is born with time in 4 different phases: the person experiences a safe and secure environment and supporting relationships, they have a variety of opportunities to try out according to their curiosity and skills, they experience success in those tasks and they can integrate the skills they discovered as their own strengths to a complex and detailed stable self-concept. Thus, self-esteem can be strengthened any time by the learning environment if we learn to evaluate ourselves, build in the gained skills and strengths to our personality and we experience control in our hands. This provides a secure environment to share unique thoughts and ideas, which is the base of creative thinking.



Further reading

Csikszentmihályi (1996): *Creativity. Flow and the psychology of discovery and invention*; Harper Perennial, New York.

InnoSupport: *Supporting Innovation in SMEs. 4.1 Foundations of Generating Ideas*. 2005.<http://archive.innosupport.net>, viewed 24th September 2008

Leonard D.; Swap W. (1999): *When sparks Fly. Igniting Creativity in groups*; Harvard Business School Press. Boston, Massachusetts

Sternberg, Robert J. (1999) *Handbook of creativity*. Cambridge University Press.

Sven F. Kylen and A.B. (Rami) Shani (2002), *Triggering Creativity in Teams: An exploratory investigation, creativity and innovation management*, 11 (1)

Várnagy (2009): *Beyond the level of self esteem. Investigating stability as an independent dimension in alternative and traditional secondary schools*.

Waschull, S. B. Kernis, M. H. (1996). *Level and stability of self-esteem as predictors of children's intrinsic motivation and reasons for anger*. *Personality and Social Psychology Bulletin*



References

Csikszentmihályi (1996): *Creativity*. Harper Collins, New York.

Kernis, M. H., Grannemann, B. D., & Mathis, L. C. (1991). *Stability of self-esteem as a moderator of the relation between level of self-esteem and depression*. *Journal of Personality and Social Psychology*, 61, 80-84.

Várnagy (2009) : Beyond the level of self-esteem: stability as an individual factor

Kernis, M.H., A.W. Paradise, D.J. Whitaker, S.R. Wheatman and B.N. Goldman, (2000) Master of one's psychological domain? Not likely if one's self-esteem is unstable, *Personality and Social Psychology Bulletin* 26, pp. 1297–1305