

# **EDEN 2018 ANNUAL Conference**

## **Exploring the Micro, Meso and Macro**

Navigating between dimensions in the digital learning  
landscape

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### **BOOK OF ABSTRACTS**

*Including the Collection of “Synergy” Synopses*

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Airina Volungeviciene, András Szűcs

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## Introduction

The demand for people with new, enhanced skills is growing. The volume of information produced and shared in all fields is overwhelming. Building the data economy became part of the EU Digital Single Market. Powerful and sophisticated ICT is part of everyday life, and the world of learning is not an exception. Pressure is on all players of the online education community to keep up with new learning solutions, and better supply the skills currently demanded by growing economies.

Open Education continues its success, providing radical advances in knowledge acquisition, sharing, distribution, and improving business models. Digital credentials and open badges are the new currencies which are beginning to transform the economic models in education.

Social and economic tensions continue to raise the issues of scalability, the micro-credentialling of education, training and skill development processes. Practitioners and stakeholders are eagerly seeking right approaches to providing learning opportunities, and many scholars are researching holistic answers.

Micro, meso and macro aspects provide an interesting range of lenses for considering the problem. These aspects may be applied in a general sense, distinguishing between the learning of individuals, learning at the institutional or group levels through a meso lens, and the learning of organizations or societies directed through policies through the macro lens.

Navigating these dimensions are the reshaping of digital pedagogy and online instructional design; the social elements including digital societal mechanisms and the position of the individual in our new era. We have need of systematic awareness and research in the critical era of sustainable socio-cultural aspects as they relate to learning.

European Union initiatives emphasize solutions to emerging needs and seek to improve competitiveness and professional development; enhance cross-sectional skills; and fuel the engines of social innovation – creativity, entrepreneurship, critical thinking and problem solving.

The EDEN 2018 Genova Conference aims to respond to contemporary needs by:

- tracking and demonstrating evidence about the mechanisms and value chains across micro-, meso- and macro-learning
- exploiting the socio-cultural specifics related to the granularity of learning
- digging deeper into finding viable, achievable and scalable solutions
- learning more about didactical design through peer learning and scholarly observation
- discussing structural and operational questions of collaborative - social technologies

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## **E-LEADERSHIP LITERACIES FOR TECHNOLOGY-ENHANCED LEARNING IN HIGHER EDUCATION: A MIXED METHODS RESEARCH DESIGN AND PRELIMINARY FRAMEWORK**

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This paper presents the design of a research method for a doctoral thesis in three main phases which entails developing and validating a framework of e-leadership literacies for technology-enhanced learning in higher education (TEL-eLL), applying this framework in three Mixed Methods case studies and finally formulating and validating recommendations for leadership development programmes (LDPs). In addition to the research design, the paper also presents the results of Phase 1 of the research, in the form of the preliminary TEL-eLL framework resulting from an online Delphi study conducted with 31 international experts. The rationale behind the overall study is anchored in the still unsatisfactory integration of technology for teaching and learning in higher education (HE) and the hypothesis that one of the reasons for this is a lack of strategic thinking and leadership. The aim is thus to explore the attitudes, mindsets, understandings and behaviours of higher education decision-makers in relation to teaching and learning supported by technology, as well as their wider views on the societal and environmental impact of technology. The voices of teachers with respect to such leadership are also addressed, as is the complex political, hierarchical and cultural environment in which this leadership operates.

The research is designed in three phases, around the following research questions:

- PHASE 1: What are TEL-eLL in HE?
- PHASE 2: (2a) How are TEL-eLL experienced by key informants in selected European universities? (2b) How do key informants in European universities develop (i.e. *learn*) TEL-eLL?
- PHASE 3: (3a) How are TEL-eLL reflected in existing LDPs? (3b) What changes should be proposed to integrate the development of eLL for TEL in LDPs?

Phase 1 took the form of an extensive literature review and a Delphi study to establish an agreed definition of TEL-eLL and to validate the literacies to be included in the framework. Phase 2 consists of three Mixed Methods case studies in European campus-based universities to answer research questions 2a and 2b. Phase 3 involves content analysis of existing LDPs and formulates recommendations.

The concept of e-leadership literacies was developed by combining the outcomes of two prior studies, firstly Heather Davis' (2012) work on Leadership Literacies, which provides the overarching dimensions of Worldly, Sustaining, Leadingful, Relational and Leadingful literacies, and secondly Jill Jameson's (2013) framework on e-leadership for TEL which, along with a number of other selected frameworks, inspired the categories and individual statements.

The online Delphi study, conducted between January and March 2018, resulted in the following agreed definition of TEL-eLL as "a set of attitudes, understandings and mindsets which enable leaders in higher education to address complex problems relating to the integration of technology-enhanced learning". This study also produced a TEL-eLL framework, consisting of a primary set of 69 statements which received a consensus >80% and an overall framework of 109 statements, including those obtaining a weaker consensus of 50-80%. The main themes in the framework are e-leadership visioning; Critical digital literacy; Awareness of research on student use of media; Understanding different learning theories; Design thinking; Affordances and potential risks of TEL; Human and environmental implications; Access, equity and inclusion; Safe, legal, ethical use of TEL; Social good, digital citizenship, open education; Creating conditions for innovation and change; Change management; Distributed leadership, empowering others; Shared vision, meaning and purpose; Managing relationships; Trust, positive affect and caring; Managing divergences and differences; Formal and informal learning for leadership; Reward mechanisms; Digital scholarship; Organisational culture.

This study thus explores how such a framework can help HE leaders implement strategic and organisational change to improve the way technology is used for teaching and learning. The wider aim is to raise awareness of the need to take into account not only pedagogical and technological considerations but also organisational, cultural, economic, societal, ethical and environmental issues in decision-making about TEL in a VUCA (Volatile, Uncertain, Complex, Ambiguous) world. Further research in the field of e-leadership literacies is required, in order to validate the concept beyond the populations studied, to refine the framework and to contribute to bridging the gap between research and practice.

## **BUSINESS PROCESSES SUPPORT AND AUTOMATIZATION SYSTEMS IN EDUCATIONAL INSTITUTIONS**

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### **Process, Registry and Transactional Data in primary and secondary education institutions**

Digital transformation of public education encompasses various implementation options and possibilities of Information and Communication technologies for supporting educational and administration or managerial processes. While available literature reports about ICT for teaching purposes, its systematic design and application for managerial processes improvement in education institutions is scarce. Our research emphasis lays on investigating how ICT can support effective planning and resource management in educational institutions. By structure and functionality, business support and business process automation systems in educational institutions should combine typical ERP (Enterprise Resource Planning) functionalities in as well as functionalities related to public registry management, workflow management, and object and documentation management. In addition to assisting and automating business processes, intermediary effects, such as standardization of business technology and data content, multileveled reporting and interoperability with other systems, need to be achieved when building similar systems. By following the Reference models paradigm, our framework contains a) Information systems requirements which are incorporating a process approach in order to build a unique set of operational requirements in order to ensure process, semantic and technical interoperability on all process management levels b) Business model requirements that are extracted from goals, organizational architecture, business processes, data, business rules, etc. and c) Information system Models describing future Architecture, Structure, Function, Behaviour, Communication, Interface, Deployment and other aspects of the new designed Information system.

### **Case study and implications**

Since some operational concepts that are well known in various business industries could be mapped to a school environment it implies that primary and secondary education institutions can replicate ERP modules from the business industry sector for supporting processes that are performed in a similar way in schools. Transactional data that is being generated by the processes leans on data registries as well as on computer software procedures and algorithms. For distributed organizational systems like schools in the public school system, which should operate in a same way regardless of its location, it is essential to build a common data infrastructure in form of data registries which can ensure compliance with demands on semantical and technical interoperability. Main data objects generated or used in main business areas are presented in the paper. Further, the paper describes a real case study of an in 2018 UNESCO rewarded project called “e-Schools: Establishing a System for Developing Digitally Mature Schools” (pilot project) which is part of a wider e-schools programme aimed at introducing ICT into the Croatian school system. The case study illustrates our process and data oriented approach on a process example and its influence on designing the IS's architecture.

Digital transformation in the education industry can be described as a continuous and strategic use of ICT, i.e. the incorporation of digital technologies to improve workflow and business operations within the organization, by finding new innovative business models and creating new value-added streams through improved user experience. A platform for our information system is the underlying data architecture that needs to be designed and developed by building common data registries as well as a unique transaction system incorporating a process approach in order to ensure interoperability as well as to enable an effective multileveled resource tracking, managing and reporting by implementing automatic exchange formats with collaboration partners, services and procedures.

The expected impacts of a future system are as follows: Simple forms for data entry, processing and updating; Use of unique sets of master data; More effective management of business events and processes by various key performance indicators; Automatic generation of business documents; Automated reporting; More efficient planning of resources at system level; More accurate monitoring the operational process performance primary education institutions.

## **A MODEL OF ONLINE COLLABORATIVE PROJECT-BASED LEARNING (OCPBL) WITHIN A DIGITAL COMPETENCE COURSE IN HIGHER EDUCATION**

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Bearing in mind the importance of the digital competence for citizenship and in the HE scenario, the research presented in this paper attempts to respond, based on a methodological proposal, to the problem of the acquisition of this Competence by university students. This proposal, is based on the combination of the Project Based Learning and Online Collaborative Learning in an online UOC's course.

During the course, students gradually acquire the Digital Competence, which includes search and selection, processing and development, presentation and dissemination of digital information; and Digital technology, Study and work planning in a virtual environment, communication strategies in the Net, Teamwork in an online environment and digital attitude. To assure this acquisition, students develop projects online divided in groups of four through a series of phases (Starting, Structuring, Development and closing and Dissemination).

In order to apply this proposal, the resources, online teachers and assessment model are essential and analysed in this work.

The study uses a design-based research methodology in which the course (as an intervention) is designed in conjunction with academics and tutors and then delivered in a natural context. The results are then tested and the course design altered in response to student and teacher results and suggestions.

The design of the course has evolved over the years through the research process that calls for iterations in which results of student evaluation and learning outcomes as well as changes in the technology, are used to continuously improve the learning design

In relation to the methodology mentioned, students clearly perceive that their knowledge and competence using digital learning has improved. The research presented in this paper has been developed over the last 20 years, provoking the creation of a methodological model based on the combination of project-based learning and collaborative learning methods, culminating in the Online Collaborative Project Based Learning (OCPBL) model.

The OCPBL is an online methodological model that is transferable to other contexts, in order to make this transference possible, the subsequent design principles must be considered:

- The course design is a model for the acquisition of digital competence that goes beyond the method (phases of the project); it includes a set of resources; the role of the online teacher and it is closely linked to a continuous assessment process.
- The key elements of this model are the phases of the project, the proposal of a set of activities based on tasks or challenges and its union with collaborative work. In addition, it is a model that requires a high grade of collaboration during almost all the process. The teams formed go through phases that are very much linked to the phases of the project.
- Assessment must be continuous as this methodological model is not possible with a unique and summative assessment; it must be linked to the group's dynamics during its application and must consider individual assessment, facilitating the students' active role. It also assesses the process and the results of all each phases of the project.
- The proactive role of the online teacher is essential for the application of this methodology, not only during the design of the activities, but also in the continuous monitoring of the process of the groups and their assessment.

# **FURTHER RESEARCH COULD BE ORIENTED TO ANALYSE IF THIS MODEL CAN BE APPLIED FOR THE ACQUISITION OF OTHER COMPETENCIES BESIDES THAT OF DIGITAL COMPETENCE.LET’S GET DIGITAL! A CASE STUDY ON THE APPROACH, UNDERTAKING AND EVOLUTION BEYOND A STRATEGIC REVIEW OF DIGITAL CAPABILITIES IN LEARNING AND TEACHING**

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## **Introduction**

At a time where the use of technology is a ubiquitous part of all of our lives, Higher Education Institutions recognise the need to embrace digital and provide their students with learning experiences that reflect the way that they live their lives. At The London Institute of Banking and Finance we realised that our approach to e-learning had been variable. We had pockets of excellence across the institution, largely driven by staff who were enthusiastic about technology. We recognised that a more strategic approach was needed and undertook a project to really understand how technology was shaping society, what our students really wanted, and gather best practice ideas from other education providers. All of this research has helped us to understand the future landscape of digital education, and to focus on where our resources are best placed.

## **Context**

The London Institute of Banking & Finance offers a range of qualifications from schools to executive education. This session will focus mainly on our higher education students who can select from programmes delivered through a range of distribution methods such as completely online, blended learning or full-time provision. Our higher education programme offerings include: Degree Apprenticeships, Full-time undergraduate and Part-time undergraduate qualifications, Professional qualifications and Masters-level courses.

## **Discussion**

This interactive workshop presents a case study of how The London Institute of Banking & Finance undertook a strategic review during 2017 of its own and others’ digital capabilities in teaching and learning. The session considers the research process that was undertaken, which included feedback from students and staff as well as corporate employers, an analysis of the competitive environment and a detailed look at digital trends within learning and the wider world.

The key findings will be shared, alongside our strategic decisions to invest in systems and tools, to develop the knowledge and confidence of staff, and to boost our multi-media development capabilities. Outcomes and output post the strategic review will also be revealed and it is intended that conference delegate participation will add to this body of experience.

It is intended that the knowledge shared at the workshop will prompt delegates to discuss questions relating to collaborative and social technologies and also to reflect whether the process and findings can apply to their own educational community.

Attendees will have the opportunity to feedback on the process and the outcomes, and to discuss their own journey, during and post the workshop through the use of digital tools.

## INDIVIDUAL AND INSTITUTIONAL SUPPORT IN ODL: HOW THE MACRO MAY BENEFIT FROM THE MICRO

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### Introduction

Educational support for students in the field of open and distance education is a multifaceted and decisive parameter for enhancing and promoting student engagement and academic progress. This is a conclusion that draws on a number of research findings on the need for effective support for students to make the most of their learning and social backgrounds in a diverse learning and participatory process. Given the growing demand for new skills acquisition and lifelong learning, online education welcomes diverse categories of learners with differentiated needs and levels of online participation. The purpose of this article is to summarize the context of the ongoing research effort of the PENER-16 program of the Hellenic Open University (EAP), emphasizing the need to develop an integrated student support system in the learning community of a distance learning tertiary institution. The paper holds that support services in higher education ought to be organized on three distinct levels, in accordance with the focus lens of the conference, so as to allow for wider participation, coping with new learning solutions, and better provision of skills currently demanded by growing economies. More specifically, it involves the following three levels.

### ***The Micro: The importance of pre-entry & ongoing individual support***

On the individual level, support should include needs' diagnostic tests, provide academic skills and offer ongoing psychological support, tailored to the study phase that students face;

### ***The Meso: Creating a supportive institutional community***

On the institutional level, support might provide assistance in administrative issues, promote collaborative and community-building skills, extra-curriculum activities that promote digital literacy and enhancement of communication media use; and

### ***The Macro: Culturally sensitive learning in a distance-shrinking world***

Equally important, on the societal level, support services should consider offering recourses that enhance the cultural sensitivity of learners and institutional agents that eliminate learning disparities and encourage individual and collective learning.

### **Closing Remarks: Three-level support for a sustainable future**

As these levels are interrelated in the learning and teaching process, they should also be delivered in terms of support via a holistic system that cultivates cross-sectional and cross-cultural skills, places the individual and the university in the current socio-economic and marketing context and follow the main principles of online instructional design.

## IHE DELFT'S DIGITAL EDUCATION TRANSFORMATION

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IHE Delft Institute for Water Education (<https://www.un-ihe.org>) is the largest international graduate water education facility in the world, having provided graduate education to more than 15,000 water professionals from over 162 countries, since its creation in 1957. The Institute offers fully accredited MSc degrees, PhD degrees in collaboration with partner universities, summer courses, short tailor-made trainings in specific topics and several online courses, including an OpenCourseWare (OCW) platform with free open educational resources.

Part of IHE Delft's mission is to contribute to the education and training of professionals. Embracing the opportunities of digital technologies, IHE Delft intends to expand its online efforts, making education more flexible and accessible to learners worldwide. In this way, the institution is undergoing an internal reflection, analysing needs, implementing processes and exploring possibilities to improve education and enrich its portfolio with the use of digital technologies.

Our short term plan is to widely implement a course development process, contributing to increase the quality of our support and ultimately the quality of the educational products that we offer. We believe that a well-established process will allow us to optimize the development of online courses and contribute to its consistency. Although this implementation has already started, time is needed to consolidate before it's seen as a standard process in the Institution.

Another upcoming challenge is to start offering MOOCs. At the moment, we have several in the pipeline that involve multiple partners, which adds more complexity. The new course development process will definitely be useful in these upcoming projects, where straightforward guidelines and effective project management are required to keep the development on track.

Regarding MOOCs, we expect a natural growth of this product in the coming years, since it fits our mission to offer flexible and open education to a worldwide audience. Hence another interesting development would be to use a combination of MOOCs to develop flexible micro-credential programmes, and perhaps inverted admissions into IHE Delft's campus Master's programmes in the future.

OCW is another initiative we want to see growing, and we expect MOOCs to have a positive impact on this matter. Although we still see some resistance to openly share our courses, it's important to motivate a change towards a culture of sharing to avoid that it becomes a barrier to OCW. Once this culture of sharing course materials is incorporated within the IHE Delft staff members' and partners' routine, and based on the lessons learned up-to-now, we believe that it will be possible to scale-up the number of open educational resources made available in OCW faster in the coming years.

Another challenge is to make IHE Delft's MSc programmes on campus more flexible. The programmes consist of 14 sequential Modules, each running for a period of 3 weeks. The workload is intensive, consisting of lectures (including guest lectures) and practical activities. A blended learning design would be a viable alternative, combining best practices in both online and face-to face methods. This approach could make the programme more flexible, enrich the learners' experience and allow lecturers and learners to make better use of contact time in a more meaningful way.

In this paper we present our online education products, a reflection on the development of Massive Open Online Courses (MOOCs) as an upcoming new product and where it stands in our offering, the implementation of an online course development process to improve quality, and finally a reflection about the future of education at IHE Delft.

## **“EDX INSIGHTS” METRICS FROM A SOCIO-CONSTRUCTIVIST PEDAGOGICAL PERSPECTIVE**

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Learning analytics has been defined as “the measurement, collection, analysis, and reporting of data about learners and their contexts, for purposes of understanding and optimising learning and the environments in which it occurs”. In this paper we explore learning analytics from a critical pedagogical perspective, that pursues a better understanding of learners' performance in an attempt to develop a pedagogical knowledge derived from data facilitated by technological tools that can lead to making educational decisions regarding instructional design, management of students support services, etc. As stated in ECAR (2015), “analytics without action is merely reporting; interventions based on analytics are needed to improve student outcomes” (p.3). The collection and analysis of relevant data from a pedagogical perspective is the approach we defend at this stage, which permits to go beyond deterministic models and analyse big data within a broader set of information about learners.

### **Pedagogical framework**

Among different approaches to learning, we adhere to constructivism. Its central idea is that human knowledge is constructed. Learners build new knowledge upon the foundation of previous learning. The construction of knowledge takes place within the socio-cultural context in which the individual acts. In online environments, the development of high order cognitive skills and the development of soft skills under this socio-constructivist approach implies that teachers have to design and create rich interaction environments using technological tools that can support better learning experiences. Learning analytics, in this regard, can be considered as a tool that, used by teachers, can lead them to better know learners' behaviour and interaction patterns in order to improve their teaching.

The Community of Inquiry (Col) conceptual framework, also based on socio-constructivism, represents a process of creating a deep and meaningful (collaborative-constructivist) learning experience through the development of three interdependent elements: social, cognitive and teaching presence. An online higher education course, a MOOC, etc. can be considered communities of inquiry.

### **Learning analytics within a Col pedagogical framework**

Based on the Col model and thus on a socio-constructivist approach to learning, it is important to collect and analyse information related to the interactions learners get involved in during the learning process. Our focus is on MOOCs (massive online open courses), as an online educational modality introduced in our respective countries and institutions. Specifically, Thai MOOCs and UNED MOOCs, which use EdX Insights (the OpenEdX Learning Analytics module). Among its metrics, engagement with content and with videos are two measures of the interaction with the course, thus these data provide input for analysing the Col presences in the MOOCs.

From a socio-constructivist approach to learning, the data collected by EdX insights in the MOOCs show a quite traditional educational model, based on content (video), structure of the course and a not so important social learning experience. MOOCs (or, more accurately, xMOOCs), not necessarily take advantage of the potential of social presence.

To make a proper use of the already available learning analytics and of those that will be available in the future, teachers and institutions need to be aware of the underpinning learning theories that lay under the technologies, and of the pedagogical implications.

## **TEACHING IN CONTEXT: INTEGRATING MATHEMATICAL THINKING AND PERSONAL DEVELOPMENT PLANNING INTO THE CURRICULUM FOR PART-TIME, DISTANCE-LEARNING ENGINEERING STUDENTS**

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### **Abstract**

This paper describes changes to the way mathematics is taught to engineering students at The Open University, moving away from *service teaching* via generic mathematics modules, to incorporating mathematics teaching into the core engineering curriculum. Mathematics is taught in the context of engineering with the aim of reducing the emphasis on derivations and mathematical proofs and putting greater emphasis on understanding basic concepts and being able to create useful models. Mathematical methods are taught and practised, then extended and applied to different engineering contexts as students' progress through modules, in order to develop students' mathematical thinking and build confidence. Professional development planning has also been embedded into engineering teaching for improved context and relevance and a more integrated approach to assessment has been taken across the whole qualification.

### **Introduction**

The Open University (OU), based in Milton Keynes with six national and regional centres across England, Scotland, Wales and Northern Ireland, is one of the largest universities in the UK with over 170,000 registered students. This total includes approximately 4500 students currently studying towards an undergraduate Bachelor of Engineering (BEng (Hons)), Bachelor of Engineering Top-up (BEng (Hons)), Master of Engineering (MEng), or Engineering Foundation Degree/Diploma of HE (FDEng/DipHE).

The OU has an open access policy and, with very few exceptions, there are no formal academic entry requirements. Some students on the engineering programme join with no previous educational qualifications (PEQs), though often with extensive practical vocational experience, whilst others may bring transferred credit from Higher National Certificate or Diploma qualifications. The majority of our engineering students are in full-time engineering-related employment.

We identified that engineering students were performing poorly on two, 30 CATS, compulsory mathematics modules and consequently failing to complete their first year (equivalent full-time) of study successfully. Anecdotal evidence and feedback from students suggested that engineering students would benefit from greater connections between mathematics principles and relevant engineering topics and techniques.

Following an evidence-based approach we proposed a restructuring of the engineering qualifications to incorporate mathematics teaching in an engineering context. The new structures incorporate revised study patterns allowing students to pace their studies more effectively alongside their work and family commitments. Teaching is delivered primarily through a mixture of print and online media distance learning with some face-to-face or online group tutorials and laboratory based residential schools. Students are supported in their studies by Associate Lecturers who typically work with groups of 20 students and provide individual support alongside the tutorial programme. The curriculum has been designed to satisfy the academic requirements of the United Kingdom's Engineering Council's professional registration framework (2014).

## **ENHANCING TEACHERS' INTERCULTURAL CONFLICT MANAGEMENT COMPETENCES THROUGH DIGITAL GAME-BASED LEARNING: A PEDAGOGICAL FRAMEWORK**

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### **Context**

With the recent immigration flows, diversity has become a structural characteristic of European societies. The growing proportion of students with a migrant background implies a series of challenges for the education systems in most member states: diversity leads to educational disparities between dominant cultural groups and immigrant students; also, discrimination and intercultural conflicts have become significant phenomena at school. Teacher education programs do not seem to adequately address those challenges. Hence, there is a growing need to prepare educators to effectively deal with diversity and to build bridges towards migrant communities. Digital technologies offer new approaches to develop teacher competences in this area.

### **ACCORD pedagogical framework**

In the context of the ACCORD project (Erasmus + programme, <http://accord-project.eu/>), this paper proposes a pedagogical framework aiming to prepare teachers to take an active stand against intercultural conflicts. Through an open online course using scenario-based learning and game-based learning, teachers develop competences in three identified areas: (a) intercultural literacy (understanding and addressing culturally diverse educational environments); (b) inclusive education (applying methodologies which promote intercultural interactions and a positive approach towards conflicts), and; (c) conflict management (peacefully resolving conflicts when they occur, through efficient communication and problem solving). The ACCORD training programme is supported by innovative digital tools: an international MOOC and the ENACT game platform (<http://www.enactgame.eu/>), which allows for developing skills through a role-play simulation.

### **Methodology**

Following a qualitative approach, we conducted focus groups in five countries (Austria, Belgium, Germany, Italy and Spain), in order to collect secondary school teachers' perspectives and feedback on the ACCORD competence areas, pedagogical approaches and digital tools. Participants were carefully recruited, so to obtain a heterogeneous group of participants from different levels and disciplines. In total, 69 teachers participated. A systematic analysis of results allowed for confronting the pedagogical framework to teachers' views and practices.

### **Findings**

Teachers acknowledged the relevance of the competence areas: they generally feel unprepared to deal with intercultural concerns, to apply training methodologies which challenge discrimination, and to solve related classroom conflicts. The pedagogical approaches were considered to be relevant and innovative: real-life scenarios appeared as powerful tools for reflecting on teachers' practices and for sharing their insecurities in terms of intercultural conflicts. Furthermore, the game-based learning approach was highly valued, as it would allow for better understanding key intercultural concepts in safe simulation contexts. Besides those approaches, teachers expressed their need for collaboration with other educators. Furthermore, they highlighted the importance of hands-on activities, so to become confident when facing classroom conflict situations. With regards to digital tools, the MOOC was seen as a flexible solution allowing for setting up teachers' own pedagogical objectives, self-managing their learning time and freely accessing open educational resources. As for the ENACT game platform, it was perceived as a powerful tool to make real-life conflict situations visual. Hence, results allowed for validating and refining the ACCORD pedagogical framework. They will guide the design of training content, as well as game-based scenarios depicting intercultural classroom conflicts. As future steps, this paper constitutes a solid basis for the elaboration of a complete competence model in the field of intercultural conflict management, as applied to today's education contexts.

## IDENTIFYING LEARNER TYPES IN DISTANCE TRAINING BY USING STUDY TIMES

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Usage data of distance learning online environments can inform educators about learning and performance. For example, usage patterns gained by log file analyses could be related to level of performance and low- and high-quality learning, characterized by motives and learning strategies. A less intensive usage, reflected by low event numbers (e.g., logins, posts) and short event times (e.g., total time spent in an online environment), correlated with surface learning and low performance, and an opposite pattern of intensive usage correlated with deep learning and high performance. Among the usage pattern variables, various time measures were indicative of learning approaches and level of performance. In addition, various learner characteristics like prior knowledge and computer attitude and anxiety were expected to influence usage data. It was found that a higher level of prior knowledge, positive computer attitudes, and a lack of anxiety correlated with higher performance and higher levels of self-regulation skills.

In this study, groups of students were profiled based on their study periods in a distance training. Students were first clustered according to their module study times into fast and slow learners. The clusters were then compared on the learner characteristics of learning strategy usage (time management, metacognitive strategies, and arranging an adequate learning environment), domain-specific prior knowledge, intrinsic motivation, and computer attitude and anxiety, and compared in reference to their demographic characteristics. Students were also compared in their experienced difficulties of content and learning, their invested effort and experienced pressure while learning, and their performance. The clusters were expected to be meaningful entities that differ in relevant individual characteristics that influence distance learning, learning experience, and performance.

The data of 159 (68% female; age:  $M = 37$  years,  $SD = 9$ ) of the 318 in-service teachers who registered for a distance training on media education in the German federal state of Bavaria were analysed. They had completed at least one of eight training modules by taking the final module test. The modular training was based on instructional texts. Students could learn at their own pace and at any time, and they could freely decide how many of the eight modules to study and in which sequence. The workload for studying a module was estimated to take 60-90 min. Before training started, students completed the first questionnaire that assessed demographic information and student characteristics. A prior-knowledge test was presented at the beginning of each module and a final module test at the end. Per module, before taking the final module test, the students were questioned about the effort they put into learning and the tension experienced while learning, and they were asked to rate the difficulty of the content and studying.

Short and long study-time groups were identified according to the recorded time period between completing the prior knowledge test and starting the final module test (the cut was set to 20 min) and the self-reported study time per module (the cut was set to 25 min). Learners who studied at least one of the modules with a short study time were assigned to the short study-time group; otherwise, they were assigned to the long study-time group. This process resulted in 117 long study-time learners and 42 short study-time learners. No differences were found between the study-time groups for sex, age, type of school, and number of successfully completed modules. Long study-time learners showed a higher level of intrinsic motivation and performance but a lower level of prior knowledge. The long study-time students gained more knowledge than the short study-time students.

Study time could be used as a predictor for how students study and thus for identifying students that should be guided to a deep learning approach. Short study-time student likely missed important information. Long study-time students spent reasonably long periods for studying, which resulted in an adequate selection, organisation, and integration of important information. Evidence for this assumption was found only for performance. Consistent with results on intrinsic motivation, learners spending more time with studying were also more motivated. The finding that a higher level of prior knowledge contributed to faster study periods could have occurred as a result of the method. A module was deemed successfully completed when a student correctly answered at least 50% of the items in given module test. Most students of the short study-time group had already met that criterion after the prior knowledge test. Consequently, they might have expected to perform equally well in the module post-test without spending much time studying a module. This procedure might have contributed to faster study times and worse performance. Overall, the distance training modular design, the use of instructional downloadable pdf papers, and the special target group of teachers are all a matter of concern when generalizing conclusions, especially to whole distance study programs.

## **IMPLEMENTING NEW EDUCATIONAL STRATEGIES: SYNERGETIC EFFECTS FROM A UNIVERSITY OVERARCHING PROJECT**

*Helen Asklund, Laura Brander, Linda Näsström, Mid Sweden University, Teaching and Learning Services, Sweden*

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In 2011 Mid Sweden University launched an educational strategy, which focused on creating active learning environments for the students, on increasing and improving the technical support for teaching and learning and on enhancing the teachers' professional competence (Dnr MIUN 2011/277, 2009/1671). Several educational development projects were initiated. One of these, called Teaching and learning resources, was based on the idea that cooperation and shared experiences between teachers from different faculties and departments in different ways can promote educational development at the university. Our aim is to describe this university overarching project, and to discuss experiences and synergetic effects that have arisen from it. What happens when teachers from various faculties, departments and subjects come together and are assigned to work with educational development? What effects have we noticed and what would be our recommendations for future projects?

An invitation to participate in the project was sent to all departments of both the Faculty of Human Science and the Faculty of Science, Technology and Media. In the end, seventeen out of twenty departments joined the project with altogether thirty teachers. Each participant focused on one or several subprojects, all with their own purposes and contents, but with the joint intention to develop new educational traits and methods of teaching and learning. The subprojects dealt with issues such as academic writing, constructing a guide for new teachers, and forming teaching and learning fora. These subprojects are useful examples of how teachers can develop teaching methods that can be shared across department and subject boundaries.

According to our experience, the project has been successful due to several factors concerning strategical enhancement. The project has focused on exchanging knowledge and advancing the learning-teaching engagement, the subprojects were started by enquiring the departments' needs, and we have wished to engage the management in forming strategies for a continual teaching and learning enhancement. Above all, this project has worked as a means for surfacing and sharing good practices.

As a result, we would like to stress the importance of interdisciplinary collaboration, since this can give valuable synergy effects within an organization. Firstly, interdisciplinary collaboration is a way of bringing together the different subcultures that are always at work at different levels in a large organization, such as in various departments and within groups of fellow-teachers. When working on forming a university overarching educational/academic culture, it is vital to bring these subcultures together in order to find out what shared values and norms there are to build on in the organization. Secondly, when working with interdisciplinary projects, the risk of tunnel vision thinking and duplication of work is minimized. This kind of collaboration could thus save resources. Thirdly, at a university like ours, where many teachers are struggling with a heavy workload and symptoms of fatigue and burnout, collaboration and shared experiences might work as tools not only for individual empowerment, but also for group empowerment and job satisfaction. Therefore, in order to achieve a creative and supportive environment we need to continue encouraging staff collaboration.

In sum, the project Teaching and learning resources has contributed, in our experience, to not only individual professional development of the teachers that participated in the project, but also to educational development and enhancement at group and organizational level. The unexpected forms of collaboration and united action across department and faculty borders has given us an understanding of the importance of structured forms of teaching and learning dialogue and fora. Learning on micro and meso level is broadened to macro level. It is surely worth the effort to give teachers time to participate in this type of activity, due to the synergetic effects that are discussed above. Our strong belief is that our university would greatly benefit from continually providing the prerequisites for the kind of cooperative teaching and learning environment of which our project is an example. For that, we need leaders on all levels who prioritize this sort of activity.

## **THREE DIMENSIONS OF PERSISTENCE IN DISTANCE HIGHER EDUCATION – THE MAIN ACTORS: MEXICAN NON-TRADITIONAL STUDENTS**

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### **Objective**

To propose a systemic model of persistence in Distance Higher Education, in order to analyse the Mexican non-traditional student's reality.

### **Approaches of persistence / dropout. Review**

In the literature we identified four approaches. Psychological models analyse the personality traits of students who complete their studies with respect to those who do not. Sociological models research the external factors. Organizational models analyse the designing and implementation services to improve student performance and, consequently the persistence of students. Interactionist model considers several variables or factors that contribute to reinforce their adaptation to the institution. However, the aforementioned models have obviated or dealt tangentially the highly changing dynamics which non-traditional, heterogeneous, unequal and disconnected students face, as the ones in Mexico. For this reason, we propose a systemic model of persistence in Distance Higher Education Programs, to approach the understanding of the persistence to those who are surrounded by highly changing environments.

### **A systemic model of school persistence**

From a systemic perspective and considering the Parsimony principle, the proposed persistence model is made up of three interrelated dimensions. The expectations, the acquired knowledge and, the environments constitute the model. The interaction of these three components generates a dynamic condition that disturbs the scholar path, where the alteration of one of the parts modifies the others.

Knowledge. The individual acquires knowledge through a continuous process of learning. The process is a spiral that transits from the most elementary situation to transcendence. Its conceptual bases are tacit knowledge and explicit knowledge. The stages through which it transits are socialization, externalization, combination and, internalization. Knowledge takes meaning in the different environments where students interact.

Expectations. Expectations correspond to the hope of achieving an attainment in the short, medium or long term. The students have aspirations, before entering school, even when they are studying, they build tacitly or explicitly, an idealized design of their future, after finishing university. The acquisition or non-assimilation of knowledge continuously has a direct impact on the decisions that students make during their school career, both to positively and negatively transform their expectations.

