Deliverable 32
Project guidelines

Work package: 7

Due date of deliverable: June 2015

Lead beneficiary: ITD

Editors: E. Kovatcheva

Contributing beneficiaries: UNIMI

Reviewer: B. Apllloni

Status: Final version

Version and date: 04/06/2015

Changes: editorial changes

Project co-funded by the European Commission within the Enterprise and Industry DG

Dissemination Level:

PU	Public	x
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the Consortium (including the Commission Services)	
CO	Confidential, only for members of the Consortium (including the Commission Services)	

Project co-ordinator: Prof. Bruno Apolloni
Universitá degli studi di Milano
apolloni@di.unimi.it

January, 2015

Statement of originality:

This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both.

TABLE OF CONTENTS

SUMMARY

This document introduces the guidelines of entrepreneurship education for creating, sharing and reusing of learning materials and resourses are supported on European level. Nowadays, it's a hot topic. There are published the contributions of various European Institutions around the NETT platform and analogous ones within the general thread of ICT supported entrepreneurship education.

INTRODUCTION

According to the Key Competence Framework, the entrepreneurship key competence refers to an individual's ability to turn ideas into action. It includes creativity, innovation and risk taking, as well as the ability to plan and manage projects in order to achieve objectives.

In 2006 the EU has set up the eight key competences for Lifelong Learning that every European should aim at acquiring which enable them to adapt competently to new situations. Furthermore, the EU-commission has set up the Strategic Framework Education & Training 2020. Through this, member states have identified four common objectives to address these challenges by 2020:

- Making Lifelong Learning and mobility a reality
- Improving the quality and efficiency of education and training
- Promoting equity, social cohesion, and active citizenship
- Enhancing creativity and innovation, including entrepreneurship, at all levels of education and training

So, strengthening the sense of initiative and entrepreneurship is explicitly seen as an active strategy to enable citizens to cope with these changes. On Commission level entrepreneurship is one of the main strategies for the future: as a key competence as well as one of the four goals in the Strategy 2020.

In six countries and two regions (Denmark, Flemish Community of Belgium, Estonia, Lithuania, Netherlands, Norway, Sweden, United Kingdom-Wales) **specific strategies** for the implementation of entrepreneurship education in primary and general secondary education have been launched (EURYDICE, 2012).

Within this framework, several countries (e.g. Bulgaria, Czech Republic, Hungary, Austria, Poland and Turkey) have created broader strategies - national strategies for lifelong learning that include objectives for the implementation of entrepreneurship education.

Each EU country is responsible for its own education and training systems, so EU policy is designed to support national action and help address common challenges, such as ageing societies, skills deficits in the workforce, and global competition.

The project NETT introduce a platform to encourage teachers in entrepreneurship as community of practice, supported with learning materials in the NETT repository.

BACKGROUND

The Entrepreneurship education is a hot topic. Creating, sharing and reusing of learning materials and activities is supported on European level. The common e-learning platform for the teachers of entrepreneurship from EU countries could be step ahead for creating the EU community of practice of teachers in entrepreneurship. The development of common e-learning platform is the goal of the EU project EE74: NETT - Networked Entrepreneurship Training of Teachers. This paper presents the guidelines for the teacher for creating the dynamic courses in the NETT platform. The focus is on

learning activities and the assessment. With the notation dynamic we intend courses that may be continuously updated, as for their contents, and delivered in non conventional ways thanks to the ICT support.

NETT is a project financed by European Commission, Enterprise & Industries DG with the aim of gathering a Social Network for improving the entrepreneurship teaching in the European educational system.

As a basic step, an Internet open platform is set up in the cloud for exchanging contents, tools and methods between entrepreneurship teachers. It is based on the Moodle Learning Management System (LMS) (Figure1) where:

- new metadata are added for description of:
  - participants
  - pedagogy
- the Moodle main unit (course) is granulated to course modules
- the course modules fill the NETT repository
- the new course could be create as usual in Moodle or by metadata filtering
- each granulated unit must be approved by experts when it is proposed as public content for any user of the platform.

The platform is supported by the most advanced technologies. The ICT infrastructure is already done. The next is to support teachers in their course designing and development process.

The NETT platform is a LMS with additional flexibility and possibility for course creation. The teacher can use the resources from their colleagues already implemented in the platform.

The main challenge is to design the new course choosing/ modifying the learning resources and activities according the learning approach.

