



**Project Number: 2011-1-ES1-LEO05-36404**

**Project funded by the European Commission through the Spanish NA, OAPEE.**

## ***ADEPTT TRAINING MODEL*** ***eng***

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## Introduction

The overall objective of the Acknowledging and Developing Entrepreneurial Practice in Teacher Training (ADEPTT) Project is to create a strategic EU model to promote teacher training in entrepreneurship as a means to developing entrepreneurial mindsets in European young people and thus, socio-economic and local/regional development. Seikkula-Leino et al (2010, p. 125) suggest that 'Entrepreneurship Education is a phenomenon worth studying in view of its central focus in the development of social and economic well-being.'

ADEPTT is an LdV Transfer of Innovation project involving 13 institutional partners from eight European countries in an effort to provide a more focused, hands-on training model that contributes to supporting and improving entrepreneurial teaching practice.

The ADEPTT Partnership believes that:

1. Entrepreneurial teaching is the main driver of entrepreneurial learning;
2. Although entrepreneurial teaching already happens to a greater or lesser extent in schools, it can be improved;

## 1. Rationale

### 1.1 ENTREPRENEURSHIP

Evidence that supports the call for enterprise and entrepreneurship development is extensive and well documented, with considerable support from the European Commission for Enterprise and Industry (2010):

If it is to make a success of the Lisbon strategy for growth and employment, Europe needs to stimulate the entrepreneurial mindsets of young people, encourage innovative business start-ups, and foster a culture that is friendlier to entrepreneurship and to the growth of SMEs. The important role of education in promoting more entrepreneurial attitudes and behaviours is now widely recognised.

Moreover, definitions have been developed that guide the type and nature of educational strategies which are considered appropriate by the Commission (2010):

Entrepreneurship refers to an individual's ability to turn ideas into action. It includes creativity, sense of initiative, innovation and risk acceptance, as well as the ability to plan and manage projects in order to achieve objectives. In a broad sense, entrepreneurship should be considered as a mindset that can be usefully applied in all working activities and in life. Therefore, entrepreneurship is a key competence for all.

### 1.2 ENTREPRENEURSHIP EDUCATION

In a post-2010 Lisbon strategy scenario the EU has embarked on the definition of an updated strategic framework for European cooperation in education and training up to the year 2020 (hereafter referred to as ET 2020) Entrepreneurship, innovation and creativity are expected to play a critical role in this new strategy whose 4 strategic objectives are:

1. Making lifelong learning and mobility a reality
2. Improving the quality and efficiency of education and training
3. Promoting equity, social cohesion and active citizenship
4. *Enhancing creativity and innovation, including entrepreneurship, at all levels of education and training.*

Further work needs to be done to foster creativity, innovation and entrepreneurship in all forms of learning irrespective of education level. Our schools are asked to enable a culture of innovation by creating conducive learning environments where pupils, trainees, students, teachers, school leaders and researchers have opportunities to develop its creative, innovative and entrepreneurial potential.

The adoption of more entrepreneurial, creative and innovative approaches to education and training is not possible without an open dialogue between the three spheres of the Knowledge Triangle (Education, Research and Innovation). Such assumptions cannot longer rely on “make-believe” narratives. Curricular reform, teacher training, practice and evaluation should be underpinned by evidence-based research.

To move to other considerations, Oxford Brookes University are currently undertaking a review of Further Education provision in English entrepreneurship education, exploring transition from schools to Further Education to Higher Education. The review is not yet complete but the authors have offered their insights, noting that it has only been in the last five years that policy makers have considered the ‘seamless’ potential for a student’s enterprise journey. The authors have indicated that a very small minority of Further Education colleges have any well-developed provision, with most grappling with the very concept. The narrow interpretation of enterprise as being measured in terms of business start-up is cited as one reason for this. Calls for more and better understanding of entrepreneurship and enterprise are extensive, however the Oxford Brookes research team take the perspective that a lot could be accomplished through better and more inclusive approaches to teaching, and see Initial Teacher Training (ITT) programmes as good routes into enterprise education.

Clark et al (2013) argue that there is not a single ‘correct’ approach to entrepreneurship education and that there is a need for institutions, colleagues and students to work together to stimulate a ‘win-win-win’ situation. As “The Budapest Agenda : Enabling teachers for Entrepreneurship Education” rightly points out the development of teacher education in entrepreneurship it is absolutely dependent on our ability to “Ensure all teachers buy in to and ultimately own their own entrepreneurial continuing professional development” (Budapest Agenda, Objective C2). But engaging a wider audience of teachers and not only the “already converted” remains a challenge.

### 1.3. THE ROLE OF TEACHERS IN EE

The broader call for more engagement in entrepreneurship education is also widespread, and some key points have been offered. For example, the World Economic Forum (2009) in their report ‘Educating the New Wave of Entrepreneurs’, takes the perspective that in the current financial crisis, and with the global challenges of the 21<sup>st</sup> century, building sustainable development, creating jobs, generating renewed economic growth and advancing human welfare means that entrepreneurship has never been more important than it is today. The report views entrepreneurship in the widest of terms, including entrepreneurial people in large companies, in the public sector and in academia, as well as those who launch and grow new businesses. The executive summary proposes that:

Now more than ever, we need innovation, new solutions, creative approaches and new ways of operating. We are in uncharted territory and need people in all sectors and of all ages who can ‘think out of the box’ to identify and pursue opportunities in new and paradigm changing ways.

How does this impact on education sector and educator development strategies?

The International Journal of Management Education recently published two papers that have direct relevance to these observations. Heffernan et al (2010) discuss 'Personal Attributes of effective lecturers: The importance of dynamism, communication, rapport and applied knowledge'. No less than 15 international studies are brought together to reach the conclusion noted in the title.

A recent study developed at the 2010 Enterprise Educators UK and National Council of Graduate Entrepreneurship's International Entrepreneurship Educators Conference (Cardiff Concordat, 2010), encompasses the views of 300 delegates representing 13 nations and 146 organisations. They found that over recent years there has been a step change in the way educators see their role, where there is now more of an emphasis on capacity building to be enterprising and entrepreneurial, and less about teaching generic small business skills.

The Enterprise and Entrepreneurship Education Guidance (QAA, 2012) describes the role of enterprising educators as professionals who:

- Create learning environments that encourage entrepreneurial behaviour in students now and in the future.
- Design curricula with learning outcomes that relate to the enterprise agenda through increasing relevance and decreasing abstraction.
- Enable students to relate their learning to personal aspirations and to their subject and industry context
- Be innovative in their approach to teaching and willing to experiment with different pedagogies to ensure appropriateness
- Be a leader who is able to shape and exploit new opportunities for enhancing the student experience
- Engage external communities (employers included) and find appropriate practical contexts to enhance the learning experience

ADEPTT has also been influenced by the views expressed in the brand new book "Teacherpreneurs: A bold brand of teacher leadership for 21<sup>st</sup> century learning" (Berry, 2013) as it provides an adequate counterbalance to the endless and sometimes excessively ambitious lists of attributes of the 21<sup>st</sup> century teacher. So we're NOT looking for "hero teachers", let alone encouraging teachers to establish a new income stream by morphing into education entrepreneurs. **ADEPTT is an attempt to reinforce teachers' confidence as producers of solutions.**

## 1.4 PEDAGOGICAL APPROACHES

There is clear evidence of the emergence of a new confidence in pedagogical approaches and methods of raising student engagement and interest, including critical evaluation and greater sharing of delivery methods. The executive summary of the International Conference of Entrepreneurship Educators 2010 states that:

“There is broader recognition of the value of enterprise and entrepreneurship education and specialists have evolved beyond the single champion model. It is important that sufficient flexibility is embedded to enable subject specialists to adapt and evolve the curriculum to suit their own subject areas.”

Experienced educators at the conference commented that there is now a critical need for pedagogic advancement (including clarity on creating appropriate assessment strategies; critical evaluation of delivery methods etc) to underpin the shift away from business strategy and to developing an entrepreneurial mindset. Some specific sectors/disciplines stated that general models of ‘business’ did not stimulate or engage students.

“Advanced educators wish to move the agenda forward and deepen the academic underpinning to effectively support the development of entrepreneurial mindsets within learners.”