Transactional and Contextual Environments. Full-time students are not anymore, the main target of educative systems and the patterns are changing in relation to marketization of universities, occupational structures, rising workers' and professionals' qualifications, family diversification, gender roles, economic and, social conditions. They are adults who enter or re-enter in universities "with a prior major break in their formal involvement in learning" large range of age, enough experiences in life and commitments, and labour and personal expectations for upgrading. With regard to contextual environment, the influence of hegemonic forces on social, economic and productive policies must be analysed holistically as substantive parts of the design of educational policies and programs. Otherwise, we will continue to replicate actions that have not improved persistence. The pauperization of work, low salaries, the digital divide and the low quality of life of citizens are the challenges faced by Distance Higher Education in Mexico.

### **Acknowledgments**

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## WHAT FACTORS INFLUENCE STUDENT DECISIONS TO DROP ONLINE COURSES? COMPARING ONLINE AND FACE-TO-FACE SECTIONS

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### Online Learning and Higher Education

Booming enrolment in online education continues worldwide. Yet, online attrition is higher than face-to-face rates and the specific reasons for this gap remains under-researched.

Despite well documented higher attrition, there are few empirical investigations of why students drop out of online courses. In a meta-review, Lee and Choi (2011) found only seven such studies. These studies report that students dropped out of an online program due to: personal issues, work reasons, program reasons and technology difficulty. However, all previous empirical studies have issues of small sample size and selection bias, which severely limits generalizability. Moreover, we know of no studies that employ our method of comparing online versus face-to-face students in the same course in order to do a direct comparison of potential differences in dropout motivation.

This research is intended to inform a theoretical model of online retention, and to support the development of effective support services for online learners. Specifically, we ask: What are the reasons postsecondary students give for dropping out of online courses?

### Methodology and Results

A survey was conducted with students who were either enrolled in a fully online course at the City University of New York (CUNY), or who were enrolled in a face-to-face section of one of the courses that was offered online. Students who dropped the course ( $n = 780$ ) were asked about their reasons for dropping and 702 responded. Course medium was classified by the percentage of instruction that occurred online (fully online is  $\geq 80\%$ ; face-to-face is  $< 20\%$ ).

Each response was coded by two coders. After the first round, inter-rater reliability, as measured by Krippendorff's alpha (based on presence/absence of each code for each student) was 0.71 for individual sub-codes and 0.85 for larger categories. Coders then went through a round of norming; many cases of disagreements involved subtle distinctions; to resolve this, many codes were more carefully defined to clarify such distinctions. After the second round of coding, inter-rater agreement was 0.98 for individual codes and 0.99 for larger code categories.

The most common reasons in both modalities for dropping a course related to specific course characteristics (most commonly cited: quality of the instruction/instructor; course workload/difficulty). Lack of time was the second most commonly cited reason (most commonly cited: personal time commitments; paid work; family commitments; other academic demands on time). And performance in the course (e.g. course grade) was the third most commonly cited reason for dropping both online and face-to-face.

However, there were distinct differences in patterns of reasons given by online and face-to-face students. Online students were much more likely to cite specific course characteristics or a lack of time as their reason for dropping the course; whereas face-to-face students were more likely to cite financial circumstances, no longer needing that particular class for their degree, or a lack of feeling of fit/belonging. Students in fully online and face-to-face classes cited course performance as a reason for dropping at almost identical rates.

### Policy and Practice Implications

This study suggests that issues related to time are cited more commonly as the reason for dropping an online than face-to-face course, corroborating recent research that online students are more time poor and that the quantity and quality of time that students have for college has a direct effect on persistence. The findings suggest that the flexibility of online courses may not off-set the outside time demands made on enrollees (work, childcare, etc.) and that colleges that want to target interventions may need to focus on ways to augment the time poverty of online students.

## **TECHNICAL INNOVATION IN BLENDED LEARNING: AN EU PROJECT ON CONTINUOUS VOCATIONAL EDUCATION USING MULTIPLE DEVICES**

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The project Technical Innovations in Blended Learning (TIBL) aims to increase the training success (and outcomes) of C-VET trainees using so-called *multiple devices* (computers, laptops, notebooks, tablets and smartphones) within a blended learning approach. The tasks foreseen are: (a) the development of blended learning training modules that will hopefully close expectation gaps between trainees and companies; (b) the creation of a web-based easy-to-use toolbox delivered in open access aiming to support trainers to implement these modules or similar ones successfully; and (c) the implementation of a blended learning course "Train the Trainers" supplied as a MOOC course, based on Moodle as an OER, also using multiple devices. In all web-based developments HTML 5 will be used as a versatile tool supplying all mentioned electronical devices. This contribution presents the project as well as the pedagogical principles underlying the courses. The project will focus on the delivering of content by interactive and multimedia-based material which can be used on all mentioned devices, and specific pedagogical techniques, like micro learning and flipped learning approach. Several frameworks developed in the frame of European projects will be used in the development and implementation of pilot courses, namely the DigiComp 2.0 framework and the E-xellence framework (developed by the European Association of Distance Teaching Universities, EADTU). The developed methods will be evaluated in real courses undertaken in formal education and in non-formal education within real enterprises.

This Erasmus+ project 2017-1-ES01-KA202-038256 uses a strategic cooperation of formal and non-formal education providers supplied with the experience and research results of two universities. It is coordinated by the Fundacion Escuelas Profesionales de la Sagrada Familia (established in Sevilla, Spain), the partners are DigiLab from the University La Sapienza Rome (Italy), the Swedish Association for Distance Education SADE (Sweden), the Universidade de Aveiro (Portugal), and the European Foundation for Quality in Blended Learning (Austria).

## QUALITATIVE LEARNING ANALYTICS TO UNDERSTAND THE STUDENTS' SENTIMENTS AND EMOTIONAL PRESENCE IN EDUOPEN

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### Theoretical framework

This contribution is supported by UniFG Tutoring – UniTutor project and connects three different fields: (a) Learning analytics; (b) Digitally mediated learning; (c) Learning and emotions. Generally speaking, learning analytics allow analysing those traces each student or entire groups of learners leave online, successful activities, difficult experiences, and so on. In relation to the field of learning analytics, we stress the emotional dimension of learning as well and its importance in mediated learning. As for this, Garrison, Anderson, and Archer (2000) sustain that communities of inquiry are digital mediated learning experiences characterized by the cognitive presence, the social presence, the teaching presence and the emotional presence. This last is understood as the “emotional expression part of being socially present online” (Cleveland-Innes & Campbell., 2012; p.272).

### Aims

- To explore the emotional processes experienced by students during the participation in 11 free different courses delivered by EduOpen ([www.eduopen.org](http://www.eduopen.org)), an international learning platform offering tens of MOOCs about several fields;
- To personalize the learning activities, according to students' emotional experience.

### Method of analysis

According to both Grounded Theory and Sentiment analysis approach, we:

- Created a first general grid of analysis, composed by the two general dimensions “Positive sentiments” and “Negative sentiments” referred to the learning experience in the digital context;
- Categorized the texts of all the posts written by students in the presentation forums through qualitative content analysis (Mayring, 1997), by using Nvivo 11 Plus;
- Generated further dimensions and their specific categories, emerging from the interaction between grounded approach and theoretical concepts;
- Analysed the nodes (the categories to the software) by using Nvivo 11 Plus.

### Results

According to the main results, the emerging set of categories is a very complex one and is composed by some clusters of similarity coding. By looking at the hierarchical graph about sentimental analysis, we can see that in general positive sentiments characterize the learners' perception about the experience in EduOpen. At the same time, the meso-dimension *Motivations* has a prominent space in the hierarchical graph about the emotions connected to the topic of the course. By going in depth in the categories, there emerges that some of them are about intrinsic motivations (e.g. to deepen the student's knowledge) and others are about external ones (e.g. To have a support for the university exams). However, cluster analysis shows that this last category is quite similar to category *Positive feelings* in terms of coding similarity. It seems, therefore, that students attending the courses have different motivations to participate in them, but they also feel positive emotions related to such a participation. Far from generalize a so specific study, we do claim that the entire set of categories shows how complex is the emotional experience of students. This is not just due to the number of categories shaping the set, but also to the three levels characterizing it, the relationships among them and the contextualized value they have in the different educational experiences.

## ONLINE PHENOMENON BASED LEARNING IN UPPER SECONDARY EDUCATION FOR ADULTS

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### **The Concept of Phenomenon Based Learning – Students Taking the Lead**

New Finnish Core Curriculum for General Upper Secondary School for Adults (FNAE 2015) was introduced in 2015 and implemented in 2016. Although the emphasis of learning still relies heavily on building students' subject knowledge, the 21<sup>st</sup> Century Skills and future competencies are given a spotlight as well. Interdisciplinary learning courses (theme courses) were introduced, and these are implemented in Otava Folk High School as phenomenon based learning modules. The concept of interdisciplinary learning can be defined by identifying interdependencies between e.g. authentic learning, problem based learning and project-based learning. Some relations to collaborative learning, experiential learning and communal knowledge construction, can also be found. Phenomenon based learning also relates to the concepts of interdisciplinary and transdisciplinary learning. In phenomenon based learning, the students are placed in the focus as they plan their learning from individual goals and interests and become in charge of their learning. Thriving from individual interests and needs we might better be able to ignite our students' motivation when it comes to learning in school context.

How do we, hence, create learning experiences that implement the need to enhance students' competencies and interdisciplinary learning as described in the curriculum? How do students take ownership over their own learning and to practice the skills – both digital and face-to-face – they need in their ongoing and future studies, and both in their working and personal lives in order to grow as active citizens and creative learners with persistent attitude towards their own future and the future of the whole globe?

### **Changing the paradigm of formal upper secondary education**

The school as an institution was established in a world in which information and knowledge were considered more or less stable. One challenge that schools often face is that students tend to learn mainly fragmented information from various school subjects. Students collect small bits and pieces of information from here and there during their schooling, but the connection between these separate pieces of information and the connection of their role in authentic phenomena might remain unclear – i.e. seeing the bigger picture and figuring out the causes and the consequences often remains challenging. In Finland, the most common way to teach in upper secondary education is based on teaching separate subjects by single subject teachers. This often leads to a situation where teachers do not cooperate and collaborate as much as the object of learning community and the object of interdisciplinary learning requires. In addition, the world is not divided into sections based on school subjects – neither is the natural way of learning.

What if the students had the freedom to choose what, when and how they want to learn? Is this possible in a formal educational system following the aims set in the national curriculum if the traditional way of organizing learning is inverted? Otava dared to take the risk and let the students show the way. The critical issue related to school and teachership is whether we let the students in control or not, i.e. if we encourage the students to take an active role and start constructing knowledge and enhancing their skills and competencies themselves. And if we go one step further, we as teachers have to ask ourselves if we let the students also decide what they want to learn and how they want to learn it.

In this presentation, phenomenon based learning models from Otava Folk High School and students' learning outcomes and student and teacher experiences will be presented. The effects of reorganizing learning and teaching to the learning community itself will also be discussed. Phenomenon based learning will be presented as a concept of implementing integrated learning in upper secondary education for adults.

## VIDEO ABSTRACTS FOR SCIENCE EDUCATION

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### Context

With the development of digital media, information, communication and working behaviour in science and society has changed fundamentally. Today, sharing scientific results via audiovisual media has become an important part of scientific communication.

A wide range of formats of audiovisual media are used in the area of research such as visualisations of simulations and models, recordings of experiments and technical procedures, recordings of conference talks, lectures and workshops. Especially short science videos (SSV) also called video abstracts have grown in popularity over the last decade. A video abstract is the motion picture equivalent of a written abstract, usually 3-5 minutes long. Video abstracts help to communicate the background of a study, methods used or study results. They can also discuss the history of an area of research or ideas on where this field is heading. Video abstracts have the potential to “describe dynamic phenomena which are simply too complicated, too complex, too unusual, too full of information to do in words and two-dimensional pictures”.

Next to their meaning for intra-scientific communication video abstracts have a huge capacity to bridge the communication gap between science and society and thus reach audiences, which would otherwise hardly learn about the research that is done. Since videos can be easily embedded in websites, blogs and other social media channels, they can be accessed wherever and whenever the information is needed. The user can adapt the speed of the information acquisition individually according to specific needs, repeat the content as often as required and skip irrelevant content.

The most relevant benefit of creating a video abstract is to rethink one’s research results in another format. This leads to the question of how scientists can be supported and learn how to communicate their research to a wider audience, so that people from inside and outside their field can be educated, informed and inspired.

### Contribution

This paper explores how the genre of video abstracts can foster the science education and how scientists can be supported in communicating their research via videos. This includes the production as well as the publication process, including thoughts on accessibility, citability and reusability of videos via online platforms, which are suitable for scientific work.

Margret Plank is head of the Labs for non-textual media at the German National Library of Science and Technology. She is also product owner of the TIB Portal for audiovisual media <https://av.tib.eu/>. You can email her [margret.plank@tib.eu](mailto:margret.plank@tib.eu) or follow the site on Twitter @TIB\_AVPortal

## **USING A BLENDED BUSINESS DECISION SIMULATION (BDS) TO GAIN PRACTICAL BUSINESS EXPERIENCE**

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The world of work is changing, requiring a new kind of professional with both theoretical knowledge and practical experience, as well as the ability to apply what they have learned. Equipping students to meet the challenges of tomorrow requires a shift to learning environments that actively involve students in problem-solving and critical thinking. Using a simulation to gain practical experience of real-world problems is an attempt to reduce the distance between theoretical knowledge (micro level) taught at University and what really happens in the workplace (macro level). Simulations may be particularly useful in situations where the curriculum is not able to incorporate practical business experience or internship opportunities.

Against this background, we implemented and evaluated a simulation called the Business Decision-making Simulation (BDS). BDS creates a start-up business experience, which allows for business decision-making in a secure environment and allows for enterprise growth. In view of the potential contribution of BDS, the following two research questions were formulated to guide the research. (a) What key learnings are derived from taking part in the simulation? (b) What is the perceived value as a replacement for practical business experience or internship?

The findings concluded that BDS incorporates not only Kolb (1984) phases of experiential learning but also the four structural features of Bell et al. (2002). BDS created opportunities for a concrete experience, knowledge reflections and changed the way the students do business, by understanding new and complex concepts such as market share and positioning. Participants implemented new knowledge during the learning process. They collaborated with the players (competitors) around the table, formed a business community, negotiated with the other businesses for resources and possible partnerships therefor being emotionally involved in the process. Having to deal with mistakes, failed partnerships, negotiations as well as decision-making, is valuable in the knowledge, cognitive and emotional domains. BDS helped to increase comprehension of the complexities of the business and the various processes, transactions and operations involved.

## A TALE OF TWO SIMULATIONS IN HIGHER EDUCATION: EXPLORING THE BENEFITS OF A BOARD GAME AND AN ONLINE SIMULATION

*Lynette Nagel, Bernice Beukes, Marina Kirstein, Rolien Kunz, University of Pretoria, South Africa*

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Games and simulations are increasingly being incorporated into higher education and corporate training, and are particularly popular in the business disciplines taught in blended learning format. Bought simulations and games are convenient to use in blended courses. In this study, students in different academic years in a B Com Accounting Science degree participated in different simulations of professional practice: a one-day duration desk-top board game for first-years and an online simulation over several weeks for third-years. The simulations aimed at familiarising students with the business world and the application of their studies in a professional context.

Educational games use motivational techniques like competition, goal setting, scoring, fantasy, surprise, uncertainty and relevance, while simulations imitate as closely as possible authentic procedures and situations. Simulation games have characteristics of both. Such learning games encompass real-world activities that enrich the classroom environment by supporting experiential and problem-based learning activities and providing learner-centred approaches and motivation to learn. In simulations, student groups often collaborate like in a real work situation rather than as competing teams, as in games. While literature reports equal cognitive learning gains from games and simulations, we were concerned with the suitability and value of the simulations for students with different levels of academic achievement. We researched the question: what was the learning value of two different types of simulations for students with diverse learning proficiencies? Mixed methods were used to analyse data gathered in electronic surveys. Responses were grouped according to student grades in the subject prior to doing the simulations.

Lower performing students found the board game valuable and singled out understanding content as the most beneficial aspect. The highest performing students, who had better pre-knowledge of the subject, did not find the content related facets most valuable. The higher their marks were, the more they benefitted from social and soft-skills aspects of the board game, seen in both qualitative and quantitative data. Group and team-related activities were seldom rated as most beneficial in the board game, possibly due to the competitive nature of game-playing.

The overall most beneficial contribution of the online simulation was *Praxis* (learning about the audit process, insight into real life audit, putting classroom theory into practice), corresponding with the intended objective of the simulation. *Soft skills*, referring to professional skills, discussions with the group, decision making, were uniformly well received as beneficial by all students. In the online simulation, *subject* knowledge and understanding had a high average rating that increased in the lower performing groups; they were also more positive about and enjoyed the simulation more than the high performers.

Comparison of the two simulations show that students in the lower performing layer of both classes benefited from understanding the subject better, more so than students who were already performing well. The higher performing students valued the acquaintance with peer students in the board game, a unique affordance of the face-to-face mode of interaction. The lower performing students enjoyed the online simulation more than the high-performers, and evaluated the web-components more positively than the higher performers. The third year students found the most value in the theory-praxis aspect and learning about the professional process in the online simulation. While the praxis in the board game was not perceived as vividly, it was reportedly more enjoyable. Both simulations transferred learning to the workplace equally well for lower performing 'novice', as expert high performing students.

Both simulations, one containing game elements, and an online simulation of practice, successfully achieved their respective aims regarding the subject and theory-praxis bridge, while also achieving extra-curricular outcomes emanating from their delivery mode (contact or online), and were suitable for the respective academic year levels of the classes. Both simulations particularly supported the lower-performing students with understanding subject concepts and motivation, while the higher-performing students benefitted from interactive collaborative and people-based outcomes. Simulations also benefit educators. The majority of students, irrespective of their profiles, agreed that the learning value of a simulation was more beneficial to them than traditional teaching methods.

## ASSESSING THE IMPACT OF VIRTUALIZING PHYSICAL LABS

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### Summary

Virtual laboratories are the new online educational trend for communicating to students' practical skills of science. In this paper we report on a comparison of techniques for familiarizing distance learning students with a 3D virtual biology laboratory, in order to prepare them for their microscopy experiment in their physical wet lab. Initial training for these students was provided at a distance, via Skype. Their progress was assessed through Pre and Post-tests and compared to those of students who opted to only prepare for their wet lab using the conventional face-to-face educational method, which was provided for all students. Our results provide preliminary answers to questions such as whether the incorporation of a virtual lab in the educational process will improve the quality of distance learning education and whether a virtual lab can be a valuable educational supplement to students enrolled in laboratory courses on Biology.

### Method and results

In the current study, two educational methods, applied on distance learning students for their preparation on microscopy laboratorial experiment, are evaluated and compared; the conventional face-to-face lab tutorial method and our proposed educational scenario enriched with a Skype session and a 3D virtual biology laboratory, the OnLabs. The sample comprised an entire class of 43 third-year undergraduate students enrolled in the first cycle of Biology laboratorial course. The 43 students were randomly divided into three groups. Our evaluation is based on the assessment of students' learning outcomes on Pre and Post-Tests. Both Pre and Post-Tests given to the 1<sup>st</sup> group are of low difficulty, those given to the 2<sup>nd</sup> group are of medium difficulty whereas those administered to the 3<sup>rd</sup> group are of high difficulty. The Pre-Tests scores proved that OnLabs experience gave higher baseline knowledge to those students who were involved, in all groups. The Post-Tests scores showed that the face-to-face tutorial improved and equated students' understanding of concepts concerning microscopy in the 1<sup>st</sup> and 2<sup>nd</sup> group whereas in the 3<sup>rd</sup> group, where the difficulty of the tests was the highest, the With-OnLabs students have better grades than the Without-OnLabs students.

## COMMUNICATION AND INTERACTION IN A BLOG-BASED LEARNING SPACE

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Formal online learning often takes place in highly structured virtual learning environments (VLEs) that are designed to manage, in one space, all of the materials and resources learners need to participate in a course. The use and integration of social or Web 2.0 technologies such as wikis, blogs, and social media, into educational practice has been increasing as instructors try to design more open, participatory environments. What defines these tools is their ability to make the digital practices accessible and participatory, and their focus on creating social connections between users, in what O'Reilly terms an *architecture of participation*. As these social technologies are co-opted into educational practice, they redefine the spaces where learning takes place, and new cultural, pedagogical and social practices will emerge or need to be developed to inhabit them.

If the learning spaces created using social technologies are impacting on the learning culture, through ways that can redefine pedagogical practices, social interactions and institutional norms, how do we start to explore them? Particularly as we co-opt social technologies into our online teaching practice to open up boundaries, do they support an *architecture of participation* and how do learners use these spaces, to both communicate with each other and engage with the learning content?

This study used an exploratory case of one course offering in an attempt to trace the way the space either constrains or enhances communication and participation in an open, online course offered using a variety of social networking tools. As social technologies are designed with an *architecture of participation* how the learners use the spaces afforded to them, to both communicate with each other and engage with the learning content were examined. Content and structural analysis of blog posts and comments using a modified coding scheme based on the Community of Inquiry (Col) model were conducted to look for patterns of participation and cultural production.

This project used methods to look at both historical traces of activity (visible messages) and the “physical” course structure (technology/content) to consider the following research questions:

- What effect does the learning space have on the learning interactions in an online course?
- In what ways does technology act as a barrier or enabler for learner's interaction/communication?
- How does learning in an open space shape the communication practices and participation in the course activities?

### Introduction and Methodology

The structural and content analysis highlighted some of the challenges students encountered when trying to interact with both the content and with each other on the course blog. The multiple and disconnected spaces, posts as a performative function rather than collaborative task, and discourse that focused on “one-to-many” all provided barriers to effective communication. In this case, the learning space shaped the participation patterns in such a way, that individual engagement with course content and activities was favoured over collaborative engagement with fellow learners. The blog postings all showed a high level of cognitive engagement with the course concepts, and often followed a more formal academic writing format. As Hemmi et al. (2009) point out “the use of new digital media does not necessarily, it seems, determine new ways of writing or being within academic programmes” (p.27), particularly when they are embedded within the formal structures of the institution which requires formal assessment and evaluation.

In this case it was evident that the course learners were willing to participate and share in developing a learning culture that was supportive, engaged, and open, but in the end the demands of formal academic writing, the performative elements of the “post”, and the barriers imposed by the virtual space may have hampered their ability to sustain active levels and patterns of participation and engaged discourse. This seems to contradict the notion that social technologies support an “architecture of participation”, and in co-opting social technologies for use in formal learning, there is a risk of recreating the rigid structures and hierarchies of the bounded spaces of more traditional VLEs. To develop innovative pedagogies that embrace the capabilities of social technologies, further research will need to focus on the interrelations between what Hewling (2009) terms “all the players” in the online space – technological, social, and cultural – to establish an ideal configuration.

## ONLINE GROUP LEARNING IS DEEPLY GROUNDED IN SHARED KNOWLEDGE AND SPACE

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### Abstract

Group learning via a 2D platform (e.g. Moodle or similar) has long been part of daily learning practice. Unfortunately, this solution leads to *text-based* or rather *text-heavy* interactions: you need to be able to write well and better still, enjoy “interacting by writing” and not every student does. Moreover, text-based interactions are good for inquiry tasks, but they are ineffective and inefficient for problem-solving tasks. In fact, experience has shown that the interaction required for collaboration is lacking or inefficient, especially in cases where the main task, like in projects, consists of collaborative problem solving. Therefore, it is not surprising that students use 2D platforms solely as a storage space for documents, quite never for collaboration. There is a lack of online group interaction and the question is why. We think that flat platforms do not meet the requirements of rich collaborative interactions online.

So, which are these requirements and how can we better support online group learning to fulfil them? For answering these questions, we propose 3 steps: first, clarifying what we mean by *collaboration* (and its relationship with knowledge), secondly developing a deeper view of the role of space in knowledge sharing and thirdly a better understanding of the true potential of 3D platforms.

1. *Collaboration Today*. Collaboration has changed! The essence of modern collaboration is that a group task is not split into parts but accomplished by the group as a whole; and since they work on it as a single task unit, also *knowledge should be a unit*. Thus, modern collaboration is grounded in shared knowledge: the better we share, the better we will collaborate.
2. *The Role of Space*. On flat 2D platforms, users cannot interact in their usual, *natural* way and this makes knowledge sharing very difficult. Interaction becomes much more intense and knowledge sharing more successful on 3D platforms that support the replication on screen of three-dimensional physical spaces, movable objects, movements, navigation and communication between digital representations of humans (avatars). By enabling the users to *interact in a more natural way*, these space simulations in 3D enhance the construction of knowledge and the negotiation of meaning by an online group, they help the individual group members in projecting themselves into the group and they support the management and the facilitation of the online interactions of the group.
3. *3D Platforms*. The platforms we need should be consistent with our concept of a collaboration based on knowledge sharing (see 1.) and provide spatial functionalities (see 2.). The system that we will present, QUBE by Pentacle (UK), fulfils these requirements thanks to an appropriate design, consistent with our approach. Each person in QUBE is represented by an individual avatar. Using your avatar, you are able to communicate with other people just as you would in the real world. You can move around in various rooms of a building, physically interact and work shoulder to shoulder, literally brainstorming with other people by means of whiteboards and sticky notes. During a meeting, group members can split into subgroups and move to areas with chairs and tables and sit down to discuss. Later, the subgroups can move to another area of the space and gather in front of a huge whiteboard on which they can write (sticky notes). All the subgroups can also meet as a plenary group, for example gathering in a circle in the middle of the main room or in front of a panel. Last but not least, for all kind of project tasks, QUBE provides ready-to-use panels that display suitable collaboration models, so-called *performance enhancing tools* (PETs).

This is our approach for meeting the requirements of rich collaborative interactions online which can make group learning more efficient and effective, especially collaborative problem solving, project-based learning, inquiry-based learning and other kinds of active learning by online groups.

## OPEN DATA FOR LEARNING: A CASE STUDY IN HIGHER EDUCATION

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Nowadays there is increasing public pressure to open the data generated by public administration and the scientific system, being these activities maintained through public funding. The most enthusiastic discourses on the availability of data and the feasibility of appropriation by the civil society are based on politic ideals as empowerment, public engagement and political monitoring, from one side; from the other side, big (open) data can be the base for new business models and crowd-work models towards economic development. However, this utopia could be hindered by an already well-known problem in the digital society: the need of skills and knowledge to navigate within the digital abundance that is continuously produced by the digital and open world. Some have compared the problem of appropriation of open data to the phenomenon of digital divide. The concept of *data literacy* could address research and innovation to cover these learning needs. This skill can occur in specific contexts both at an academic level (manipulation of data for academic communication purposes); and at a professional level, when data is used to inform processes and decisions (more essential) or to generate products and services (advanced level of innovation). The different existing definitions coincide on the following key elements of *data literacy*: extraction, management and processing, ethical and critical approach to data handling. In line with the above mentioned research, the very recent European debate on the Digital Competence, with the framework DigComp 2.1. has focused data literacy.

In this presentation, I will introduce a case study generated in the context of Higher Education which aims at explore two issues: data literacy as part of academic skills (students' side) and designing for learning with Open Data (teachers' side). The first issue relates the several difficulties and motivations leading open data exploration by university students that are not expected to master Statistics or Data Analysis as part of their professional competences. The second issue, instead, focuses the several problems faced to design for learning with Open Data. As case study, the method encompassed careful analysis of events and narratives regarding a specific subject of study tightly connected to contextual conditions. The context of this study was the course "Learning Design in Adults' Education", devoted to students of the 3<sup>rd</sup> year of the Degree of Educational Sciences at the University of Florence (6 ECTS, First Bologna Cycle). Eighteen students (11 Female and 7 Male) took part at the experimental learning activity during the First Semester of the academic year 2017-18.

The study was implemented in three micro-phases, within a learning unit: Self-evaluation of Data-Literacy skills, Data expedition, Discussion on Open Data for educators' professionalism. The first micro-phase, yielded information relating the participants self-evaluated skills, as well as some interesting reflections on Open Data within the educator' baggage of knowledge and skills. In this phase, the students declared themselves generally at the level of no competence, or basic competence. Moreover, most students connected their knowledge and skills with the first phase of data literacy, namely, *data search*. Regarding the second phase, it was possible to observe that the experience of interacting with data was a hard task to accomplish. While at the end of the activity most students acknowledged the relevance of open data in society, the groups that faced more issues in analysing and using data considered "that there is always need of 'mediation', that is, experts working in the field of statistics that arrange data for 'final consumption'". However, half of the class was enthusiastic about the potential of Open Data in society, and for them as educators. Not surprisingly, these second group of students were those able of extracting personalized graphs and to generate their own data tables. As for the third phase, it was interesting to see the students' commitment to understand the several representations selected according to every specific project. Four educational problems were proposed by the four groups: two of them relating adult learning in elder life; and the other two regarding adults' education for inclusion. The four projects adopted the open data collected as part of the analysis of adults' basic skills that should be considered as part of adults' education in the above mentioned cases.

These led to undisclose a macro-meso-micro structure as conceptual framework to reflect of the educational problem ahead: while understanding how and if Open Data (as available, authentic and rich resources) could be placed at the macro-level of learning in digital contexts; the expected outcomes for undergraduate students and the context of higher education as well as the specific problem of Open Data for educators, are all topics that belong to the meso and micro-level. The results in this case study showed that while Open Data offers exceptional opportunities to the society (macro-level), their only presence may not trigger virtuous practices immediately at meso and micro levels.

## **DIGITAL TOOLS IN THE SERVICE OF SOCIAL MEDIA – OPPORTUNITIES AND ROLES OF EDUCATION AND CONTENT SUPPORTED BY MOBILE COMMUNICATION DEVICES IN SUPPORT OF INFORMAL EDUCATION AND DIGITAL COMPETENCES DEVELOPMENT**

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In today's digital environment, new methods of education have emerged from the web 2.0 and e-learning 2.0. New Media systems have also transformed the learning environment to a significant degree. It might be said that the era of Digital Pedagogy 2.0 has arrived. The new types of platforms that are emerging as a continuation of this trend go even further. In addition to supporting previously existing services, these platforms assist in the navigation of large data sets, and focus on mobile technologies. They also provide a space for, among other things, the introduction of new technologies, such as AI-based apps/programmes. On the basis of our research, it has become clear that classrooms, as a century-old learning environment, have been fully extended, they have opened up towards digital pedagogy, new methods and new types of teachers.

As a consequence of the integration of networks and digital technologies into everyday life, the mechanisms of information acquisition and learning have radically changed. Consequently, there is a need on the part of users to acquire knowledge and information quickly. The reasons for this include the transformation of reading habits and the need to access knowledge as quickly as possible using BYOD logic.

In the paradigm of the information society, the nature of knowledge changes: it becomes practical, multimedia and transdisciplinary. At the same time, the characteristic patterns of the acquisition of knowledge are also undergoing change, as lifelong learning becomes ever-more prevalent. The conceptual division between the child and the adult fades, and formal schools increasingly shift over to the virtual environments of open education.

The rapid spread of mobile devices and social media has affected learning, in which networked learning has become a new teaching method. This kind of new methodological solution has a lot of potential to offer in the area of the support of learning processes, one of the key points being the transformation of content consumption and content production, as influenced by mobile devices.

In this paper, theoretical frameworks and major tendencies in digital culture on the basis of an empirical study carried out in the autumn of 2017 will be described. On the basis of a large sample size (N = 110), clear evidence emerges of the existence of openness towards the digital content and new ICT tools used in atypical learning methods. In addition, a significant tendency in the direction of network-based and community-based services in education may be discerned.

## **USING SOCIAL MEDIA PLATFORMS IN THE UNITED ARAB EMIRATES TO CREATE ETHICAL, CULTURAL AND SOCIAL AWARENESS THROUGH EMOTIONAL INTELLIGENCE PRINCIPLES**

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The basic theme of this research paper is to investigate and establish the case for using social media networks on the Principles of Emotional Intelligence to create Ethical, Social and Cultural awareness among the citizens of the UAE to enhance their public dealing skills, people management, workforce management, tasks execution skills contributing towards amplified work efficiency thus greater return on investment (ROI).

From the literature review gathered, there seems to be a strong connection between employee job advancement and production and the level of a manager's Emotional Intelligence. Articles spanning from 2005 till 2017 specifically suggest that institutions in the UAE could benefit by improving EQ skills in their leaders as the question of what predicts professional success has become very crucial, especially when considering the fast development and the subsequent demands of an academically successful Emirati workforce.

The significance of this question becomes even more evident when one takes into account the country's efforts to challenge the issues of the Emirati youth and prepare them for the new UAE National Agenda initiatives. The UAE Vision announced by His Highness Sheikh Mohammad Bin Rashid Al Maktoum targets the UAE to become among the competitive and most recognized countries in the world by the Golden Jubilee of the Union year 2021.

In an attempt to contribute to the UAE's ethical, cultural and social peoples' awareness through using principles of emotional intelligence, I decided to take on an initiative of posting video about EQ on social media platforms such as LinkedIn, Facebook, Instagram, Snapchat and Twitter. The micro-learning video is a group of 10 sec clips totalling between 1-2 minute releases with a different message on EQ each time.

EQ topics I spoke about vary from empathy, sympathy, humility, patience, resisting anger, resisting negativity, manifestation, positivity, calamity, loving one another, forgiving, leading by example.

The micro videos echoed positively on LinkedIn that the profile viewers increased 41% in the last 90 days building 14,711 followers, drawing traffic of 22,162 profile viewers in 2 weeks. 50% of these viewers are in an executive/director/founder level, over 75% of these comments were positive with praises and appreciation for subject matter.

- Indeed, many of the problems facing society today are the direct result of emotional ignorance: depression, addiction, illness, religious conflict, violence and war. "Perhaps we humans have tried too hard to 'civilize' ourselves, trying to deny our true emotional nature. We've done this because we have had the wrong idea altogether about the nature of emotion and the important function it serves in our lives" (Morrison, 2007; p.245).
- Naturally, people are drawn to universal basic human traits that are not necessarily related to religious beliefs such as empathy, sympathy, fear, love etc. Several studies based on the relationship between emotional intelligence with physical and mental health have been conducted. "The results show that emotional intelligence both directly and indirectly are associated with mental health" (Cherniss, 2000; p.10).
- Whether or not programs are actually adopting EQ qualities, various useful skills are learned like labelling and describing emotions, appraising basic emotions in oneself and others, conflict management, taking perspective of others, decision making and problem solving techniques, effective peer relation trainings (Morrison, 2007; p.542).
- People seem to be pulled by the idea of short micro-learning videos. The videos aim to minimize content congestion on common folk. Each micro-learning video deals with a single learning objective, breaking down knowledge into understandable bits. Learning is not confined any more to universities and colleges. People are able to study full courses from under their fingertips off the internet and so the micro-learning technique has made learning gullible.
- People seem to enjoy focused content presented on the go through their preferred social media platform whether twitter, Facebook, Instagram, LinkedIn and Snapchat where the video is accessible on their smart devices especially mobile phones.