The NETT platform is created to support initiatives in the field of Open Educational Resources and its contents are free for use but with respect of the copyrights.
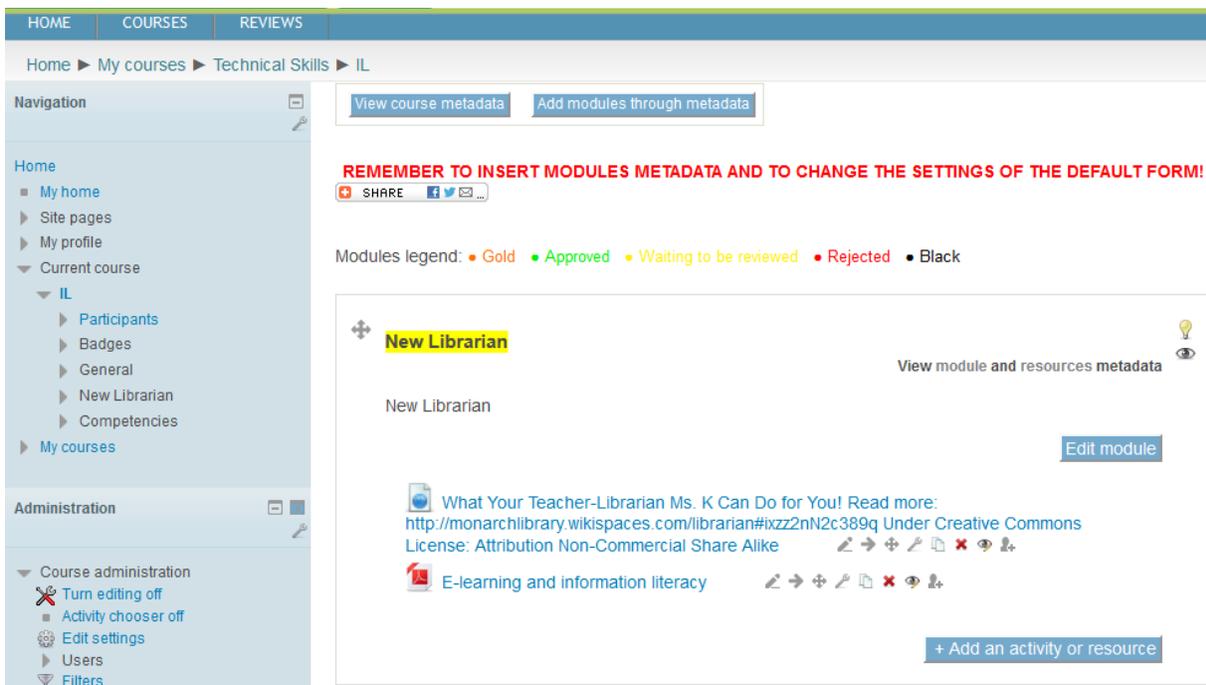
Figure 1 Course in the NETT platform

GUIDELINES

The capabilities of the Internet to develop learning offer the new features of education: reuse, share and flexible. There are different definitions of ICT supported learning. According to Nolan (2000) it is **learning that uses electronic technology to present academic information to facilitate the acquisition of knowledge and skills development**. This definition fits very well in our case when the main goal is to develop the knowledge and skills for entrepreneurs.

Once created the learning materials / activities in NETT platform they could be reused in different courses and share among teachers.

These learning features are an attribute of the global information society and meet the needs of today's learner as for flexible training available anytime, anywhere.

The updated Collis and Moonen's (2001) flexibility characteristics contains six items: **Time, Place, Content, Assessment, Pedagogy, Course delivery**. They are the basis for more widespread use of eLearning, but every step should be paying attention to proper selection of each aspect according to the target group and the topic of education.

The technology-enhanced training can augment the effectiveness of training. It should not be the sole form of training. Activity-based learning should fill at least two-thirds of training hours (no more than one third is lecture). It will concern:

- Competence-based learning
- Problem-based learning;
- Project-base learning
- Inquiry-based learning;

Effective development of learning-by-doing requires ongoing organizational support. This starts in designing: 1) the training course, 2) its structure, 3) content, and 4) activities the teacher should consider. In particular the teachers should consider:

- goals and objectives - What they intend to do. Questions the teacher should consider before planning the training session include
    - o What do I want to accomplish in this course – respectively session?
    - o What needs to be done with the group in order to reach the desired goal?
    - o content, methods and materials - How are they going to do it. Training must be provided in a way that learner can understand.
- language
- vocabulary
- monitoring and evaluation - How will they know if they have succeeded The learner achievement should be assessed by more flexible and active methods:
- Peer-to-peer evaluation
- 360 degrees assessment
- e-portfolio

