



Towards OER-based Personalised Learning Sets for Entrepreneurial Education

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Abstract

Linkage with Open Educational Resources and the entrepreneurial sector is in an early stage of investigation. StartUP is an action-research project aimed at filling the blank spot for where no open and flexible entrepreneurial training opportunities are in place for reaching the lifelong learner.

The project aims at developing an innovative pedagogy and assessment approach, based on Open Educational Resources (OER), to support the diverse individual learning pathways and to better assess all types of learning outcomes and future learning needs related to entrepreneurship competences (entrepreneurial mind-set and sense of initiative), a key competence for the lifelong learner. The project challenges the matching process between available OER and individual training needs, with the aim to promote the use and re-use of OER in a pedagogically-rich context, increasing the number of OER users and foster the effectiveness of OER for entrepreneurial educational purposes.

StartUP is to pilot entrepreneurship in a novel way, as prospective part of the curriculum for learners. It also includes the training of trainers to the use and adoption of OER. With innovative ICT tools and combined institutional approaches, StartUP takes up the development of entrepreneurial competence by increasing use of OER. The project addresses a wide target audience, composed by secondary school, higher education teachers and students, VET trainers and trainees, adult learners and professionals.

The paper draws on the results of the StartUP project, a 32 months project co-funded with support by the Lifelong Learning programme of the European Commission. StartUP stands for "Intelligent training needs assessment and Open Educational Resources to foster entrepreneurship" and it was launched in January 2013.

1. Introduction

In spite of the large investments being made worldwide on distance learning and open education, these rarely focus on improving personal, professional and entrepreneurial skills such as interpersonal communication, critical thinking, creativity, time management, financial management, problem solving, ethics and personal balance, although all these are invaluable assets for employability.

Urgent addressing in this respect is needed for entrepreneurship. A scientific survey shows that countries exhibiting a greater increase in entrepreneurship rates tend to exhibit greater subsequent decreases in unemployment rates [1]. The "Entrepreneurship 2020 Action Plan" [2] of the European Commission stresses the importance of Entrepreneurship as a powerful driver of economic growth and job creation. Concurrently, the Rethinking Education initiative [3], launched in 2012 to redress education systems across Europe, proposes reforms in order to increase skills' levels, promote apprenticeships, promote entrepreneurship, and increase foreign language skills. All these are essential measures to reduce unemployment, together with fostering entrepreneurial mindset.

In this context the StartUP project is being carried out. It is a widespread opinion that favorable conditions can be created by educational incentive [4]. An innovative way must be devised to address the entrepreneurial competences in a flexible manner. Nowadays many institutions and individuals worldwide are sharing their digital learning resources over the Internet openly and for free, as Open



Educational Resources (OER). In this context OERs are understood in accordance with the definition provided by Atkins et al. in the report “A review of the open educational resources movement: Achievements, challenges, and new opportunities”, commissioned for The William and Flora Hewlett Foundation in 2007: “teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use or re-purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge.” [5]

So far we do not know much about who is actually re-using and re-mixing all the available OER. Actually, as noted by Susan D’Antoni, Head of UNESCO International Institute for Educational Planning “Open resources are not much used if they cannot be found and trusted” [6]. Beyond technological hurdles, users must be able to locate and work with the increasing amount of open contents and information available.

2. Linkage with OER and the entrepreneurial sector

Although OER and open access are supported by many stakeholders in the educational sphere, their use in education has not yet reached a critical mass: focus remains on building more access to digital content and too little consideration is given to whether this really fills in the knowledge gap of learners. It is acknowledged that many institutes in Europe do not yet participate in OER initiative and not all educators and students are aware of benefits and pitfalls of OER. In particular, linkage with OER and the entrepreneurial sector is in an early stage of investigation. Building upon those considerations, the project aims at providing open and flexible entrepreneurial training opportunities to lifelong learners.

Hence, Startup’s main characteristics are:

- A specific focus on OER in the key domain of entrepreneurship even if the methodology could be easily transferred to other domains;
- An accurate (by means of expert systems) training needs analysis to identify the learning needs of users and drives them in the definition of pedagogically-rich learning paths;
- A virtual community for the promotion of collaborative learning and user generated contents;
- Its target groups: Universities, Schools, VET systems with specific problems and challenges regarding effective use of OER in the entrepreneurship domain.

The overall goal of the StartUP project is to develop an innovative pedagogical and assessment approach, based on OERs, to support individual learning pathways and assist different targets in doing training on entrepreneurship.

The report “Beyond OER” [3] came to the conclusion that OERs are in principle available but are not actually frequently used because of several factors:

- 1) lack of institutional support,
- 2) lack of technological tools for sharing and adapting resources,
- 3) lack of skills and time of users,
- 4) lack of quality or fitness of OER,
- 5) personal issues like lack of trust and time.

These are indeed the challenges the project team has tried to tackle over the past two years.

3. The OER gateway to entrepreneurial learning: one size doesn't fit all.

The OER Gateway is the online tool developed by the project. It is based on the concept that “one size doesn't fit all”, in particular when it comes to the development of an entrepreneurial mindset. During the first phase of the project, the concept of *entrepreneurship* has been defined, taking in



consideration that it involved hard and soft skills, theoretical and abstract business related content and practical and personal competences. The “Entrepreneurial Competences Matrix” is the results of these activities, grouping entrepreneurial competences in four main clusters: Business, Management, Communication and Self-development skills. The Matrix has constituted the knowledge base for the design and implementation of the StartUP online system.