- The clearer the spoken language and the stronger the body language, the greater the effect on its viewers. Familiar language is that which the readers easily recognize and understand because they use it on a regular basis. One of the most important functions of language is to build *homophily* or a sense of commonality with one's readers. By using language that is familiar to the reader, the message is likely to have more impact.
- People seem to find the presenter/author appealing although she is an Arab Muslim Covered Female. Richard Kallergi in 1925 in *Practical Idealism* predicted: "The man of the future will be of a mixed race. Today's races and classes will gradually disappear owing to the vanishing of space, time, and prejudice" (Wikipedia). And that exactly what has occurred. People are more in tune with their humanity rather than their ethnicity. The effects of globalization have surpassed our expectations in connecting people with mutual understandings.

People are threatened by the artificial intelligence hype and feel that humanity could be hindered. These learning videos serve as quick reminders to encourage staying in touch with our EQ. In the Independent, Hawking points out the benefits that come from such technology developments: "one can imagine such technology outsmarting financial markets, out-inventing human researchers, out-manipulating human leaders, and developing weapons we cannot even understand. Whereas the short-term impact of AI depends on who controls it, the long-term impact depends on whether it can be controlled at all" (Love, 2014; p.1).

## **FROM BOOKS TO MOOCS AND BACK AGAIN: AN IRISH CASE STUDY OF OPEN DIGITAL TEXTBOOKS**

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While digital technology in some form now permeates most conventional campus-based courses the truth is that textbooks remain a fixture of the higher education landscape. Moreover, rising textbook costs are an often unspoken reality of the student learning experience, particularly in North America. Less is known about the costs and usage of textbooks in Europe and more specifically the emergence and potential impact of openly licensed digital books. This study seeks to address this gap in the literature, with a particular focus on the Irish higher education context. Framed around five overarching research questions the research aims to (a) complete an environmental scan and national baseline survey of open digital textbooks Ireland; and (b) undertake a micro-level institutional case study of current practice around the use of textbooks and adoption of open digital textbooks more particularly. The wider objective of this line of research is to help inform and eventually develop or at least pilot an Irish open digital textbook initiative. Although the study is still at an early stage in the research process a critical perspective anchors and guides the work as we seek to better understand the transformative advantages of open digital textbooks. Put another way the longer-term intention is to go beyond efforts to merely replace traditional print-based textbooks with cheaper and more accessible open digital learning resources, as we wish to challenge the basic conception of the student as the audience of such materials.

## **DIVERGENT PERCEPTIONS FROM MOOC DESIGNERS AND LEARNERS ON INTERACTION AND LEARNING EXPERIENCE: FINDINGS FROM THE GLOBAL MOOQ SURVEY**

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In face of today's complex societal challenges, education systems worldwide have been facing the need for introducing major changes. As a consequence of this transformation process, there is a new awareness of the potential and impact of Open (Online) Education, particularly amongst the higher education sector. One of the drivers for this transition is the phenomenon of Massive Open Online Courses (MOOCs). The unprecedented and rapid popularity of MOOCs in the last years has led to an increasing global debate about their quality, involving researchers, practitioners, institutional leaders and learners. To address the quality issues involved in the discussion, the Massive Online Open Education Quality (MOOQ) project was initiated as the European Alliance for the Quality of MOOCs. It is a 3-year project funded by the European Union under the ERASMUS+ call. MOOQ is directly relevant to several key aspects of the 2011 EU Modernization Agenda.

Typically, the drop-out rates has been a critical indicator for measuring quality of the learning experience. In MOOC settings, evidence indicates they are consistently very low and often below 10 %. Therefore, the demand for rebooting the design of MOOCs and their research and quality gained increasing attention and new research agenda have been claimed in literature. However, this discussion of low quality MOOCs is mainly based on an improper use of drop-out rates as a formal evaluation measure of face-to-face education. This is problematic as MOOCs engender mostly non-formal learning experiences. Thus, alternative evaluation measures have been proposed for MOOCs to better address learners and their personal intentions and goals in learning with MOOCs. To focus on the quality issue, the development of a Quality Reference Framework (QRF) for MOOCs was envisaged and started within the MOOQ project.

Based on a literature review and analysis of existing quality approaches and indicators for MOOCs, the Global MOOC Quality Survey was designed and conducted ( $n = 267$ ). The research used as reference the process model of EN ISO/IEC 19796-1. This is based on the generic process model that is divided into seven process categories containing in total 38 processes. However, for the MOOQ objectives the first two categories were merged, giving way to only six process categories. The MOOQ quality reference process model consists therefore of three pillars which represent the main aspects involved in the production and delivery of MOOCs, each subdivided in 34 dimensions and respective descriptors.

The survey was developed for three target groups: learners, designers and facilitators of MOOCs. Final objective is the development of the Quality Reference Framework (QRF) with quality indicators and tools in close collaboration with all interested stakeholders worldwide.

In this paper, we present the first results from the Global MOOC Quality Survey (Stracke et al., 2018) relating to the overall experiences with MOOCs and their offered four interaction types: learner-facilitator (LF), learner-resource (LR), learner-learner (LL) and group-group (GG). We have found there was a very high significant relationship ( $p < .001$ ) between the learners' MOOC experience and the three interaction types LF, LR and LL. Similarly, there was also a significant relationship ( $p = .026$ ) for the fourth interaction type GG. However, contrary to these findings there was not a significant relationship between the designers' MOOC experience and all four interaction types.

Comparing the different perspectives of learners and designers, our analysis presents significant differences in MOOC learners' and designers' intentions and experiences. The correlation differences of the MOOC learners and designers on the interaction in MOOCs are significantly very high. We attribute this to the gap between MOOC designers' and MOOC learners' perspectives on interaction in MOOCs. MOOC designers do not seem to understand very well the needs and demands of MOOC learners. Hence, it can be questioned whether MOOC designers are currently understanding and meeting the interests and demands of the MOOC learners.

## **ASSESSING THE EFFECT OF MASSIVE ONLINE OPEN COURSES AS REMEDIAL COURSES IN HIGHER EDUCATION**

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Worldwide Higher Education Institutions (HEI) are investing efforts and resources in the creation of Massive Online Open Courses (MOOCs), highly scalable and freely available online courses. Most of their potential is related to the possibility to open up and democratise higher education, to place technology at the service of a more flexible and personalized education using courses to complement or substitute part of traditional face-to-face classes, and to increase the internalisation of the higher education market. Even though the discussion on the topic is broad, empirical evidence on the effect of using MOOCs for the mentioned purposes is limited. The current study aims at addressing the effect of using MOOCs with a specific goal, that of remedial education. Data refer to an Italian technical university, Politecnico di Milano, where a MOOC platform called POK (PoliMi Open Knowledge) have been launched in 2014. The strategy followed in its implementation is “MOOCs to bridge the gaps”, with the purpose of creating courses to help students (and other stakeholders) to fill possible knowledge gaps. Hence, the study aims at assessing the effect of completing a MOOC about basic scientific disciplines (i.e. mathematics and physics) on the ability to pass the subsequent discipline related on-campus exam. First-year students enrolled both in the platform and at the university campus have been considered. Two sources of data have been merged: data on MOOCs are retrieved from the POK platform; data on students' academic achievement are retrieved from the Student Office of the university, which also provided personal and previous school career information on students. The methodology employed is propensity score matching (PSM), where propensity scores are based on students' personal and academic information. Results show the potential usefulness of MOOCs as remedial courses, with relevant managerial and policy implications.

## MOOCS IN LOCAL YOUNG TERTIARY UNIVERSITIES: STRATEGY AND METRICS

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### Context

Since 2011, distance education has been reshaped by the onset of a new type of teaching, the MOOCs. These courses are considered as a disruptive innovation to bring reform in higher education. MOOCs enable a mostly free access to higher-level education for many self-motivated people worldwide. The University of Applied Sciences Western Switzerland (HES-SO) decided in 2013 to develop a MOOC project to evaluate the potential of these courses. The HES-SO Board of Education designed a MOOC strategy in two phases. The first phase (2013-2015), when a pilot project was launched and assessed, has been followed by a second phase lasting from 2016 to 2020, during which MOOCs are developed to become fully-fledged in this field. After completion of the second phase, a global appraisal of the MOOCs mission will help define if this type of educational method should be officially embedded in the institution's development policy.

### Phases

In Phase 1 (2013-2015), the e-learning center HES-SO Cyberlearn developed two uncredited MOOCs, a suitable platform to host HES-SO MOOCs (<https://moocs.hes-so.ch>) and deployed a video infrastructure (studio, cameras, film director, software and computers). The objective of this phase consisted in developing and launching two types of MOOCs in order to measure their impact. The findings of this pilot phase are globally positive. More than 3,000 people signed up on the platform, for 1,000 people actually having attended the two MOOCs. If the number of participants was not massive, strictly speaking, it was possible to demonstrate that the audience shows a true interest in this type of educational approach. Although the figure of 50,000 learners per MOOC is often highlighted, the number of participants per MOOC, worldwide, actually amounts closer to 846 (<https://www.class-central.com/moocs-year-in-review-2016>). The HES-SO MOOCs are therefore very close to this average rate. The dropout rate in this phase reaches 67%. This rate is lower than the world average reaching 96%. With regard to the financial and human effort placed into developing MOOCs, we decided to interface the MOOC on oral communication with that of the face-to-face class. It is interesting to note that the hour of the distance course was attended during face-to-face courses in other courses or on Sundays. Students revealed higher competencies than other years at the end of the module. It is, however, impossible at this stage, to check whether this is due to the integration of the MOOC or to this year's students' inherent capabilities.

In Phase 2 (2016-2020), following the positive assessment of the first phase, the HES-SO has decided to launch a yearly call for the creation of a MOOC called "Moocs.Fab". Only one project proposed by the professors is accepted at the end of the evaluation process. With this setting, a new MOOC lasting 7 weeks was produced. The faculty of Design and Fine Arts proposed a project, dealing with an initiation to Cartoon creation for beginners. Launched in 2017, 12 certificates of achievement were delivered for 574 participants. In the last week, 100 participants were still active at the end of the course. Most participants were Swiss and French.

### Conclusion

With the 10 sessions of the three current MOOCs of the HES-SO, a profile of the average participant can be defined. It is a woman between 25 and 36, living in Western Switzerland, with a teaching diploma in higher education, attending the MOOC on a mobile, which is consistent with the HES-SO gender distribution of the regular students, which represents 52% of women (rounded) and 48% of men (rounded).

Since the MOOC project was positively assessed, this type of course is now included in the Board's intention plan 2015-2020 (<https://www.hes-so.ch/data/documents/HES-SO-Plan-dintentions-5368.pdf>): "The development of Massive Online Open Courses, MOOCs and by-product models encourage pedagogical thinking towards a new step in the use of information technology and communication in teaching" (<https://www.hes-so.ch/data/documents/HES-SO-Plan-dintentions-5368.pdf>, p.23).

## **A NEW APPROACH TO DIGITAL COMPETENCE BUILDING FOR UNIVERSITY EDUCATORS IN EUROPE**

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A number of competencies frameworks redefining the idea of digital literacy for educators have emerged over the last few years out of different disciplines, schools of thought and professional sectors. As a consequence, the range of competences, levels of proficiency, scope and terminology is extremely varied. Ultimately what is at stake is the (re)definition of what it means to be an educator in the context of contemporary educational institutions, what students need to learn and how they can best learn in contemporary networked societies. Learning how to teach in an environment where digital ICTs are increasingly ubiquitous implies a fundamental change in routine teaching practices and learning experiences. Issues such as online identity building, trust dynamics and knowledge management come to the foreground with potential for enabling meaningful participation and increasing access of excluded learners.

An important recent development in the education domain is the DigCompEdu framework, issued in 2017 by the Joint Research Centre of the European Commission in Seville, that aims to structure and describe the digital competences that European educators should master, with the aim to inform and reinforce national initiatives in the field under a common umbrella. In order to be successful, attempts to operationalise the DigCompEdu framework – as well as any other capacity building effort that wants to build open and networked capacity of educators – should have three characteristics. They should be open, encouraging learners to use the open web and to both reuse and produce Open Educational Resources (OER); collaborative, moving away from individual capacity building towards group activities, sharing peer-feedback and interacting with others within communities of practice; and active, privileging practical activities (“things that can be done”), aiming to help educators rethink teaching and learning through digital practices.

In line with these principles, the EduHack.eu initiative is developing a capacity building course for European educators based on the DigCompEdu framework, starting from the idea that in order to be able to meaningfully teach in an open and networked world, educators need to not only “learn” how to teach with technology, but should be allowed to “experiment” with it, in an open and collaborative spirit. In line with the DigCompEdu philosophy, the principles of co-creation, collaborative learning and student/learner engagement are central to the course methodology. As such, the EduHack.eu course is drawing on educational paradigms and models including networked and connected learning, participatory cultures, hybrid pedagogy and Open Education.

The EduHack.eu experience includes an online course, followed by an EduHackaton. At the beginning of the online course, learners will be provided with a blog, that they shall populate with content created as a result of a series of activities, both individually and in collaboration with others. Following the online course, participants will gather in EduHackatons, hands-on events that will address a selection of challenges to education in a digitally/networked era, which will be defined by the learning community (e.g. building meaningful and useful assessment, how to improve student engagement and active participation). During the EduHackatons, participants will produce teaching resources and strategies, that will then be shared through an open platform, allowing others to be inspired by their work.

The EduHack.eu online course will be launched in an opened fashion in September 2018, followed by the organisation of three EduHackatons in Politecnico di Torino in Italy, Universidad Internacional de la Rioja in Spain and Coventry University in the UK. Following these pilot events, the while capacity building experience will be made available during 2019 to any institution willing to implement it within its own context.

## VISUAL TURN IN THE DEVELOPMENT OF DIGITAL PEDAGOGICAL COMPETENCIES

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From an educational aspect, it is an important characteristic that in the process of demonstration, understanding the *object* requires further *knowledge*, information, structures and activity samples. In this process, although in a spontaneous manner, is forming in the case of contents, mainly images, created and shared in the virtual space by individuals. This space can really be considered a learning environment the typical function of which is the transmission of visual contents. According to our preconceptions and experiments, these spontaneous processes can, however, be applied within the educational framework and from a pedagogical aspect, making learning more interesting and conscious. It is widely agreed that everyone needs digital competences that make the person capable of applying electronic media self-confidentially and critically both at work and in their free time. This competence is also related to high-level information management abilities and developed visual communication capabilities. The new competences connected to info-communication technologies include, at the most basic level, search for, evaluation, storing, creation, introduction, and transmission of information of multimedia technology, communication through the internet and the capability of participating in networks. Utilizing the advantages of its flexibility and the fact that it allows accessibility in space and time, comfort and personal time management in acquiring the learning material, we must open the process of content development, and make it possible for teachers and students to share new contents. This is how the development of the Open Content Development (OCD) concept in 2015-2016 that was built on the fact that interactive online learning solutions allow the recording and wide-range accessibility of digital content (text, picture, sound, and video). Our model was built on three main activities: first, it offered a special training for the teachers who joined the project. It made it possible for the participants to use LMS tools and to learn methods necessary to handle these. In the evolving network, we initiated a communication focused on development cooperation. Thus we considered the concluded personal development knowledge, the pile of the newly elaborated micro contents, the possibility that a dynamic knowledge base can be created by the participants and the open contents created by them as output factors. We have stated that a more intense use of visual elements may bring about a considerable turn in developing digital pedagogical competences; the possibility of this is clearly indicated by our experiments conducted in open content development so far, taking pedagogical-didactical aspects into account. Between 2015 and 2017, almost 100 pieces of micro-content that could be taken as educational units were created that, regarding their visual and text elements, can be used in the methodological evaluation of education and in pointing out the main characteristics of the genre.

This research project of the MTA-BME Open Content Development Research Group is funded by Content Pedagogy Research Program of the Hungarian Academy of Sciences.

## **EPICT CERTIFICATION SYLLABUS AS MEAN TO ATTEST DIGCOMPEDU COMPETENCES**

*Angela Maria Sugliano, EPICT Italia Association, Italy, Margaret Marshall, Epict UK, United Kingdom,  
Giovanni Adorni, University of Genoa, Italy*

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### **The EPICT Syllabus to evaluate and certificate teachers' competences.**

We present the EPICT Certification Syllabus (European Pedagogical ICT Licence – [www.epict.net](http://www.epict.net)) as a mean to articulate the competences of the recent DigCompEdu Framework of Competences for Educators, and to use the EPICT Certification model as mean to certificate those competences. That is the last evidence of the work the EPICT group has done in the last fifteen years in order to give a comprehensive tool useful to guide the professional development of teachers in the pedagogical use of ICT.

The Syllabus, having originally been developed as a result of a European eContent Project (years 2003 – 2005), is current and is updated annually informed by the research and professional work of the partners of the EPICT Group originated by the project. The Syllabus describes what knowledge and skills teachers need to use digital tools to reach pedagogical goals: not an ECDL syllabus, but a pedagogical approach to use digital means at School. The EPICT group not only updates annually the Syllabus Modules, but has worked during the years to maintain the whole structure in line with the international literature sources. The EPICT European project produced not only the Syllabus but it developed and rollout a training model and set of learning materials both in English and in the languages of participant Countries – Italy, Greece, Hungary. Today partners who join the group receive the complete syllabus and start to participate in national and central updating of the syllabus and materials. EPICT group national nodes, are licensed from the EPICT Group to confer the EPICT Certification in their Countries. The EPICT Certification is directed towards educators at all levels of education.

We tested the soundness of the EPICT Syllabus in these past fifteen years, and we want to propose it to all the ones interested in evaluating and certificate the competences that teachers already have or they reach at the end of an education experience (formal or informal), to join or collaborate with the EPICT Group in order to use the EPICT Syllabus in their contexts and to improve it with new points of view and evidences.

### **The EPICT Syllabus structure and its value in relation to DigCompEdu Framework**

The 6 areas of competences of DigCompEdu describe the digital competences teachers must have to perform as a member of the school as organization ((a) Professional Engagement area) and as a teacher in the pedagogical process ((b) Digital resources, (c) Pedagogy, (d) Assessment, (e) Empowering learners, (f) Facilitating Learners' Digital Competences areas). DigCompEdu articulates each area in a number of high-level competences.

The EPICT Syllabus is formed today by 20 modules, each focused on the competences teachers must have in order to use a particular technology in the pedagogical process and during his/her professional activities within the school as organization. We can consider the EPICT Syllabus as a tool based description of teachers pedagogical digital competences: the mapping of the 20 EPICT modules on DigCompEdu put in evidence which tools are useful to perform the 6 DigCompEdu areas of competences and each module describe the best way (the competences!) to use those tools when teachers (a) collaborate with colleagues, (b) produce digital learning materials, (c) design innovative learning scenarios and guide the class in collaborative activities, (d) evaluate and give feedback thanks to the support of digital tools, (e) involve Special Needs students, (f) guide students in earn digital competences.

Beyond within EPICT courses, the EPICT Syllabus has been used to attest the competences in Erasmus+ projects: each EPICT Module has indeed the value one ECVET credit.

## **EFFECTIVE STRATEGIES FOR INCORPORATING OPEN EDUCATIONAL RESOURCES INTO THE CLASSROOM**

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The purpose of this research is to identify strategies that would ensure the successful implementation of open educational resources (OERs) in the classroom. OERs are freely available content and media that can be used for teaching purposes. This reflects a transition from the classic textbook to a new educational paradigm. Often touted as a means to significantly reduce student expenses and expand the scope of knowledge beyond textbooks, anecdotal evidence indicate that the approach has had mixed results in the classroom. Based on student feedback and a faculty survey, University of Maryland University College (UMUC) graduate school students and faculty members shared their perspectives of the benefits and challenges associated with OERs. Based on these findings, a number of best practices were identified to address the major concerns related to the approach.

## OPENING-UP EDUCATION IN SOUTH-MEDITERRANEAN COUNTRIES AT THE MACRO, MESO AND MICRO LEVEL

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Open Education has the potential to expand the role of Higher Education (HE) in society, fostering and democratising access to education and localising learning materials in line with the needs of local contexts. By using openly available teaching resources, educators and learners can collaborate on compiling course material and resources, opening up the classrooms to new forms of learning. However, for this to be realised, a change in attitudes towards what is meant by open education, teaching and learning is required, including new approaches towards collaboration and transparency for open education practices.

Widening participation to HE by means of adoption of Open Educational Resources (OER) is a strategic priority for the HE sector in general and for the OER movement, and it is a matter of urgency in the South-Mediterranean. In the South-Mediterranean countries the demand for education often exceeds the capacity of the existing HE system, and therefore the use of OER and adoption of Open Educational Practices (OEP) are possible ways to facilitate learners' access to learning opportunities, promoting equity, inclusion and democratisation of Higher Education. This should be done by stimulating academics to network and collaborate on course development and on ways to help students to use OER.

The OpenMed project is exploring the adoption of strategies and channels that embrace the principles of openness and reusability within the context of South-Mediterranean universities. The overarching goal of OpenMed is to raise awareness and facilitate the adoption of OER in the Arab Mediterranean countries, with a particular focus on HE in Egypt, Jordan, Morocco and Palestine. OpenMed fosters the role of universities as knowledge providers not only to their on-campus students but also beyond the walls of institutions, especially towards disadvantaged groups (e.g. low income peoples, disabled students, people living in rural areas, learners at risk of low achievement, refugees). The vision of OpenMed is that opening up education can truly change HE and make it more accessible and more relevant, and that sharing information about OER initiatives can inspire others to reflect, develop their own initiatives, make connections, celebrate diversity, and work together to promote education as a public good and a basic human right.

Starting from a review of good practices in Open Education globally and in particular the South-Mediterranean region which have been brought together into a Compendium of case studies, OpenMed has been working at three different but connected levels:

- the *macro* level, addressing policy development through multi-country dialogue with a range of stakeholders and through setting strategic actions on the basis of such dialogue, aimed at maximising the benefits of Open Education to increase the access, the quality and the equity of Higher Education in the region;
- the *meso* level, targeting university leaders through facilitating the process of development of institutional roadmaps and action plans for the implementation of open education at local and institutional levels;
- the *micro* level, working with university educators to strengthen their capacity to incorporate open educational practices into their daily teaching in order to bring learning processes and their outcomes closer to learners' needs.

The Compendium is openly available at <http://openmedproject.eu/results/compendium/> together with the Executive Summary in English, French, and Arabic.

Favouring a bottom-up as well as top-down approach and by including the level of university governance, OpenMed has proved that it is possible to better integrate Mediterranean university systems into global academic and scientific cooperation network, which is an essential factor in the integration of Mediterranean communities and economies.

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## THE DIGITAL AND NETWORK SOCIETY NEEDS FOR OPEN ONLINE LEARNING

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Educational reformers, innovators and researchers suggest that the appearance of digital technologies will radically transform what people learn, how they learn, and where they learn, yet there are existing disagreements on the speed and scope of this change. However, looking for answers to these questions, it is important to identify factors in society which drive the need for a changed role of learning, and analyse the role of open and online learning. The common practice is to identify the learning needs related to already existing services, relating them to formal, non-formal or informal learning. Networks and digital technologies have become the main characteristics of our society and take an important role in the society transforming it into global economies and shaping educational systems, organizations and ways that people learn. In a learning society, learning plays an important role to mitigate risks of individuals to prosper, participate and unfold in their lives, e.g. in the labour market. At the same time, access to learning opportunities seems to diversify through digital technology. The aim of this presentation is to discuss and present theoretical findings on the needs of digital and network society for open and online learning. The presentation will present the results of theoretical research and empirical (quantitative) research implemented among Lithuanian digital and networked society to clarify their needs for open and online learning.

Different studies investigated membership, participation, knowledge building, experiences of online learners, perceptions of online adult learners' interaction with the instructor, content, and the other learners, or support for adult learners. Findings of these research publications suggest that open online learning taking place outside educational institutions is important for informal learning and makes it easier for individuals to build and share knowledge, because it disregards physical distance and makes it easier to share interests.

Open online learning can promote learner agency and autonomy, gives them an opportunity to balance different commitments, can facilitate the exchange of ideas and practices among people of different cultural backgrounds, highlights blended learning approach and online learner-learner interaction.

With the progress in mobile technologies, rapid increase of mobile devices and mobile applications, mobile learning has gained interest among educators and learning material developers to examine acceptance, incidence, and use of digital mobile devices. Application of adult learning principles may strengthen personal and professional development when organizing online learning. Learning experiences in open online learning of adults in general seems to be positive in most cases which is a clear direction for online course designers to create visual, multimedia, and social learning environments for digitally oriented adult learners and incorporate inquiry-based and experiential learning in the curriculum also providing slower paced learning experiences that involve time for reflection.

The discussions about the meaning of open online learning and how it should be organized responding to the main needs of adult learners continue. However, researchers indicate that people (or employees, in general) are very positive about their experiences of using online learning and are more likely to use open online learning in the future. Employees are highly interested in receiving continuous professional training in online format, and open online learning is considered to have the added value of promoting lifelong learning for different groups of society. Even older adults tend to satisfy their learning needs on health and wellness, leisure interests using informal and self-directed open online learning experiences. It is suggested that greater emphasis should be placed on understanding sub-groups who may have different skills and knowledge than their own generation because of their past experiences and attitudes towards technologies.

Members of society, particularly adults, are diverse learners in their nature, needs, and preferences. Comparison and combination of digitally orientated adult learner needs for particular learning style, time, place and pace of learning with online delivery system give clear directions for online course designers how to create and organize courses according to society needs. Visual, multimedia, social learning environments with incorporated inquiry-based and experiential learning in the curriculum are essential to fulfil the needs of learners during open online learning.

The theoretical considerations of this paper will be complemented by empirical data in the further stages of a four year long scientific research project "Open Online Learning for Digital and Networked Society" (3.3-LMT-K-712-01-0189) funded by the ESF and Lithuanian Research Council under High Level R&D grant.

## **A DIGITAL LEARNING ECOLOGIES CONCEPTUAL FRAMEWORK IN THE MICROSYSTEM OF ONLINE HIGHER EDUCATION**

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The field of online and distance learning (ODL) has expanded exponentially in the networked society becoming part of mainstream higher education practices and a catalyst for both reform and educational transformation, ushering in new pedagogical models of open and distance learning through the affordances of networked information and communication technology. The guiding research problem recognizes an urgent need to think more holistically and critically about online learning across a variety of contexts, and deliberately consider the interconnections between institutionalized learning and the informal, incidental and everyday learning that happens in contexts outside of formal environments.

As higher education has had to prepare for the transformation toward the digital university, so to have students had to navigate increasingly digital, collaborative and globally networked learning scenarios. The objective of the current study, therefore, is to analyse the contribution and conceptual potential of a digital learning ecologies conceptual framework in the context of online higher education in order to provide recommendations and guiding heuristics for improving pedagogical practice in this setting. The context for the current study, accordingly, is the microsystem of student learning rooted in an ecological model in online higher education. The purpose of the research is to examine student's experience of online learning using a Digital Learning Ecologies analytical framework, understanding how learners approach and conceive of learning across a continuum of learning formality.

This paper presents a conceptual framework that contributes to the literature base on student experiences of learning in online higher education, seeking to broaden understanding of ecological approaches in expanding and emerging digital learning scenarios. A digital learning ecologies conceptual framework is introduced as an organizational scheme, extending from Brofenbrenner's (1979) ecosocial system model, that can be used as a guiding heuristic and analytical model for researching and conceptualizing student learning in virtual contexts across a continuum of learning formality. It presents conceptual findings useful in examining the role of emerging digital learning ecologies in online higher education, analysing the individual microsystem dimensions of students in relation to their digital learning ecologies that offer opportunities for learning.

The objective of defining a digital learning ecology conceptual framework has been to create an organizing scheme that will support future lines of research and data collection in the field of online learning using an ecological approach. This conceptual framework will be used in further case-study research to analyse the attributes of learning offered by the various components that configure the digital learning ecology of online HE students. This guiding heuristic will be used to analyse the strategies students use to connect and organize the different components of their learning ecology across a continuum of learning formality. More fundamentally, a digital learning ecology conceptual framework will be used to support the identification and analysis of student experiences and conceptions of online learning in relation to student development as lifelong and lifewide learners. The objective of using such a framework is to analyse the contribution and conceptual potential of the digital learning ecologies of online university students in order to provide recommendations for improving pedagogical practice in online HE.

As the majority of all learning in present and future settings will be both online and situated in ever-shifting physical and virtual contexts, it is the argument of this research that an ecological perspective in online higher education, represented through a digital learning ecologies conceptual framework, will help prepare students for the demands of a complex, dynamic and interconnected global society. Finally, supporting sustainable, lifelong and self-directed learning in online HE demands an ecological approach that can respond to the complex interrelations between student learning across a continuum of learning formality in self-organizing, adaptive and open digital systems, presenting implications for the holistic design and delivery of online higher education.

## **CHANGING LIFELONG LEARNING PARADIGM AND THE DIGITAL LEARNING AGE**

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Knowledge production and innovation are important drivers of economic growth in the 21<sup>st</sup> century. There are growing social expectations towards higher education and scholarly work. Political and social support for universities, crucially relying on public funding and tuition fees, may be maintained on the basis of assessability of their performance through the improvement of quality. On the social level, it is desirable that the lifelong learning paradigm becomes integral part of human resource development and gains strategic importance in the economy, overcoming the barriers of rhetorics.

Due to globalisation and the rapid change of the operational environment, community culture, ways of thinking responsive network economy, as well as cooperation processes and devices have become important success factors. Digitalisation plays a significant role in these processes.

Universities focusing on lifelong learning adapt their operation increasingly to the social and economic environment of lifelong learning, responding to the changes and opportunities in the learning environment, undertaking greater role in regional development.

The promotion of lifelong learning develops the knowledge supply, innovation and competition capacity and system-level operation. Students increasingly move towards self-directed learning experience: learning-by-doing or experiential learning. It is conceptually important that the traditional teacher-centred model should be replaced by a learner-centred approach. For a comprehensive restructuring, systematic methodological preparation is needed. To accelerate methodological reform is one of the priorities in the implementation of the development strategies of the institutions and the promotion of lifelong learning.

In a modernising, globalising and digitalising higher education environment, the exploration of the correlations involved in the relation of the Knowledge Triangle and Lifelong Learning requires a systematic approach.

Through their everyday activities, teachers have substantive impact on the development of motivation for lifelong learning. In this respect, it is an important step to strengthen customer-centeredness in institutions, including the modification of the idea about or the image of the learning human as a customer.

Lifelong learning approach reinforces education and university research as social service while the latter, in turn, helps lifelong learning as an institutional mission. New elements appear in education as a mindset responsive to network economy, the knowledge of the processes and devices of cooperation.

Higher education institutions must be transformed into open, service providing institutions. As an element of strategic value creation in adult education, the professionalization of the methodological culture of learning support is gaining higher status. The improvement of instructor competences becomes a priority in institutional development.

## BALANCED BLENDED LEARNING: SUPPORT FOR DECISION-MAKERS

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Technology in education often implemented to reach one of more of following objectives: (a) improvement of didactics, (b) increased flexibility and (c) improvement of cost effectiveness. However, it appears that the implementation of ICT in education depends on “innovation champions”: teachers who design attractive ICT-rich education with a lot of time investment and enthusiasm. These innovative practices of individual teachers can remain isolated from the rest of the institution and have a limited impact on the curriculum and broader educational practice. This can be explained by Roger’s theory (2003) as he states that the acceptance of innovations in organizations varies per person. For education, this means that the small group of innovators and pioneers use new technology without needing support from the institution, but it is precisely for the large group of followers and laggards that institutional support and dedication are essential. Leadership can have a positive influence on technology use, but it depends on the skills of the manager to co-create a vision on how to use technology in education. Currently, we have been focusing on the innovators and early adapters by the flexible deployment of instructional designers within our schools. As we strive for institutional adoption of technology, we decided to also focus on the decision makers and enable them to create a vision and to translate this vision to teachers’ classroom practices. Hence, we created a blended course called balanced blended learning.

The foundation of our learning design is Kennisnet’s Four in Balance model which consists of four fundamental elements that needs to be in place in order to use ICT in education effectively, namely: (a) vision, this element encompasses the institutions (long term) vision and related goals their education and the use of technology; (b) content and applications, this element is all about between the fit of use the right digital learning materials for reaching the educational goals; (c) expertise, this is about the competences of managers, teachers, support staff and students must have to effectively use the technology; and (d) infrastructure, regarding the availability and quality of software, hardware, networks and connectivity with the institution’s education system. In addition to this well-established model of Kennisnet, we choose to reintroduce the elements of Leadership and Collaboration as research shows that leadership is one of the main success factors for adoption of innovations in education. We use these constructs as an overarching concept. This resulted in our model (Figure 1) to design our blended course program for decision makers.



Figure 1. Balanced Blended Learning model

The project started in 2017, based on questions from the schools to make the next step in design attractive ICT-rich education for followers and laggards. The members of the project group have a prominent and powerful role as an ICT-contact person in their schools. Those ICT contact persons had an advisory role within the project and reviewed several times the prototype. Improvements in developing the prototype were: the more integrated position of “leadership” in the model. The valuable addition of examples to each question so the participant can imagine the desired situation. The participants of this course have all different roles in the organisation. The desired roles in this course are manager, team leader, innovators and early adopters, teachers of the majority, member of the curriculum committee and ICT-contact person.

## **TOWARDS GLOBAL GOVERNANCE IN DISTANCE EDUCATION**

*Elif Toprak, Mehmet Fırat, Serpil Koçdar, N. Gizem Koçak, Seçil Kaya Gülen, Erhan Akdemir, Kazım Demirer, Anadolu University, Turkey*

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### **Implications of Regime-Building for Global Governance in Distance Education**

Increasing transnational cooperation in open and distance education provides opportunities for non-state actors to meet around common interests, objectives, values and create a synergy. Besides transnational cooperation, these members of global civil society also motivate intergovernmental cooperation processes. International organizations and professional networks in the field, share common normative values and lead to the construction of a regime. This presentation is about the findings of a research project that aims to make a comparative analysis of the communication networks and cooperation models of international distance education organizations.