It is therefore evident that awareness of enterprise education among the teaching community has undoubtedly increased and attitudes towards the subject have become more positive, although it may not necessarily transfer to actual teaching methodology where traditional approaches still prevail. As in many other aspects of education, teachers are expected to play a pivotal role in the delivery and promotion of enterprise in schools. ‘Teachers are an instrumental factor in causing change among students’ (Arbel et al., 2001) but more often than not, bear the brunt of translating policies into practice. Seikkula-Leino (2007) points out that teachers do not know enough about the aims, contents and work methods of entrepreneurship education. At best they know what they should implement but not how. Hence, greater efforts should be made to build up teacher confidence and skills to promote creative and entrepreneurial learning skills and abilities as well as active-learner centred approaches. More focused hands-on training opportunities would contribute to improving and supporting teaching practices. In support of this, in the recent Teaching and Learning International Survey (TALIS), more than half of those teachers surveyed expressed a need for more professional development opportunities (OECD, 2012).

The UK’s Council for Industry and Higher Education (CIHE), the National Council for Graduate Entrepreneurship Education (NCGE) and the National Endowment for Science Technology and the Arts (NESTA) observe that developing ‘entrepreneurial teaching and learning practices demands a shift from transmission models of teaching (learning about) to experiential learning (learning for) and offers students techniques that can be applied in the real world’ (NESTA, 2008). Edwards and Muir’s (2006) aptly named paper ‘Tell me and I’ll forget; show me and I may remember; involve me and I will understand’, demonstrates the value of experiential learning. However, McKeown et al’s (2006) findings from 86 universities demonstrated that, whilst a small group of institutions use action and experiential learning in entrepreneurship modules, 86 percent of those that considered their programmes entrepreneurial in delivery, still use very traditional means both of teaching and assessment. In the international arena, Fregetto’s US based research (2006) highlights that professors of entrepreneurship education ‘rarely concern themselves with different ways of teaching’. Any entrepreneurial programme should have a clear remit to provide experiential, creative, innovative approaches, appropriately tailored to enhance and embrace sector specific skills.

The ADEPTT Model has been designed in such a way as to meet the findings of the studies referred to above, engaging a wider audience of teachers, encompassing experiential learning and culminating in a flexible approach to assessment that allows teacher participants to apply entrepreneurial pedagogies to their particular discipline in a safe environment.

## **2. The ADEPTT Training Model**

The final product of the ADEPTT Project is a teacher training model aimed at bolstering teacher confidence by adopting more innovative and entrepreneurial behaviour through a personalised and self-guided process that builds on elements already present in their teaching. The model acts as a vehicle to improve the ability of educators to develop an entrepreneurial culture amongst students and for enterprise and entrepreneurial activity to be embedded into the curriculum at all levels and across all specialisms.

Ten basic aspects were taken into consideration in the design of the model:

1. Enterprising teaching is a driver of enterprising learning.
2. The overall aim of ADEPTT teacher training module will be engaging and equipping teachers with tools to adopt more innovative and entrepreneurial approaches to teaching
3. It will achieve this through a personalized and self-guided process that takes stock of enterprising elements already present in their teaching
4. Firstly, it should activate prior knowledge and prompt a reflection on daily practice.
5. By the same token, it should build on teacher's own interests, an essential pre-requisite for ownership and motivation.
6. It is premised upon the "freedom for teachers to innovate" rather than following predetermined programmes
7. It aims to deepen the academic underpinning, drawing ideas from different disciplines to identify, highlight and reinforce enterprising behaviours and actions in teaching practice.
8. Creativity and Innovation, Reflective Practice, Community Engagement, Learning Environments have been identified as 4 key building blocks in any entrepreneurial teaching endeavour.



9. Bias toward action: Participants will generate ideas (small-scale, low-cost, low-risk) and turn them into actions that ultimately add value to others (students, school, colleagues, community). These actions could touch upon different topics and adopt diverse formats, such as products, services, processes, events or even policy recommendations.
10. By the end of the module teachers will not only be able but willing to:
  - Create learning environments, which do not only develop positive attitudes but encourage enterprising behaviour in students and graduates (Teaching for Entrepreneurship)
  - Lead by example showing an enterprising behaviour themselves when designing and applying delivery (Enterprising teaching)

Further development of the ADEPTT Training Model was informed by the results of the study into the entrepreneurial education needs of teachers and course piloting experiences in eight European Union (EU) Member States: Belgium (Flanders), Germany, Iceland, Norway, The Netherlands, Portugal, Spain and the United Kingdom (England and Wales) (ADEPTT, Work Package 2, 2012). The findings of the study indicated that in order to become effective the implementation of entrepreneurship education in teacher training, needed to consider five main areas:

- Endorsed entrepreneurship knowledge (based on the latest research and systematically evaluated to ensure quality);
- Entrepreneurial development (experimentation and practice of entrepreneurial skills and services);
- Active participation of teachers, heads of schools, students, parents, and communities (in order to co-create knowledge and allow for dissemination);
- Development of coaching skills (trained teachers are to become their students' and colleagues coaches on entrepreneurial projects); and
- Business knowledge (teachers must be able to follow up their students' attempts to develop mini-companies, start-ups, small businesses and other entrepreneur initiatives).

The study also concluded that an active-learner approach is essential in entrepreneurship teacher training. Teachers need to build on their own creativity to reach an innovative teaching repertoire. Active-learner approaches in dealing with students should include individual self-assessment, group-work, guided discovery, experiential learning, and the facilitation of self-study and individual discovery, as well as the integration of networks and communities of practice (ADEPTT, Work Package 2, 2012).

The active-learner approach would remain ineffective if not coupled with an active-teacher approach. In this respect ADEPTT firmly endorses Michael Fullan views on the new roles of teachers in the recently published report "Towards a New End: New Pedagogies for Deep Learning" (Fullan & Langworthy, 2013)

1. Teacher as designer of powerful learning experiences. "This creative responsibility distinguishes new pedagogies from the primary role of teachers as delivering content knowledge"

2. Teachers as source of Human, Social and Decisional Capital "Teachers become models of the learning attitudes and creative, connected, collaborative skills they seek to instil through their learning activity designs"

3. Teachers as partners in learning with students, accelerated by technology. "few teacher preparation programmes provide teachers with explicit guidance on how to build strong, personal supportive relationships with their students"

## 2.1 LEARNING OUTCOMES

The model considers teachers as “change agents in the classroom” that place problems and questions in real world contexts, take risks and engage in trial-and-error problem solving (NESTA, 2013). This process should build upon the personal experience of the participants.

Thus ADEPTT should be seen “as an opportunity to engage teachers in challenging action around issues that reflect their genuine needs and offer authentic opportunities to make decisions and effect change, in an environment of support in which teachers can reflect on their experiences.” (Kahn, Hewes & Ali, 2009)

With all this in mind four basic Learning Outcomes have been defined:

Upon the successful completion of this module the participant teacher will be able to:

1. Explore and understand creativity, innovation and entrepreneurship development in an educational context.
2. Identify research and appraise an entrepreneurial opportunity for teaching a particular subject, and pitch the idea to peers and/or other stakeholders.
3. Prototype (produce a novel and fully functional model) and test the idea engaging potential users and real stakeholders.
4. Reflect upon and evaluate the application of the entrepreneurial opportunity.

Turning ideas into action is the most defining feature of ADEPTT training course. Thus, teachers should be supported to not only in identifying opportunities and generating ideas but in taking the necessary steps to make them real placing a special emphasis in the need to test the ideas on the ground with real users.

## 2.2 THE CRCL MODEL

**CRCL** stands for **Creativity, Reflective Practice, Community Engagement and Learning Environment**. These were identified during the second partners’ meeting in Langreo (June 2012) as key enablers or building blocks of enterprising teaching.

The aforementioned defining features of the enterprising educator (QAA, 2012) have a direct bearing on the elements of the model as shown below:

<b>CRCL</b>	<b>Tasks of enterprising educator</b>
Creativity, innovation and entrepreneurship	<p>Design curricula with learning outcomes that relate to the enterprise agenda through increasing relevance and decreasing abstraction.</p> <p>Be innovative in their approach to teaching and willing to experiment with different pedagogies to ensure appropriateness</p>
Reflective practice	<p>Enable students to relate their learning to personal aspirations and to their subject and industry context</p> <p>Be a leader who is able to shape and exploit new opportunities for enhancing the student experience</p> <p>Be aware of and adjust accordingly the appropriate balance between structure and freedom</p>
Community Engagement	Engage external communities (employers included) and find appropriate practical contexts to enhance the learning experience
Learning environments	Create learning environments that encourage entrepreneurial behaviour in students now and in the future.