Answering these questions will assist the teacher in putting together the training plan and selecting the appropriate exercises. The **general guidelines** for designing the structure of the training and the content of the course material should be:

- Be specific and address the needs of the learners
- **Do not attempt to evenly divide the time between all topic areas** - each topic should only be given the amount of time it will take to adequately cover the most important points
- Build in flexibility
- **Have reserve materials on hand** - be prepared for unexpected questions and problems
- Prepare general time guidelines for each session, but remember the need for flexibility.
- Use visual support throughout
- **Build in early participation** - involve the participants as early as possible in the program.
- Consider the team approach to planning course structure
- Provoke the learners with the learning exchange between participants:
    - *Participant-to-Participant* - learning exchange recognizes that participants can learn from one another's experiences.
    - *Participant-to-Teacher* - facilitators can learn as much from training sessions as participants do.
    - *Teacher-to-Participant* - classroom learning needs structure.

According these guidelines the Checklist for an open course should be create as follows:

Audience Analysis

- Prerequisite course knowledge and experience are identified
- Technology proficiencies are clearly articulated

Course Goals and Objectives

- Course goals are stated
- Learning objectives are stated
- Objectives are achievable and measurable

Course Content

- Content provides learners with the skills and knowledge to achieve the objectives
- Instructional strategies (e.g., advanced organizers, examples, discussion questions) help learners relate new knowledge to prior knowledge
- Modules are organized in a logical and consistent sequence
- Content is motivating and engaging
- Content relates to real-life experiences through example and application
- Content accommodates differences in learning styles and life experiences of the learner
- Instructional activities require the learner to actively participate in the acquisition and processing of the content
- Instructional activities foster critical thinking
- Instructional activities promote dialog among the participants

- Instructional activities support collaborative and cooperative learning, including group self-evaluation and peer reviews
- Reviews summarize key points

Interactions

- Learners are encouraged to communicate with the instructor and with each other
- Goals for online collaboration are established
- Rules of engagement are either established in advance or developed collaboratively by learner groups
- Learners have a "work space" to communicate information relating to program-related topics
- Learners have a "social space" to share information
- Learners have a "technical space" to post questions and problems with technology
- Learners have access to the instructor via e-mail or a private space for communicating with the instructor

Instructional Media and Tools

- Media is appropriate for the different types of learning
- Media and tools are accessible to the widest range of learners
- The selection of media and tools reflects a thorough analysis and understanding of the "added value" of that technology
- Audio or video is clearly audible/visible
- Media elements load quickly

Syllabus or other introductory course documents include the following information:

- Introduction
- Contact information (e.g., telephone number, office hours, e-mail address, etc.)
- Organization of course content or course map
- Course policies and procedures, such as
- Specific instructions on assignments
- Detailed schedule with assignment due dates, exam dates, and discussion forum participation attendance
- Consequences of late assignments, lack of participation in discussion forums, non-attendance or tardiness to synchronous online activities, and missed quizzes or tests
- Statement of how learners are notified when assignments are received
- Statement of the type of feedback to expect on assignments and when it can be expected
- Statement of required learner participation and time commitment
- Statement regarding how quickly e-mail is returned or responses to private posts are made
- An email list or explanation of how learners can contact other learners

Assessment

- Assessment is based on multiple measures (e.g., papers, discussion participation, projects, portfolios, quizzes, tests) taken through time
- Assessment items are matched to the objectives

- Assessment strategies accommodate the special needs, characteristics, and situations of the either in presence or distance learner
- "Low-stakes" assessment strategies and self-check activities are included to enable learners to gauge their progress without impacting course grade or performance measurement
- Techniques and technologies support peer review and assessment

THE ASSESSMENT CYCLE

The assessments are the challenge for the teachers. They should support the achievement of the learning goals. They are objectives before training, learning activities during the training, indicators during the assessment and learning outcomes after the training (Figure 2).
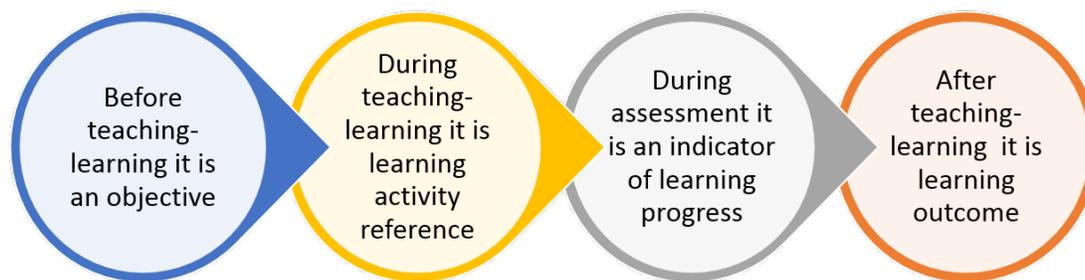