### **Project UZENET and Key Findings**

Project UZENET is designed as an interdisciplinary research related with disciplines of International Relations, Open and Distance Learning and Communication Sciences. The qualitative research techniques are utilized in the collection and analysis of data collected from the websites and legal documents of distance education (DE) organizations. A scale has been developed for evaluating the level of regime-building in ODL which serves as a control list for researchers. According to the regime theory, principles are “beliefs of fact and causation”. In Project UZENET, principles in the field of ODL have been defined as strategic management, internationalization, openness, lifelong learning and quality assurance by the research team. Norms are “standards of behavior defined in terms of rights and obligations”. In the project, norms are defined as cooperation, social responsibility (civic engagement) and open resources. Rules are “prescriptions or proscriptions for action” which means that they regulate behaviours through prohibition. Non-governmental transnational actors might lack enforcement mechanisms however networking may appeal to some actors more than formal credibility issues. For the case of ODL, rules are exemplified by statutes of organizations and their other legal documents such as reports issued, in addition to agreements with members and third parties. The last component of a regime, the decision-making procedures are the accepted practices in the collective decision-making. They can be exemplified by institutional communication and collaboration models of DE organizations. It may be difficult to distinguish between these normative concepts; principles, norms and rules, for which the legal documents are the places to look for. They gradually determine and shape the actors’ preferences and behaviours.

### **Path to Global Governance**

In Project UZENET, the normative issues of regimes such as principles, norms, rules and decision making processes are searched for, in the websites and documents of nineteen distance education organizations active in the field of ODL with an eye to the regime theory. The findings reflect common understanding towards cooperation and increase the expectations for regime-building which shall further institutionalize international cooperation. The governmental organizations are key players in this endeavour since they can enforce common decisions on members more than their non-governmental counterparts and professional networks. This second group of stakeholders act as catalyst in regime-building through fast exchange of information in the media provided by the organizations. The global reach of the organizations increase with the number of their members however smaller and regional organizations may have stronger infrastructure for cooperation embedded in their culture such as in the case of European organizations. On the other hand, national institutions may be stronger in shaping the trends in technology and standardization in quality assurance based on the experiences of their members. This is why regime-building towards global governance of distance education requires a multi-level approach and transnational cooperation. There is also need for a sociological approach in order to see the changing socio-economic needs in different regions, cultural values and changing levels of identity with common norms, shared ideas and collaborative learning.

## **TOWARDS A EUROPEAN MATURITY MODEL FOR BLENDED EDUCATION (EMBED)**

*Katie Goeman, KU Leuven, Belgium, George Ubachs, EADTU, The Netherlands*

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Since the turn of the century, convergent formats of online and onsite teaching and learning have received increased attention in higher education (HE). However, some important questions remain. Firstly, there is a lack of consistent use of related terminology. The concepts of blended learning, teaching and/or education are far from clear-cut. Secondly, it has been difficult to consolidate Blended education practices in HE institutions. Further scrutiny is crucial in order to thoroughly understand the drivers of successful online and onsite teaching and learning, and in particular to know how to incorporate their best characteristics in order to enhance HE. Thirdly, project managers responsible for implementing blended scenarios are in search for proven practices and a sound, validated set of guidelines for educational design, adapted to their organisation. Given these considerations, recently, a strategic Erasmus+ partnership between seven European organisations and HEIs was established. This EMBED (European Maturity Model for Blended Education) partnership is aiming at:

- developing and validating a monitor for mapping blended learning practices, institutional strategies and governmental policies for blended learning across Europe, including criteria to assess their degree of maturity;
- empowering European HEIs in order to achieve up-scaled quality BL programmes and courses by means of professional development activities and community building across institutional frontiers.

During this EDEN session we will present the main outcomes of the first phase of the EMBED project. This includes the conceptual framework which delineates the focus and scope of the multilevel maturity model, and the monitor. Both were developed on the basis of a literature review, expert reviews, a web-survey followed by in-depth interviews in each partner university.

Partner organisations involved are: EADTU (coordinating body), Aarhus University (Denmark), Delft University (The Netherlands), KU Leuven (Belgium), University of Edinburgh (United Kingdom), DCU Ireland (Ireland) and Tampere University of Applied Sciences (Finland).

## **TOWARDS THE CREATION OF A RANKING SYSTEM FOR ONLINE UNIVERSITIES: QUALI-QUANTITATIVE ANALYSIS OF A PARTICIPATORY WORKSHOP**

*Flavio Manganello, Marcello Passarelli, Donatella Persico, Francesca Pozzi, ITD-CNR, Italy*

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University ranking systems are being implemented by different organizations in an attempt to evaluate and compare Higher Education Institutions at a global level. Despite being more and more widely used, ranking systems are strongly criticized for their social and economic implications as well as for limitations in their technical implementation. One of the most relevant limitations is that they do not consider the specific characteristics of online education.

Despite all of the benchmarking tools tailored to evaluate online programmes or courses, online universities risk that their position in most rankings misrepresents their actual quality compared to that of traditional universities. Thus, building a ranking system able to reflect the specific nature of online universities, in such a way that they are not evaluated through unsuitable indicators devised for traditional universities, is definitely a need that deserves to be addressed to protect quality in the online world. However, there is a number of challenging aspects to be considered in order to develop a ranking tool specifically designed for online universities. These mainly include, but are not limited to, the need to identify the most adequate criteria and indicators to reflect and measure the specificities of online universities.

Moving from these premises, we started focusing on the definition of the main criteria to be considered when assessing and ranking online universities. To this end, we took a participatory approach, involving several stakeholders and informants in an attempt to reach the broader Higher Education Institutions community. This approach was implemented through a first phase where we collaboratively elaborated a preliminary set of criteria for online Higher Education Institutions, and a second phase where a two-round Delphi Study and a national workshop were run to refine, enrich and evaluate the initial set of criteria. In this paper, we present the approach adopted and the findings of the participatory workshop.

We conducted the national participatory workshop with 38 participants from different background (including academic professors and researchers, educators, private organizations and institutional representatives). The workshop included a morning session devoted to a round-table discussion and an afternoon session consisting of a group work discussion-based activity. The round-table discussion was video-recorded and transcribed. In addition, during both sessions, researchers' field notes were collected. Transcribed data and researchers' field notes from the round-table discussion were analysed following a thematic analysis approach, while the data generated within the group work discussion-based activity were statistically treated and then interpreted on the basis of researchers' field notes.

There was a significant feedback in reference to the proposed list of criteria during both sessions. The round-table discussion underlined the relationship between ranking systems, quality assurance measures, and accreditation systems, in most cases by identifying their different aims. The main points emerged from the discussion are recommendation for the technical implementation of any future ranking system, which should be: statistically robust, clearly defined (transparent) and as objective as possible; capable of catering for the needs of different audiences; able to consider quality at all levels, from the micro-level (Course) to the meso-level (Department) and the macro-level (Institution); able to elicit reliable and accurate data from different sources. The group work discussion-based activity, in addition to having produced a ranked list of the proposed criteria based on their (perceived) relative importance, underlined the difficulty of keeping some of the proposed criteria separate, and therefore suggested ways to merge them into broader categories. The group work discussion-based activity also pointed out that the terms used to define the proposed criteria and parameters are in most of the cases subject to a very wide range of interpretations, and that some criteria should be added in order to consider specific system figures.

Overall, the actions put in place so far have turned out to be quite effective in terms of feedback collected. We have begun to develop, test and refine representative performance online quality education indicators based on common criteria. The participatory approach allowed us to enable stakeholders' reflection on online universities' peculiar nature and discussion towards the definition of criteria and indicators to be used to rank online universities. Among the main conclusions of this work, the importance of teaching, student support and student experience turned out to be higher than any other criteria, organization, teacher support, research, sustainability and technological infrastructure are middle ground criteria, while reputation was deemed the least important criteria.

## **STUCK IN THE MIDDLE? MAKING SENSE OF THE IMPACT OF MICRO, MESO AND MACRO INSTITUTIONAL, STRUCTURAL AND ORGANISATIONAL FACTORS ON IMPLEMENTING LEARNING ANALYTICS**

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Despite evidence that learning analytics has become institutionalised within higher education since its emergence in 2011, there remain questions regarding its impact on informing curricula, pedagogy and ultimately, on student success. A variety of factors can impact on the successful implementation of learning analytics. Despite its huge potential, learning analytics may become stuck in the middle of, inter alia, the need to balance operational needs and resource allocation, and different perceptions of learning, agency and loci of control in learning, teaching and macro-societal factors. In this *conceptual* paper, we propose an institutional cartography of learning analytics and explore the impact of a number of micro, meso and macro institutional factors that may impact and shape the institutionalisation of learning analytics. We utilise a socio-critical model for understanding student success as a conceptual basis for developing this cartography.

## CONNECT OR DISCONNECT: ACADEMIC IDENTITY IN A DIGITAL AGE

*Sue Watling, University of Hull, United Kingdom*

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There has been a rapid expansion of digital practice in the 21<sup>st</sup> century. Higher Education Institutions are moving towards more blended forms of design and delivery while the flexibility of internet enabled tools and platforms is well suited for increasingly diverse student cohorts, many of whom are combining part-time and full-time study with work and other commitments. Virtual learning offers 24/7 access to digital resources at a time, place and device of choice and have the potential to meet the complex demands of 21<sup>st</sup> century higher education. However, while the field of education technology research includes literature around how students learn as e-learners, there is less knowledge about how staff teach as e-teachers. Little is known about how they conceptualise their practice, in particular how they negotiate the varying processes through which academic identity is built online.

This research includes a three-year data collection project exploring the digital shifts in attitude and practice of staff who teach and support learning in a UK higher education institution. The aim was to investigate and disseminate what it means to be an academic in a digital society. Research participants were enrolled on a teacher education programme called Teaching and Learning in a Digital Age (TELEDA). The programme was developed and facilitated by the researcher, with data being collected from forums, reflective journals, evaluations and end of course semi-structured interviews. Learning activities included an introduction to social media through the building of academic profiles on a number of different platforms. This highlighted lower than expected levels of digital literacies among participants. It also revealed a reluctance to transfer professional identity into social media which was understood as constituting personal and private space. Some academic staff appear digitally fluent but there are many who have yet to make the necessary digital shifts in attitudes and practice which are increasingly essential for teaching and learning in a digital age. The research revealed a growing disconnect between the requirements of 21<sup>st</sup> century higher education, such as flexible online programmes and the development of digital graduate attributes, and the reality of digital shyness and resistance. This is resulting in a diversity of digital working practice and in many places a silencing of the academic voice. As the platforms for educational debate and discussion move online, those who have yet to connect and establish their digital identities are being essentially excluded from participation.

To teach and support learning in the current time means to become involved in a range of altered practices. Educators are required to navigate complex landscapes where traditional approaches and new perspectives collide. These include the open education movement which has challenged historical conceptions around the acquisition, sharing and distribution of knowledge. Contemporary digital literacies involve working with multiple media formats, including audio and video while bitcoin, blockchain and badges are all examples of new currencies with the potential to transform traditional ways of working. Threaded throughout these changes are the pedagogic shifts from didactic transmission models to more student centred interactive approaches to learning design.

Of all the challenges currently facing higher education, it is the need to tackle the digitally divided practices of early and late adopters of technology enhanced learning which requires more attention and focus than it is receiving. The shifts from the analogue to the digital production and dissemination of knowledge, via teaching, learning and research, requires complex sets of new literacies. These encompass the creation, curation, selecting, sharing and synthesis of content alongside communication and collaboration methods. Overall, these can be seen to represent a broader set of social literacies. These constitute the core elements of what it means to be an academic in a digital age. However, across the sector, universities continue to apply competency-based ICT training approaches to the development of what are perceived as digital skills. These deficit models of competence risk obscuring the realities of teaching and learning in a digital age which in themselves constitute complex and multifaceted literacies and landscapes.

Analysis of the data from the TELEDA research suggests a broader understanding of digital literacies as socially situated practices would be beneficial. Such an approach would constitute more meaningful engagement with literacies of the digital kind in order to usefully inform future development. This would be of particular value where institutions are seeking to support academics to make the digital shifts from disconnected to connected identity and practice.

## **MODEL-BASED APPROACH FOR PENETRATING EDUCATION SYSTEMS BY DIGITAL TRANSFORMATION KNOWLEDGE**

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Digitization penetrates all areas of social life and is one of the defining phenomena for the future development in science, business and politics. Digital transformations are characterized by high dynamics and high complexity. One of the biggest challenges for knowledge transfer in society is the near-term transfer of the latest knowledge on complex system developments from research, development and application in elementary, primary, secondary and tertiary education. Despite the variety of well-known research methods, the challenge of mastering complexity is growing. Therefore, quite different research methods are combined in holistic approaches.

The whole is more than the sum of the parts, which is why, starting from the wholeness, individual parts of the system have to be identified, analysed, described and interpreted. The design should be done in the sense of an overall optimum. If knowledge and experience from transformations in general and digital transformations in particular are to be transferred into education, then the field of investigation has to be considered holistically, otherwise inadmissible simplifications and errors in the interpretation of the models may occur. The present state of analysis, description and interpretation of such complex processes as the digitization of social processes and functions as well as digital transformations of different systems require different disciplinary perspectives which in turn lead to a high variety and diversity of different concepts.

System engineering offers models and tools for the research and design of complex tasks and applications. The goal is the successful planning, design, development, implementation and operation of systems. Systems engineering is closely related to software engineering. Engineering systematic was transferred to software development. New methods of software development are shared interdisciplinary, in particular through project management and consequently for higher education, especially in the development of new study programs, too. System and software development have verifiably influenced the design of new learning systems in the categories development philosophy, development process and lifecycle management.

The V-Modell will be explicitly selected for further consideration, because it includes not only the analysis and decomposition of the task, but also the subsequent synthesis and composition of the educational application including the corresponding quality assurance. In addition, the design of knowledge transfer in teaching and learning systems was successfully established in this way and is used in particular for tasks of the public sector on development standards. Thus, even in more complex educational networks, new study programs can be professionally designed in a short time and in high quality, while respecting the individual needs and stakeholder demands.

The process model was successfully used in the development of new double degree programs in national and international educational cooperations, for example in China and Mexico, in combination with other methods of system and project development. The interdisciplinary program for Business Administration and Engineering (BizEng) was designed in a basic version, subsequently built up by four different profiles, and then additionally expanded to include "Digital Transformation / Industry 4.0 (DT I40)" profile.

Once the standardized procedure has been introduced procedurally, contextually and organisationally, it can be ensured even for complex applications that derivations can be developed in a target group-specific and output-oriented manner in short time and high quality. Hitherto, several variants of distance learning with different partners have been created for the entire program as part of PPP models. Thus, a significant contribution is made to disseminate the latest research results of digital transformation into teaching as quickly as possible. By applying ever better methods and tools for mastering the complexity, it will be possible to penetrate education systems by digitization ever faster and with increasing quality.

## **A PRACTICE ORIENTATED FRAMEWORK TO SUPPORT SUCCESSFUL HIGHER EDUCATION ONLINE LEARNING**

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Since the year 2000 learning online has grown considerably and various models have evolved to support strategic planners and practitioners' decision making. The Joint Information Systems Committee (JISC) pedagogy strand helped to classify a wide range of models under six headings. These classifications have been further analysed and expanded to create a practice orientated framework for modelling successful online learning.

Although our intentions had changed from eLearning to online learning by 2011, we believed that the classifications remained sound and provided a prototype that we could use to shape our online learning strategy. With the addition of horizon scanning we used this framework in conjunction with evidence and anecdotal accounts of good design from within the University as a starting point. Annually this practice orientated framework is reviewed and adapted to the changing landscape; adding and removing key drivers in each of the classifications. The model illustrates our evolved framework for 2017, with horizon scanning sitting centrally, crossing the boundary between pedagogic and education planning. This paper charts the University of Derby Online Learning's (UDOL) journey from 2011 to the present day, using this practice orientated framework to evaluate the impact of interventions on the online student experience.

The purpose of this study is to present practical examples of pedagogic and educational practices that support successful Higher Education online learning, using the classifications of the aforementioned practice orientated framework. It is hoped that the study will provide strategic planners and practitioners with a framework and examples of successful strategies with which to investigate their own organisational practices and shape their own successful online learning strategy. From an evidence based perspective the University has grown its online learning provision from 3% of the University's total student population to 15%. Whilst this growth indicates success, other indicators may more usefully elucidate how successful UDOL has been pedagogically and in the eyes of its learners.

## THE FRENCH THEMATIC DIGITAL UNIVERSITIES – A 360° PERSPECTIVE ON OPEN AND DIGITAL LEARNING

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### Summary

This paper presents a 360° analysis of the role of the French Thematic Digital Universities (TDUs) from the perspectives of policy (macro), institutions (meso) and support for digital teaching and learning (micro). We trace the history of the development of these organisations since their creation in 2005, including insights from a recent report by the General Inspection of the Administration of National Education and Research, highlight the interactions between international, national and local initiatives and provide concrete examples of how the TDUs are contributing to the development of Open and Digital Learning. Key questions include how to reinforce visibility and reputation, including recognition of their transversal role in the French higher education landscape, how to develop engagement with Open Educational Resources and Practices on the part of both teachers and students and how to contribute to furthering interdisciplinary research in the field.

The French Thematic Digital Universities (TDUs) are national consortia of Higher Education Institutions dedicated to the production and dissemination of digital learning resources. They total eight in number, covering the major disciplines or disciplinary families. The TDUs have a somewhat complex history, are structured in different legal forms and have faced periods of doubt and uncertainty, not least with the advent of MOOCs and the shifting priorities of public policy. This paper draws largely on a recent report by the IGAENR – General Inspectorate for the Administration of National Education and Research as well as on other analyses of the context of French Higher Education in general and of the digital learning landscape in particular. It starts with an account of the historical development of the TDUs, placing this in the wider context of evolutions in the national HE landscape, before providing insights into the contribution of the French TDUs to the uptake of digital learning resources and practices since 2005, through the lenses of national policy, relationships with their membership, engagement with digital learning, and finally their contribution to research.

Concerning national policy, the main impact on the TDUs is the 2018 ORE law, which includes a series of measures to improve student success at bachelor level. While the TDUs have traditionally been encouraged to focus on digital resources at bachelor level, this new law introduces the notion of prerequisites or ‘expectations’ of knowledge and competences for higher education study. As we shall see, the TDUs already engage in a number of projects and initiatives designed to support students in this way, whether through partnerships with secondary education, resources and quizzes on the basics or projects supporting the development of transversal competences.

The relationship of the TDUs with their member institutions is explored, including moves to reinforce recognition at governance and disciplinary level as a way to both support the alignment with institutional digital learning strategies and the uptake of digital learning among teachers.

Finally, the contribution of the TDUs to research is illustrated both by resources to support students in developing a scientific approach to their study, a demonstrator for valorising research results through online training and the setting up of a research group.

This presentation and analysis of the French TDUs is voluntarily restricted to the French national context. It is intended to provide the reader with insights as to how these structures developed and an understanding of their contribution to the national digital learning landscape, the challenges they face and how they might overcome them. Further analysis of the TDUs in terms of comparison with initiatives in other countries would be welcome, to build on the considerable work already done by the POERUP Lifelong Learning Programme project. Finally, both the TDUs and the Ministry of Higher Education, Research and Innovation should continue to stay up to date with European and international developments in the field. While the TDUs in their current form will continue to be largely dependent on national policy, they are still in a position to develop a clear identity for themselves, taking a stance on Open Education and exploring different business models to contribute to their sustainability.

## **A COLLABORATION & LEARNING ENVIRONMENT TO ENABLE TO BE A UNIVERSITY LEADER IN EDUCATION INNOVATION**

*Willem van Valkenburg, Delft University of Technology, the Netherlands*

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### **Introduction**

Delft University of Technology was founded 175 year ago as an engineering school. It is a traditional brick-and-mortar university in engineering, science and design with 23,000 students on campus.

In 2014 the executive board embraced the online learning development and started the innovation programme on open and online education. The objectives of the programme are to educate the world and enhance the quality of education (for both the online and campus programmes).

### **Selecting a new LMS**

Part of enhancing the quality was selecting a new LMS for both our campus and online students. TU Delft was using Blackboard since 1999 and it was time for a change. In the preparation for the European tender process we organized pilots with some of the popular platforms in the market to use that experience in formulating our tender document. Three important lessons we learned from this:

- The implementation is much more important than the system.
- We need a system that is not only easy to use, but also very advanced in its capabilities.
- We should look for a partner that will work together with us to enhance our education.

For the tender we used a Best Value Procurement, which is a new method of tendering. Instead of listing all your requirements, you describe your vision, mission, strategy and conditions and the suppliers are asked to come up with their best possible solution.

Desire2Learn with the Brightspace Learning Platform delivered the best proposal and university is very satisfied with this selection. As Ovum concluded Brightspace is the #1 LMS for next-generation online teaching and learning.

### **Implementation**

From the start the project team identified the implementation of Brightspace as an opportunity to enhance our education. We defined the implementation as an education project, not as an IT-project. The educational quality improvement for the students is leading in the strategy and decisions of this project.

To lead the implementation, we composed a team of experts from within the university and hired experts from around the world, such as instructional designer from Portugal and a learning developer from the US. The project leader is not a traditional IT project leader (using Prince II method), but an educational technology expert with project management experience.

The implementation was organised in two stages. First stage focuses on migration on the courses into a standard course structure with limited freedom for the instructors. The second stage focuses on improving and innovating courses. The first phase is successfully finished and we are starting up the second phase.

### **Conclusion**

The key message is that implementing a LMS is the perfect opportunity to enhance your education, but this only works if it is an integral part of your strategy and all your decisions.

## BAVARIAN VIRTUAL UNIVERSITY – BEST PRACTICE FOR A NETWORK OF HIGHER EDUCATION ONLINE

*Steffi Widera, Ingrid Martin, Bavarian Virtual University, Germany*

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### Introduction

Over 30 universities come together, cooperating in the field of online teaching? Sounds surprising, doesn't it? At the Bavarian Virtual University, we have been serving our 31 member universities successfully for 18 years now. Virtuelle Hochschule Bayern (vhb) / Bavarian Virtual University (BVU) is an institution set up in the year 2000 by the universities and universities of applied sciences of Bavaria, one of the 16 German federal states. We enhance our member universities' teaching capacities and encourage their digital strategies. For this mission, we financially support the course development as well as the course implementation. Combining these funding practices with a well elaborated quality management system, we guarantee sustainability and flexibility in online education.

### The portfolio of the BVU: best practices and new activities

#### ***Classic vhb***

Established in 2000, the focus of the BVU has since been on "blended learning at the macro-level", not at the micro-level of a single course. Characteristics of these "classic" courses are their integration into the curricula of courses of study at face-to-face universities, exams to earn credit points, support for students by online tutors and matching of the course duration with semester intervals. Priority has been given to asynchronous forms of communication; offering courses which are completely online, thus facilitating the import and export of online courses between all member universities and allowing for a maximum of the students' flexibility. With a portfolio of nearly 500 online courses, we considerably extend the range of offerings of our member universities. In the academic year of 2016/2017 we had more than 180,000 course enrolments by more than 60,000 students.

#### ***Smart vhb***

In our new field of activity, *smart vhb*, we are going to fund the development of learning materials for blended learning scenarios on the course level. These smaller units may consist of videos, tests, simulation texts, again taking into consideration the needs of the universities. The pedagogical design and high quality of teaching may demand a close link between theoretical input, practical issues and hands-on training within one course session with a mix of teacher input and web based learning materials. With this new line of funding we are responding to this demand and will reach further target groups beyond the *classic courses*.

#### ***Open vhb***

With *open vhb*, the other new funding programme, we are going to offer a range of open courses which meet university standards. For the years 2018-2022, the Bavarian government has passed a plan of action to enhance digitization, the "Masterplan Bayern Digital II." IT and digitization as a mainstream strategy are intended to improve and enrich all areas of life. The BVU is part of this plan with the task of establishing a platform for open courses. The courses should deal with topics which are of interest for people / learners outside universities for their personal and/or professional development. The other target group are future students who need to bridge knowledge gaps, no matter if after school or in transition from bachelor to master courses as well as to facilitate the start at a Bavarian university for international students. The courses in the field of *open vhb* are also supposed to promote Bavaria as an attractive place to study.

### Conclusions

The BVU is an excellent example of how to establish a properly functioning cooperation. The BVU avoids competition with its member universities. With the *classic course* programme for macro-level blended learning BVU has been holding a stake in university teaching since 2000. With the new fields of activity, *smart vhb* and *open vhb*, we will even further improve our services for the member universities and society as a whole.

## **TRADITIONAL AND ON-LINE UNIVERSITIES, A PARTNERSHIP FOR THE PRESENT AND THE FUTURE OF EDUCATION**

*Maria Amata Garito, Alessandro Caforio, Università Telematica Internazionale UNINETTUNO, Italy*

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Internet has evolved into global platform ever richer in content and is becoming the prevailing infrastructure for the exchange of knowledge between people. The generations of new students, the digital natives, will no longer do unless you use the network to develop knowledge and skills. The transformation of the University is really happening.

New technologies allow a direct connection between the university and the user, by means of a simple PC, a tablet or a smart phone: lessons, multimedia products, databases, self-assessment systems, exams organisation and other training materials can be quickly forwarded and this promotes collaborative learning processes inside dynamic virtual environments. In the *virtual classrooms*, it is possible to reproduce teaching-learning activities as it happens in actual classrooms, but it is also possible to significantly increase the amount of information and start up multiple interactions in real time among individuals belonging to different cultural levels, having different traditions and experience and coming from educational environments of different countries of the world.

Today, strengthening cooperation among academic institutions of different countries of the world, jointly developing Internet-based training contents is an issue of utmost importance from a strategic, cultural, political and economic perspective. The production of Internet-based educational contents by lecturers coming from the best universities allow to develop a quality e-learning model and promotes the cultural and industrial development of a society based on Knowledge Economy.

Through the analysis of the psyco-pedagogic model introduced by the International Telematic University UNINETTUNO, this paper aims at arguing that the creation of a global network for Higher Education in which teachers and students from different parts of the world participate in the collaborative construction of knowledge is not a utopia. Indeed, it can be a cure to bring a new vitality to the University by featuring them on the global networked economy.

## **BLENDED LEARNING TEACHING: THE STORY OF A SOCIAL NETWORK WITH A HISTORY**

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Outside the walls of the classroom, social media and specifically social networks are a source of informal learning for many people and are beginning to slowly gain momentum in the world of formal education. This paper presents the developmental path of an academic social network used as a virtual space for Blended-Learning teaching in Higher Education.

Integrating social networks into education requires, or should require, a proposal providing critical and comprehensive answers which go beyond introducing technologies into a space, because artifacts (hardware and software) do not, by their mere presence, solve or enrich anything. Integrating a social network into teaching involves pedagogical and technological challenges and also has political implications, since an open environment can give rise to questioning by students of teacher's didactic proposals or the underlying educational conception.

There are a variety of social network classifications but one of the best known within the educational field refers to horizontal and vertical social networks. Our experience was carried out using a vertical social network on an institutional server, which sought to resolve issues such as student privacy, security, the mix of personal and professional life, social networks as a source of distraction, network obsolescence, intellectual property, adapting teaching proposals into a network created with non-educational objectives, the use of student data by companies and shallow relationships.

The Stellae Social Network was born in the late twentieth century for the purpose of enabling both face-to-face and blended-learning experiences. In 2006, the process began of integrating it into courses pertaining to various degree programs at the Faculty of Education Sciences of the University of Santiago de Compostela using the open source Elgg platform.

The teaching proposal is based on the idea that students now spend more time engaged in various forms of informal and self-directed learning outside of formal education environments. They aim to take advantage of the Internet in general as a way of learning, and emphasis is placed on curricular design where decision making is influenced by students' opinions and needs. In the proposal analyzed in this paper, the students make an e-portfolio to record the evidence of their learning. To this end, students must comply with a small number of compulsory activities, both individually and in groups. But the main activity is to explore the topics addressed in class through an open proposal based on students' own interests. Evaluation is based on a rubric.

Some of the results from the quantitative and qualitative research carried out on this experience are shown here, as well as reflections by students and teachers who have participated in this teaching environment. The research shows some implications for students, after the first moment with the initial adaptation, students tend to successfully channel the feedback (which the others student give her/him) and begin to understand the dynamics, as well as take advantage of the diverse knowledge elements that must be considered.

The use of a social network environment is also a challenge for the teacher, because it breaks with classical hierarchical schemes that are normal in other types of platform. It involves a clear and distinct role to support students in the face of the difficulties that arise in the process. Furthermore, evaluation is often considered an obstacle for teachers supporting this methodological framework because they have to deal with a large number of documents associated with each personal space. However, they can explore elements of the learning process and know more about the pupils.

The teaching experience and the research carried out also allow us to improve some elements. For this, we were working for create "Softlearn", a tool to assist the evaluation of e-portfolios based on Learning Analytics, and new proposals for improving student self-regulation in a mode combining face-to-face and online learning. We also try to deep into the relationships and interactions among members of the network, the level of self-regulation and its relation to course outcomes.

The implications for the various parties involved in this experience with a social network represent opportunities but also limitations, in which we are working to find solutions.

## MUSETECH: A WEB APP TO ENHANCE 21ST CENTURY SKILLS THROUGH HERITAGE EDUCATION

*Antonella Poce, Francesco Agrusti, Maria Rosaria Re, Università Roma Tre, Italy*

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### Abstract

As stated in the scope of the conference, new ways of enhancing learning are more and more demanded by contemporary society. While in the 19<sup>th</sup> century people were trained to perform a permanent job throughout their professional career, nowadays constant changes require the education system to be no longer only focused on technical skills, which rapidly develop, but rather on competences. The latter are to be interpreted as the set of transverse knowledge, skills and attitudes a person can use throughout life.

These competences, which are referred to as the 21<sup>st</sup> century competences, are extensively debated by scholars at international level. The great interest and debate this topic generates is closely connected with a “new” approach to education and learning which inevitably affects the present and the future of the whole social system. Arts and cultural heritage prove to be valuable tools to encourage the development and use of the skills people need to adapt themselves to a continuously changing context like today’s society. The use of digital tools in the field of arts and cultural heritage represents a real innovation challenge: new areas in museum education may be explored to introduce technology and, simultaneously, new teaching and learning methodologies may be developed, especially for the younger generation of users.

In this light, Roma Tre University Museum Education Center, which took part in the Erasmus Plus DICHE project (Digital Innovation in Cultural Heritage Education), carried out a research on the main objective of the project: informing primary school teachers, including both in service and in training teachers, of new education practices which employ technologies and also include the evaluation of their effectiveness in learning in terms of competences development. The Roma Tre research group was in charge of pilot activities taking into consideration the theoretical model of the DICHE project: one of the core activities was devoted to the creation of a web app devoted to integrate technology in heritage fruition within primary school education. The paper presents the development of an application for mobile devices, MuseTech web app (available at: [www.musetech.it](http://www.musetech.it)) which includes the use of technologies for cultural heritage enjoyment. The web app was used by Italian teacher and prospective teacher during the DICHE project pilot phase.

Through the use of MuseTech web app, researchers, teachers, students and museum educators can design, create and evaluate innovative programs and teaching scenarios for primary school students, in formal and informal education contexts, aimed at developing 21<sup>st</sup> century skills. Users can also share, in social media, the teaching scenarios or the digital tools listed in the web app and vote them, like other review apps and Internet services (TripAdvisor®, Yep!® etc.).

MuseTech was used by primary education sciences students and primary school teachers, in addition to all participants of the Roma Tre dissemination events. The app impact and the evaluation rates are shown in the paper. The rationale at the basis of the analysis that was carried out was related to the idea of facilitating in-training and in-service teachers’ awareness and critical use of technology in their teaching and learning, especially in heritage education.

## **BOUNDARY CROSSING: INTERNATIONAL STUDENTS' NEGOTIATING HIGHER EDUCATION LEARNING WITH DIGITAL TOOLS AND RESOURCES**

*Mengjie Jiang, Palitha Edirisingha, University of Leicester, United Kingdom*

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This paper draws on qualitative data from a research on Chinese international students at the University of Leicester in the UK and reports on the appropriation of digital tools during their intercultural adaptation. Qualitative data collection took place from middle 2015 over 15 months, and data collection instruments include mind maps (n = 14), photographic journaling (n = 4), and semi-structured interviews (n = 30). The paper brings two theoretical approaches to improve our understanding how international students make sense of, and use digital tools and resources when they begin to adapt to a new higher education environment. One theoretical approach is appropriation of cultural resources, the process through which digital tools are shaped in use, which draws on the work of Pachler et al. (2010). The other approach draws on the model of boundary crossing, which provides an alternative route to understand appropriation of digital tools as boundary crossing tools. Adopting such theoretical approaches allows an interpretation that boundary can carry learning potential through the spectrum of transformative learning where students are seen as active agents shaping their learning trajectories. It also contributes to the debates around the deficit view of internationalisation that portray international students as “victims” or “problems” while dichotomises the learning strategies of students from Asia and the West. The study highlights that Chinese international students’ intercultural learning experience involves ongoing engagement with social networks and artefacts. There is also an aspect of the expansion of their capacity at a personal level and strategic agency to appropriate digital tools and services to cross different sociocultural contexts such as bridging political, cultural and language differences. Understanding this is important in a context where learning becomes increasingly mediated by technologies which can contribute to improving pedagogical approaches for using digital tools and services to engage international students.

## **SUPPORTING LEARNING IN TRAUMATIC CONFLICTS: INNOVATIVE RESPONSES TO EDUCATION IN REFUGEE CAMP ENVIRONMENTS**

*Alan Bruce, Imelda Graham, Universal Learning Systems, Ireland, Maria-Antònia Guardiola, UOC, Spain*

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The issue of mass migration and population movement has dominated European discourse for at least 40 years. Since the invasion of Iraq and war in Syria the problem of millions fleeing chaos has become huge. We are now entering a period of real transition. New problems arise around family fragmentation, emotional trauma, and the need to rebuild lives. Education provision for refugees is not being done in a consistent and qualitative manner in Europe. We outline creative measures in Greece, through work with the team of Lesvos Solidarity. This initiative reflects the engagement of the authors at theoretical, design and implementation levels in addressing conflict resolution theory with practical steps to support learning in crisis or traumatic environments. Lesvos Solidarity began as a response to the crisis on the Greek islands in 2015. Lesvos Solidarity is the only open camp in Lesvos and its main objective is to work in active solidarity with refugees and address European immigration policies. Services have expanded since 2015 to provide other supports, particularly in the educational sphere.