### **Creativity, Innovation and Entrepreneurship**

Our schools are asked to enable a culture of innovation by creating conducive learning environments where pupils, trainees, students, teachers, school leaders and researchers have opportunities to develop its creative, innovative and entrepreneurial potential.

#### **Suggested contents**

- Entrepreneurship, enterprise and its development in education
- A balanced view on entrepreneurship including the impact of entrepreneurs and intrapreneurs (creativity, innovation and market/economic value) on society
- Creative thinking and the establishment of creative learning environment

- Idea generation, action and dealing with failure
- Convergent and divergent thinking capabilities

*Norway. Focus on creativity*

*“Our intention with the course we designed for this purpose was to introduce the teachers to creativity as being the core concept when trying to explore the connections between science teaching and entrepreneurial approaches in general. Creativity, thus, was our focus during the course. In a plenary session on the last day, in a dialogue with the participants, we summarized the ideas about creativity and teaching put forward by the participants. The summary resulted in a model, drawn on the black board, in which all elements of the CRCL-model were present. In fact, the participants had, themselves, constructed their own CRCL model. That gave us an opportunity to explicitly link creativity to innovation and entrepreneurship.”*

## **Reflective practice**

“Periods of genuine reflection only when they follow after times of more overt action and are used to organize what has been gained in periods of activity in which the hands and other parts of the body beside the brain are used.” (Dewey, 1938)

Building on personal experience of participants, the ADEPTT training course provides an opportunity to reflect on the key issues of motivation, engagement and learning dispositions through collaboration and dialogue with colleagues. New insights from educational and other disciplines will contribute to the debate in order to critically reassess the role of the teacher in 21<sup>st</sup> century education

## **Suggested contents**

- Identification of entrepreneurial elements already present in their teaching
- Revisit the role of the teacher (mentor, coach, activator, change agent)
- Exchange on sources of motivation and engagement of students and teachers
- Problems and opportunities based on participants’ own interests, experience and research
- Regularly reflect on the communication of teacher-learner, what kind of pedagogy is being developed, classification (roles of teachers and learners) and framing (who controls what in the learning process).

## **Community engagement**

“(educators) should know how to utilize the surroundings, physical and social, that exist so as to extract from them all that they have to contribute to building up experiences that are worth while.”(Dewey, 1938)

Engaging the local community is an invaluable support to support learning, making it real and relevant. ADEPTT helps teachers to develop extended learning relationships with people

outside the school that will assume tutoring, mentoring, coaching or expert roles or support the project in another valuable way.

#### Suggested contents

- The human, social and decisional capital of teachers
- Engagement of entrepreneurial educators and other relevant stakeholders as co-creators
- Stakeholder mapping: Who can help us?
- Interviews on the project ideas with students and potential stakeholders
- Role models and impact on student motivation and student retention

#### Learning Environments and Cultures

“(educator) duty of determining that environment which will interact with the existing capacities and needs of those taught to create a worth-while experience.” (Dewey, 1938)

Physical and virtual contexts exert a great influence in the teaching-learning process. Enterprising educators need to put some thought into it so as to design nurturing learning environments for creativity and entrepreneurship to take place.

- School as basecamp (Learning Futures, 2012)
- Internal and external resources available to support the enterprising initiatives of participant teachers and their students.
- Connected learning, that is to say learning that’s powered by interest, supported by peers and academically oriented. ([www.connectedlearning.tv](http://www.connectedlearning.tv))

### 2.3 EVALUATION & ASSESSMENT

A common assessment protocol was derived from this list of learning outcomes. A rubric was created so that the trainer and course participants could rate their confidence on achieving these learning outcomes before and after the training takes place.

The objective of this tool is to capture teacher participants’ thoughts on creativity, innovation and entrepreneurship and its development, in their own educational subject area. They are asked to score their own confidence in each of the learning outcomes both before the course and after completing the course assignments.

#### Assessment Rubric

The assessment rubric provides a number of descriptions of achievement for the different learning outcomes; these are not meant to be judgemental but a measure of participants’ confidence to generate novel ideas to use in teaching.

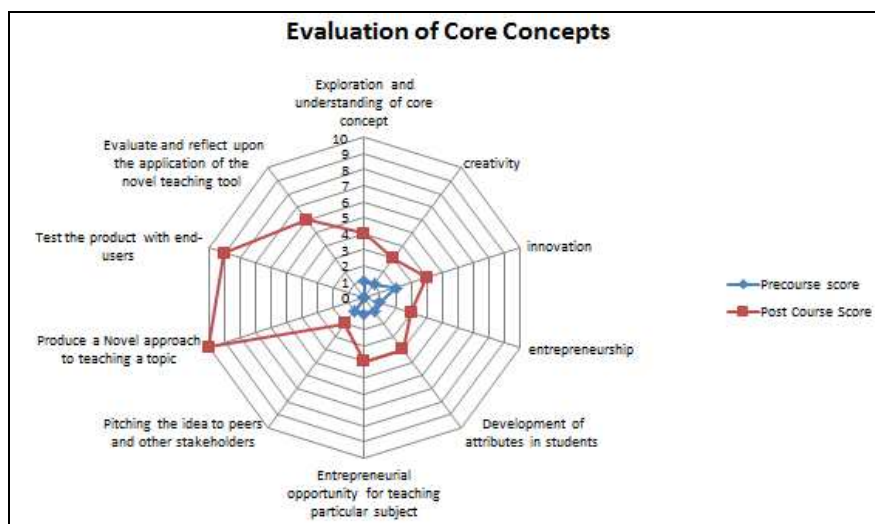
<b>L01 Explore and understand creativity, innovation and entrepreneurship and the development of these attributes in students.</b>					
	Low 1 to 2	3 to 4	5 to 6	7 to 8	High 9 to 10
<b>1.a</b> Exploration and understanding of creativity, innovation and entrepreneurship	Have not had the opportunity to explore the concepts and have low understanding them	Have explored them somewhat but have misconceptions about some of them	Have been able to explore them fully and have working understanding of all of them	Have deep understanding of the concepts and what they entail	Have a full understanding of the concepts and is confident of explaining the relationship between them.
<b>1.b</b> Development of attributes in students	Have no confidence in developing creativity, innovation or entrepreneurship in students	Have tinkered to a very limited extent with some of the most popular techniques (eg. Brainstorming)	Have been able to ascertain and prepare ways of working with students that enhances students ability in one or two of the attributes mentioned	Have been able to prepare ways of assessing student progress in the development of one or two of the attributes mentioned	Confident of demonstrating variety of different ways of enhancing creativity, innovation and entrepreneurship in students and assessment strategies
<b>L02 Identify, research and appraise an entrepreneurial opportunity for teaching a particular subject, and pitch the idea to peers and other stakeholders</b>					
<b>2.a</b> Entrepreneurial opportunity for teaching particular subject	Do not see there is a need for any change in teaching method, content or otherwise in my teaching	Can identify opportunities in subjects, but have difficulties in researching and appraise it	Confident of researching an opportunity within a particular subject with the aim of developing an idea for seizing that opportunity	Confident of delivering well research and appraised idea to make use of and entrepreneurial opportunity in a particular subject	Have identified, researched, appraised and implemented an idea produced as result of and entrepreneurial opportunity with a particular subject.
<b>2.b.</b> Pitching the idea to peers and other stakeholders	Not confident in communicating the essential information of the idea to a friendly audience	Can prepare a presentation with all necessary information but lacks in presentation skills	Can give a prepared presentation to a group of peers where all necessary information about the idea is communicated	Can give a well prepared presentation to group of stakeholders	Have confidence in delivering a well prepared and rationalised pitch to a group of mixed stakeholders and receive and answer any feedback given.
<b>L03 Create a novel approach to teaching a topic and test the idea engaging potential users and real stakeholders</b>					
<b>3.a</b> Create a novel approach within your teaching	Have been unable to produce a novel idea	Have made a model of the novel idea	Have produced a partially functional model of a novel idea	Have produced a functional novel teaching tool	Have produced a fully working novel approach to teaching
<b>3.b</b> Test the product with end-users	Lack confidence in devising and testing the novel approach with end-users	confident in coming up with testing criteria but is unable to conduct testing	Can devise a test and implement it with small sample group	Have tested to product with larger group of users.	Have tested the product with variety of end-users and stakeholders and received feedback
<b>L04 Evaluate and reflect upon the application of the entrepreneurial opportunity</b>					
Evaluate and reflect upon the application of novel approach to teaching a topic	Have not been able to actively evaluate or reflect on the process as a whole	Can evaluate parts of the process but have not been able to collect feedback on the process	Can evaluate parts of the process undertaken, but can not reflect on feedback	Have evaluated the whole process undertaken and reflected on parts of the feedback received	Have done a thorough evaluation of the whole process and have reflected on what the feedback they have collected

## Self-assessment tool

In completing the pre-course and post-course self-assessment participants should score each outcome on a scale from 1 to 10. A score of 1 is where respondent is least confident and 10 where highly confident.