Within the OER Gateway, learning needs of individual learners match selected relevant contents, retrieved from available OER repositories worldwide, granting users the possibility to access free and open training sets. The Gateway provides training sets in the 4 clusters and guides users through a self-assessment of their knowledge on entrepreneurship. Based on the learning gap of individual learners, the system provides customized learning contents based on OER.

An innovative-online peer review community ensuring the quality of the OER available in the system supports the OER Gateway. It is composed by four main components: a Virtual Expert, an Authoring System, a Rating function and a Recommender.

1. The *Virtual Expert* simulates a real expert conducting a multidimensional analysis on users’ training needs, taking into account such data as personal interests, age, educational background, prior knowledge, learning style, etc. It processes users’ data and produces a set of recommended resources to fulfill their training needs and the acquisition of new competences, creating a personalized training set with OERs.
2. The Authoring System (i.e. “*Share your OER*”) allows users to take an active part in the process of development / localization / remix of OERs. Users not only benefit by the chance to learn through OERs calibrated on their profile, but also actively participate in the improvement and customization of the training sets. Users can develop an OER from scratch, adapt or remix an existing OER both in terms of contents and format, translate an OER, localize an existing OER and link it into the system.
3. The *Rating System* allows collaborative and peer-to-peer learning and assessment of resources. An online community is set to promote discussion and collect feedback on the quality of the training sets. The Rating evaluates the quality and relevance of OERs. Assessing the “Quality” means assessing user experience about how to access and navigate into the interface, its layout, and the quality of contents (e.g. clear, well explained and presented, without spelling errors). “Relevance” instead measures the relevance to the training set proposed.
4. The *Recommender* provides users with more resources than the OERs selected for the training set. It helps discovering new resources with the Serendipity search tool, using such resources as basis for new OERs, and it helps networking through the suggestion of Twitter accounts and hashtags (analysis of keywords) and presents users several food for thought.

StartUP is open to everyone, not only those who are already running their own businesses or thinking about starting up, but also those who want to get an edge in the labor market by showing employers that they have the drive and skills to push a business forward. We also invite educators from schools, college and universities to join the OER Gateway and use the resources with their pupils and students. The OER Gateway has been presented in November during a Webinar (about 25 participants from the 5 Partners countries) and has been later opened to the public for an open test. Right now, the StartUP Team is collecting feedback, revising the system along with major comments, improving the possibilities of providing open and flexible training to users as this is the main project goal.

A young HR employee told us that in her working experience she often faces the need to have strong communication skills to relate to customers, and management skills in managing her daily working routine. However working full time can be an obstacle to her training possibilities. She found the OER Gateway a very interesting and useful tool, to be able to improve her skills with a personalized set at her disposal anytime, despite a strict working schedule. Another positive aspect highlighted by users is



the possibility to connect with other users or stakeholders through the Twitter account: young people may be able to connect with peers or learn from the expertise of experienced entrepreneurs.

An interviewed teacher said: *The possibility of using OERs for training is a practice which should be more commonly used, especially in secondary schools where sometimes learning programs are very much traditional. Schools are often somehow closed and rigid to innovation; however, if carefully introduced to the platform, they can be fruitful users of the OER Gateway for teaching entrepreneurship, communication and self-development to pupils. Such a system can show the schools other realities, new instruments, teaching them the existence of the online world of open education resources of quality*. In addition, she underlined that the *Virtual Expert* is one of the most important aspects presented: it is rare and precious to have the opportunity to do a self-assessment, evaluate own competences and have a picture of own strengths and weaknesses. The profiling opportunity is therefore an added value. This is one of the aspects to be developed in the future, offering users the *before and after* profiling, personalized, giving them a comparative picture of how training with the Gateway is helping for their competence development. The self-assessment practice is worthy per se.

Users in the testing phase also detected areas of improvement: the online interface should be more user-friendly and endearing to users, the clusters of competences should be amplified in other directions or sectors, an enhanced Virtual Expert is desirable, the possibility to do simultaneously training in different clusters should be introduced, and so on. The StartUP Team is taking in great consideration such feedbacks, as the key for quality assurance and sustainability. Through the valorisation of results and thanks to the partnership and networks activated, it will be possible to circulate the experience of the participants to the OER Gateway and show the benefits derived by the use of the StartUP innovative approach to training and learning. Constant improvements are foreseen and the whole experience may become a starting point for the uptake of OERs as key elements of formal and informal education.

4. Conclusions

Entrepreneurship is a niche area under development, and StartUP wants to promote the uptake the use of Open Resources in teaching entrepreneurship, and contribute to the adoption and fundability of open content in general. Once OER would prove easier to find and to use, we can expect that the number of learners will significantly increase in comparison with the present users, thus enhancing the community and allowing the creation of a virtuous learning circle. As a further result, a growing community leads to an increasing uploading of learning objects, enriching the availability of resources. Furthermore, as at present the majority of OERs are in English, we can even assume that the most effective resources could be translated by trainers, to be used in their courses.

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