As of June 2017, there were 5.5 million Syrian refugees (UNHCR statistics). The scale and intensity of the refugee problem caught the European Union by surprise. Responses were uncoordinated, fragmented and often counter-productive. For countries in the front line the impact is significant with the burden falling intensely on Greece, Italy and Malta. The situation has escalated with a rising tide of racism and discrimination in many Member States. The situation underlines many needs: as the numbers of refugees trapped for extended periods continues to grow, the need to develop concrete *supports* has emerged. In both the short-term responses and in longer-term need for integration and conflict resolution, "Education, Training and Employment" offer most opportunities for inclusion.

Education benefits both host and refugee communities. However, education systems in Europe often do a poor job in providing opportunities for vast numbers of new (often traumatized) populations. The reality is that education systems in most EU countries are not inclusive. Refugee children and youth need targeted support as they enter these already challenged school systems (such as intensive language and general induction programs to allow them to participate in mainstream classes as soon as possible). The development of Education, Training and Employment opportunities through Lesvos Solidarity offers a strong model for successful integration. The use of advanced ICT supported learning in such environments offers new creative options for teaching and support. In this way, the tragedy of producing a "lost generation" can be avoided by constructing a proven example of linkage and innovation that can serve as a model for best practice throughout the EU.

This model builds on identified needs. It includes deployment of digital learning supports to address competence-based learning, as well as best practice early-years education, integrating both local Greek and refugee children. Another element has been the advocacy and achievement of organizing of primary school age refugee children to attend local schools (often in the face of significant and intimidating local opposition). The model finally supported innovative vocational education for the older children not in school as well as vocational classes for adults.

Additional benefits include supporting the critical thinking and reflection needed to develop understanding of past trauma. This entails a deployment of principles of conflict resolution and diversity management within learning programs to encompass the need to adjust and integrate (either temporarily or over a longer time), intercultural competence, counselling support, cultural mediation, empathetic communication and innovative adaptation of advanced digital learning platforms. The entire initiative has been designed to use the installation of ICT supported learning and digital resources to produce a resource of permanent value to the Camp, enhancing self-sufficiency and autonomy, while at the same time delivering parallel training and upskilling methodology to provides permanent benefit to refugee participants. The secondary benefit is construction of a viable and transferable training system and content that enhances the career prospects and employability of trainee beneficiaries.

## HAPTIC PROTOTYPE ASSEMBLY TOOL FOR NON-SIGHTED, VISUALLY IMPAIRED AND FULLY SIGHTED DESIGN STUDENTS, STUDYING AT A DISTANCE

*Lisa Bowers, Ryan Hayle, Nick Braithwaite, The Open University, Farshid Amirabdollahian, University Hertfordshire, United Kingdom*

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### Background

It is commonly understood that undergraduate design students, studying in conventional universities, use a blend of manual and virtual processes to aid the production of prototype solutions. Within distance learning programmes, studio-based prototype production can be challenging to facilitate, and often students are offered alternative graphical simulations of manual prototype creation. However, the visual nature of graphical simulated prototype processes can often lead to creating barriers for non-sighted and visually impaired students, who are often limited to screen reader transcriptions of the CAD process, a singular sensory interaction.

Since the mid-1980s product designers have chosen to discard time consuming physical modelling processes, preferring instead to use 3D virtual simulations via computer aided design (CAD), and manufacture the concepts as short run prototypes via computer aided manufacture (CAM). However, short run CAD/CAM manufacture can often limit designers' physical touch within the creative process. In recent years, various applied education disciplines, such as design, have shown practitioners and educators exploring new sensory augmenting technologies, such as machine haptic technology, which can offer users physical touch interactions, whilst maintaining the efficiency of virtual reality. Machine haptic technology has been shown to afford users the ability to gain more hands-on manipulations and dynamic interventions with prototype models or 3D objects within a virtual environment. For non-sighted students the ability to engage with data on-screen through dual sensory interactions can offer new channels of exploration. Seminal works by Brewster examining the haptic sonification of widgets to assist non-sighted PC users to gain a better mental image of the environment on screen and Wall et al.'s study which examined the use of haptic technology to assist non-sighted users to 'read' digital graphs and charts. Both studies revealed a precedent to educate applied study students and non-sighted students who are known to need to work beyond a single sensory engagement with the virtual realm.

### Overview of the paper

This paper presents an investigation of the use of a technology enhanced learning (TEL) project in the form of a machine haptic tool combined with a novel interface. The study aimed to extend non-sighted and sighted students perceptions being present in to the virtual environment where they would assemble a virtual prototype model. The Geomagic Touch™ haptic device was selected within the investigation, this was mainly due to its ability to offer users a full 6 degrees of freedom (6DoF) within the virtual realm. It was also chosen because of the similarities of Geomagic Touch™ stylus to commonly used graphics stylus tools, thus offering users a common single point tool through which they could map contours and lift objects in virtual space. The haptic rendered interface was designed to assist haptic interactions by non-sighted – visually impaired and fully sighted distance design students learners registered at The Open University. The project used mixed methodologies to measure (a) Student feedback (b) *Duration* – to task completion, measured against an industry standard time taken to assemble a four block prototype, and (c) *Collision rate* caused by participants stylus' avatar colliding with 3D geometric block during assembly.

### Results

The results and following discussions revealed encouraging feedback from both non-sighted and sighted student groups, and quantitative data identified that the given prototype task was completed well within the accepted industry standard, of 5 minutes, and that there was little significant difference between duration and collision rate between-groups, indicating that the machine haptic device with the novel haptic rendered environment had the potential to offer access to both non-sighted and visually impaired as well as full sighted design students.

## **USING MICROLEARNING MODULES IN AN INTEGRATED TALENT ACQUISITION FRAMEWORK TO ENHANCE CORPORATE TALENT MANAGEMENT PROCESS**

*Teemu Patala, Context Learning, Finland, Alan Bruce, Universal Learning Systems, Ireland*

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Constant change in modern society shapes demand for products and services and client expectations in many businesses. Many traditional jobs and work functions either disappear or change in nature. Employees must manage a wider range of issues and responsibilities. Such new work roles require knowledge and expertise that job seekers seldom have. Change raises the bar for employers to find suitable employees with required skills who are also motivated and committed to work in the longer term. In a wider socio-economic perspective, changing labour markets face challenges in matching available jobs to suitable workers. Employers try to manage this by implementing various talent management practices and tools. Despite many efforts to make the process more efficient, companies often have to invest massive amounts of resources to fill available jobs with suitable employees. Since 2006, Context Learning Finland has designed and developed educational solutions and digital learning programs and provided consultancy services for more than 200 client organizations, private and public. Change Learning Alliance, founded by Context and its Irish partner Universal Learning Systems, provides added value to quality training and strategic development consultancy services in diversity management, health, inclusion and organizational transformation - working on a global scale to provide enterprises with solutions and insights to help them excel in rapidly changing business environments.

“Context Jobs” is an online service developed for companies to improve the accuracy and efficiency of talent acquisition. The service is based on the idea of Talent Acquisition Funnel. It provides a means for job seekers to learn about the company and work task related skills and required competences while engaging with the recruitment process. Motivation, readiness and suitability of candidates is assessed during the same process, which provides efficient and easy ways for HR managers and recruitment staff to learn about new work candidates. The needs identified among Context clients pinpointed the importance of candidate assessment against performance measures to help improve sourcing of employees, recruitment and early stages of employment. The role of training (induction, role/function-specific, on-the-job, recurrent, face-to-face, blended, online etc.) was considered critical. Training was included as an integrated component in the framework. Selection of appropriate learning methods was based on understanding about learning objectives, expected levels of motivation within the target group and understanding learners’ learning preferences and readiness to learn. Due to large numbers of users, online microlearning modules (micromodules) were chosen as the primary training instrument. During the first phase, employers introduced the objective of raising candidate interest. The candidates are provided with information about the company and they access initial learning modules that teach basics about the business and operations of the company and about possible work roles.

The model is useful for learning designers to choose the appropriate level of intervention for each learning challenge and further define methodologies to be used. The decision to use online micromodules as the primary training instrument was based on the fact that micromodules have been found extremely useful “in giving workers easy-to-digest topic skills that they can immediately apply and change behaviours”. Microlearning is also known to create about 50% more engagement than traditional online learning among employees that participate in corporate training programs. We use interactive/active methods such as simulations that take place in the actual working environment and situations (illustrated by video and photo-based animation) to enable a contextual learning experience.

In the wider employment context, the experiences gained from the initial program are very interesting. Challenged by the early success of this initiative, Context is examining extending the initiative to address talent acquisition challenges in cluster-specific and national contexts. The role of advanced technological tools and e-learning has also become a key focus in the literature and research undertaken internationally. The use of advanced technologies powerfully reinforces learning for adults and provides a rich resource in terms of techniques and methodologies for teaching staff and facilitators. Parallel to this macro-economic context is the growing impact of the emerging digital world and the contours of employment it is shaping. This new, emerging digital world has created a range of new professions and skillsets, which are literally and figuratively unprecedented. In other words, these new professions cannot be studied in advance. But they represent a range of professional skills, behaviours and attitudes that professionals are obliged to learn in a hands-on manner, in dynamic and evolving job configurations.

## ONLINE DISTANCE COURSES FOR OLDER WORKERS: A MALTESE CASE STUDY

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Major investigations including the “Survey of Adult Skills” of the OECD confirm that, while the overall participation of older workers in lifelong learning is increasing, there remains a consistent gap in participation between younger and workers aged 50 and over. There is also a mismatch between the training content and forms, and the needs and aspirations of older employees.

Malta, like other European countries, relies on small and medium sized businesses (SMEs) as the driving force for its current economic success. 75% of the Maltese work force is employed in 30,494 SMEs. Further analysis shows that almost 95% of all these enterprises are microenterprises with less than 10 employees. Because of their economies, most microenterprises can neither afford an in-house training department nor the outsourcing of training programs. Consequently, their record of investment in education and training has remained notoriously low and employees of microenterprises undertake much less training than employees in larger firms. The situation is more complicated for older workers whose participation is further restricted because of the owners’ reluctance to invest in their training because of a perceived lack of return in investment, the workers’ own negative perceptions for training and their need to cope with family, social, health and work-related commitments. The literature is thereby arguing that older workers must have access to other, more innovative, accessible and flexible forms of education and training programmes, such as those offered online.

This paper presents the findings of a Grounded Theory investigation of the perceptions of manager-owners and older employees in Maltese microenterprises about online training programmes. This case study is part of a three-year project that is investigating the possibilities of online learning for Maltese workers. The project is co-financed by the Ministry of Education and Employment (Malta) and the European Structural Cohesion funds (under Priority axis 3). The main data-gathering tool was the semi-structured interview. The analysis of the empirical data was achieved through Grounded Theory approaches, including constant comparison, coding and memoing.

The findings indicate that owner-managers and older employees have a negative attitude towards formal education and training in general, and company-related e-learning efforts in particular. Various factors were identified including the lack of knowledge about online courses, scant awareness of the potential benefits of e-learning to the enterprises and individuals, the perception that online courses are not adapted to the very practical and specific needs of microenterprises, the older workers’ unfamiliarity with learning technology and their belief that old age reduces their ability to learn. However, the data suggests that, if the online courses are designed to meet the demands of both owners and employees, and if they have a non-formal, non-directive form, like ‘work-based learning’, they can encourage the participation of older employees for training.

## A MULTI-SCALE APPROACH TO LEARNING INNOVATION DESIGN

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This paper presents the Learning Innovation Network (LIN), a learning innovation multi-scale design tool, developed by METID Politecnico di Milano, that provides a synoptic vision of the factors enabling a learning-teaching process. The decision makers at each level are stimulated in reflecting about actors, objectives and constraints, but also supported in designing in a creative and integrated context all the components (physical and digital) of a transformative collaborative experience (channels, activities, contents, relationships with the outside world, etc.), shifting the focus from the *content centred* approach, still deep-rooted in traditional academic institutions. The challenge is focused on supporting teachers in reaching specific learning outcomes by *teaching innovation*, seen as the implementation of strategies able to transform traditional transmission-based teaching practices in student-centred processes, stimulating active learning within supportive environments.

The LIN conceives learning innovation as an actual design story where useful innovation rises because of a synergic effect, often sprouting in the gap between the different stages of the structured processes. It can be applied at different zooming scales, to design new concepts and ideas for education system, an institution or a whole course, and it can be integrated with the use of specific conceptual and practical design tools. Based on several pillars (the directed storytelling, the empathic conversations and the multi-agent communication graph), the LIN is thus an “empathic conversation catalyser” and a “new ideas elicitation tool” that guides and supports the decision maker or the teachers in order to promote their awareness of all the components of the learning dynamics in where they are already acting and help them in focusing problems and limits perceived or emerged by facts. Furthermore, it mobilises their interest for playing the role of “designers of useful learning innovation” and it kicks off the process of learning innovation by identifying main actions to be planned and implemented.

The LIN nodes are made up by all the *actors* that interact in the knowledge transformational process. The key concept is that the experiences able to catalyse learning are raising from the knowledge sharing among *people* acting in an environment and connected to each other thanks to *communication channels* that allow them to co-shaping a network where the learning experiences occur. The Subjects-nodes are defined by their basic features and the actions they can accomplish. The Arches connecting the nodes of the LIN are the channels through which the communication flows (Physical: classroom, laboratories, etc.; Virtual: LMSs, Social Networks, etc.). The Contents (concepts, ideas, information, instructions, etc.) flow through the channels among the nodes. There are *liquid* and their flow is allowed by the fact that they have a structure (time-based, deductive, inductive, etc.) and a shape defined by the media used (text, video, image, etc.). A component of the LIN asking a particular attention is the *Outside world*, a relevant part of the learning path but also a key driver of learning Innovation. A deeper and wider interaction with the actors involved in the production and reproduction of the knowledge in our societies, could help us in designing innovative learning path. The LIN hasn't any hierarchical organisation: each single components of the LIN can be the starting point for the learning innovation design. Several iterations of the model lead to the internal coherence of the results.

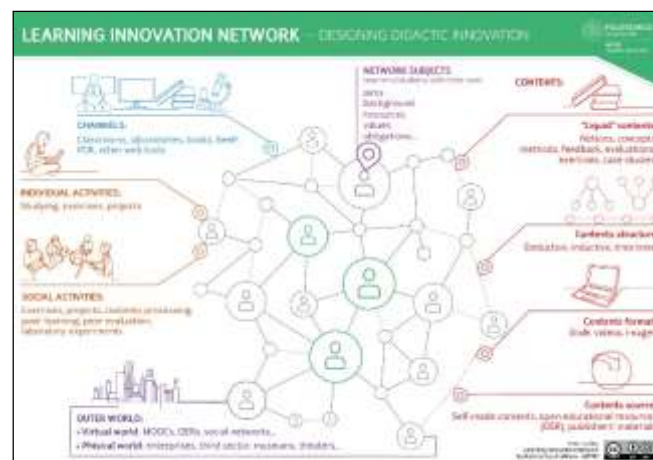


Figure 1. The Learning Innovation Network (source: METID, 2017)

## **DISTANCE LEARNING AND TEACHING: UNDERSTANDING THE IMPORTANCE OF TUITION OBSERVATIONS**

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This paper describes a project to capture and understand the practice of tutorial observations from two different perspectives: the perspective of the distance learning tutor, and the perspective of the line manager. The project has a number of linked objectives: it aims to understand what happens during a tutorial or class observation; understand what good observation feedback is; what considerations need to be made regarding the observation of online tutorials; how to observe team teaching and offer feedback that is appropriate and useful for lecturers; how to best influence and develop teaching practice; to understand attitudes of different groups of staff across the university.

The project began with a literature review. Fifty-nine publications were identified. These included journals, books, and professional development conferences. Following the literature review, two types of focus groups were organised: one for associate lecturers who are observed, and another for the academic managers who regularly carry out observations (known as staff tutors). Two focus groups were run at an associate lecturer development conference in May 2017. During the session, tutors were asked two questions: "How should staff tutors and faculty managers run effective observations?" and "What feedback would help you the most?". A further focus group took place in November 2017 within a regular meeting that is scheduled for tutor line managers.

The tutor discussions that took place can be summarised by a set of keywords: purpose, importance, dimensions, acknowledgment, dialogue, frequency, practicalities, negotiation, feedback, differences, opportunities and connections. The discussions from the staff tutor focus group can be summarised as: philosophy, relationships, dialogue, guidelines, feedback, online, experience, priority and opportunities. One of the immediate outcomes of these focus groups was to uncover a set of practical and adaptable guidelines that have been used for Science tutors.

This research has exposed a variety of different practices and attitudes regarding tuition and tutorial observations, and has helped to suggest further research. There are three immediate areas of focus. These are: continue to read and analyse the literature review, continue to explore the subject of online teaching observations, and continue to consider how to appropriately conduct observations when team teaching is carried out. This third point implicitly reflects an important and repeated theme: how to balance the needs of management and quality with the needs of pedagogic and professional development. This is, of course, connected to a theme that has emerged from the literature, the tutor focus group and the line manager focus group: how best to develop and facilitate peer observations. This question points towards an important action: the need for further staff development workshops to share practice.

There are a number of future research directions. This research has been carried out within the Faculty of STEM. It may be useful to extend this work to other faculties to uncover a more detailed and broader attitudes surrounding tutorial observations. There are, however, a number of key themes that appear to be of fundamental importance. These are of course, the importance of trust between tutor and line manager, and the importance of communication.

## ACTIVITY THEORY AS DESIGN TOOL FOR EDUCATIONAL PROJECTS AND DIGITAL ARTIFACTS

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### Abstract

The Digital Competence Framework 2.0 indicates among most key digital competences the “Problem Solving” as capability to solve conceptual problems and complex situations with the mediation of digital environments. It is then crucial to use digital tools to innovate processes and products in educational and working contexts. According to these indications, since 2015, we promoted at the University of Padua a Master’s program entitled “Digital Innovator”.

The participants, that come from various public institutions (schools, municipalities, local health authorities), can to acquire technical and methodological skills useful for designing and implementing specific digital projects in their context of work. The paper presents a design model, named Project Activity Model (PAM), with which digital educational project and artifacts are designed through Activity Theory approach, during the educational phase of project work.

The Project Activity Model is focused on explanation of the elements involved in two different activity systems (the production and the use systems), with the aim of shaping historical-cultural inputs to the real and digital context of application. In conclusion there are some perceptions of the actors involved in the concrete experimentation of the model.

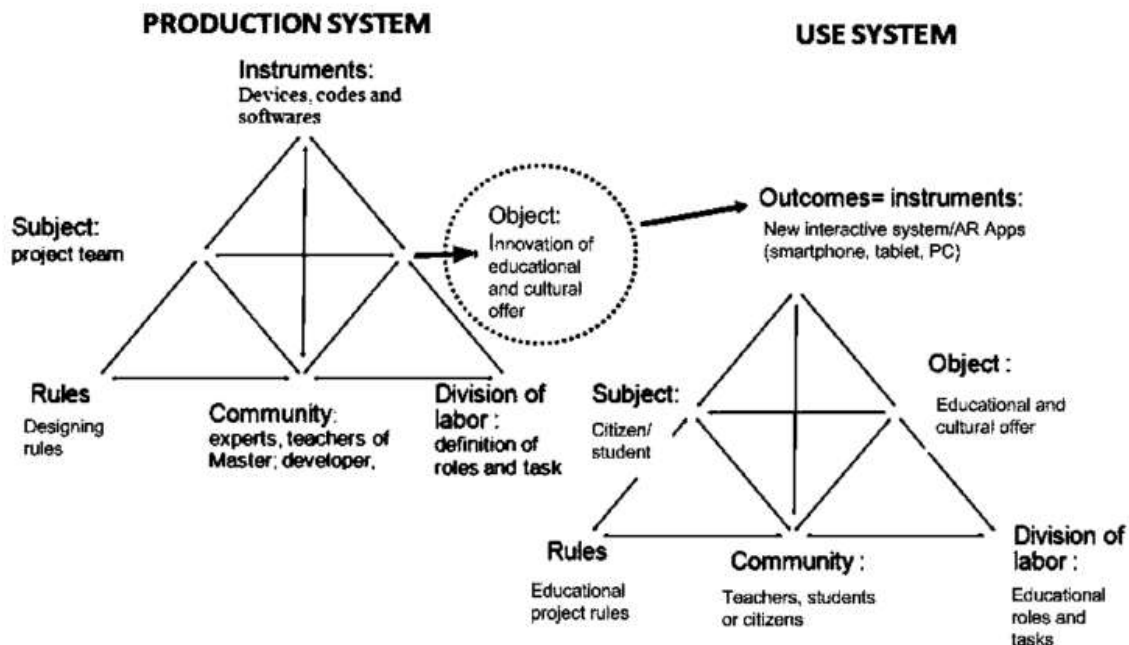


Fig. 2 - The connection between production and use systems (project “Augmented Museum”)

## **“THE COBBLER WHO WEARS THE BEST SHOES”: HOW TO EDUCATE THE STAFF OF THE HIGHER EDUCATION INSTITUTIONS USING DIGITAL TECHNOLOGIES. STUDY OF THE PLEKHANOV UNIVERSITY EXPERIENCE**

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### **Introduction**

Among communities of different levels, education of which is to be organized under the special scheme, perhaps the most specific one is the staff of the higher education institutions themselves. Meanwhile, these educational programs often have very high relevance, which can be clearly illustrated by the Russian example. The majority of Russian universities are public, and receive the funds from the state budgets in order to conduct their activities (which in a sense is the heritage of the Soviet era). With the transition to a market economy, many higher education institutions have switched to making their own funds, but came across the problem of managerial knowledge lack. In 2017, the Ministry of education and science of the Russian Federation (MES RF) has given the Plekhanov Russian University of Economics (PRUE) and the Ural Federal University (UrFU) the task of designing the special study programs aimed for the professional development of universities financial managers and specialists of strategic development. According to this task, the PRUE and the UrFU had to train at least three representatives from each higher educational institution of Russia. Since the organization of education of such number of participants, scattered geographically across the vast country, on full-time basis was extremely hard to implement, the program was developed with wide application of digital and E-learning technologies.

### **“Tools of planning and implementation of mechanisms for sustainable economic development of universities” study program**

The new educational program included 7 main themes: the balanced system of strategic objectives, overview of financial strategies for decision-making, process approach to organizational change, the system of remuneration and incentives, project management, rating of the financial management quality and informatization as the basis of efficiency. The learning process lasted for 6 months (from late June to the end of December 2017) and was divided into four stages. Stage 1 was devoted for self-examination for two weeks, during which the participants have filled four questionnaires developed by the organizers of the training; it was followed with one-month distance learning, which included two webinars. Stage 2 involved three-day full-time training in the form of intensive interactive sessions at the PRUE. At the Stage 3 the teamwork of the students was organized in distance learning format for 6-8 weeks aimed to develop specific projects that can bring economic benefits (this stage also included two webinars). Finally, at the Stage 4 included one-day intramural presentation of the developed projects for the Commission consisting of the PRUE professors and representatives of the MES RF. In total more than 500 people from 203 higher education institutions of Russia were trained within the program.

### **Feedback and results**

Upon the end of the program the first group of participants were asked to rate the organization of the event, the curriculum and the skill level of the speakers. The analysis of the responses showed that, thanks to digital technologies, the professional training program for TOP-management of a large number of universities was implemented well and for relatively short time. The result wished by the MES RF was achieved – heads of the higher educational institutions financial services had looked differently at their functionality. They established systematic and structural link between the universities development goals and objectives and their financial stability. The results and efficiency of the program may also be radically enhancing by its continuation, when each university acts in turn as the customer. The management of each university is supposed to form a “team of changes” (15-20 promising young employees), which is trained on the program described above, and then together with experts from the PRUE develops real projects and bring them to reality.

## EDUCAMPS IN DISTANCE EDUCATION: PROFESSIONAL DEVELOPMENT AND PEER LEARNING FOR STUDENT TEACHERS IN ICT

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### Introduction

Some distance education programs offer campus sessions in their courses. That has been the case at the University of Iceland – School of Education (UISE) for the past decades. The question is how such sessions are best organised. One method that we have found to be promising among teacher students learning about ICT is a type of workshop that has for example been called *educamp* or *edcamp*. Similar methods have also been called *unconference* or *over-the-shoulder* learning, playdates, or teachmeets. An educamp as described by Leal Fonseca is an “unstructured collective learning experience” making tangible “possibilities of social software tools in learning and interaction processes while demonstrating face-to-face organizational forms that reflect social networked learning ideas.” Due to the fast technological developments it is important to instil in teacher students a mind-set that nobody can be an expert in everything and that it is important to explore together and learn from each other. Teacher students in their second semester of several years of study can expect that the technological landscape will have shifted and changed and new pedagogical emphasis and sets of tools arrived or be on the horizon. In this paper, educamps organised with undergraduate teacher education students are described as well as the reactions of students from three cohorts in 2014, 2015 and 2016.

### Method

The educamp project was integrated in a 5 ECTS introduction course on ICT in education. The goals were the following: Students will understand the value of sharing experience, knowledge and ideas about ICT use in learning and teaching; Students will understand the importance of professional development in ICT and opportunities and possibilities to keep up with changes and innovation; Students will widen their network among fellow students and teachers regarding the use of technology and pedagogy; Students will increase their knowledge about use of ICT and development of teaching methods. During the educamp session students took turns being a teacher and student role. The participants were teacher students in three cohorts taking the course in spring 2014 (113 students), 2015 (109 students), and 2016 (96 students). About 66-78% completed the project and a survey about their experience.

### Results

The number of contributions during the educamps ranged from 62 to 73 and covered from 49 to 52 tools/software etc. The presentations were about a diverse range of tools, software and/or e-learning materials. Examples from 2015 included digital portals or resources in Icelandic, e.g. educational games or drill and practice in language learning, mathematics, digital maps in geography, and first aid. Other examples included social media (e.g. Google, Facebook, Snapchat, Twitter, Pinterest), maps, question games, flashcards (e.g. Bitsboard), or music (e.g. Guitarbots). In addition, there were introductions about tools for multimedia production or publication and online communications. The students tended to rate the experience as very interesting/fun. A large majority agreed with that statement, 73% 2014, 81% 2015, and 84% 2016. In addition, 27% 2014, 18% 2015 and 16% 2016 thought it was considerably interesting/fun. In spite of the short time devoted to the educamp event and the project, a large majority though they had learned very much (29%, 36%, 43% 2014 to 2016) or much (50% 46%, 46% the years involved) from the project while some answered considerable amount (21%, 14%, 10%) and hardly any students said little or very little/nothing.

### Conclusion

Teacher students appear to enjoy and learn from the educamp method to reflect and think about using ICT in education. There is a need to work with ICT competences in teacher education perhaps with a focus on self-efficacy (Gudmundsdottir & Hatlevik, 2018). In a world that can be quite intimidating, regarding its huge flora of tools and methods that are being promoted in teaching and learning, new ways need to be tried and tested where learning and professional communities can explore technologies and discuss with peers and experts why and how they could be of use in praxis.

## **A STUDY ON DESIGNING ONLINE LEARNING ACTIVITY**

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### **Abstract**

To enhance the quality of online learning, the curriculum design is the most important part and the learning activity is the key to high quality delivery. Meanwhile, the design of content and learning activities have to meet the needs of different target groups. The study is based on interviews of 105 e-Learning courses about the online learning activity and current situation, etc. The purpose of the study is to design an online program with higher quality and it will be able to motivate the target groups' willingness to learning: what are their interests, how are they learning and which ways they prefer. The study provides five kinds of online learning activities which fit the learners and provide the methods and tools of designing.

### **Conclusion**

People-oriented design is an effective method. The study proposes design plan and tools for 5 kinds of online learning activities in modern higher education. The paper focuses on the design processes and methods of two kinds of online learning activities (experiencing and problem-solving online learning activities) which are largely needed by learners in current courses. Furthermore, the methods proposed fit not only modern distance higher education but also other kinds of education for reference, which will be able to enrich the forms of online activities, be more suitable for learners' needs as well as ensure the quality of all kinds of online learning. Online learning activity depends on the function of learning platform. The structure and the function of the platform would pose great impact on the online learning activity design.

## THE OPEN UNIVERSITY OF CHINA AND CHINESE APPROACH TO A SUSTAINABLE AND LEARNING SOCIETY

*Yanwei Qi, Wei Li, The Open University of China, People's Republic of China*

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### Abstract

As the most populous and second largest economy of the world, China has seen huge changes and emerging needs in social and economic aspects over last few decades. In 2012, the Chinese government decided to establish the Open University of China (OUC) on the basis of Chinese Radio and TV University System for promoting lifelong learning and a learning society. The purpose of this study is intended to provide a case analysis of results of and challenges for OUC. After five years of development, OUC has increased its capacity for promoting lifelong learning including a national wide university network, massive online teaching and learning model, digital learning environment and resources, customized services for special groups and credit bank system. Meanwhile, there are problems and challenges to its current and future development, such as inexperience of quality teachers, the difficulties in quality assurance and credit transfer, insufficient policy support and regulation from government and the growing competitiveness in online education market. It is expected that this study will contribute to understand the way of OUC meeting the emerging needs of a lifelong learning society in China and share its experience.

### Conclusion

The establishment of OUC was considered to be a response to meeting the diverse needs of China's political, economic, social, technological and educational development. As an important approach to a sustainable and Lifelong learning society in China made by MOE, OUC has made tremendous difference in last five years after its establishment. For open to people, it is getting more accessible and providing customized education provision to the different group, such as on-job workers, farmers, migrant workers, elders, soldiers, disabled people. For open to places, it is producing more and more online learning resources to the students and more and more OERs to the public. And the resources and learning support can be reached at the workplace, learning centres and home through Pad, laptop, TV and many other ways. For open to method, it is the in-depth of ICT with teaching and learning. The propose of six key factors of online teaching and learning and its practice improving the learning behaviour and outcomes. For open to ideas, the OUC has a bigger and wider university system than before, and its ideas of co-share and win-win of stakeholders shows great potential and adaptive to the holistic promoting of lifelong learning society in China. As a result, ICDE gave OUC the Institutional Prize of Excellence for its good performance. But on the other hand, the problems and challenges are still there and needed to be solved. It is related with many aspects like policy support and regulations, capacity building, quality assurance and improving of using ICT.

## MOOCS COPYRIGHT PROTECTION IN CHINA

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### The ownership of the MOOCs copyright

MOOCs in China, its copyright ownership is also different under different circumstances, in some cases the copyright of the class is owned by the teachers, and in some cases the copyright of the class goes to the educational institutions directly.

As the object protected by law, if the creative process of the MOOCs is relatively simple and the creative subject is clearer, the ownership of the copyrights is simple and clear. The copyright should belong to its creator. If two or more individuals or units coproduce the works, these works are called *cooperative works* and the copyright should be shared with all partners. However, in the actual process of creation, colleges or educational institutions are often provided with resources and facilities, such as facilities, equipments and other resources. Moreover, they hire professors or teachers with doctorates to teach, the copyright ownership of such works is more complex. For the hired professors or teachers, they think that the class is mainly the activity of the lecturer's speech, and the talents of the instructor are very high. They are the master of the course, so the copyright of the class should be the individual who teaches. Another point of view, institutions of higher learning or educational institutions feel injustice, because the curriculum is not only the narration of the instructors, but also the use of media, Internet technology for recording, phonetic transcoding, subtitle and file uploading. The creation process of the class is more than a typical multi process team. As a result, we should not regard MOOCs as a single individual, but a common cooperative work.

### The fair use of copyright in internet

In order to ensure the authority and interest of the course teaching, the course makers will inevitably use other people's works. Regardless of the maker or learners of MOOCs, the infringement may occur during the use. In order to obtain the balance between the copyright owners and the public interests to acquire knowledge, the Chinese Copyright Law stipulates the "fair use" system.

The twenty-second article of Copyright Law of China stipulates that: "the use of a work under the following circumstances can not be paid without the permission of the copyright owner, but the name of the author and the name of the work shall be specified, and the copyright owner shall not infringe on the other rights under this Law: (1)... (7) for school classroom teaching or scientific research, translation or a small amount of reproduction of published works for use by teaching or scientific researchers, but may not be published and issued".

### Statutory license of copyright in China

China's statutory license system is an important restriction system of copyright. It allows people to use other's works in a specific way without the consent of the copyright owner, but should pay the necessary fee to the copyright owner. The twenty-third article of the Copyright Law of China stipulates that, "for the implementation of the nine-year compulsory education and the national education plan, the publication textbooks can be compiled without the permission of the author, without the permission of the copyright owner to assemble the published pieces of work or short text, musical works or single pieces in the textbook".

The works of fine arts and photographic works shall be paid in accordance with the provisions, and the names of the authors and the names of the works shall be specified, and the copyright owners shall not infringe on the other rights enjoyed by the copyright owner in accordance with this law. The eighth article of the regulations on the protection of the right to communication of information network also provides a clearer provision for the statutory licensing system "for the implementation of nine-year compulsory education or national education planning through the information network, without the permission of the copyright owner to use the fragments of their published works or short written works, musical works or single pieces". The courseware for the production of art works and photographs is provided by the remote education institutions making the courseware or using the courseware according to law to the registered students through the information network, but the remuneration shall be paid to the copyright owner.

## DOES A RAPID PROTOTYPING METHOD STIMULATE OUR TIME-PRESSURED TEACHERS TO DESIGN RICH AND BLENDED LEARNING ENVIRONMENTS?

*Sylke Vandercruysse, Sofie Bamelis, Delphine Wante, Kurt Galle, VIVES University of Applied Science, Belgium*

There is the need to design future-looking, digitally rich, flexible courses, mobile-ready and attuned to students' expectations for engaging, professionally related learning experiences. In VIVES, we therefore stimulate a blended learning approach, which we define as the integration of on and off-campus learning activities and a learning goal-oriented use of educational technology. Our primary focus is on the enhancement of teaching and learning with a didactical focus on student centred learning. Technology supports the enhancement of this goal. However, upgrading conventional face-to-face approaches towards more blended, online and distance learning formats is recognized as a dauntingly challenging task for lecturers, educational advisors and learning technologists.

### Designing blended learning environments

"Re-creating learning online and determining the right blend isn't easy or to be taken lightly" (Hofmann, 2002; p.519). Blended learning demands new instructional design that requires harmonization of the environments not only in terms of the technology used, but also regarding design approaches. Many aspects should be taken into account instead of simply combining online and face-to-face practices if a blended learning experience needs to be successful.