Learning Objective		Pre-course score	Post Course Score
L01	Exploration and understanding of core concept	1	4
	creativity	1	3
	innovation	2	4
	entrepreneurship	1	3
	Development of attributes in students	1	4
L02	Entrepreneurial opportunity for teaching particular subject	1	4
	Pitching the idea to peers and other stakeholders	1	2
L03	Produce a Novel approach to teaching a topic	0	10
	Test the product with end-users	0	9
L04	Evaluate and reflect upon the application of the novel teaching tool	0	6

After the pre and post course scores are completed the Radar chart will update to give some visual feedback of the measure of trainee confidence in each learning objective.



Following completion of the self-evaluations by all participant teachers, trainer collates results. The collation tool is entitled 'With rubric, Trainer Evaluation'.

If the participant teachers find it difficult to complete the rubric with all Learning Outcomes, an optional short and simpler version is also available.

### Focus group

While teachers are working on their novel idea, there may encounter some barriers to develop their teaching approach. In order to capture details and evaluate these issues participant teachers should be attending a focus group for their feedback in 4-6 weeks time (after completing course). Trainer should encourage their thoughts and ideas to be captured. To allow reflective practice, some of the focus group questions were:

1. Briefly describe your project idea
2. What problems did you have thinking of a novel idea?
3. Were there any problems using your novel idea with your students?
4. Were there any other problems in developing your teaching approach?
5. Have you been able to share this novel approach with a colleague? What feedback did you get?
6. Reflection is a key aspect of entrepreneurial learning. Please indicate below what you feel you may have missed out on / or need additional guidance with, so that we can respond to any individual needs.
7. If you have any other personal comments and thoughts that you might like to share, please comment below.

Learning outcomes, CRCL model and assessment protocol are the essential ingredients of ADEPTT methodology. As long as these ingredients are present trainers have freedom to adapt and appropriate our suggestions to best embed and meet the needs of the trainees bearing in mind contextual factors. In the next section a detailed description of a 3-day training programme is provided.

## 3. Delivery

### 3.1 SETTING THE SCENE

#### Target group

Our experience in the pilots says ADEPTT methodology is particularly well suited for teachers with no previous experience/contact with enterprise education. Engaging the non-converted is certainly a challenge and we made some decisions that worked reasonably well:

- Wipe away all words beginning with “Entre-” or if that’s out of consideration, consider giving preference to some more education-friendly words such as creativity and innovation or learning motivation of students. Make it as neutral as possible. Our decision to omit entrepreneurship in the title and description of the course worked particularly well to engage a broad cross section of teachers from different disciplines.
- Don’t be afraid to gather a rich mix of participants from different education levels in the same room. Primary, secondary, VET teachers, we’re all humans and get with each other quite well as long as we are given some room to share experiences. Pilot experiences showed that teacher participants appreciated this diversity of backgrounds and the exchange of different perspectives.

*Germany. Engaging a rich and diverse audience.*

*“Teachers of all school types and all specialisations were addressed in the announcement of the course. So the scope of participant teachers was very diverse. They were teaching at primary, lower and upper secondary, but also VET schools. Their specialisations varied from natural sciences (maths, physics, etc.), to languages, social sciences (history, ethics, geography) and economics. Only 3 out of 9 teachers had any experiences in Entrepreneurship Education (e.g. supporting a mini company at school).”*

#### Room requirements

It’s not rocket science. Spacious, lots of light, flexible arrangement, some boards, laptop, beamer, a good wireless connection, post-its by the bucket load and some more low-resolution materials for the prototyping phase (cardboard, modelling clay, felt-tip pens, A3 papers). Coffee, water, fruit and biscuits will be always welcome.

#### Timing

This is something we got completely wrong in the pilots, and teachers were quick to let us know. As a rule of thumb training should work better if delivered anytime at the beginning of the school year (Sept- Dec) This allows teachers enough time to develop and put into practice their project ideas throughout the course



## **Hours, sessions**

Allow at least for 10-15 hours of contact time with teachers. Suggested training programme distributes 10 hours of contact time with teachers split in 3 sessions. The decision is not so much dependent on the ground to cover but rather on the need to open up time for reflection and real action in between sessions. Some may note an influence of the great Miles Davis here who noted the essential role of silence in music. That's it.

## **Maturation**

Time gaps in between sessions are deliberate and with a purpose. The 7-day gap between sessions 1 and 2 seeks to avoid "premature articulation" in the opportunity recognition/empathy phase. The core message is "don't rush to jump into the ideation phase".

The 4-6 week timespan between day 2 and day3 is a deliberate decision in order to allow teachers enough time to further develop and finetune their ideas. This is brilliantly summed up by Claxton and Lucas when they state "Problem solving may have a time-course of hours or days, true innovation, which runs from a hazy concern to a finished product, may have a complex natural history that lasts for months or years. The pressure for speed and technique that often goes along with the clamour for innovation is almost inevitably counterproductive." (Claxton & Lucas, 2009)

The only drawback is momentum may be lost unless some structured follow-up in between is provided in the form of sending regular updates, communications and deadline reminders in between sessions.

## **Resource-sharing and teacher feedback**

Plan well ahead the use of some sort of online tool for sharing resources and enabling rapid feedback cycles. Padlet online boards, Moodle VLE platforms have been a great help for the trainer and much appreciated by teachers. It's a flexible tool that makes easy sharing and updating information. See chapter on Resources for additional information

*Portugal. Use of a Moodle platform.  
was used for training where all the information and considerations of the training was located, as well as the proposed bibliography and resources were used. The trainees' tasks were also delivered through Moodle platforms. The use of Moodle platform was a very enriching experience due to the sharing created between trainer and trainees.*

## **External stakeholders**

Draw on the local community and involve external stakeholders (employers, nascent entrepreneurs, teachers, artists) in the delivery of specific parts of the programme. They will surely add relevance to the project.

## **Visual minutes**

Definitely, this is a different and engaging way of capturing what's going on in each session. There may be some visual artists offering this service in your area. Obviously it is not a "Must" but the results are stunning as you can see in this example.

Wales. Visual minutes for Session 1



### 3.2 DELIVERY/METHODOLOGY

Before we look at the nooks and crannies of the training programme, these simple methodological premises may help in understanding how the model design was designed to meet the 4 learning outcomes previously identified.