Figure 2 Learning Objectives, outcomes
(Source Nikolov,Shoikova, Kovatcheva, 2014)

E-portfolio artifacts constitute very suitable tools for formative and summative assessment. E-portfolio technology, particularly for assessment purposes, is still evolving, and this is why the approach at this stage is deliberately to guide rather than to constrain usage. This solutions will be sought and developed over time. This is seen as the only practical way in which to enable evolution of the technology, encourage the participation of interested parties in developing effective practice, and share both effective practice and lessons learned (SQA, 2012). Technology makes it possible to use large-scale testing in a more formative way to help shape and improve the effectiveness of ICTs for learning. In particular, the ability of ICTs to reach a broad range of learners, collect data, and present different variants of the same material makes for a powerful research tool. Questions as broad as the best trajectory through the learning content or as narrow as the most effective way of visualizing information can be tested empirically, and the environment can be shaped to reflect the results. Under this formative model of research, learners can still be randomly assigned to conditions, but the goal of assessment is the continual improvement of the ICT, not the final proof of effectiveness (Blair and Schwartz, 2012).

The ultimate goal of assessment is to strengthen learner's responsibility for the process and outcome of learning. Research suggests that the future projection of traditional assessment should be revised toward authentic assessment by changing its dimensions: 1) from discrete to continuous, 2) from isolated to interdisciplinary 3) from focusing on a single measure to more diverse assessment 4) from primarily quantitative to qualitative e and integrated assessment, 5) from prescribed to flexible, 6) from standardized to open, and, last but not least, 7) from assessment to self-assessment (Tchoshanov, 2013).

SUMMARY

The entrepreneurship learning is very complex. The NETT platform support the teachers but they should have the competency on their own topic as well as to design the course.

The most important is assessments design in learning-by-doing approach. When the main goal is to develop the entrepreneurial spirit in the learners the most appropriate is it (EC, 2013). To design the assessment for it is to yield information that is actionable at the appropriate level. Assessments have many different uses, from ranking nations to characterizing a learner to evaluating a learning experience. Different uses require different kinds of assessment according the learning styles. Assessments can be embedded in ICTs. They do not have to take time away from learning and should be integrated into the learning process.

REFERENCES:

Blair, K., D.Schwartz, (2012) **How Technology Can Change Assessment**, IITE Policy Brief, UNESCO Institute for Information Technologies in Education, http://iite.unesco.org/files/policy_briefs/pdf/en/how_technologies.pdf (Last visited March 9, 2015)

Collis, B., & Moonen, J. (2001), **Flexible learning in a digital world: experiences and expectations**, London: Kogan Page Publishers.

EC (2013) **Strategic framework – Education & Training 2020**, (Last visited March 9, 2015) http://ec.europa.eu/education/policy/strategic-framework/index_en.htm

EURYDICE (2012) **Entrepreneurship Education at School in Europe: National Strategies, Curricula and Learning Outcomes**, Education, Audiovisual and Culture Executive Agency, ISBN 978-92-9201-252-6

Nikolov R., Shoikova E., Kovatcheva E. (2014) **Competence Based Framework for Curriculum Development**, Za bukvite O'pismenah, Sofia

Nolan M.E. (2000), **E-Learning and You**, Curriculum/Technology/ Quarterly, Vol 9, Num 3, Association for Supervision and Curriculum Development (ASCD), Spring

Scottish Qualifications Authority (SQA), (2012) **Guidance on Using E-portfolios**, http://www.sqa.org.uk/files_ccc/Section_4.pdf (Last visited March 9, 2015)

Tchoshanov, M., (2013) **Engineering of Learning: Conceptualizing e-Didactics**, UNESCO Institute for Information Technologies in Education, Moscow, Available: http://iite.unesco.org/pics/publications/en/files/3214730.pdf (Last visited March 9, 2015)

Valerio A., Parton B., and Robb A. (2014) **Entrepreneurship Education and Training Programs around the World: Dimensions for Success**, Directions in Development, Human Development, The World Bank, Washington, D.C., ISBN: 978-1-4648-0203-4