A question that arises is how do we best help our time-pressured teachers in this process in order to develop rich blended and online courses? Teachers often don't feel the urge to use new technologies and some are reluctant towards implementing technology in the learning activities. Additionally, a great work load makes it difficult for teachers to make enough time for redesigning their course.

### Focus of the study

We recognize Beetham's (2014) general critique of curriculum design in higher education in that "practice and process had often been local, ad hoc, unexamined, and unresponsive to changing demands". The design process of blended courses requires to be structured, dialogic and iterative. At VIVES, we sought for a concrete and effective method for getting started with design teams. Several methods were compared and many of the current methods of learning design consultancy and workshops (supported by internal and external experts) seemed to be support-intensive, time consuming and therefore poorly scalable. However, one method was retained. This method – an approach called "ABC curriculum design method" based on research from University College London (UCL; Young & Petrovic, 2016) – meets with our concerns. The key of the approach is pace, engagement and collaboration.

### Research questions

After implementing the workshop in our institution, we want to have an insight in the effect and the long-term results of teachers who followed the workshop. The questions that will be investigated are:

- Do teachers change their ideas about blended learning after joining an ABC-workshop?
- Is the ABC-method useful for stimulating the reflection about the use of learning activities and tools?
- Do teachers have the intention to redesign their courses after joining an ABC-workshop?
- Do teachers actually change their instructional design after joining an ABC-workshop?
- How do teachers experience the ABC-workshop and would they like to change aspects of the ABC-workshop?

### Methodology

Focus group methodology will be used as qualitative research tool. The composition of the focus groups will be based on the teachers joining the ABC-workshops and have the following structure: introductory round (description of the main goal of the focus group), individual task (each participant will be asked to reflect for five minutes on what they considered the most prominent experience during the ABC-workshop and secondly on what they want (or have) (to) change(d) after following the workshop), group discussion (the participants can freely talk and interact with each other; based on the above mentioned questions) and a group task (participants are asked to summarize their findings). Based on this information, the ABC-method can be optimized in order to enhance the long-term effects of the workshop.

## **ALEBRIJE MODEL FOR THE DEVELOPMENT AND SUPPLY OF EDUCATIONAL CONTENT**

*Jorge León Martínez, Edith Tapia Rangel, National Autonomous University of Mexico (UNAM), Mexico*

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The Alebrije Model achieve the creation of decontextualized learning contents that can be reused by different educational events. This model is organized in three levels: the micro, the meso and the macro level. In the following lines, these levels will be described.

### **The Micro level**

In order to meet the needs of people at any place and time, the Learning Support Units (UAPA for its acronym in Spanish) were designed, which are online educational resources for self-study that present the content, activities and evaluation of the specific topics in an organized way, to meet the learning objectives proposed by the same UAPA. UAPA can be used by teachers and students. The UAPA alone constitutes a whole (thematic unit) that due to its conception and structure can be used, reused or serve as a reference during different moments of the teaching-learning process. Therefore, the narrative of each UAPA must be taken care of, so that the discourse in it is sufficient for the achievement of the proposed learning, and, in addition, does not depend on other UAPA. The base structure of UAPA includes: objective, content, activities, evaluation and information sources.

### **The Meso level**

At the Meso level, the construction of educational events (course, subject, module) with UAPA is considered. Each UAPA must consider the following characteristics for pedagogical aspects and style correction: instructional design focused on the construction of self-contained and interoperable thematic units; design of activities and content management based on: native LMS resources, template multimedia resources, and downloadable resources (PDF's, etc.); creation of a style sheet that gives uniformity to the criteria: verbal person, bibliographical references, learning objectives, etc.; spelling, writing and style revision, emphasizing aspects such as uniformity and proper use of language. UAPA's graphic and integration aspects must consider: visual design and integration of activities and contents based on multimedia resources of template, native of the LMS and downloadable (PDF's, DOC's, etc.); visual design and integration of custom graphic interface in HTML5; design of institutional identity iconography applied in contents; inclusion of a template multimedia resource by topic; and content development in HTML5 oriented to the SCORM standard.

### **The Macro level**

This is where the repositories of resources are located, which serve to disseminate and disseminate knowledge that supports learning. Information technologies perform a fundamental support function as a support for the processes of exchange of ideas through the repository, but reality shows that the key for the repository to achieve its objectives are the people. The main repository is UNAM-RETo (Educational Resources for All). UNAM-RETo catalogues and organizes UAPA and other educational resources from different sources such as the Virtual Environment of Languages (AVI for its acronym in Spanish), English Media, Math Media, Spanish Media, Reposital, and Media Campus, among others.

### **Conclusion**

The UAPA are an alternative for the efforts in the creation of open content (accessible from any device) by educational institutions, be valuable inside and outside your organization. The cultural wealth of the University must be open to society and must also support the individual in their individual and group learning events. The layout of the UAPA as individual study elements, as part of a course, and as items of institutional repositories visible thanks to the metadata, makes the UAPA a very useful development and allows us to visualize new ways of approaching learning to more people.

## **INTERNATIONAL COLLABORATIONS IN BLENDED LEARNING: A DOUBLE DEGREE MODEL**

*Charles Krusekopf, Royal Roads University, Canada*

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This poster highlights a unique blended learning double (dual) degree agreement between Canadian and Austrian universities that was developed to facilitate cross-border enrolments in online educational programs for working students. While almost all universities have embraced internationalization strategies, and many offer online courses and programs, insufficient attention has been paid to how the two approaches might be mutually supportive. Online education offers the opportunity to bring together students living in different countries in common courses and programs, but cross-border enrolments remain low and new models and approaches are needed to build educational offerings that bring students and faculty from different countries together in sustained educational engagement online.

Double degree agreements that pair online programs offered by universities in different countries offer the potential to connect internationalization in education together with online learning. This poster highlights a case study of an innovative blended double degree business masters' program between Royal Roads University (RRU) in Canada and the Management Center Innsbruck (MCI) in Austria. Through this double degree program, students can complete a Master of Global Management (MGM) at RRU and an MBA at MCI in approximately 24 months. Each of the programs is offered on a cohort basis and include short one- to two-week residency periods on the home campus, plus online courses. The double degree allows mid-career, blended learning students to build international competencies and networks, while continuing to work full-time. Mid-career students have traditionally had limited opportunities to participate in an international education due to work and family constraints. The pairing of the two blended programs created an opportunity for cross-cultural and international learning among a traditionally overlooked population.

This double degree program design has several advantages over other models of cross-border online collaboration. First, the international learning components of the program are sustained over a period of time and across a series of courses. Many earlier cross-border online collaborations are one-time course or exercises that bring students together for a short time with little or no follow up engagement. The double degree model insures that students are full members of the learning cohort at the international partner university, and a blended learning approach supports this deeper engagement by allowing students to meet and study together before moving into online courses as a cohort. The cross-cultural and knowledge benefits of having students from the international partner school participate in the full program extend to all students in the program, even those not taking the double degree, as the program cohort gains additional diversity and new perspectives through the inclusion of students living and working in another country.

Second, the double degree program is sustainable for the institutions and faculty because it pairs already existing programs and does not require the development of new curriculum or special technical and administrative solutions that are often required to support one-time online collaborations by faculty and students at different institutions. While some effort is necessary to develop and implement the double degree partnership, once it is in place it simplifies the recruitment and enrolment of international students in the home program. This model supports a strong business case as additional costs are minimal and new students are recruited into the program.

Third, the double degree model insures that the students in the program are compatible and can work together effectively in the online environment. Because students complete at least one year of an online program at the partner school, they have prior online learning experience that supports their integration into a new international student cohort and university program. Common admissions criteria and similarities in academic and career focus among participants allows for the development of culturally diverse, yet cohesive cross-border learning communities. The double degree partnership expands the range of courses available to students and enhances key 21<sup>st</sup> century work skills and knowledge such as global awareness, the ability to incorporate multiple perspectives, cross-cultural capability and the ability to work in an international online environment.

## **STUDENT ACTIVE LEARNING IN NET BASED EDUCATION – EDUCATIONAL DEVELOPMENT IN TEACHING OF INFORMATION LITERACY**

*Anna Gahnberg, Sonja Fagerholm, Karolina Karjalainen, Swedish National Defence University,  
Anna Lindh Library, Sweden*

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During 2018 the Anna Lindh Library at the Swedish Defence University (SEDU) offers all information literacy education online. The transformation to online teaching has a number of reasons and here are some:

- The number of students is expected to grow with 30 % within the next two years. Classes will be larger and there is a scarcity of physical classrooms on the horizon.
- Military contract education students have expressed wishes for more flexible learning.
- The Swedish University Computer Network (SUNET) provides infrastructure and software services, hence SEDU has adequate technological environment.

As a first step in the transition to net based education, we have used the web conferencing software Adobe Connect to carry out the teaching. The teaching has been scheduled and synchronous. We have designed it with search exercises, conducted individually or in groups to stimulate student-active learning. Synchronous design like this may also have social advantages, according to Biggs (2011; p.71). In addition to Adobe Connect, the school's Learning Management System has been used as an asynchronous communication platform with the students.

According to Hrastinski technology, if properly used, it can increase learning opportunities (2013; p.15). We also believe that online education can be a solution when the student groups grow. It enables remote teaching and it is in close proximity to the platforms and databases used in today's information search.

One of the challenges of applying net based learning to information literacy instruction is that the students are not familiar to the technique yet. Another challenge is that librarians do not meet the same students over a longer period of time, or not even when they need the instruction the most. Therefore, the combination of scheduled synchronous instruction and asynchronous communication will possibly turn out to be the most successful.

## **ONLINE INDUCTION TO SUPPORT TRANSITION TO TAUGHT POSTGRADUATE STUDY**

*Megan Kime, University of Leeds, United Kingdom*

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This poster presentation will explore how online resources can be used to support students through the transition to taught postgraduate study. It will showcase an online induction course – Pathways to Success – developed to prepare students for study on online distance learning (ODL) Masters degree programmes at the University of Leeds; and discuss work currently ongoing to develop the course so that it can support a wider cohort of PGT students at the University.

The transition to taught postgraduate study can be a challenging one for students from all backgrounds. It involves stepping up to a higher level of academic practice, and for many students, operating within an unfamiliar academic culture, whether because they are returning to formal education after a break, or are new to study at a UK higher education institution (HEI). Added to this, the study period for taught postgraduates is accelerated, with less time to acclimatise and settle in that in a traditional 3-year undergraduate degree. This presentation will introduce an ongoing project at the University of Leeds to develop online resources to support students through their induction and transition to taught postgraduate study.

The first phase of the project was to develop an induction course – Pathways to Success (P2S) – for taught postgraduate students beginning ODL degree programmes at the University of Leeds. P2S has been built and will be piloted with a small cohort of student in April 2018. Following evaluation of this pilot, the course will be made available for students on a number of ODL programmes at the University of Leeds for the September 2018 intake. The second phase will be to pilot a version of P2S for a wider cohort of PGT students coming onto campus-based programmes.

This poster presentation will explore the challenges, both technical and content-related, associated with developing resources that are sufficiently targeted to particular cohorts to be relevant, whilst at the same time sufficiently generic to enable re-use across a range of contexts. Evaluation of Phase 1 is ongoing, and initial student feedback will be presented here, along with plans for future evaluation and the development of Phase 2.

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## **AN INNOVATIVE TOOL TO ASSIST THE CREATION OF HIGH QUALITY OPEN, AND DISTANCE LEARNING COURSES – THE VIRTUAL TEACHERS TOOLBOX**

*Peter Mazohl, University of Technology Vienna, Austria, Ebba Ossiannilsson, Swedish Association for Distance Education, Sweden, Harald Makl, Pedagogical University College, Austria, Maria Ampartzaki, Michail Kalogiannakis, University of Crete, Greece*

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The European Erasmus+ project the Virtual Teachers Toolbox (VTT-Box) is a 2-year project, which aims to create a special virtual toolbox for teachers as a sophisticated tool for developing Open Online Distance Learning (OODL) courses which means open, online, flexible and technology enhanced education (OOFAT). As a complete innovation, the self-evaluation mandala is implemented as a motivating tool. It is a graphical pattern to collect the pre-competence of the learners and to compare it with the learning outcomes. Another innovative tool is the toolbox which helps the teachers to create correct mandalas and supplies the teachers with information and knowledge to create the courses easily. A specific pedagogical approach is developed in the frame of the project. Several frameworks developed by the European Commission (EC) in the frame of former projects are also part of the project and used in the toolbox. In particular, the DigiCompEdu2.0 framework is used as well as the E-xellence quality framework developed by the European Association of Distance Teaching Universities (EADTU) for course development, course creation and implementation and the course evaluation. The used learning platform is Moodle 3.X.

This project uses a strategic cooperation between formal and non-formal/informal educational providers using ICT based teaching and the enhancement of digital integration in learning. It will be enhancing teachers' professional development and support students' acquisition of values, skills and competences.

The partners in Erasmus + project VTT-Box 2017-1-ES01-KA201-028199 are:

- Colegio Internacional Costa Adeje (Spain) (coordinator);
- Europäische Bildungsinitiative (Austria);
- I.T.S Vittorio Veneto Salvemini (Italy);
- University of Crete (Greece);
- Swedish Association for Distance Education (Sweden).

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## UNIVERSITY STUDENTS AS DIGITAL CONTENT CREATORS

*Marco Toffanin, DML, Alessio Surian, FISPPA, University of Padova, Italy*

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### Introduction: Higher Education Repositories, Students and Digital Content

We discuss the role of learner-produced digital content within higher education courses and the ability of higher education institution to scaffold such learner-generated outcomes in ways that enhance both learners' engagement and learners' education. To this purpose the poster offers a review of selected relevant literature as well as of relevant data in order to discuss the core elements of a viable pilot project.

### Students as Digital Content Creators at the University of Padova

In January 2017 the University of Padova began to use the Kaltura platform as a repository for digital contents. It was introduced to teachers through a workshop involving Moodle experts and by making available an online tutorial. A total of 55 teachers were involved in 5 workshops implemented between February and July 2017. Further information was spread through e-mail and Moodle platforms to the whole of faculty members. Using the Kaltura open source multimedia platform students and teachers had the possibility to share, to produce and to collaborate around multimedia digital content. During the 2017-2018 academic year, different outcomes were uploaded in the Kaltura platform. They include six main categories: video presentations; interviews; small documentaries and photo-reportages; video demonstrations; podcasts; motion graphics videos. According to the students this led to cooperative work, engagement, research of creative solutions. Usually these outcomes were of low quality. We can identify some reasons as that we can encounter: (a) both, teachers and students have, in average, a low level of digital skills; (b) not knowing the amount of technical and practical work, it was difficult to plan the outcome efficiently; (c) both teachers and students lack technical instruments.

### Collaboration among Creators

In addressing ways to turn cognitive surplus into social capital, Shirky (2010; pp.171–175) identifies four categories (or spheres) that can draw additional value from digital online activities: personal, communal, public, and civic forms of human collaboration. Cooperative learning offers specific instructional opportunities to enhance such collaborative efforts. In order to improve both the quality of the students' outcomes in relation to digital content creation and their ability for peer-to-peer cooperation at the University of Padova, it is envisaged that during the 2017-2018 a pilot project should be implemented. Within this pilot project, instructors provide guidelines for group formation and open a space in the virtual classroom for this purpose. The choice of topic and type of content design should be the decision of each group. Groups are encouraged to discuss and to implement significant research before consensus is reached, in order to increase their sense of ownership of the project. Based on previous studies Brindley, Walti, and Blaschke, (2009) suggest 7 main instructional strategies that seems relevant within the above mentioned pilot project framework in order to improve the quality of group collaboration and to support and enhance student participation. Throughout the process, adaptivity is of great importance to maintain the attention of both underachievers and overachievers.

### Towards the 2018-2019 pilot project

As mentioned, presently, both teachers and students at the University of Padova report a lack in terms of digital soft skills. During the academic year 2018-2019 we intend to offer them a joint training and action-research framework. This is intended to enable both students and teachers to attend technical workshops based on a cooperative learning approach before and/or during their courses. The workshops aim at developing the digital soft skills needed to produce a valuable outcome that can be spread and shared through institutional repositories. For example, a workshop based on guidelines on how to record a video interview could lead to the production of different interviews based on a topic chosen by the students themselves. A further example: a workshop on how to produce info-graphics as survey outcome or research outcome, based on type of studies that have been introduced during the course. This could lead to have visual results that are useful in summarizing data and in identifying relevant information. This kind of workshops would encourage engagement and cooperative work and should provide students with core skills that can be useful for future academic and professional tasks as well. We intend to design an action-research framework that should allow a relevant analysis of the workshops' process and outcomes based on the combination of three main types of data: students' and teachers' opinions and ideas as outlined through focus group, students' and teachers' surveys, and the analysis of the quality of the contents developed by students through their groupwork.

## THE FIGURE OF THE TUTOR IN BACHELOR'S DEGREE IN EDUCATIONAL STUDIES, IN DISTANCE LEARNING MODE: AN EXPLORATORY SURVEY ON THE VISION AND PERCEPTION OF STUDENTS

*Beatrice Partouche, Sebastiana Sabrina Trasolini, University of Roma Tre, Italy*

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In the academic year 2015/16 the Department of Education of the University of Roma Tre, has activated a bachelor's degree program in educational studies (SDE online) in a mainly distance learning mode. Educational activities are offered, organized and managed through a Moodle platform. At the end of this semester we should have the first students ready for their graduation and we thought it was advisable to evaluate their degree of satisfaction and their opinions, especially with respect to the figure of the e-tutor.

### Methods of Investigation

We chose to invite students to respond to a survey that would allow us to have a clearer view of how they are experiencing their distance learning, while at the same time providing us with useful information to improve the service. We chose to invite students to respond to a questionnaire that would allow us to have a clearer view of the experience they are living and at the same time provide us with useful information to improve the service.

For the construction of the questionnaire we used University of Roma Tre's program LimeSurvey (<http://survey.uniroma3.it/formazione/index.php/admin/authentication/sa/login>). Through this platform we created the survey which was sent by e-mail to all, approximately, 250 students enrolled in the SDE on-line degree course. At the same time, the survey was included in the "technical assistance" news forum on the SDE on-line platform. Anonymous responses took each student about 10 minutes.

The questionnaire consists of 26 items, some with multiple response and some with open response. A section dedicated to profiling students, to understand some of their characteristics:

- place of residence,
- their age,
- if they have children,
- why they chose distance learning.

One of the main aims of the questionnaire is to allow us to know the students' perception of the two missing features of frontal teaching: the figure of the tutor and the use of exchange forums. The next set of questions investigates the perception of the figure of the tutor:

- if it helps to mediate between student and teacher,
- if it encourages participation in the forums,
- whether it is a point of reference in the difficulties of access to the Athenaeum's services.

We also asked, in their opinion, what the role of the tutor should be and in what way it was useful for them. The latter two questions required a spontaneous answer and not a multiple choice. Finally, we ask if they find the availability of a didactic forum useful, if and how often they access to it, which are the advantages found and if they would be more motivated to participate in the discussions if they knew that it has an impact on the final evaluation.

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## **BRIDGING THE GAP BETWEEN EDUCATION, TRAINING AND THE WORLD OF WORK THROUGH THE DC4JOBS PROJECT'S E-PLATFORM**

*Anca Colibaba, Universitatea Gr.T.Popa Iasi, Romania/ EuroED Foundation Romania, Irina Gheorghiu, Albert Ludwigs University Freiburg, Germany, Stefan Colibaba, Universitatea Al. I. Cuza Iasi, Cintia Colibaba, Universitatea Ion Ionescu de la Brad Iasi, Claudia Elena Dinu, Universitatea Gr.T.Popa Iasi, Ovidiu Ursa, Universitatea Iuliu Hatieganu Cluj-Napoca / QUEST, Romania*

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The article focuses on the DC4JOBS project (Programme: Erasmus+/2017-1-DE04-KA205-01527), developed by partners from Cyprus, Germany, Latvia, the Netherlands, Spain and Romania. The DC4JOBS project targets young European students with ages ranging from 15 to 17 and creates materials promoting digital literacy among young people and fighting skills mismatches and young unemployment. The article gives insights into the project's research, which identified young people's digital needs and enabled project partners to create the e-learning materials which will facilitate students' integration into the world of work. The article also presents the project main outcomes meant to support young people to up-grade, up-skill or re-skill their digital competences in order to meet the needs of the labour market and bridge the gap between education, training and the world of work.

### **European context**

In all European countries, youth are a "key asset" (OECD, 2013). However, significant challenges have to be met in order to facilitate young people's transition from school to work as well as their successful integration into the world of work. All European countries have joined their efforts to reduce unemployment and raise young people's chances to access jobs by introducing a number of programmes meant to develop and improve young people's skills required on the market as the lower skills youth have, the higher risk of unemployment they face. Equipping young people with these skills enhances their opportunities to obtain a job in accordance with their qualifications and avoid any mismatching in this respect, thus contributing not only to their well-being but also to their country's economy. As repeatedly stated, young people's unemployment has dramatic effects on their life. Young people who are not involved in any systems (the so-called NEETs): education, employment or training, are at particularly higher risks. In its new Skills Agenda for Europe the European Commission asked all its member states to elaborate and implement national digital skills strategies and found national coalitions to support their implementation. Thus, at the European level the Digital Skills and Jobs Coalition mobilises its member states, companies, non-governmental organisations and education institutions to manage the existing digital skills gap in Europe and create a single digital market in Europe, which is based on a digitally skilled labour force and population.

## THE PEDAGOGICAL EXPLOITATION OF LAND ART WITH ICT FOR THE CULTIVATION OF CREATIVITY: THE CASE OF ACTIONBOUND (AUGMENTED REALITY APPLICATION)

*Alexia Spanoudaki, University of Crete, Greece, Alexandros Stavrianos, Anglia Ruskin University, United Kingdom*

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### Abstract

Art, can be a tool which can approach knowledge in a multi-disciplinary, an inter-contextually, exploratory and experiential way, by combining all elements of a school's curriculum. Furthermore, art can support and inspire the modern school and educate students to cultivate their own personalities. Art, can also initiate the ones who engage with it, into the complexity of reality and provide them with the opportunity to become capable thinkers of the modern's world parameters, by increasing their knowledge, sensitivity, judgment as well as their democratic and social consciousness. Several relevant research, point to the connection of creativity and art. Previous research, also underlines that art can be a fruitful approach for the development of creativity. Moreover, digital communication and informatics technologies can be defined as a sum of tools which can be chosen to promote the creative process. Furthermore, creativity can be expanded by its use, under conditions (e.g. appropriate framework, pedagogical approaches). An interactive process can have positive impact on learners in various levels. Interaction for example, can promote the engagement of learners, with a game which can provide immediate feedback to the decisions of its users, to the observation-recording of the results of an experiment with direct and dynamic feedback. The birth of the phenomenon of Land Art took place after the Minimalist Movement. In the U.S.A, since the 1960s' this artistic trend was created by Robert Smithson, Michael Heizer, Dennis Oppenheim and Carl Andre. One of the movement's primary goals was to condemn the misuse of natural resources. The artist creates the artwork in nature by drawing the needed materials from the environment (e.g. sand, water, stone, etc.) and thus the artwork is presented experientially through the contact of place in time. These artworks, are sculptures that have to do with the way, the time and the impact of natural forces upon objects. Land art can be used by anyone while it uses materials found in nature, such as leaves, tree branches, pebbles, sand or shells. Today's Land artists share not only their vision and experience through their magnificent artwork, but also engage the public to actively participate. Actionbound is an application which allows digitally interactive "scavenger hunts" to take place in a fun way (Actionbound.com). It is a tool that can let someone build an interactive learning object, conduct a treasure hunt or even experience orientation exercises while at the same time, it does so by interacting with its users. User decisions are delivered via a mobile app and the data are recorded via a web interface. The users are invited to answer questions and carry out tasks which are previously setup via a Bound Creator which is accessed by a web browser (University of Brighton). The present study derives from the experiential lab of Land Art, during the 3<sup>rd</sup> E-Learning's Lab Summer School of the faculty of Primary Education of the University of Crete. The participants were educators working in Primary and Secondary Education. The study aimed to cultivate awareness for Land Art, Creativity and IT technologies in Education, through an application of enlarged reality called ActionBound. The participants were asked to respond to problems according to Walla's (1926) stages of the creative process as well as to familiarise themselves with Land Art. In order to do so, the participants had to use technological skills and come in touch with the natural environment of Naxos, Greece. In addition, they were asked to experience social interactions and experience the connection between the permanence of technology to the ephemeral condition of Land Art sculptures. Through an action research it was concluded that, by coming into contact with nature, the participants gained environmental awareness, quickly appropriated the unknown space, cultivated their technological and group skills and cultivated their creativity. The effects that were observed in the course of this project are cultivation of creativity through the course, acquaintance with Land art, cultivation of technological skills, exploration, motivation, cooperation & communication and flexibility.

## **IMPROVEMENT OF GRANTS SUPPORT PROCESS IN SCHOOLS**

*Martina Tomičić Furjan, Igor Pihir, Faculty of Organization and Informatics, University of Zagreb, Croatia*

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### **Grants support process in schools**

Support in the education system implies any form of aid for education users (students, program participants, parents or guardians). Grants may be financial (e.g. scholarships or one-time financial assistance), material (e.g. nutrition, books), or subsidized services (e.g. transportation). The current way of organizing grant and subsidies allocation and implementation in education institutions is significantly administratively burdensome. Grant applicants are expected to collect and deliver documentation proving the right to subsidies, with some of the evidence coming from the education system itself. There occur costs that are related to time spent on resources in each organization. These costs can either be avoided or minimized with use of modern ICT. A new information system should support institutional processes, including the grants support process as well.

The current way of grants support process in education institutions was investigated through several process discovery techniques (process discovery technique based on evidence with document analysis, observation and current information systems analysis, field research by setting several meetings with key users in Ministry of education, school founders (municipalities, cities and counties) and school representatives, interview based evidence techniques and several workshops in large cities). Based on the gathered knowledge about the current system and potentials of contemporary ICT, a future way of performing the process was suggested, which would allow all participants to operate all different subsidies and grants through the one single system.

### **Research results and suggestions for improvement**

The future, new way of providing subsidies enables organization and implementation of grant support process, from every level of subsidy / grant source, from national level (Ministry of Education) to counties, cities and municipalities and the schools themselves, increasing thereby speed and transparency of the process and reducing costs. That is enabled by introducing a single ICT solution, represented through a generic process model.

The generic process model represents a common model of processes that would support an ICT solution and would enable the process of implementing a new mode for any form of grants and subsidies. From the generic process model, individual models for all forms of subsidies and grants can be derived and they represent different execution scenarios of the generic process model. The grant form for subsidizing and organizing student transportation includes all participants listed in the generic process model and it has been chosen as an example for model breakdown in this paper.

The grant subsidies segment supported through segment lifecycle processes should be technologically elaborated to allow a high level of process automation. The process automation would facilitate the collection, analysis and evaluation of data and submitted requests, and that will contribute to run the procedure faster, more transparent and cost efficient.

## LEARNING & SOCIAL NETWORK AT THE UNIVERSITY OF CRETE [ELEARNING LAB]

*Panagiotis Anastasiades, University of Crete, Department of Education – eLearning Lab, Greece*

Social networks play an important role in fostering social interaction in eLearning environments since under educational circumstances they are able to support collaborative learning. The eLearning Lab of the University of Crete designed and implement a complete Learning and Social Network (LSN), based on the principles of open software and the principles of collaborative learning.

### The “Learning and Social Network” (LSN) of The University of Crete [eLearning lab]

The “Laboratory for Advanced Learning Technologies in Lifelong and Distance learning” (eLearning Lab– EDIVEA in Greek), [www.edivea.org](http://www.edivea.org) of the Department of Primary Education of the University of Crete aims to serve the educational and research needs in the fields of Lifelong Learning, Teacher Training and Distance Learning, with emphasis on the pedagogical implementation of advanced learning technologies and social networks to all types and levels of education, both in Greece and abroad. Within its research activities, “eLearning Lab” designed and developed the “Learning & Social Network” (LSN) which aspires to become an open collaborative social network for learning purposes by deploying the philosophy of collaborative culture of Web 2.0 technologies. The LSN creation was based on the Elgg open source platform and its educational design aims at enabling educators and learners to form a personalized environment for teaching, learning and social networking. The LSN was developed in order to encourage interaction among its human resources by creating the conditions and by actively supporting the development of communities of shared interests, and it aims at promoting collaborative learning by taking advantage of the social interaction opportunities offered by Web 2.0 applications.

The Learning & Social Network (LSN) of EDIVEA (Figure 1) aspires to become a fully-featured social interaction environment, adapted to the needs of distance learning.



Figure 1. The LSN Interface (<http://elgg.datacenter.uoc.gr>)

## **“CONNECTING SCHOOLS” PROJECT: WORKING FOR AN INCLUSIVE LEARNING NETWORK**

*Sonia Camara, airea-elearning, Itziar Kerexeta, University of Basque Country, Spain*

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This poster explains the “Connecting Schools” Project, which has been created by airea-elearning (<https://airea-elearning.net/en/>) with the aim of providing a learning virtual network involving teachers from different countries so as to share experiences, doubts and best practices about inclusion. Based on the principles of understanding knowledge as a common good, supporting inclusive education and fighting for Societal Transformation, this project offers a meeting point to everyone who wants to change the focus of the teacher centred approach of education to the student centred one in order to generate a democratic educational and connected community. At the same time and when interacting and creating content in digital environments, it is expected that the digital teaching competence of the participants will increase, obtaining more opportunities for the horizontal exchange of educational experiences of professionals from different parts of the world who work for inclusion.

### **“Connecting Schools” Project**

The main aim of “Connecting Schools” Project, is to generate a virtual community where teachers from Spain and Latin America working on schools that promote participatory dynamics, can share their educational practices. In fact, it is conceived as a network that unites, empowers and inspires educational agents to achieve progress in the challenge of Societal Transformation.

Our departure premise is the value of understanding knowledge as a common, that can be enriched through learning networks, constantly in progress, always reflexing. In order to achieve this goal, “Connecting schools” is based on four editions (spread over two years) of virtual training in the art of “Engaging students’ voices”, where teachers of Spain and Latin America, share their experiences about implementing this approach in their real contexts in order to feed their schools with inclusive and participative techniques. In this way, global educational priorities can be connected with real contexts and concrete strategies, from connected digital environments.

Apart from the virtual training Moodle platform, social media are also vital in this project. Using Facebook and Twitter potentialities as a meeting point of the members of this always growing community, everyone can provide the own experience and at the same time, learn from other experiences. As it is mentioned in the project’s website ([www.conectandoesuelas.org](http://www.conectandoesuelas.org)), during the second year a virtual congress is going to take place. In this free event, everyone interested in this subject and in being a member of this community can take part.

The main goal and success indicator of “Connecting Schools” is not only to offer a training process, but to build a horizontal self-supporting network that will remain alive and active even when the training finishes, because it means that a real virtual community has born. As it is mentioned in the UNESCO publication “Rethinking education: Towards a global common good” “education is at the heart of our efforts both to adapt to change and to transform the world within which we live” (UNESCO, 2015; p.3). We see an optimistic future for this project: more countries involved, wider contents and the permanence of an always bigger network. In order to achieve this goal, we continue imagining new inclusive scenarios where everyone has place. Because to connect is to grow. Because technology offers us the chance to open a world-wide window of opportunities and relationships for the construction of a better world.

## **STUDENTS' OPINIONS RELATED TO VIRTUAL CLASSROOMS WITHIN THE ONLINE DISTANCE EDUCATION GRADUATE PROGRAM**

*Secil Kaya Gulen, Anadolu University, Turkey*

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Face to face and virtual classrooms that came up with different conditions and environments; but similar purposes have different characteristics. Although virtual classrooms have some similar facilities with face-to-face classes such as program, students and administrators, they have no walls and corridors. Therefore, students can attend the courses from a distance and can control their own learning spaces.

Virtual classrooms defined as simultaneous online environments where students in different places come together at the same time with the guidance of a teacher. Distance education and virtual classes require different intellectual and managerial skills, and models. Therefore, for effective use of virtual classrooms, virtual property should be taken into consideration. One of the most important factors that effects the spread and effective use of the virtual classrooms is the perceptions and opinions of students – as one the main participants. Student opinions and recommendations are important in terms of providing information about the fulfilment of expectation. This will help to improve the applications and contribute to the more effective implementations.

In this context, ideas and perceptions of the students related to the virtual classrooms in general were determined in this study. Advantages and disadvantages of virtual classrooms, expected contributions to the educational system and expected characteristics of virtual classrooms have examined in this study. Students of an online distance education graduate program in which all the courses offered by virtual classrooms have asked for their opinions. Online Distance Education Graduate Program have totally 19 students. The questionnaire that consists of open-ended and multiple choice questions sent to these 19 students and finally 12 of them answered the questionnaire. Analysis of the data presented as frequencies and percentages for each item. SPSS for multiple-choice questions and Nvivo for open-ended questions were used for analyses.

According to the results obtained by the analysis, participants stated that they did not get any training on virtual classes before the courses; but they emphasize that newly enrolled students should be educated about the virtual classrooms. In addition, all participants mentioned that virtual classroom contribute their personal development and they want to improve their skills by gaining more experience. The participants, who mainly emphasize the advantages of virtual classrooms, express that the dissemination of virtual classrooms will contribute to the Turkish Education System. Within the advantages of virtual classrooms, “recordable and repeatable lessons” and “eliminating the access and transportation costs” are most common advantages according to the participants. On the other hand, they mentioned “technological features and keyboard usage skills affect the attendance” is the most common disadvantage. Participants’ most obvious problem during virtual lectures is “lack of technical support”. Finally, “easy to use”, “support possibilities”, “communication level” and “flexibility” come to the forefront in the scope of expected features of virtual classrooms. Last of all, students’ opinions about the virtual classrooms seems to be generally positive. Designing and managing virtual classrooms according to the prioritized features will increase the students’ satisfaction and will contribute to improve applications that are more effective.

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## **DEVELOPMENT OPPORTUNITIES FOR LABOUR MARKET COMPETENCES AT THE BASE OF HIGHER EDUCATION**

*Katalin Nagy, György Molnár, Budapest University of Technology and Economics, Department of Technical Education, Hungary*

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The early empirical research on the entry into the labour market of the graduates' and their career opportunities, began in the mid-2000s, and ended by 2013. The focus of the investigations was firstly on the comparative analysis of the labour market "utilization" of the diplomas issued by HEIs and secondly on the competences of graduates and expectations of the labour market. The results of the questionnaires conducted between 2004-2012 by the Hungarian Chamber of Commerce and Industry and Institute for Economic and Enterprise Research, as well as the student interviews in Graduate Course Tracking System (DPR), agree on one substantive issue. In many cases the students were not aware of the labour market opportunities after graduation, the labour market expectations and they lacked individual professional aspirations.