#### Curiosity and evidence-based learning.

Practical activities and/or reflection on personal experience were dealt with before disclosing the evidence supporting it and not the other way around. A lot of effort has been made in coupling practical activities with insights from relevant scientific research about the conditions that foster creativity, innovation and entrepreneurship in the classroom. Make a good selection of relevant papers to be included in the resource list but teachers will certainly appreciate a concise abstract (if possible, in their mother tongue)

*Spain: "Drawing houses"*

*This is an individual task. Group is split in 2 halves. Members of group 1 are asked to draw a house while members of group 2 have to draw 3 houses. Both groups are given the same time to complete the task (2 mins) Trainer guesses house drawn by first group before asking the 3-houses group if they came up with somewhat different or radically different designs. A discussion ensues about the extent to which activity design may curtail or promote generation of ideas. Finally, the trainer introduces the paper "Prototyping Dynamics: Sharing Multiple Designs Improves Exploration, Group Rapport, and Results" Steven P. Dow et al. 2011 (Stanford HCI Group) and explains the rudiments of the experiment and highlights the main conclusion "Creating multiple prototypes in parallel can help individuals more effectively to understand underlying design principles, enumerate more diverse solutions and react less negatively to feedback" and its implications in teaching practice.*

## **Eclectic and well-balanced sources**

Draw on eclectic sources. Don't feel constrained by the "agreed" body of theory of the topic and enrich the picture. Counterbalance excessive positive accounts with some critical papers. Don't believe the hype. For instance the seemingly great benefits students could derive from failure, perseverance are questioned by some important education experts. Make sure these voices are also heard. (Check out Alfie Kohn's views on what do kids really learn from failure [http://www.huffingtonpost.com/alfie-kohn/what-do-kids-really-learn\\_b\\_1936002.html](http://www.huffingtonpost.com/alfie-kohn/what-do-kids-really-learn_b_1936002.html))

## **Design thinking, Project Based Learning, Cooperative Learning**

Some of the premises and techniques of these methodologies have proven particularly useful in ADEPTT approach. Design Thinking is described as "an approach to learning that focuses on developing children's creative confidence through hands-on projects that focus on empathy, promoting a bias toward action, encouraging ideation and fostering active problem-solving" (Kwek, 2011)

Does Design Thinking encourage teacher-led innovation? To what extent does it dovetail with more widespread approaches such as Project Based Learning? Do they reinforce each other? Further research is needed but our experience in the training sessions has been very positive and they constitute two basic pillars in ADEPTT methodology.

*Flanders. Co-operative learning in enterprise education*

*"After the lunch, the participants zoomed in on active and co-operative learning and how this could be linked to entrepreneurship. They experienced this through different assignments, which are relevant for their teaching. During the afternoon, the topics concerning evaluation and teaching styles in an entrepreneurial learning environment were extensively explored"*

## **Development of teacher-led projects**

Spotting an opportunity in their own context and coming up with a project idea may be a daunting task for some teachers. Keep in store some exemplars of good and relevant "Driving questions" questions if participants get stuck.

*Spain. Driving questions*

*Three driving questions were used as templates.*

- *How Might We Engage former students in the activities of School?*
- *How Might We Connect Students Personal Interests with Curricular Contents?*
- *How Might We Build a Creative Space in our School?*

## **Project diversity**

Ideally project themes will mirror the diverse background of participants. The extent to which they are developed will vary. Teachers can be asked to submit project memos or lesson plans, fine but they should not overshadow proofs of real action such as prototypes, presentations, leaflets and pictures as proofs but real action

*Iceland. Turning ideas into actions*

*"Participants were encouraged to find and analyse problems and seek opportunities based on their own interests and experience, supported idea generation and development and encouraged actions"*

*with presenting their ideas. The main output of the course was a development of an innovation or a new educational approach or course. For example a transferable puppet show handling issues related with the divorce of parents. A talk between a child and a wise Owl answering the most common questions children have about their parents divorce. Need: 20% of children in Iceland age 9-12 have divorced parents, step- or foster parents.*

## **Prototypes, pretotypes**

Dominant models pay great importance to the “final product” (normally in the shape of a tightly structured lesson plan) ADEPTT sees planning “more as a concept associated with unpredictability, flexibility and creativity” and emphasizes its context-dependency (John, 2006). So, teachers are expected to produce and test “rapid prototypes” that could be tested in a classroom setting rather than “sleek solutions” in paper. "The teacher's suggestion is not a mold for a cast-iron result but is a starting point to be developed into a plan through contributions from the experience of all engaged in the learning process" (Dewey, 1938) Alberto Savoia's definition of “Pretotyping” hits the nail on the head. “Pretotyping is a way to test a product idea quickly and inexpensively by creating extremely simplified versions of that product to help validate the premise that "If we build it, they will use it." (Savoia, 2011)

## **Rapid feedback cycles**

Opinions are elicited from participants at the end of each training session. In order to keep it informal a very basic template with 5 questions (most interesting moment, most shocking, funniest, most boring, things you would change) Real-time “in-flight” comments do not only provide high-quality feedback to the trainer but they are highly appreciated by participant teachers. Some of the suggestions may be directly incorporated in the next session.

## **3.3 PROGRAMME**

This section outlines a suggestion for training course structure comprising 3 sessions-10 contact hours distributed as follows.

### **Session 1 (4 hours)**

Homework (1 week)

### **Session 2 (4 hours)**

Homework (4 weeks)

### **Session 3 (2 hours)**

It can be used as a template but as often repeated throughout this document, feel free to experiment and adapt it to your needs. Do always bear in mind that what happens outside the room is much more important than what happens inside. If there's one thing you should probably avoid is delivering the course in consecutive days. Creativity needs time for maturation.

We tapped into the “School as Basecamp” concept first coined by Learning Futures and kind of extended it into a sort of climbing expedition metaphor divided in 3 phases that are really helpful in conveying what is expected from participants in the process:

**Setting up the Basecamp:** First of all participants are encouraged to share stories about their perceptions, previous experience in teaching, work context, most memorable moments, things they are interested in. This is all about Reflective Practice, (the “R” in the CRCL model). At this stage participants realise their backpack is not empty at all but full of interesting gear and experience that will be of great use during the climb.

At this particular stage we start discussing the role of creativity in education (the first “C” in the CRCL model) developing some practical exercises before disclosing the theory behind divergent and convergent thinking strategies. Shortly afterwards a rapid prototyping exercise is a good appetiser before the mindsets and stages of design thinking methodology are introduced.

With this information basecamp is basically set up and it is time to start identifying opportunities or “summits worth to be climbed”. This is an individual task although some participants with shared interests may work in teams. Before day 1 comes to an end participants are prompted to observe people and engage with them in order to build empathy and spot an adequate opportunity that could be transformed into a project idea. During the next week they will interview at least 5 different users and/or stakeholders.

**Selecting summit and finding a climbing route.** Interviews and observation during the previous week lead to session 2. At this stage the goal is framing the challenges they want to tackle, or metaphorically speaking, the peak they want to climb. Participants are asked to switch to divergent mode and produce at least a basic draft of 3 different ideas, 3 possible climbing routes to reach the summit. These 3 ideas will be further enriched with comments from the rest of course participants using the 6-3-5 technique. This exercise turns out to be a fantastic introduction to a research paper on the benefits of parallel prototyping in the generation of creative and disruptive ideas and the need to avoid premature articulation. Time to switch into Convergent thinking mode and select ideas using a dot-sticking technique where teachers were asked to consider the impact of different criteria such as desirability, feasibility and viability in the “innovativeness” of the ideas selected.

At this stage participants are expected to prototype selected ideas and pitch them to their peers. Four key questions are introduced in order to help teachers scaffold their ideas: “What needs to be done next?”, “What do we already have?”, “How are you going to engage your users?” and “Who can help us?” Community Engagement (The second “C” in the CRCL model) is introduced through a stakeholder mapping exercise that paves the way for further action during the next weeks. The question “How Might We Connect students Personal Interests with Academic Contents?” sparks a discussion about the changing landscape and blurring boundaries of Learning Environments (The “L” in the CRCL model) In the session wrap-up teachers are reminded they now have four weeks to venture into the wild and make an attempt to the summit no matter how high they reach.

**Attempt to summit and back to the basecamp.** Four weeks later we will be sitting around the campfire. Bruises and the ragged clothes will be shown, enthralling tales of avalanches and storms, sleepless nights spent out in the cold will be told and in some cases proofs of summit provided. Likely projects devised by teachers will have covered a wide range of topics. To give you a flavour Nieves, a spanish primary school teacher came up with the project idea “Fuera de...” (“Out of...”) which aims at developing primary school kids mathematical competence using real contexts. Carlos, a secondary school PE teacher combined coaching and technology to craft a emotional education project for year11-year12 called “Emotional Zombies” and Andoni, a VET teacher in the Basque Country managed to design and carry out KUDEA-TU, a P2P teaching project where a group of VET students organised a creativity workshop for Secondary Schools. But above all, this was an opportunity to discuss and evaluate the whole ADEPTT learning experience.

See Annex for a detailed description of a 3-day training programme

### 3.4 RESOURCES/TOOLS

Powerpoints

Day 1 + Day 2 + Day 3

Online boards:

Day 1. Resources

Day 2. Resources + Day1 results of opinion poll

Day 3. Resources + Day2 results of opinion poll

All resources used during the training can be accessed at: [http://padlet.com/wall/adeptt\\_ast](http://padlet.com/wall/adeptt_ast)





### 3.5 USE OF VIRTUAL BOARDS

Padlet is a “virtual surface that has all the benefits of being digital and the simplicity of a notepad” according to its creators so we decided to give it a go in ADEPTT pilot course with a 2-fold purpose:

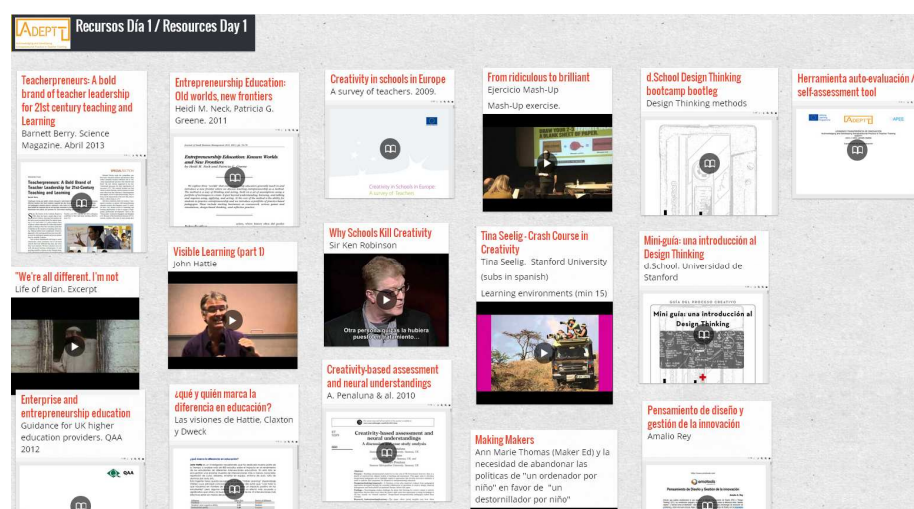
- To share relevant and media-rich resources and contents and
- To stimulate the exchange of opinions and interactivity between participants and trainer.

The use of online boards has been of great help to the trainer and much appreciated by teachers in the final evaluation. It's a flexible and inexpensive tool that makes ridiculously easy sharing and updating information in a very interactive way with course participants. Configuration is pretty straightforward and it is extremely user-friendly. A quick 5-min tutorial is more than enough to show participant teachers how it works. In future editions we plan to make participant teachers create their own personal online board as a sort of project portfolio to showcase progress from problem to insight to idea to action in a very visual way.

All boards were password protected allowing participant teachers to read, comment and upload new content. Three different types of board were created for each session:

- Resource board
- Opinion board
- Inspiration board

**Resource boards** include links to research papers, policy reports, tools and videos on relevant topics.



**Opinion boards** elicited comments from participants at the end of each training session. Teachers were asked to highlight 5 different aspects of the session: “Most interesting”, “Most shocking”, “Funniest”, “Most boring” and “Things they would change”. Comments were immediately uploaded and shared in the online boards. These real-time “in-flight” comments did not only provide high-quality feedback to the trainer but were also highly appreciated by participant teachers. Some of the suggestions were incorporated in the next sessions.

## Valoraciones día 1 / Teachers' opinions day 1

Valnalón, 23/04/2013

### Lo más interesante / interesting

Padlet.com, la aplicación muro de lamentaciones (4)

Interacción del grupo

Compartir ideas con compañeros de otros ámbitos educativos (4)

Dinámica global de la sesión (2)

Clarificar conceptos de forma sencilla

Inventar producto con lo que llevamos en bolsillos

Visión rompedora de creatividad

Metodología utilizada (5)

Metodología práctica

La posibilidad de llevar a la práctica el curso

Referencias a experiencias europeas y estudios (9)

Trabajo colaborativo

### Lo más chocante / shocking

El proyecto en sí, ¡es algo nuevo!

La dinámica de grupo

La puesta en escena del curso

Romper esquemas de "amistad" y hubo que conocer a gente nueva

Dinámica fila de cumpleaños

Diversidad de profesores

Sencillez y relax

Ver como la creatividad no es algo únicamente físico

Resultados estudio creatividad

Lo inesperado de las propuestas

Cantidad de posibilidades que se pueden dar de forma muy sencilla

La visión del Pensamiento de Diseño

Creencias, actitudes que damos por supuestas (ej. Dibujar casa)

### Lo más divertido / funny

Diseño de productos, prototipo y puesta en común (13)

Momentos de creatividad, dinámicas (5)

Observar creatividad

Dinámica de cumpleaños (2)

### Lo más aburrido / boring

Dibujar las casas

Rúbrica de autoevaluación

Esta valoración (5)

### Lo que cambiaría / improvements

Estructurar sesión a situaciones diarias de vida de un docente

Tratamiento en más profundidad de alguna experiencia concreta de creatividad en centros educativos.

Más protagonismo de Silvia

Mayor participación en actividades prácticas

Reflexión de la práctica por escrito

**Inspiration board** is a space where teachers could share inspirational stuff that may somehow influence project ideas. To make things easier, four different categories are created: Things I'm interested in (work-related or not) , Things I'd like to change (at classroom, school or community level), Things I've seen somewhere else (that I'd love make them happen here) , Things I have in mind (but still haven't found the time to put them into practice)

## Muro de las lamentaciones

TEMAS QUE ME INTERESAN... con o sin relación con mi trabajo

### Cooperatividad

Trabajo cooperativo

Reparar cosas, no tirarlas

Reparar manifiesto

Aplicar la experiencia de antiguos alumnos

Uso educ. aplicaciones para móvil

Colaboración con centros extranjeros

Proyectos liderados por jóvenes

### Motivación del profesorado

Neurociencia

Tener actives, perovistas para enviar a alumnos

Clases al aire libre

Fotografías gratis para alumnos

Caching educativo

TRABAJAR EN EQUIPO REAL PARA MEJORAR EL RENDIMIENTO DE ALUMNADO DE FORMAS INNOVADORAS

ANGELA

### Nuevos GAT

Transformar las TIC en TACCs para en Aprendizaje la Colaboración y la Comunicación

MIENTRAS CLASOS DEL MUNDO

Clases al aire libre

Fotografías gratis para alumnos

Caching educativo

TRABAJAR EN EQUIPO REAL PARA MEJORAR EL RENDIMIENTO DE ALUMNADO DE FORMAS INNOVADORAS

ANGELA

### Salvo IVU

Me encanta la metodología del aprendizaje a través de proyectos. Está en inglés.

Katka Bigalke

Una ONG holandesa en la que la burocracia holandesa

Ruta Bigalke

Me encanta la relación entre hobby, motivación, superación, deporte y aprendizaje

Descubrir el surf fardamente, tras mucho sufrir, peligro y dolor, estoy disfrutando de cada pequeño progreso más que nada antes me había hecho viral.

Ruta Bigalke

Me encanta escribir historias, inventar realidades, contar cuentos. Son de mucha utilidad para en el diseño actividades para los alumnos.

Lore

Me gustaría poder tener una buena red para poder valorar los trabajos de los alumnos y alumnos. Creo que a veces puede ser muy subjetiva.

Por otra parte, me gustaría poder trabajar de forma más activa al vídeo con vídeos. Aquí es de una noticia publicada hoy en internet: Miran Orazabal Gortia

High Tech High

Un centro educativo en San Diego que utiliza Aprendizaje Basado en Proyectos.

Realizar bicicletas para diversos usos

ONG: Mosa Piel (Guatemala)

Trabaja con grupos flexibles

Saludos, act complementarios, ponentes al aula

Aprendizaje cooperativo

Colégio Artica

### COBAS QUE ME GUSTARÍA CAMBIAR...

en mi aula, centro, localidad...