There were also lecturers at the Department of Technical Pedagogy at the BME who did research on the issues and had a competitive market experience which they used to develop a curriculum for a freely selectable course, which served to expand the knowledge on the world of work.

The lack of preparation for entry into the world of work is not only evidenced in the results of the research, but also more directly visible in the growing interest in the freely selectable course offered to BME students. During the semester, student activity related to the course, positive student feedback, successful job- and career-seeking applications among the respondents supported the hypothesis that students need to prepare for the world of work during higher education studies. This was a novel initiative, which meant that the methodological and technological opportunities provided by the infocommunication technology should be incorporated into subject activities to maintain student interest and develop labour market competencies.

The aim of the authors was to provide a modern, atypical teaching methodology that uses gamification. The method of gamification in the subject mentioned allows flexible learning pathways, student-centred, tailor-made adaptive teaching, encouraging student awareness, autonomy, and responsibility for career planning. In this poster, we intend to present the characteristics of the gamification method developed and applied within the subject, the results of the effectiveness and the results of an empirical survey conducted among students. We conducted our quantitative based questionnaire survey among full time students of the Budapest University of Technology and Economics using a simple random sampling in the fall of 2017. In the course of the study, we focused on learning how much are the students' aware what competencies are expected by labour market at the start of their career, how effective is the course, how much did it contribute to the development of labour market competences among students. Our results firstly match the challenges of today's digital pedagogy and the motivational needs of the digital generations and secondly clearly contribute to a new approach to the subject. This way, the pilot can be called successful. We believe that by developing our ICT based support system and by expanding our innovative, experience-based methodology solutions based on BYOD, we can greatly contribute to the design of new curricula in the field of methodological cultural.

## **FACILITATING YOUNG PEOPLE'S INDUCTION INTO THE WORLD OF WORK THROUGH THE WWW ONLINE APPRENTICESHIP SIMULATOR**

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The article gives insights into the www project's online apprenticeship simulator, which offers young people opportunities to cope with changes, link theory to practice and get the employability, entrepreneurship and digital skills necessary to get a job. The simulator involves students in interactive training sessions of apprenticeship, proposing virtual work situations related to several jobs identified by research as most wanted (mechanic, electrician, nurse, etc.). The article presents the results of the WWW – We Welcome Work project – Online apprenticeship simulator for introducing work strategies to teachers, students and companies (Ref. no.: 2016-1-RO01-KA202-02471), funded by the European Commission within the Erasmus+ Programme.

### **Introduction**

The new challenges related to education and employment that Europe is facing nowadays are creating unprecedented demands for schools, which have to meet their students' growing needs. The Council of Europe has repeatedly stated that all states' commitments should be channelled towards young people so that they will benefit from quality education and training, from decent work and living conditions, which will enable them to contribute to the development of our society. However, despite these commitments, opportunities offered to young people to help them cope with changes, link theory to practice and get the necessary employability, entrepreneurship and digital skills are still scarce. On the other hand, lack of workplace experience and the related skills contributes to the skills gap and reduces their chances of getting a job.

Although career orientation has been part of school policy, in spite of all efforts and under the pressure of dramatic and fast changes, young people do not have enough information about their future jobs, the skills they need, responsibilities they have; tasks they have to do or challenges they may face in their future jobs. The We Welcome Work (WWW) project attempts at meeting this gap. The main aim of our partnership is to facilitate young people's induction into the world of work by connecting the theoretical knowledge they acquire at school with the world of work.

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## SUPPORTING DEVELOPMENT OF DIGITAL LEARNING SPACES IN THREE DIMENSIONS

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### Objectives of the workshop

The objectives of this workshop are to:

- Critically evaluate today's learning spaces
- Investigate what is lacking in the existing environments
- Discuss how to develop competence for teaching in digital spaces
- Harvest good practice and ideas for development of new digital learning spaces

### Description

Physical learning spaces have been discussed intensively over the last few years and new ideas have directed the construction of new kinds of learning environments e.g. ALC rooms, (Active Learning Classrooms). However, the physical space is only a part of students' learning environment. The digital environment is becoming increasingly more important, but development of the digital space has received less attention. As students today use social media, digital tools and platforms as natural tools in their daily life, it is also important to create more innovative digital learning spaces which encourage and facilitate student interaction and in which students feel comfortable to work. This means that the demands on teachers' knowledge and competence change from not only being able to use digital environments, but also to contribute to the development of new digital learning environments. An example of this change can be seen in the Swedish national recommendation regarding the learning outcomes for the professional training in academic teaching. The demands have changed from "being able to use digital tools" to "contributing to developing both physical and digital learning environments".

As integration and use of digital technology have become priority policy across Europe, the issue of creating supportive digital learning environments stretches over the micro, meso and macro dimensions. In this context, the micro level refers to the individual, the meso level to the institutional and the macro level to the national and/or international level. The European Commission states that building teachers' pedagogical digital competence is essential for digitalization. Educators now require a broader set of competencies to meet the challenges of rapidly changing demands in the digital environment, as stated in the European Framework for the Digital Competence of Educators (DigCompEdu).

This workshop has a format of a digital world café with group discussions. Participants will be able to attend the workshop at the venue or online (hybrid workshop/online webinar). The workshop will use a digital canvas, called Padlet, and each table will have a dedicated digital synchronous room in Zoom. A main room will be set up for the common parts of the workshop. Depending on the number of participants, five to seven questions will be discussed from three dimensions (micro, meso and macro). The participants will be encouraged to contribute to all the activities, such as group and plenum discussions and adding material, comments, and group results to online canvases (Padlets).

The presentations will be interactive with opportunities for the on-site and the online participants to ask questions as well as engage in discussions with the speakers and with other participants. The results will be posted on multiple online canvases (Padlets). The workshop uses Twitter as a social media channel for social networking, sharing, online and virtual presence and involvement possibilities. Further discussions will be facilitated by ITHU (ithu.se) as the materials presented and created during the workshop, together with recordings, will be available and public after the event.

## **SOMESKILLS X: USING PERSONAL ASSISTANT TECHNOLOGY FOR LEARNING**

*Emma Gillaspay, Cristina Vasilica, University of Salford, United Kingdom*

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Learner attitudes are changing. This workshop will share the initial stages of a unique learning transformation which aims to create the self-determined learner who is prepared to work and live in their digitally enabled future.

By participating in this workshop, participants will:

- examine the project data gathered to date
- experiment with personal assistant technologies
- debate the potential future applications of using this technology for learning

By 2020, millennials will account for 50% of the global workforce. Generation Alpha – born 2010-2025 – will begin to enter Higher Education in the next decade. As educators, we need to provide challenging learning environments to prepare these generations for innovating and working during and beyond the social age. The initial stage of the SoMeSkills X project involves the development and delivery of a unique learning environment for undergraduate nursing students. In this environment, students explore how social and digital media can be effectively embedded to trigger positive health and wellbeing outcomes. Learners also gain digital confidence and competence through active experimentation with new technologies. The environment encourages a social, de-linear approach to learning where the student determines their own learning needs and takes action to further develop themselves. Our innovative approach investigates the potential for using personal assistant technologies such as Amazon Echo Dot and Google Home to deliver healthcare education. The potential applications of this growing technology is yet to be evaluated in Higher Education and we would like to open the debate at EDEN 2018.

This highly interactive workshop will be comprised of three elements:

- A case study where participants will examine the project data gathered to date. This project brings together students, academics, patients, health practitioners and other partners to explore the existing use of global networks accessed through social and digital media. Students co-develop micro-learning materials, share practice, generate case studies, and curate existing resources around effective professional social media use in healthcare. Students have access to personal assistant technology (Amazon Echo Dot and Google Home) to assist with their learning.
- A mini hackathon will enable participants to crowdsource solutions to educational issues they are currently facing, using social and digital media. Participants will use personal assistant technology to complete a micro-learning needs analysis of this social learning approach for their own practice.
- A debate will encourage participants to share ideas, challenges and solutions for the potential applications of personal assistant technologies through three lenses – in their own learning (micro), in their department/organisation (meso) and how the educational landscape may change (macro)

Virtual participants will be encouraged to contribute to each element in real time through Twitter, Mentimeter, Padlets and their own personal assistant technologies.

Together the community will consider how this approach could transform the way we work and study.

## **EXPLORING THE POTENTIAL OF OPEN DATA: FROM ONGOING PRACTICES TO FUTURE SCENARIOS**

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With the digitalization of services and research data collection in the public space; as well as with the paradigm of the Internet of Things where more and more data from daily activities are collected in several ways, opening up this richness has become a social endeavour. In this context, the assumption that open data can encompass different forms of learning, or that they could be adopted in educational scenarios appears as a natural consequence. There are rich existing educational practices that have been characterized, and approaches for educational applications of open data are being explored. Moreover, some have discussed the relevance of this approach under the lens of critical pedagogy, emphasizing the importance of open data for social cohesion. However, an important challenge for the societies to mine the treasure of open data, in a context of Open Education, regards the analytical basis and frameworks for practice that support mainstreaming. This has been a concern for the Network “Open Education Italy” that launched the project “ODA – Open Data per l’Apprendimento”. This workshop is an activity of the network and aims at exploring the educational potential of Open Data in diversified contexts of learning: formal (school and higher education) non-formal (work) and informal (political activism and civic engagement).

The workshop’s target are not only researchers but also practitioners interested on understanding the concept of open data connected to lifelong learning, as well as designing educational interventions adopting Open Data.

The workshop will be organized in two simple phases: (a) a conceptual introduction, which will put the basis to understand and discover the principles, the policy context and the existing practices relating Open Data, together with cases addressing practices; (b) a “hands on” moment in which the concepts above will be applied to the participants’ pedagogical practices, and their sense discussed on the light of both practical and deontological implications.

The topics that will be presented during the first part of the workshop, guiding reflection, will be:

- What is an Open Educational Resource and why Open Data could apply? The central thesis discussed will deal with the need of exploring the specific characteristics of Open Data in the light of the already well-known issues and constraints regarding Open Educational Resources, to integrate them as particular category.
- Open Data as Open Educational Resources: a model to train educators. Open Data can be key in the development of transversal skills (including digital and data literacies, alongside skills for critical thinking, research, teamwork, and global citizenship), enhancing students’ abilities to understand and select information sources, to work with, curate, analyse and interpret data, and to conduct and evaluate research. This idea will be discussed along several examples for practice.
- Open data as a plea to promote open knowledge and participative continuous learning in local health-care settings. The presentation describes an innovative activity run in the health-care system in the city of Ferrara, between 2015 and 2017, and promoted by the Region Emilia-Romagna. A researcher observed and ethnographically described the cultural and the organizational changes in a local health-care setting during an experimental learning activity aimed to change the internal and the institutional communication of the local public health-care services, including the access to open datasets in Health-care.
- Learning in the datafied society: from informal to formal learning, a critical perspective. Overall, in this presentation it will be underlined the fact that living in the datafied society could encompass for children and adults more surveillance and exploitation by those controlling/showing data, instead of more empowerment. However, the audience attention will be driven onto the potential of education and training to heal the above mentioned issues. Three cases will be considered in order to trigger the audience’s reactions.

## MICROMASTERS ARTICULATING TO YOUR MASTER'S DEGREE

*Tracy Tan, Massachusetts Institute of Technology, United States of America*

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The Massachusetts Institute of Technology (MIT) has been at the forefront of transformations in education since its inception. OpenCourseWare was the beginning of a dramatic acceleration in the sharing of MIT-calibre education with learners and teachers around the world in 2002. Then, in 2012, MIT responded to the growing demand for interactive modes of digital learning by co-founding the edX platform with Harvard University. MIT established MITx to help its faculty to develop MOOCs on edX. As the online education space has become crowded with offerings, it is important to build online learning opportunities, and credentials, whose quality, value and credibility are clear to both learners and industries. Furthermore, there is a significant unmet demand for MIT-calibre Master's level professional education. Responding to both these drivers, MIT is today leading a new transformation in digital learning. MITx MicroMasters was created in fall 2015 at MIT. MicroMasters provide a new way for educators, learners and industries to respond to burgeoning demands for new skills in an economy that is in the midst of a transformation, much as MIT itself did at the time of its founding. A MicroMasters is a coherent suite of Master's-level online courses, that provides a cohort of global workplace learners from a particular professional domain a boost to their education that they need to advance their careers and subsequently, perhaps, to accelerate their completion of a professional Master's degree at MIT or elsewhere. The holder of an MITx MicroMasters credential has completed a comprehensive, demanding, graduate-level sequence of MOOCs that yields mastery of content and skills that gives them a strong foundation in their professional domain. It is what happens next, though, that is the key to seeing that MIT stands behind the credibility of the credential. MIT guarantees that when an MITx MicroMasters recipient who wants to complete the entire corresponding graduate degree is admitted to MIT to do so, they will get graduate-level MIT credit for the online work that makes up their MicroMasters, typically allowing them to complete a professional Master's degree with one less semester spent at MIT and away from their job. Only a small fraction of MicroMaster's recipients go this route, but this guarantee from MIT confers credibility on the credential received by all the global learners who complete their MITx MicroMasters. There are 47 MicroMasters programs offered by 24 global universities as of today. Over 1000 learners have completed the MITx MicroMasters credential. MIT can only accommodate a small number of these learners to study at MIT. There are still many highly qualified learners who are in need of getting into graduate programs somewhere. The MITx MicroMasters is now growing a global ecosystem among universities for credit recognition. With MITx MicroMasters credentialing, learners have multiple options for continuing their graduate studies. They can choose to apply to the blended Master's at MIT, or utilize the pathways built by MIT with the various Master's programs at other academic institutions in the US and around the world.

## INNOVATIVE LEARNING SPACES

*Ebba Ossiannilsson, Swedish Association for Distance Education, Sweden*

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### Innovative Learning Spaces

Learning is ubiquitous, as it takes place in all means, at all-time and everywhere. Learning today can take many forms, such as formal, informal and non-normal and take place anywhere and anytime. Whoever we are, wherever we live we are presented with opportunities to learn every day of our life. Humans are learning throughout life, as life is learning humans throughout.

With the rapid advancements in economy, technology and society in general, that occurred in the last decades of the 20<sup>th</sup> century, the demands on the educational system increased in a number of ways for the 21<sup>st</sup> century. Critical thinking, collaboration, innovation, Information and Communication Technologies (ICT), digital literacy, adaptiveness, are some of the basic skills that students and citizens of today and of tomorrow (and citizens of tomorrow) are asked to possess in order not only to fill the industry demands but also to survive and function in society.

Worldwide the topic of re-thinking traditional learning spaces and aligning them with user expectations, and the joy of learning are highly emphasized. Next generation learning spaces is a hot and highly debated topic right now due to high demands and trends for education, not at least to the changing learning landscape, and UNESCO SDG4.

Space, whether physical or virtual, can have a significant impact on learning. Innovative learning spaces focuses on how learner expectations influence such spaces, the principles and activities that facilitate learning, and the role of technology from the perspective of those who created learning environments: academics, faculty, learning technologists, librarians, and administrators. Information technology has brought unique capabilities to learning spaces, whether stimulating greater interaction through the use of collaborative tools, videoconferencing with international experts, or opening virtual worlds for exploration. Together space, technology, and pedagogy empower learner success.

*“If you can design the physical space, the social space, and the information space all together to enhance collaborative learning, then that whole milieu turns into a learning technology, and people just love working there, and they start learning with and from each other.” – John Seely Brown*

### Space as a Change Agent

New ideas about learning spaces represent a significant opportunity for higher education to make learners – and learning – more successful. Through the application of information technology, today's learning spaces have the potential to serve the new learning paradigm and at the same time meet the needs and expectations of the most recent generation of students, the Net Generation. Since education is the core mission of higher education, learning and the space in which it takes place are of the utmost importance. In order to best serve the educational enterprise, we must design learning spaces that optimize the convergence of the Net Generation, current learning theory, and information technology.

Learning spaces need to be expanding outside the classroom/school or university. As for example what Cormier emphasize the society is the curricula. Next generation learners require more of just for me, and just in time learning, and more authentic, and challenge-based learning. They are also more used to Internet and social media, which have to be integrated into learning spaces, for interactions' and cross actions.

Have you ever set up a physical or virtual learning space? Space as a change agent? How can learning spaces change teaching approaches? What are the learning spaces of the next generation? Learning spaces and evolving pedagogical approaches? These topics and more will be discussed during the workshop.

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## PEDAGOGIC VIDEO DESIGN PRINCIPLES, AT THE MICRO LEVEL

*Jack Koumi, Educational Media Production Training, United Kingdom*

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### Origin of the Workshop

Based on Part 2, How to teach with video, of the workshop facilitator's MOOC, Achieving the Pedagogic Potential of Video: What and How to Teach with Video, run on the EMMA platform in Jan 2017 – in which video clips illustrate the “30 Design Principles in the 8 categories” below. (Part 1, What to teach with video, will not be covered.)

- |                                                |                                  |
|------------------------------------------------|----------------------------------|
| <b>1. HOOK</b> (a. capture b. retain interest) | <b>5. SENSITISE</b>              |
| a Shock / surprise / delight                   | a Priming                        |
| b Suspense, entertain, engross / appetise      | b Reassure / build confidence    |
|                                                | c Personalise the teacher        |
| <b>2. SIGNPOST</b> (what's coming)             | d Music style & timing by design |
| a Set the scene                                | e Consistent style               |
| b Signpost: what's coming later                |                                  |
| c Chapter Heading: what's next?                | <b>6. ELUCIDATE</b>              |
| d Heads-up: what to look out for               | a Vary tempo to indicate syntax  |
|                                                | b Enhance legibility/audibility  |
| <b>3. STIMULATE COGNITIVE ENGAGEMENT</b>       | c Maximise Cognitive Clarity     |
| a Pose questions                               | d Control pace, depth, breadth   |
| b Encourage prediction                         |                                  |
| c Students' personal relevance                 | <b>7. REINFORCE</b>              |
|                                                | a Repetition (with a new angle)  |
| <b>4. ENABLE CONSTRUCTIVE LEARNING</b>         | b Re-exemplify                   |
| a Words NOT DUPLICATING pictures               | c Words-image synergy            |
| b Visual metaphor                              | d Compare / Contrast             |
| c Scaffold construction of knowledge           |                                  |
| d Let students see the context                 | <b>8. CONSOLIDATE</b>            |
| e Concretise / Activate their knowledge        | a Recapitulate                   |
|                                                | b Summarise key features         |
|                                                | c Integrate associated materials |

### To date, there has never been any other course that meticulously covers the MOOC principles

Now that video is “easy” to produce, there is a proliferation of teaching/learning videos, but little attention is paid to pedagogic video design principles (such as the 30 above) that are necessary to achieve effective learning.

### How the Workshop will be conducted

The workshop facilitator will play a selection of the 7 videos in Part 2 of the MOOC (Pedagogic Video Design) and stop after each video to ask and answer questions, and to initiate discussion – mimicking the interactivity in the MOOC. The whole content cannot be presented within 90 minutes; however, a Handout will summarise the missing content. Another two handouts will support the video-design group-work to be carried out in the final 30 minutes.

A Taste of the workshop: the following DropBox folder contains 1 of the 7 MOOC videos plus the above three handouts: <https://www.dropbox.com/sh/hsvoztqqu3we2oq/AACMdwKFXSeKUA EKZg7ppAt9a?dl=0>

### Objectives

Participants, in small groups, will be able to implement design principles to achieve the pedagogic potential of video.

### References

The MOOC, and the derived workshop above, update the content of Chapters 1, 2, 3, 5, 6 of the author's book *Designing Video and Multimedia for Open and Flexible Learning*, Routledge 2006/9.

## **FLIPPING A UNIVERSITY AROUND THE WORLD WITH AUGMENTED AND VIRTUAL REALITY**

*Michael Mathews, Oral Roberts University, United States of America*

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In 2014, Oral Roberts University's (ORU) Board of Trustees created a Globalization Case Statement to initiate a discussion around a "Global Learning Space". In this Case Statement, imperative number six stated that we would "use new paradigms in technologies to reach millions with whole person education" – which promotes spiritual growth, academic excellence, physical fitness, social skills, and professional competence. The vision was to "flip" the university and transform it from one central campus educating students in Tulsa, Oklahoma into a digital global campus making our education program available to students worldwide.

To work toward this vision, ORU invested \$8.5 million and the next 24 months constructing the Global Learning Space called the Global Learning Center, which would include classrooms, studios, a performance hall, offices, teleportation system, and conference rooms. In the Global Learning Center, classes and programs would be recorded and stored on file servers to be retrieved by students on their personal devices or computers. The third floor of the building would also feature an Augmented and Virtual Reality (AVR) room, with would allow students to access more than 7,000 academic subjects.

Video View – <https://vimeo.com/199352021>

Website – <http://www.oru.edu/glc>

Attendees will learn:

1. How does flipping a classroom compare to flipping a university.
2. How does using this modality improve increase retention >90%.
3. How does this modality enhance and fulfil the pinnacle of Blooms Taxonomy.
4. How does this modality engage students while inspiring faculty.
5. A live demonstration from the USA Global Learning Center.

## FROM MICRO STRATEGIES AND MESO PLANNING TO MACRO ENDS: EXPLORING A SITE FOR DESIGNING QUALITY ONLINE LEARNING

*Lindy Croft-Piggin, Barney Dalgarno, Sarah Hyde, Charles Sturt University, Australia*

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### A model for best practice online learning

The Online Learning Model (OLM), *Mixer* and *Learning Exchange* developed by Charles Sturt University, Australia, were developed to provide online educators with the tools to be responsive and agile designers of learning experiences. This workshop is an opportunity to investigate the effectiveness and functionality of these tools.

The *Online Learning Model* (OLM), elaborates a set of elements which are known to result in increased student engagement linked to measures of teaching quality, retention and overall satisfaction. The model alerts educators to the elements that exemplify best practice online learning, highlighting a range of effective strategies. The *Learning Exchange*, an online repository of OLM exemplars and micro strategies, provides an open access site where a wide range of best practice approaches are elaborated and illustrated. The *Online Learning Model* and *Learning Exchange* were developed to support the design of online higher education courses that are responsive and adaptive to learner needs for flexibility while maintaining quality standards in the seven key areas identified in the literature as characterising engaging processes. The concept of engaged learning that underpins this teaching-learning model builds on Moore's highly cited model of Distance Education engagement, which incorporates learner-teacher, learner-learner and learner-content interaction. The CSU model broadens the notion of interactivity to one of engagement and adds learner-community engagement as a crucial element of professional courses as well as institutional engagement as a key additional element of the student's overall connected experience. This focus on the various aspects of student engagement is elaborated and supported by learning design strategies encompassing a series of seven elements in the OLM: "Teacher Presence, Interaction with the Professions, Interaction between Students, Interactive Resources, Learning Communities, Flexible and Adaptive Learning and E-assessment".

The OLM *Mixer* is an interactive online tool devised to enable course and subject design teams to explore the possibilities for enhancement within each of the OLM elements inside a subject and/or course. Just as a sound mixer separates out elements of a musical piece, allowing particular features to be focused on individually with a visual display illustrates the relationships between these elements, The OLM *Mixer* may also be used to enable choices to be made and levels adjusted when planning a learning cycle. It is not desirable (or possible) to focus on each element of the OLM at full volume, a balance must be achieved. Finding the right levels requires a sense of the audience, the purpose, the context and the nature of the "instruments" available. The *Mixer* comprises descriptors of levels of engagement with each element on a scale of 1, *light engagement*, to 5, *deep engagement*. Current practice may be mapped to the descriptors or aspirational designs for future courses and subjects, and plotted for planning purposes according to the levels described. It enables practitioners to evaluate performance in each of the seven key areas of the OLM.

As an online portal the *Learning Exchange* provides examples, illustrations and guidance in implementing best practice strategies at both the micro and meso levels. Through micro strategies and case study examples of implementation of each of the elements, models of practice are provided to support engagement ranging from a light touch to an immersed commitment. Online educators may work independently through this site using the *Mixer* to guide their thinking or it may be used as the basis of a series of scaffolded professional development workshops or design activities.

Designing for e-learning has evolved in recent years from a linear process, like the 5 step ADDIE model (Analyse, Design, Develop, Implement and Evaluate) towards more agile methods akin to the agile movement in software engineering, using dynamic collaboration to support student needs. In recent years the ADDIE model has been criticised as being "too pre-determined, linear and inflexible to handle more volatile learning contexts" (Bates, 2015; p.4). The OLM seeks to harness a more dynamic flexible approach which fosters increased student engagement and connectedness. It acknowledges the context sensitivity and multidimensional topographies of online learning packages. The combined application of the model, exchange and mixer acknowledges the need to find a balance between the different elements of online learning. They are a practical response to the literature which elaborates the wide range of elements we need to consider in designing online learning experiences. This workshop is an opportunity to investigate the effectiveness of these tools.

## **ROAD TO BARCELONA: DEVELOPING JOINT INTERNATIONAL RESEARCHES PRESENTING RESULTS AT THE 10TH EDEN RW**

*Antonella Poce, Francesco Agrusti, Maria Rosaria Re, Università Roma TRE, Italy, Josep M. Duart,  
Universitat Oberta de Catalunya, Spain*

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### **Brief summary**

This workshop is devoted to finding links to develop joint international researches with the aim of presenting results at the forthcoming EDEN Research Workshop event, entitled “Personalised Guidance and Support for Learning”, which will be held in Barcelona, from 24<sup>th</sup> to 26<sup>th</sup> of October 2018.

Usually, proposal writing workshops are tailored to discipline areas, focusing on one side on business, social sciences humanities and so on, and another on sciences, health sciences, engineering and technology. In the present proposal, the intensive workshop introduces participants to build a network of interested members with specific knowledge in order to develop a joint proposal for the next EDEN event. Focusing on the EDEN RW 10, participants in this collaborative-learning workshop will gain significant new insight into the upcoming research themes creating small working groups organising participants by research interests, delivering a successful paper proposal.

To achieve this aim, starting from the promotion of the Network for Academics and Professionals of EDEN (NAP), where each one should be registered or might be afterwards, we will propose a specific speed dating session making a particular combination of crossings so that everyone meets everyone (with a round-robin algorithm).

At the beginning of the workshop each participant is given a card of approval, on which precise indications are printed to be sure that, at the end of the session, everyone is aware of each other's research interests. Once the session is over, each participant indicates on their card the most appreciated: the workshop presenters will collect the cards and check which meetings were mutually appreciated by participants. If a meeting has worked (and therefore the interest is reciprocal) a group with involved participants will be created.

The aim of this workshop is to create new networks between the participants and to ensure that these newly created research groups can present a successful proposal at the next EDEN event.

### **Format of the session (provisional agenda)**

The agenda encompasses the following 6 activities (total of 90 minutes):

1. Introduction to the workshop – 5 minutes
2. Introduction to the forthcoming EDEN Research Workshop event, entitled “Personalised Guidance and Support for Learning” and to the EDEN Network of Academic and Professionals – 10 minutes
3. Speed dating between participants – 25 minutes
4. Working groups creation grouping participants by speed dating results – 10 minutes
5. Co-designing the research proposal – hands-on activity in small groups – 30 minutes
6. Short summary and evaluation of the workshop – 10 minutes

The workshop is designed as a collaborative session with hands-on activities in small groups supported by templates and includes introduction of participants' interests and experiences in the forthcoming EDEN Research Workshop themes, focusing on the roles of teachers in supporting student digital learning. Moreover, the Best Paper Award winners from past editions will be presented in order to understand how write a winning paper for the upcoming RW10.

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## USING ONLINE ASSESSMENT SYSTEMS TO SYSTEMATICALLY RESPOND TO ASSESSMENT'S GRAND CHALLENGES: REVIEW AT UNSW

*Daniel Carroll, University of New South Wales, Australia*

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This demonstration of UNSW's use of REVIEW will highlight how an online assessment system has provided a leading Australian university with a platform to *systematise* responses to the *grand challenges* of assessment.

### **Abstract**

Some failings to the grand challenges of assessment persist in Higher Education. While the Assessment for Learning (AfL) movement and considerable research has informed and improved assessment policy and development in many institutions, most front-line technology-based assessment systems and tools still under-deliver in supporting learner-centric approaches to assessment and better student assessment.

Since 2011, the UNSW Business School has used REVIEW, an Australian software developed by academics for academics. REVIEW provides an online platform for criteria based assessment and feedback and connects individual assessments with longer-term learning. Our experience has seen a systematic and widespread improvement in assessment experiences among staff and students. This is based on the clarity of criteria-based assessment, observed reductions in staff marking times, the focus on feedback related to the judgement criteria and the increased engagement of students in assessment judgement processes through self and peer assessment. In six years, system usage has grown from 4 pilot courses at UNSW to 150 courses with 13,000 student users per term. The demonstration references the wider context of meeting big challenges facing assessment (see below).

### *Overview*

A brief three-minute introduction illustrates core platform elements of REVIEW (e.g., the criteria-based marking screen, task to degree goal-mapping, student self and peer assessment interfaces, staff assessment reports and analytics interface). Unlike in an LMS, student data and activity is much more student centric, with in-built self and peer assessment and personalised student reports core to the student assessment experience.

- Challenge 1: Assessment is often poorly described, inadequately recorded and not recoverable.
- Challenge 2: Individual assessments are atomistic and poorly connected to longer-term learning.
- Challenge 3: Students are passive in assessment.
- Challenge 4: Evidence of student access to and use of feedback is a "black box".
- Challenge 5: Staff hate marking and giving feedback.
- Challenge 6: We don't have learner-centric assessment systems.

## **INTRODUCING ACCESSIBLE SELF-ASSESSMENTS AND SELF-EVALUATIONS IN BASIC SKILLS TO REACH OUT TO A WIDER POPULATION – COMBINING THE MICRO AND MACRO LEVEL**

*Ingrid Radtke, Skills Norway, Norway*

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### **Background**

Although Norway does have a system for the provision of basic skills training for adults, the target groups remain largely unaware of their training possibilities. While Norway as whole scores higher than average in PIAAC, significant percentages of the population score too low.

Results of the PIAAC-study (Programme for the International Assessment of Adult Competencies) in Norway show a large number of low achievers on or below level 1 in Norway (out of approx. 5 million inhabitants). For the area of literacy, it is estimated that 400,000 adults are low achievers while the number for numeracy is 480,000 and for problem solving with ICT even 800,000.

Studies by Skills Norway show also that the country lacks adequate assessment tools, especially a simple, user-friendly, and accessible screening test which can be used both for self-testing and to help professionals in employment agencies or career centres determine if individuals are in need of basic skills training.

The demonstration shows the result of the project, which is the creation of user-friendly online screening tools in reading, numeracy and IT-skills that can be used by both individuals and counsellors to determine the need for basic skills training. These tools represent a new assessment culture, allowing test-takers to assess themselves by using self-assessments and self-evaluations. At the same time, it combines the different levels in education by trying to reach out to the micro level, the individual adult who is in need for more training but might not be aware of training needs and possibilities offered. On the macro level, the project hopefully is going to raise the level of competence in basic skills in the Norwegian society as a whole.

### **Features to be presented**

The tools to be presented are self-assessments and self-evaluations in reading/writing, numeracy and digital competence.

### **Web-address**

The tools are available in both Norwegian and English and are open available so that they could be used in other countries than Norway. They can be viewed under: [www.kompetanseporten.no](http://www.kompetanseporten.no)

## **MATR, PLATFORM AS A SERVICE TO ENABLE SCHOOL / EDUCATION SYSTEMS TO DELIVER THEIR OWN TEACHING RESOURCE ONLINE**

*Allen Atwell, Third Space Learning, United Kingdom*

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**Our mission:** We seek social change by cultivating a global community of the most ambitious talent to make online teaching more accessible than ever before.

**Who we are:** We are a team of 50 in London and Krakow covering technology, design and marketing, plus a team of over 300 academics and online teachers across 3 offices in India and Sri Lanka. We've built a virtual school, staffed globally, to make effective online teaching available anywhere, anytime.

**What we do:** We use technology to recruit and train a global community of academic talent to provide live online teaching to students in need of extra help.

**What makes us different:** Our technology facilitates and records thousands of hours of teaching every week. We're now using this data to scale more efficiently, developing a model to augment the ability of our teacher community. We have established a JV with UCL's Institute of Education to launch the world's first online teaching qualification, powered by A.I. In our platform, allowing us to qualify and optimise online teaching performance at a global scale.

**Secret sauce:** We analyse and understand human interactions to improve engagement and impact. We focus on education, a huge and critical sector which is built upon communication. We are agnostic to the subject or language of the teaching experience. We aim to understand where and why a tutor is engaging their student in the concept at hand to help maximise success. This understanding enables us to manage tutor performance, and student success, at a massive scale.

**Tutor/student experience:** We create intelligent, automated pathways for each student's learning, and each tutor's training, to ensure the best teaching and learning experience for every member of our community. This way we can help, at huge scale, to translate our tutor community's knowledge into effective teaching and, in turn, learning for our student community.

**Our secret sauce largely resides in the data we capture from our users and their interactions, the insights we gain from this, and our ability to build a platform that can intelligently shape the human interactions upon which good teaching and learning is built.**



# **BOOK OF PROJECTS**

Collection of “Synergy” Synopses

# FOCUS

Facilitating blue growth with open courses by utilizing R&D products and virtual mobility



**Website:** <https://www.ku.lt/focus>

**Runtime:** 01.2017 – 12.2019

**Supported / co-funded by:** INTERREG South Baltic Programme / European Regional Development Fund

**Partners:** Lead partner – Klaipeda University, Lithuania

Project partners – Lithuania Business University of Applied Sciences, Lithuania; Linnaeus University, Sweden; University of Gdansk, Poland; Roskilde Business College, Denmark

**Project representative to be contacted for further info:** Dalia Baziuke (Dalia.Baziuke@ku.lt)

The project involves five partners from Lithuania (2), Sweden (1), Poland (1) and Denmark (1). The partnership is composed of the universities and a business college. The partners are supported by 12 associated partners (<https://www.ku.lt/focus/#partners>). The project is led by the Klaipeda University from Lithuania. The overall idea of the project is to enable the exchange of knowledge and transfer of good practice from R&D sector to practitioners in marine biotechnology, coastal tourism sectors as well as to students searching for education in a given field. In order to achieve this objective a virtual mobility platform (VMP) will be created and a pilot delivery of digital education system will take place. The project includes the following activities:

- Performing a feasibility study combining required knowledge needs for the marine biotechnology and tourism sector in the South Baltic region and defining human resources skills specific to blue growth;
- Identification of at least 5 crucial subjects for the knowledge transfer in the sector;
- Developing course syllabus related to blue growth sectors and e-mentoring course;
- Adaptation of developed content to the virtual training and launching the Virtual Mobility Platform (VMP);
- Pilot delivery of e-mentoring course to train the trainers;
- Pilot online delivery of at least 5 subjects addressing blue growth topics to train the target group;
- Feedback survey and improvement of content and virtual platform.