No cumplir con lo acordado en reuniones

Democracia en centros

Iniciativas para desarrollo prof. más tempranas

Evolución de aptitudes y actitudes

No sólo de conocimientos

Aprender a aprender

Cuando no se quiere

Aula específica de reformas con aulas y video

Falta de trabajo en equipo en centros

Visión negativa del profesorado de algunos alumnos

Mejor visión social del emprendedor

Metodologías obsoletas

El sistema de calidad

Escasa conectividad social

Ed. Física en 2º Bach

Tutorías en infantil y primaria

Actitudes negativas y destructivas

Pedagogías espaciales educativas

Instalaciones, horarios, colab. externa

Visitas de perfil

Innovación como proyecto de centro

No proyectos individuales

Reparar de temas en ambiente doméstico

Aperturas en relación con familias

Salvo de ordenadores en desuso

Transformar en Tablón: Reprocesos 3D (huel)

Me gustaría poder llegar más al alumnado en materia de emprendimiento y ser más creativo

Aumentar, aunque sólo sea un poquito su grado de autonomía.

Ruta Bigalke

Comentarios de los rituales con más pruebas competenciales y sistemas de evaluación (BELL)

### IDEAS QUE TIENDEN EN LA CABEZA...

para que nunca ha tenido tiempo para ponerlas en marcha

Convertir barridos en ecobarridos

Health, Tech and Coach

Entornos Personales de Aprendizaje (PEA)

Aperturas de centros a la comunidad

Proyecto intercambio alemán

Aula para trabajar destrezas manuales con alumnado desmotivado

Utilización líneas metodológicas en Ed. Infantil y primaria

Mejorar la visión negativa del trabajo

Viaje a ver musical

Human CEM

Mi proyecto, que ya he comenzado este curso, pretende continuar y crecer la participación en Proyectos Colaborativos y el crecimiento en la construcción de nuestro entorno personal de aprendizaje con la repensación en la transformación de los procesos de enseñanza aprendizaje y la progresiva modificación de las TIC en TACC

Creación de club/ asociación para fomentar la actividad deportiva

Fomento para Empatia en el aula

Proyecto europeo con centro de Ind. Ciencias en Alemania

Usar la cabeza de ideas explorar

Realizar proyectos en los que participen equitativamente alumnos de distintos ciclos.

Comisión que Proyectos como puede ser EIE no nos comprometamos en trabajar por aula sino que las empresas se realicen con alumnos de distintos grupos.

Ruta Bigalke

Escribir un libro entretenido

Tocar la guitarra

Pili

Concurso de ideas empresariales para dar respuesta a un reto.

A summary board was created shortly after the training ended with links to boards for each session. [http://padlet.com/wall/adeptt\\_ast](http://padlet.com/wall/adeptt_ast)



### 3.6 MONITORING & SUPPORT

Make sure you provide support and follow-up of teacher project development. Set up e-mail list or a Facebook group. Use them to send/publish updates and reminders. Make sure the momentum is not lost. More structured and personalised follow-up and its practical implications in terms of time and resources needed may be considered.

## 4. In conclusion

### 4.1 KEY POLICY MESSAGES

As can be seen in the previous chapters the foundation of the CRCL model are rooted in research regarding the four aspects of where creativity is visible in human community, endorsing community engagement, reflective practice, exploration of creativity, innovation and entrepreneurship and enhancing the learning environment in such ways that maximises sustainable entrepreneurial mind set of participants.

The learning outcomes of the CRCL model as can be seen in Chapter 2, set the path of the teaching methods and materials used in the pilot courses. The findings show that the learning outcomes have different attainment levels, however the evidence suggest that a course structure of CRCL nature is beneficial as an in-service training option for teachers of all levels of education and from different fields.

Based on the ADEPPT experience and evidence of the CRCL model pilot training the next level of action requires further development of:

1. A mark 2 CRCL model in- service training course that takes further into account the different roles that the participants bring to the experience, and thus highlighting that community roles of the participants.
2. Methods and materials used in the training in order to keep up with the fast moving changes that should be done in two or three years' time
3. A network of ADEPTT trainers and trainees to exchange experiences materials and general support, mostly locally and regionally.
4. Research exploring the ways participant teachers transfer their learning to a variety of situations. Extended monitoring and support would be of great help to see if this is actually happening.

Internationally the SEET and the ADEPPT networks will continue as groups of likeminded individuals and institutions and will continue to with the set course to manifest further creative human behaviour for a more sustainable future for all.

## 4.2 ADEPTT MANIFESTO

- Expand the battlefield of entrepreneurship education by allowing entrance to a wider spectrum of influences and influencers. This may be a cure for one of the ills of Entrepreneurship Education as we know it, its "Jekyll & Hyde syndrome" or the harsh cognitive dissonance arising from endlessly repeating Entrepreneurship Education "free-range" nature while our traitorous subconscious repeatedly chooses to keep it confined in an overheated and narrow battery cage.
- Knock Entrepreneurship Education off from its "high" horse. It's time to pay respect and acknowledge the influence of pedagogies that have been out there for ages instead of engulfing and renaming everything that works as entrepreneurship education.
- Invest in and support the teachers we already have (D. William). We don't need another hero (nor ed-entrepreneurs from outer space).
- Although effective in certain circles the economic crisis/employment/fear imperative is a poor and narrow justification, let alone a motivation for engaging in enterprise education. Let's do ourselves a favor and find a better selling point.
- Bring dragons back into their dens \* and let all hells break loose bringing some diversity into the picture: enterprising hydras, gorgons, wyverns, chimeras, basilisks and so on. Embrace criticism and adopt a historical perspective. (\* Dragon's Den is a TV show. It allows several entrepreneurs an opportunity to present their varying business ideas to a panel of five wealthy investors, the "Dragons" of the show's title, and pitch for financial investment offering a stake of the company in return.)
- Tinker, tinker, little star. (pun intended) It doesn't need to be perfect. Learning is about appropriating, taking something that belongs to others and making it one's own (often without permission). Tweak it, hack it, bend it, break it.
- Let the slow magic make its magic (Bruydonckx, 2013), make room for genuine reflection.

## 5. References

ADEPTT Project, (2012), Work Package 2 Final Report, Portugal: Plataforma Para a Educacao do Empreendedorismo em Portugal (PEEP), June.

Arbel, A., Dor, L., Weiss, S. and Peffers, J. (2001), What makes Teacher an Agent of Change?, ENTRANCE project.

Berry, B., Byrd, A. and Wieder, A. (2013), Teacherpreneurs: Innovative Teachers Who Lead But Don't Leave [Online], Available: <http://www.teachingquality.org/content/advocating-bold-brand-teacher-leadership-chapter-1-teacherpreneurs-jossey-bass-2013>

'Business Dynamics: Start-ups, Business Transfers and Bankruptcy', (2011), [Online], Available: [http://ec.europa.eu/enterprise/policies/sme/business-environment/files/business\\_dynamics\\_final\\_report\\_en.pdf](http://ec.europa.eu/enterprise/policies/sme/business-environment/files/business_dynamics_final_report_en.pdf)

Cachia, R., Ferrari, A., Ala-Mutka, K. and Punie, Y., (2010), Creative Learning and innovative Teaching, Final Report on the Study on Creativity and Innovation in Education in the EU Member States, JRC, European Commission, Luxembourg: Publications Office of the European Union.

Cardiff Concordat, (2010), A report from the International Entrepreneurship Educators Conference, Sept 2010.

CBI, (2009), Future Fit: Preparing graduates for the world of work, CBI higher education task force, [Online], Available: [www.cbi.org.uk/highereducation](http://www.cbi.org.uk/highereducation)

Clark, R., Andrews, J., Thomas, L. And Aggarwal, R., (2013), Compendium of effective practice in higher education Volume 2, Aston University and the Higher Education Academy, June.

Claxton, G and Lucas, B. (2009) Wider skills for Learning. NESTA [Online], Available: <http://www.nesta.org.uk/library/documents/DisPap%20-%20CRL%20Wider%20Skills%20v6.pdf>

d.School (2011) "Bootcamp bootleg" Hasso Plattner Institute of Design. Stanford University. [Online], Available: <http://dschool.stanford.edu/wp-content/uploads/2011/03/METHODCARDS2010v6.pdf>

Dewey, J. (1938) Experience and Education. Touchstone Edition. US

Dow, S. et al. (2011) Prototyping Dynamics: Sharing Multiple Designs Improves Exploration, Group Rapport, and Results. Stanford HCI Group

Edwards, L. J and Muir, E. (2006), Tell me and I'll forget; show me and I may remember; involve me and I will understand: developing entrepreneurship education through theory and practice, Working Paper 019/2006, National Council for Graduate Entrepreneurship, March.

EU, TWG, Entrepreneurship Education, (2011), [Online], Available: [http://ec.europa.eu/education/lifelong-learning-policy/doc/exchange/entrepreneurship\\_en.pdf](http://ec.europa.eu/education/lifelong-learning-policy/doc/exchange/entrepreneurship_en.pdf)

European Commission Directorate General, (2009), Impact of Culture on Creativity.

European Commission for Enterprise and Industry (2010), [Online], Available: [http://ec.europa.eu/enterprise/policies/sme/promoting-entrepreneurship/education-training-entrepreneurship/index\\_en.htm](http://ec.europa.eu/enterprise/policies/sme/promoting-entrepreneurship/education-training-entrepreneurship/index_en.htm)

Fregetto, E. (2006), Do Entrepreneurial Inclined Student Learn More from Simulations? Entrepreneurship Education Track, United States Association for Small Business and Entrepreneurship National Conference, January, Tuscan, Arizona

Fullan, M. and Donnelly, K. (2013) Alive in the Swamp: Assessing digital innovations in education. NESTA, UK. [Online], Available: [http://www.nesta.org.uk/areas\\_of\\_work/public\\_services\\_lab/digital\\_education/assets/features/alive\\_in\\_the\\_swamp\\_assessing\\_digital\\_innovations\\_in\\_education](http://www.nesta.org.uk/areas_of_work/public_services_lab/digital_education/assets/features/alive_in_the_swamp_assessing_digital_innovations_in_education)

Fullan, M. and Langworthy, M. (2013) Towards a New End: New Pedagogies for Deep Learning. Collaborative Impact. Seattle, Washington, USA

Heffernan, T., Morrison, M., Sweeney, A. and Jaratt, D., (2010), Personal attributes of effective lecturers: The importance of dynamism, communication, rapport and applied knowledge, The International Journal of Management Education, Volume 8, Number 3, p13.

John, P. (2006) Lesson planning and the student teacher: re-thinking the dominant model. Journal of Curriculum Studies, Vol. 38, No.4, 483-498

Kahn, L. , Hewes, S. and Rushanara, A. (2009) Taking the lead. Youth leadership in theory and practice. The Young Foundation.

Kim, K. H. (2011), The Creativity Crisis: The Decrease in Creative Thinking Score on the Torrance Tests of Creative Thinking, 'Creativity Research Journal', Volume 23, Number 4, pp. 285 - 295.

Kohn, A. (2012) What do kids really learn from failure. Huffington Post Online], Available: [http://www.huffingtonpost.com/alfie-kohn/what-do-kids-really-learn\\_b\\_1936002.html](http://www.huffingtonpost.com/alfie-kohn/what-do-kids-really-learn_b_1936002.html)

Kwek, S.H. (2011) Innovation in the classroom: Design Thinking for 21<sup>st</sup> Century Learning. (Master's thesis). Retrieved from [http://www.stanford.edu/group/redlab/cgi-bin/publications\\_resources.php](http://www.stanford.edu/group/redlab/cgi-bin/publications_resources.php)

Latin America Roundtable on Entrepreneurship Education Global Education Initiative, (2011), Rio de Janeiro, 21 April, [Online], Available: [http://www3.weforum.org/docs/WEF\\_GEI\\_UnlockingEntrepreneurialCapabilities\\_Report\\_2011.pdf](http://www3.weforum.org/docs/WEF_GEI_UnlockingEntrepreneurialCapabilities_Report_2011.pdf)

Lowenstein, G. (1994) The psychology of curiosity: A review and representation. *Exotic Preferences: Behavioral Economics and Human Motivation*. New York: Oxford University Press

Manifesto for Creating Jobs and Economic Growth in the MENA Region through Entrepreneurship and 21st Century Skills, (2010), Marrakech, October, [Online], Available: [http://www3.weforum.org/docs/WEF\\_GEI\\_UnlockingEntrepreneurialCapabilities\\_Report\\_2011.pdf](http://www3.weforum.org/docs/WEF_GEI_UnlockingEntrepreneurialCapabilities_Report_2011.pdf)

Martinez, A. C., Levie, J., Kelley, D. J., Rognvaldur, J., Saedmundsson, and Schott, T., (2010), Global Entrepreneurship Monitor Special Report: A Global Perspective on Entrepreneurship Education and Training, [Online], Available: <http://www.gemconsortium.org/download/1273182304212/GEM%20Special%20Report%20on%20Ed%20and%20Training.pdf>

McKeown, J., Millman, C., Sursani, S. R., Smith, K. and Martin, L., (2006), Graduate entrepreneurship education in the United Kingdom, Education and Training, Volume 48, Number 8/9, pp. 597-613.

NESTA, (2008), Developing Entrepreneurial Graduates: Putting entrepreneurship at the centre of higher education, NESTA: London. [Online], Available: [http://www.nesta.org.uk/publications/reports/assets/features/developing\\_entrepreneurial\\_graduates](http://www.nesta.org.uk/publications/reports/assets/features/developing_entrepreneurial_graduates)

NUS, (2010), 10 Principles of Effective Assessment, [Online], Available: [http://resource.nusonline.co.uk/media/resource/Microsoft%20Word%20%20Assessment\\_Purposes\\_and\\_Practices\\_Briefing\\_Jan09.pdf](http://resource.nusonline.co.uk/media/resource/Microsoft%20Word%20%20Assessment_Purposes_and_Practices_Briefing_Jan09.pdf)

Organisation for Economic Co-operation and Development 2009, Creating effective teaching and learning environments: first results from TALIS, OECD, Paris, [Online], Available: <http://www.oecd.org/dataoecd/17/51/43023606.pdf>.

Patterson, F. and Kerrin, M., (2009), Innovation for the Recovery: Enhancing Innovative Working Practices, London: CMI / NESTA

Penaluna, A., Penaluna, K., Usei, C. and Griffiths, D. (2012) Enterprise Education Needs Enterprising Educators: Inspiring New Teachers Through Formal Teaching Training Provision, Proceedings of the 57th World Conference of the International Council for Small Business, Leading from the Edge, 10-13 June, Wellington, New Zealand, [Online], Available: <http://sbaer.uca.edu/research/icsb/2012/Penaluna%20486.pdf>

QAA, (2012), Enterprise and entrepreneurship education: Guidance for UK higher education providers, September, [Online], Available: [www.qaa.ac.uk](http://www.qaa.ac.uk)

Reigniting the entrepreneurial spirit in Europe, (2012), Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Entrepreneurship 2020 Action Plan.

Savoia, A. (2011) Pretotype It. Alberto Savoia. [Online], Available: [https://docs.google.com/file/d/0B0QztbuDIKs\\_ZTk2M2RhZWItYzk3YS00ZDZmLTgyZjltY2Y2ZWlyYjZkOTE3/edit?hl=en\\_US](https://docs.google.com/file/d/0B0QztbuDIKs_ZTk2M2RhZWItYzk3YS00ZDZmLTgyZjltY2Y2ZWlyYjZkOTE3/edit?hl=en_US)

Seikkula-Leino, J., (2007), Curriculum reform and entrepreneurship education, Opetusministeriön julkaisu 28, Yliopistopaino, Helsinki.

Seikkula-Leino, J., (2011), The implementation of entrepreneurship education through curriculum reform in Finnish comprehensive schools, Curriculum Studies, Volume 43, Number 1, pp. 69–85.

Starkey, K. and Tempest, S. (2009), From Crisis to Purpose, Journal of Management Development, Volume 28, Number 9, pp. 700 – 710.

Williams, M. and Williams, J., (2010), Evaluating a model of business school students' acceptance of web-based course management systems, The International Journal of Management Education, Volume 8, Number 3, pp. 59 - 70.

World Economic Forum, (2009), Educating the Next Wave of Entrepreneurs: Unlocking entrepreneurial capabilities to meet the global challenges of the 21<sup>st</sup> Century, A Report of the Global Education Initiative, Switzerland, [Online], Available: [www.weforum.org/en/initiatives/gei/EntrepreneurshipEducation/index.htm](http://www.weforum.org/en/initiatives/gei/EntrepreneurshipEducation/index.htm)