**Main target groups of the project** are SME professionals working in marine biotechnology, marine/coastal tourism as well as students searching for education in the areas of blue biotechnology and coastal tourism.

**Significant public results:** the FOCUS project has already performed a research regarding the expectations of stakeholders working in the Coastal tourism and Marine Biotechnology sectors to their employees on common and specific competences. Two surveys elaborated and performed in each partner country. Two deliverables are ready for public as the result of this activity:

- Feasibility study: Coastal Tourism Sector;
- Feasibility study: Marine Biotechnology Sector.

## Opening Education for Developing, Assessing and Recognising Virtual Mobility Skills in Higher Education

**Website:** <http://www.openvirtualmobility.eu>

**Runtime:** 01-09-2017 - 31-08-2020

**Supported / co-funded by:** Erasmus Plus - KA2 - Cooperation for Innovation and the Exchange of Good Practices - KA203 - Strategic Partnerships for higher education

**Partners:** openVM Coordinator: Beuth-Hochschule Fuer Technik Berlin, Germany; see more at: <http://www.openvirtualmobility.eu/?p=454>

**Project representative to be contacted for further info:** Prof. Dr. Ilona Buchem ([buchem@beuth-hochschule.de](mailto:buchem@beuth-hochschule.de))

HEIs face high requirements and challenges in today's global world, including internationalisation as a response to globalisation. Virtual Mobility (VM) has a great potential to contribute to the internationalisation, innovation and inclusion in higher education. While it is feasible to encourage outward and inward student and faculty mobility, the main limitations are the high costs, socio-economic, political and health-related issues. These barriers could be greatly reduced by adding a virtual component to the physical mobility, in order to make mobility more accessible to all.

Yet, despite numerous initiatives and projects in the past years, the uptake of VM in higher education is still low and the possibilities of VM including virtual internships/placements unknown to many educators and students. VM can only develop its potential, provided higher education leaders, educators, students and other relevant stakeholders, such as international offices, know about and can/want to use the opportunities of VM.

The aim of the OpenVM project is to enhance the VM readiness of institutions, educators and students by supporting them in acquiring, assessing and recognising VM skills (i.e. key competencies needed to successfully design, implement and participate in VM actions). The project thereby addresses the need of creating accessible opportunities for achieving such skills in order to ensure a higher uptake of VM in higher education in Europe. To promote the achievement, assessment and recognition of VM skills, OpenVM applies the principles of Open Education. Both VM and Open Education aim to enhance participation in international knowledge flows, use of digital media, improve teaching and learning by setting international benchmarks, attract and keep talents for the economy and research systems, innovate and build capacity.

The main outcomes of the project include:

- Conceptual framework and guidelines for achievement, assessment and recognition of VM skills in higher education.
- Virtual Mobility Learning Hub as a central reference point for VM skills in Europe.
- Semantic competency directory and matching tool as smart tools supporting learning, assessment and recognition of VM skills.
- E-assessment concept and tool for innovative, open and evidence-based assessment of VM skills.
- Open credentials and gamification for recognition of VM skills and engaging/effective learner experience.
- OER, MOOC and pilots for innovative pedagogies for achievement of VM skills and validation.

The OpenVM activities are carried out by a consortium of nine partners, led by the Beuth University of Applied Sciences Berlin.

**Main target groups of the project:** Higher Education institutions; Students and educators.

# WISR17

Web-based courses for international positioning of strategic research groups



**Website:** <http://www.kau.se>

**Runtime:** 01.2018 – 12.2020

**Supported / co-funded by:** Knowledge Foundation, Sweden; NU 17 – Online Education for International Positioning

**Partners:** Deutsche Telekom AG, Germany; Ericsson AB, Sweden; Procera Networks AB, Sweden; Sandvik Mining and Rock AB, Sweden; Uddeholm AB, Sweden; Compare AB, Sweden; Clavister AB, Sweden; Wolfram MathCore AB, Sweden; Tieto Sweden Support Services AB, Sweden

**Project representative to be contacted for further info:** Jörg Pareigis ([jorg.pareigis@kau.se](mailto:jorg.pareigis@kau.se))

Karlstad University has a vision to be internationally acknowledged for excellence in several research fields and to be at the forefront of some of them. Towards this end, a strategic realignment of the research prioritization strategy has been taken place with a long-term financial commitment to strategically important research groups. After a comprehensive evaluation that took place during the fall of 2013 and 2015, two excellent research groups and five strong research groups were nominated. The University's educational strategy focuses on high quality teaching, flexible forms of study and professional contacts. To further strengthen the ties between research and education and in support of our blended learning strategy, Karlstad University answered a call by the Knowledge Foundation, Sweden, as part of the online education for international positioning programme. The aim of the project is to profile and position these strategic groups through web-based courses. The project builds on the recently adopted strategy for online courses for the strategic research groups of the University, which can be regarded as an integration of our educational and research strategy.

The deliverables of the project are four modularized courses on advanced level with a combined scope of 25 ECTS, aimed at different target groups in the Swedish and international business arena. Building on earlier achievements from the Knowledge Foundation financed project use.it and WISR16, the courses will be developed as hybrid open online courses. A hybrid open online course design combines the advantages of providing targeted courses on advanced level, with the advantages of massive open online courses and enables the University to list the courses in international course databases such as Class Central and thereby raising our international visibility and profile. Towards this end, we will also produce and disseminate a variety of open educational resources (OERs), many in the form of short video lectures. For each course, we recruited one to three companies who will actively contribute to the course development and ensure the highest possible match to business sector needs, while the hybrid format supports scalable lifelong learning.

To support the course development and production, the project will recruit external experts. This will lead to an accelerated competence development of our researchers in terms of online teaching techniques, which is another central focus area of the project. Experiences from the start of the cross-faculty course development project as well as its predecessor will be shared in this project presentation.

**Main target groups of the project:** Business professionals, Educational technologists, Faculty.

**Significant public results:** Several dozens of high quality open educational resources have been developed so far, as part of a handful of hybrid open online courses on advanced level in the area of service computer science, service management and material science, which are also published with a CC-BY license.

# JOVITAL

## Jordan Opportunity for Virtual Innovative Teaching and Learning

**Website:** NA

**Runtime:** 10.2017 – 10.2020

**Supported / co-funded by:** Erasmus+ Capacity Building in Higher Education Programme of the European Union

**Partners:** Technische Universität Dresden (TUD), Germany (coordinator); Coventry University (CU), UK; International School for Social and Business Studies (ISSBS), Slovenia; Mediterranean Universities Union (UNIMED), Italy; Princess Sumaya University for Technology (PSUT), Jordan; Jordan University of Science and Technology (JUST), Jordan; German Jordanian University (GJU), Jordan; Al Hussein bin Talal University (AHU), Jordan; Tafila Technical University (TTU), Jordan.

**Project representative to be contacted for further info:** Wissam Tawileh ([wissam.tawileh@tu-dresden.de](mailto:wissam.tawileh@tu-dresden.de)) and Cristina Stefanelli ([stefanelli@uni-med.net](mailto:stefanelli@uni-med.net))

JOVITAL offers Higher Education Institutions in Jordan a chance to explore, implement, and disseminate state of the art academic practices to enhance teaching quality and improve learning outcomes. A comprehensive capacity building programme will be implemented to facilitate intensive know-how transfer between the consortium members to address the problems of: outdated instructor-centred frontal teaching methods, limited physical academic mobility, and ineffective use of ICT in formal higher education in Jordan.

The specific objectives of JOVITAL are:

- Qualification of academic staff at Jordanian HEIs on modern pedagogical and didactical methodologies for innovative virtual teaching and learning settings;
- Support Jordanian HEIs in adopting and implementing effective ICT-based internationalisation at home activities and integrate Jordanian HEIs in a global network for “Virtual Mobility”;
- Open up higher education in Jordan to integrate disadvantaged groups including women, rural areas inhabitants and refugees in inclusive virtual classroom settings.

**Main target groups of the project:** Teaching staff, faculty members, and students in Jordanian HE Institutions.

**Significant public results:**

Expected results for JOVITAL are:

- Didactical design patterns of technology-enhanced collaborative learning scenarios for teaching staff in Jordanian higher educational institutions.
- Educational case studies with local practical relevance for problem-based group work in the virtual classroom.
- Best practices for Internationalisation at Home strategies development and implementation.
- Awareness raising events of modern educational technologies in different cities in Jordan.

Expected outcomes for JOVITAL are:

- Enhanced capabilities of teaching staff at Jordanian higher educational institutions to design, develop, and implement learner-centred common courses with local, regional, and international academic partners.
- Empowerment of administration staff at Jordanian higher educational institutions to develop and adopt effective and efficient internationalisation strategies based on Virtual Mobility.
- Increased students' motivation and involvement in modern immersive interactive learning settings with interdisciplinary teamwork on learning projects.
- Integration of Jordanian higher educational institutions in regional and international networks for academic exchange and innovative teaching and learning cooperation.
- Inclusion of learners and teachers from disadvantaged communities and rural areas in virtual learning spaces with access to flexible learning experiences at local and international universities.

# SADE – REK

National Professional Associations cooperation – in the areas of open, online, flexible, and distance learning including TEL



**Website:** SADE <http://www.sverd.se/swedish-association-for-distance-education/> REK <https://www.rekompetens.com>

**Runtime:** Ongoing

**Supported / co-funded by:** Both SADE and REK are NGOs, driven by members

**Partners:** Swedish Association for Distance Education (SADE), and Swedish Association for E-Competence (REK).

**Project representative to be contacted for further info:**

- Ebba Ossiannilsson, V President SADE and REK (Ebba.Ossiannilsson@gmail.com);
- Ulf Sandström, President SADE (Ordforande@sverd.se);
- Torbjörn Skarin, President REK (torbjorn.skarin@samhallsanalys.nu).

National professional associations of flexible learning and technology enhanced learning (TEL) are usually the ones who unite professionals applying technologies in learning, and to facilitate learners, teachers and institutions to promote learning using new technologies. National associations experience a lot of challenges and requests from local institutions who turn to associations for support to introduce online learning, as schools and VET organisations, adult and higher education institutions strive for knowledge, practices and quality assurance in online learning applications. There is increasing demand on how national organizations within these areas can contribute at local, regional, national and international level to developing strategies, as well as when it comes to implementation. National associations could, or should also to a higher extent be more used as referral bodies for national authorities, especially in the area of reaching the UNESCO 2030 sustainable goal four (SDG4), The EU Digital Agenda 2020, and issues related to the 4<sup>th</sup> Industrial revolutions.

For this EDEN Synergy Session SADE and REK invites other European Professional Associations, and individuals who have an interest in working through national organizations/bodies to contribute to Open Education, in the year of Openness 2018, and to contribute to reach the SDG4, and to implement the EU Digital agenda 2020.

This Synergy strand is initiated and organized by the two Swedish Associations SADE and REK.

The Swedish Association for Distance Education (SADE) is a professional organization for all those involved in open, online, flexible learning and technology enabled learning and education in Sweden (OOFAT). SADE has members from a broad sector of education, as schools, universities, organizations and companies.

The national organization for e-competence (REK) is an organization for members with common interests and skills in our digital part of the world, as e-Learning, e-Work and e-Democracy. Some of the keywords that are now included in our dialogue are the Digital Agenda, Collaborative Learning, Workplace Learning, Digital Entrepreneurship and much more.

**Main target groups of the project:** National organizations in the areas of open, online, flexible, and distance education, including technology enhanced learning (TEL), Open Educational Resources (OER), and Massive Open Online Courses (MOOC).

With this initiative SADE and REK invites for collaboration with other European Associations within the areas of interests, as outlined above.

# MOM

## Maternity Opportunities and Mainstreaming



**Website:** <http://eu-mom.eu>

**Runtime:** from September 2017 to August 2020

**Supported / co-funded by:** European Project financed by Erasmus+ /

**Partners:** Associazione Piano C (lead partner), Italy; Fondazione Politecnico di Milano, Italy; LBV – Life Based Value S.r.l., Italy; Ayuntamiento de Alzira, Spain; EUROMASC – European Masters of Skilled Crafts; Inova Consultancy Ltd, UK; International Platform for Citizen Participation Sdruzhenie, Bulgaria; and University of Thessaly, Greece.

Project representative to be contacted for further info: Matteo Uggeri ([matteo.uggeri@polimi.it](mailto:matteo.uggeri@polimi.it))

MOM (Maternity Opportunities and Mainstreaming) project is aimed at appraising the skills that woman naturally learn during motherhood, in an employability perspective. MOM's target groups are mothers that lost their jobs due to maternity; women who face difficulties in finding a job because they are mothers; women returners; single mothers who need to improve their job presence; and pregnant women who want to reinforce their competences for a future job.

The specific MOM's aim is to design a European innovative training program to turn parental skills into job skills, assessing it according to the ECVET (European Credit System for Vocational Education and Training) framework. MOM's set of competences comes mainly from a non-formal, informal learning process. One of the project expected results is making these competences visible, validated and recognized in order to capitalize the learning results in an EU perspective. The second aim is to widen potential beneficiaries, creating a MOOC for unemployed mothers and caregivers, aimed at reinforcing their employability, assessing and enhancing their motherhood competences and developing other professional skills. The MOM main activities will be: to adopt and adapt the method with a target group of unemployed women; to design a European training program to turn parental skills into organizational skills, assessing it according to the ECVET, making competences visible, validated and recognized; to make the innovative method free available and easily accessible to the target group through open, free online resources.

**Main target groups of the project:** mothers, unemployed women/mothers, women in general.

### Significant public results:

- MOM curriculum – It contains the scientific and educational background to address the training to the target.
- MOM MOOC for women – It is a free open online course where mothers can self-organize their participation according to learning goals, prior knowledge and skills, and common interests.
- MOM MOOC for trainers – It is the open online course that will be addressed to potential MOM trainers that are interested in organizing face-to-face workshops for those women that cannot directly access the online resources.
- MOM e-campus – It is the digital environment that will gather all MOM MOOCs and Open Education Resources (OER) that will reinforce a sense of community within the participants, providing a discussion area.
- MOM in ECVET – It is the formal certification through competence mapping and Recognition of Prior Learning (RPL) that will applicate ECVET (The European Credit system for Vocational Education and Training) principles and solutions to MOM's training path.

# Navigate

Information Literacy: A Game-based Learning Approach for Avoiding Fake Content



**Website:** <https://www.navigateproject.eu>

**Runtime:** 09.2017 – 08.2020

**Supported / co-funded by:** Erasmus+, KA2 Strategic Partnership in Higher Education

**Partners:** University of Library Studies and Information Technologies (project coordinator), Bulgaria; Fondazione Politecnico di Milano, Italy; University of Parma, Italy; University of Gävle, Sweden.

**Project representative to be contacted for further info:** Marina Encheva ([m.encheva@unibit.bg](mailto:m.encheva@unibit.bg))

Navigate is a project that originates from important research results in the field of Information Literacy (IL) achieved in the area of Higher Education (HE) at European level in the last decade. The project intends to apply an innovative approach based on digital gaming to the information literacy training of HE students in Humanities. The goal is to create the opportunity for an active involvement of students through research, experimentation, competition and cooperation. It will also be possible to extend awareness on the issues of Information Literacy, since game-based training expands the collaborative potential of digital environments.

The main objectives of NAVIGATE are to:

- elaborate a competency tree and a program on core IL skills such as finding, evaluating and using information effectively;
- develop a game-based model for IL training based on the competency tree;
- design a scenario model for IL games;
- develop games to support the IL and implement an online platform to integrate the game-based learning model;
- elaborate a manual to support future users of the game-based method in the IL training.

Main target groups of the project: HE students

## **Significant public results:**

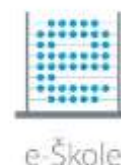
The project will allow the realization of specific intellectual outputs:

- Competency tree based on the analysis of the Information Literacy Training Needs in Faculties of Humanities in European Universities
- Game-based Model for Information Literacy Training
- Game-design Template
- Serious games (a selection from existing ones and new ones)
- Online platform that will support the game based training methodologies

**Multiplier events** will be organized in the involved countries: Italy, Sweden and Bulgaria.

# e-Schools

Establishing a System for Developing Digitally Mature Schools (pilot project)



**Website:** <https://www.e-skole.hr/en/>

**Runtime:** 03.2015 – 08.2018

**Supported / co-funded by:** Operational Programme Competitiveness and Cohesion (OPCC), European Regional Development Fund (ERDF), Operational Programme Efficient Human Resources (OPEHR), European Social Fund (ESF)

**Partners:** CARNet – Croatian Academic and Research Network Croatia, University of Zagreb Faculty of Organization and Informatics, Croatia; Agency for Vocational Education and Training and Adult Education (ASOO), Croatia; Croatian Education and Teacher Training Agency (AZOO), Croatia.

**Project representative to be contacted for further info:** CARNet office for information and public relations, ([press@CARNet.hr](mailto:press@CARNet.hr)) Faculty of organization and informatics, Center for international projects

The e-Schools programme consists of the pilot project, which will be implemented in the 2015-2018 period and the full scope project, which is planned for the 2019-2022 period based on the results of the pilot project. The overall objective of the e-Schools programme is to contribute to the capacity building of the primary and secondary school educational system in order to allow students to be prepared for the labour market, further education and lifelong learning. The purpose of the e-Schools pilot project is to establish a system for the development of digitally mature schools through the pilot project and the evaluation of the application of ICT (information and communications technologies) in the educational and operational processes of 10% of schools in the Republic of Croatia. The specific objective of the e-Schools pilot project is to pilot organizational, technological and educational concepts of introducing ICT in the educational and operational processes in selected schools during two school years and to develop, based on the experience of the pilot project, a strategy for the implementation of a system of digitally mature schools in the entire primary and secondary education system in the Republic of Croatia, that is for the application in the major project (2019-2022). Experiences on similar European projects for the informatization of operational and teaching processes show that a coordinated implementation is indispensable, regarding both infrastructure and education, with an awareness that the foundation of education is the teacher, and the primary focus the student.

**Main target groups of the project:** 101 primary schools, 50 secondary schools, more than 23.000 students

## **Significant public results:**

Within the result of the project Digital Maturity of Schools lead at FOI by Assoc. Prof. Nina Begičević Redep, Ph.D., the Framework for Digital Maturity of Schools (FDMS) and the Instrument for Assessment of Digital Maturity of Primary and Secondary Schools have been developed. The schools can use the FDMS as a guide when planning and integrating the ICT in learning and teaching, as well as in their management processes. The FDMS recognized five areas divided into 38 elements that are described on five digital maturity levels in the form of a rubric. The main five areas of the digital maturity within the FDMS are: 1. Planning, management and leadership, 2. ICT in learning and teaching, 3. Development of digital competences, 4. ICT culture and 5. ICT infrastructure. Each area consists of a larger number of elements which have been described for each maturity level: Basic, Initial, e-Enabled, e-Confident and e-Mature. The FDMS, the Instrument for evaluation of the digitally mature schools and the supporting software represent a unique and comprehensive tool set created according to sound research methodology. Due to their generic characteristics, the FDMS and the Instrument can be applied in other educational systems and countries with minor adjustments. The Instrument can be used as a tool to evaluate the school's digital maturity level but also for the identification of the areas for improvement that could enable the growth on the scale of digital maturity and improve the overall reputation and school results. The FDMS, the Instrument and the accompanying software have been already successfully applied in the process of self-evaluation and external evaluation of 151 schools in Croatia. The significant feedback for improvement of the FDMS and of the Instrument was collected in this validation process. The self-evaluation of further 1400 elementary and high-schools in Croatia is in progress.

**Website:** <https://elearning.upt.ro/proiecte/eu/girlstech/164>

**Runtime** 1 September 2016 until 31 August 2018

**Supported / co-funded by:** Erasmus+ KA2

**Partners:** MBO Raad, The Netherlands; Association of Colleges, UK; Forave, Portugal; Hariduskeskus, Estonia; Politehnica University of Timisoara, Romania; Sataedu, Finland; Šolski center Nova Gorica, Slovenia; VHTO, The Netherlands.

**Project representative to be contacted for further info:** Dr. Diana Andone (diana.andone@cm.upt.ro), Manfred Polzin (M.Polzin@mboraad.nl)

Technology continues to dominate much of our daily lives. To be able to compete worldwide, Europe needs more highly skilled technicians. We need to use the talents we have available, especially the talents of women. The current low participation of women in STEM (Science, Technology, Engineering, Mathematics) fields is a problem for most European countries.

In the Erasmus+ KA2 project GirlsTech this theme is addressed. Eight countries share their knowledge to improve their own policies. The project is not about developing a new universal tool, but to focus on peer learning activities, to find out which approaches might be suitable for the participating countries.

Participants in this project inquire why there is such a considerable difference in the number of girls participating in STEM-studies in different EU countries and how we can all learn from each other to improve this shortage.

In GirlsTech project several group discussions, study cases, presenting instruments and examples of good practices from all participating countries were used as steps towards finding ideas and new projects, but also to establish if there are common opinions regarding 'what works in attracting girls to STEM education'. Some common ideas emerged:

- STEM subjects should be a main part of curricula (compulsory) until the end of secondary education.
- STEM subjects and teaching materials should be more gender-aware and it is important to have a female professor in STEM subjects.
- Lifelong learning should include the opportunity to gain skills towards a new profession in STEM as a second chance (subsidised, free or open education).
- Activities with STEM female role-models need to be included in all education levels – mentorship activities, ambassadorial activities.
- Cooperation between school and technical company with internships, presentations and job perspectives need to be widely used.
- Different strategies, activities need to be included in all education levels, related to any age, from young ages, for girls and boys, but definitely not exclusively only for girls/women.

**Main target groups of the project:** VET students, girls in secondary school, professors and teachers, VET sector, employees

**Significant public results:** Presentations from each country, analysis and evaluation, video recordings on the project website

# IoT Rapid-Proto Labs



**Website:** [www.iotprotolabs.eu](http://www.iotprotolabs.eu)

**Runtime** 1 January 2018 until 31 December 2020

**Supported / co-funded by:** Erasmus+ Knowledge Alliance

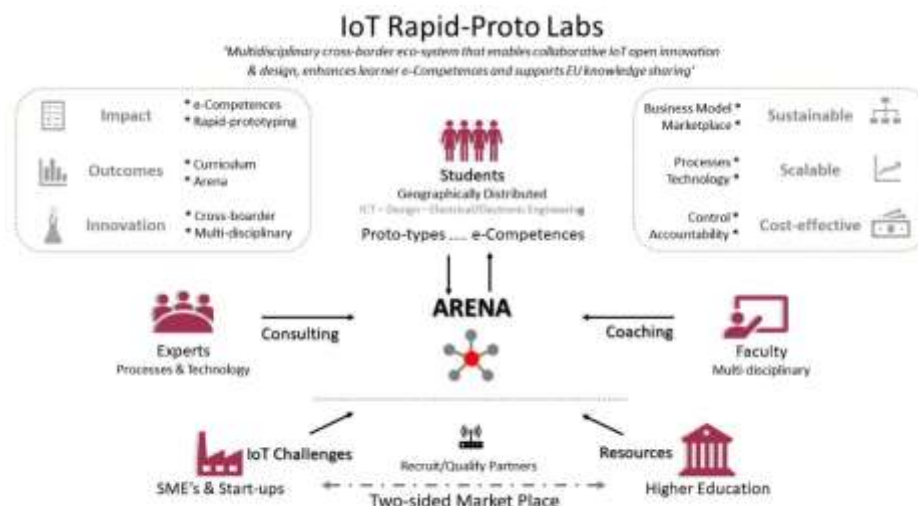
**Partners:** Haaga-Helia University of Applied Sciences, Finland; University of Leiden, The Netherlands; Politehnica University of Timisoara, Romania; Technical University Delft, The Netherlands; Bruno Kessler Foundation, Italy; 247GRAD, Germany; Houston Inc. Consulting, Finland.

**Project representative to be contacted for further info:** Dr. Diana Andone ([diana.andone@cm.upt.ro](mailto:diana.andone@cm.upt.ro)), Danford Gerard ([Gerard.Danford@haaga-helia.fi](mailto:Gerard.Danford@haaga-helia.fi)).

IoT Rapid-Proto Labs is a European transnational project, co-funded by European Union Erasmus+ Knowledge Alliance Programme, bringing higher education institutions and businesses together to accelerate Internet of Things (IoT) product development. The project will create and implement a multidisciplinary (ICT, Design and Electrical Engineering) course curriculum which is focused on real problem-based activities (innovative IoT product development for SME's/Start-ups). Cross-border teams of students, teachers (coaches), and practitioners will jointly develop solutions to challenging IoT applications (Internet-connected objects), add value for enterprises, and strengthen the employability, creativity and career prospects of students. IoT Rapid-Proto Labs represents an innovative, multidisciplinary, and low-risk enabler of SME/Start-up IoT innovation.

Distributed teams of multidisciplinary students (three European countries) will be supported by a Project Arena (web-platform) which enables them to effectively collaborate on rapid-prototyping of IoT products/services. The Project Arena also stimulates the flow of knowledge and innovation between Higher Education, enterprises and other stakeholders. Each IoT Proto-Lab student-centred team will rapidly set-up, trial and test an innovative IoT solution for their SME/Start-up client (18 clients in the complete project cycle). Throughout the discovery, design, develop and test process, student teams are continually supported by teachers, external coaches (Research Centre and ICT Process Development House) and client staff. The fields of study embedded in the project curriculum (e-Competences, design thinking, lean/agile processes etc.) are highly relevant for every business today.

This project contributes to the modernisation of Europe's Higher Education system (relevance/quality) and reinforces the European Knowledge Triangle (more effective links between education, research, and enterprise innovation).



**Main target groups of the project:** VET students, girls in secondary school, professors and teachers, VET sector, employees.

**Significant public results:** IoT Rapid-Proto Labs Web-Arena (scalable) for project management (tools), marketplace activities (projects), and dissemination of knowledge.

**Website:** <http://www.risewiseproject.eu>

**Runtime:** 09/2016 – 08/2020

**Supported / co-funded by:** Horizon 2020 / GA 690847

**Partners:** UNIGE (U) – University of Genoa (COORDINATOR, Cinzia Leone), Italy; UNED (U) – National University Madrid, Spain; METU (U) – Polytechnic University of Ankara, Turkey; UCM (U) – University Complutense Madrid, Spain; UMINHO (U) – University of Braga, Portugal; UNIBS (U) – University of Brescia, Italy; AIAS (P) – Association for Spastic Persons – Bologna, Italy; AFADIS (P) – Association for Persons with Disability, Madrid, Spain; FRATERNA (P) – Association for Persons with Disability, Guimarães, Portugal; AAATE (P) – Association for the Advancement of Assistive Technology in Europe, Linz, Austria; FUNKA (P) – Private Enterprise on Accessibility Stockholm, Sweden; ENGELLI (P) – Association for Persons with Disability, Ankara, Turkey; University of Stockholm (U), Sweden; AISM (P) – Multiple Sclerosis Association, Italy.

**Project representative to be contacted for further info:** Cinzia Leone ([cinzia.leone@unige.it](mailto:cinzia.leone@unige.it))

## Short description of the initiative

Women with disabilities (WWD) have more difficulties to find an employment and to integrate in social day life activities than men with disabilities. RISEWISE project focuses on this collective from different countries and perspectives, trying to identify needs and best practices in several EU countries, representing different cultural and socio-economic environments, for the integration and improvement of their quality of life in several environments from the point of view of different disciplines, among which there is accessibility to technology, assistive technology and barriers to WWD together with technology improvement in general.

In the case of WWD stretching the boundaries is an everyday action, in many cases to be done in order to survive, in other cases to have a better/different life. The demand for enhanced skill and for accessibility, in particular towards ICT, digitalisation, e-learning, new design approach, novel techniques and technology in general by side of WWD is still open.

RISEWISE would contribute to these aspects with its sub-group devoted to technology and will represent some different specific point of views, observed by the perspective of WWD.

**Main target groups of the project:** Academicians, journalists, citizens, policy makers, youngsters.

## Significant public results:

Workshops (most relevant):

- Genova, 2 November 2016 – Disability studies and women with disability (WWD)
- Madrid, 4 April 2017 – Methodology about research about WWD
- Genova, 21 September 2017 – WWD and Technology
- Bologna, 15 December 2017 – Women voices
- Madrid, 25 January 2018 – Use your ability: women and functional diversity
- Guimaraees, 15 March 2018 – Methodological approach to WWD design

Audition at Italian Parliament:

- 5 October 2017 – The coordinator of RISEWISE has been invited to an audition at the Italian Parliament about WWD and employment.
- March 2018 – The video 3' long in the EC YouTube channel has collected around 900 likes in less than 15 days.
- Sep 2016–April 2017 – Surveys implementation among diverse case studies and towards different fields of investigation: social aspects, inclusion, technology and ICT accessibility.

Next Future:

- December 2018 – The coordinator has been invited to present the project's results to EC of the selected project RISEWISE.
- February 2019 – RISEWISE submitted an application for a symposium at AAAS – Washington, USA, February 2019. This event devoted to science registers 5500 participants annually: scientists, engineers, journalists and stakeholders will attend. RISEWISE has been selected BY EC as one of the most representative projects.



**Website:** <http://www.dowellscience.eu/project/>

**Runtime:** 11.2017 – 10.2019

**Supported / co-funded by:** Erasmus+ Programme, KA2 – Strategic Partnership in the field of School Education, 2017-1-IT02-KA201-036780

**Partners:** 8 partners from 4 different European countries are involved in the project: Liceo Machiavelli di Firenze, Italy; Università degli Studi di Genova, Dept of Mathematics, Italy; Zinev Art Technologies, Bulgaria; SPGE “John Atanasoff”, Bulgaria; Pixel Associazione, Italy; Technologiko Ekpaideftiko Idryma (TEI) Dytikis Elladas, Greece; Arsakeio Lyceum of Patra, Greece; Södertörn University, Sweden.

**Project representative to be contacted for further info:** prof. Massimo Amato ([massimo.amato.mail@gmail.com](mailto:massimo.amato.mail@gmail.com)), tel. +393482837432; dott.ssa Anna Siri ([anna.siri@unige.it](mailto:anna.siri@unige.it)).

The Do Well Science project is funded by the European Commission through the Italian National Agency for the Erasmus+ Programme with the aims to increase secondary students' achievements in science subjects.

Science education is a key factor for European economy and society's future competitiveness.

The general objective of the Do Well Science project is to increase secondary students' achievements in science subjects.

The specific objectives are:

- Provide support to science teachers in promoting an interdisciplinary and inquiry based teaching approach
- Develop innovative pedagogies for science teaching and learning
- Make full use of ICT communication potential to stimulate students' commitment to learn scientific subjects

The project activities will be organized in the following phases:

- **Phase 1 – Creation of the STEM Package for teaching and learning STEM**  
This phase is dedicated to the development of a teaching and learning environment for high school students and teachers of scientific subjects. The aim is to challenge students with problems, exercises and tests to be performed according to an enquiry based learning process.
- **Phase 2 – Testing activity and follow up**  
This phase is dedicated to the creation of a learning community of students and teachers at transnational level. STEM teachers will identify the most effective learning objects and how to make best use of them. Students will develop an autonomous active learning approach by sharing challenges and solutions with their peers.
- **Phase 3 – Development of a Manual for innovative pedagogy in STEM contents**  
This phase is dedicated to the production of a manual, addressed to teachers and policy makers, for the planning and implementation of innovative pedagogic approaches in teaching STEM at secondary school level.
- **Phase 4 – Training and Multiplier events**  
The project partners will organize workshops addressed to teachers and headmasters. A number of multiplier events will be organized to disseminate the results reached, methodology implemented and output produced in the Do Well Science project. The participants in the multiplier events will be: school teachers, headmasters, administrative staff, experts in science education, policy makers.

The main project results include:

- A collection of learning objects for Mathematics, Physics and Natural Sciences available both for desktop and mobile devices.
- A publication of an innovative pedagogy in science teaching

**Main target groups of the project:** Secondary Schools Science Teachers; Secondary Schools Students.

Digital up-skilling platform for European young unemployed

**Website:** <http://www.compassdigitalskills.eu/>

**Runtime:** 12.2016 – 11.2018

**Supported / co-funded by:** European Commission, Directorate-General for Communications Networks, Content and Technology / EKOCT 2015

**Partners:** Agence Francaise d'Expertise Technique Internationale (Expertise France), France; Dara Design and Print Limited (Dara Creative), Ireland; Siveco Romania SA (SIVECO), Romania; Lai-momo Società Cooperativa Sociale (Lai-momo), Italy.

**Project representative to be contacted for further info:** Filippo Mantione – Lai-momo ([f.mantione@laimomo.it](mailto:f.mantione@laimomo.it))

Compass is a free and interactive learning platform, co-financed by the European Commission, aimed at helping young Europeans evaluate and develop their digital competences in line with the current digitalization of the economy. A 2-year pilot project, Compass is a unique Pan European Digital Upskilling Platform with problem based learning content developed from the European DigComp Framework. Compass was conceptualized as a tool to bridge the gap between the requirements of employers and the insufficient digital skills of young unemployed Europeans in order to increase their employability and help them develop a clear career structure. The learning courses, developed from the DigComp Framework, are segregated into Foundation Level courses and Advanced Level courses. In case a user decides to skip the Digital Competence Assessment or does not have the requisite knowledge, the user can only take the Advanced Level courses or Foundation Level courses.

As a user completes the courses and gets hands-on experience on real-life projects, a user can collect and showcase all the projects they have worked on in one hub - their personal ePortfolio. The ePortfolio provides the user with an opportunity to showcase their project work, list of courses completed, and digital badges collected to potential employers, privately.

The course content developed from the European DigComp framework identifies key components of digital competence in 5 areas including Information and Data Literacy, Communication and Collaboration, Digital Content Creation, Safety, and Problem Solving. The courses focus on problem based learning so that the user develops digital skills that can be immediately put to use.

**Main target groups of the project:** Young unemployed Europeans from 15 to 30 years old.

**Significant public results:** We have already presented the project during the UNESCO Mobile Learning Week (26-30 March 2018).