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## BUS Business EDUCA

## ICT-DRV: Facilitating Work-Based Learning Through Distance Learning Within Mandatory Periodic Training for Professional Drivers

Claudia Ball, DEKRA Akademie GmbH, Germany

Professional drivers range in Europe under the top ten jobs employers are having difficulty filling with qualified employees. At the same time this occupation is characterised by a fundamental increase of qualification requirements during the past decades. This situation is especially challenging for the transport industry due to the rather low level of professional qualification within this occupation and a mostly negative image of the job that characterises this occupation nearly all over Europe.

These circumstances and the implementation of EC directive 2003/59 on the initial and period training for professional drivers assign the challenging task on initial and continuous vocational education and training (I/CVET) in Europe to prepare all professional drivers for their continuously changing job requirements and to keep them qualified for their job once they entered into the labour market. Technology-based training opens up additional innovative opportunities in order to reach professional drivers in Europe, to make learning more corresponding to their often challenging work organisation as well as to achieve the high quality of training necessary in order to foster drivers' employability and safety on European roads.

It is the overall aim of the ICT-DRV project to enhance I/CVET for professional drivers in Europe with the means of technology-based training under special consideration of computer-based distance learning and simulator-based training approaches. This aim is approached through the development and testing of a number of distance and simulator-based learning prototypes. The one presented in this contribution focuses on the topic of load security based on the European Qualifications Frameworks (EQF) learning outcomes approach and aiming to facilitate and document work-based learning in this field of work with the means of e-learning. The case study addresses the following questions:

- What support structures are necessary in order to facilitate work-based learning of professional drivers on the distance?
- How can work-based learning of professional drivers be documented in order to receive recognition within the relevant national legal regulations on continuous training?
- What framework needs to be provided in order to adapt the facilitation of work-based learning to the individual needs and/or institutional requirements of employees and employers on work-based learning?

The developed e-learning course on load security applies a blended learning approach combining online course elements as well as course elements with direct interaction between the learner and a tutor. The online course elements are based on video lectures, sample cases and praxis-tasks to be implemented alongside regular work. The video lectures provide the theoretical background knowledge described and explained on real-life samples, the sample cases display the application

of this knowledge on whole working tasks, while the praxis-tasks require the learner to apply and work with the learning content during their regular work praxis.

A number of key challenges identified within e-learning for professional drivers have been addressed within the pilot:

Recognition of learners prior learning in following the course

The very heterogeneous nature of professional drivers' prior abilities is a key challenge within continuous training. The course therefore contains the opportunity for drivers to add, skip and/or adjust course elements based on their prior abilities and in dialogue with the individual tutor. This approach is strongly supported by the application of the EQFs learning outcomes approach because this approach moves the focus away from time spend in training (as currently part of the legal requirements for periodic/ continuous training of professional drivers) and to the reaching of a common minimum standard allowing for an adjustment of the course content.

Need for guidance and support alongside distance learning course attendance

The following of an e-learning course has been evaluated as an often difficult task for the pilot target group because of missing abilities with regard to learning strategies, self-motivation, self-organisation and self-evaluation. The course has therefore been designed as a tutored course with at least two fixed tutor contacts and additional tutor contacts on demand via verbal or written communication. Furthermore, contact with the learner is kept through the provision of the praxis-tasks in regular intervals rather than at once in order to facilitate continuous work on and with the learning material.

Adaptation of the learning content to the work-reality of the learner

Just as the prior learning also the work reality of professional drivers differs strongly even in a field such as "load security" as addressed in the pilot course. While the background/ basic contents of the course remain the same (in order to ensure a common minimum content of the course as required by the legal framework of professional drivers' periodic training) the praxistasks have been designed in order to be adaptable to (a) the learners' prior abilities and (b) the different work realities of the learner. If necessary, it is even possible to prepare an individual set of praxis-tasks for a learner or a group of learners.

Transfer of learning content into the daily work

Praxis transfer is a key challenge for the application of the learning outcomes approach because the EQFs learning outcomes approach requires the development and proof of knowledge, skills and competences. Especially the development of skills and competences often requires practical training elements that are often difficult to realise within e-learning. In order to address this aspect the pilot course has been given a strong work-based learning component by introducing the praxis tasks that are to be implemented in the learners' daily praxis in order to apply their knowledge and foster the development of skills and competences. This process is facilitated by the tutor.

 Proof of learning for recognition in the framework of (formal) periodic training requirements

So far the legal framework for professional drivers' continuous/ periodic training requires professional drivers to attend a course for a certain number of hours while the required learning outcomes are not specified. The application of the learning outcomes approach shifts the focus away from time spend in training towards reaching of a common minimum standard of knowledge, skills and competences being a fundamental requirement for the recognition of non-class-room-based courses. The pilot course makes use of this opportunity in order to provide an alternative

proof for learning by integrating a dialogue-based assessment into the final course evaluation with the tutor based on a common interview guideline incl. indicators for the tutor to measure the reaching of this minimum standard.

The piloting results underline the learning outcomes approach as an effective solution for the implementation and recognition of e-learning-facilitated work-based learning within regulated continuous training within this occupational field. They contribute to the development of quality indicators and policy recommendations on the improvement of professional drivers' initial and periodic training within EC Directive 2003/59.

So far a widespread integration of technology-based learning into professional driver training is hindered by strong scepticism of involved actors towards technology-supported learning and by legal regulations still applying an input orientation with a focus on traditional class-room based training. Both barriers are based on missing trust into technology-based tools, the applicability of such tools within professional driver training and their appropriate application within VET for drivers with their special needs, characteristics and work reality. The projects focus is put on the facilitation and improvement of the learning process and transfer in the context of technology-supported learning.

## Motivating Human Capital While Discovering Hidden and Unexplored Talents in Virtual Learning

Bob Barrett, American Public University, USA

This presentation will focus on how human capital may be a bit mislead by previous learning experiences, but it can be refocused and redirected to additional resources, learning experiences, and application work. The key approach to this new type of discovery is to focus on appreciate inquiry to centralized the instructor's approach to the positive skills sets of the adult learner, as well as helping the learner consider more than one possible career decision. Many people fixate their career decisions on the inputs from family, friends, co-workers, bosses, and what the media tells them – but what about the meaning of work and the satisfaction of the career in general? Why settle for one career, when one can start exploring more options and discovering what feels right and perhaps will lead to better job satisfaction and self-enrichment? The presentation will focus on how virtual learning and various types of technology can be used to help students from falling into a "linear" way of thinking of future career options and perhaps move to a more multidimensional approach. In essence, the instructor of online courses has a wealth of knowledge to impart to students, but each student has a variety of learning experiences and needs. In addition, many adult learners tend to follow what others may insist is the best career move or decision for them - but why should anyone "settle" for second best and not do what they want to do and will enjoy in the future? While the presentation will offer several strategies to motivate adult learners to think more deeply about their current learning needs and how to apply the knowledge gained for real world jobs – another aspect will focus on help them develop their own "toolbox" of decision-making skills in terms of how they can take knowledge gained and apply it to their current and future career aspirations. While many curricula focus on a set of learning objectives, they tend to omit the important end objective that tends to be the central theme of why people seek additional education (degrees) and/or training – career development. In terms of courses being offered in many school programs, career development is usually not a required course – but only an elective if the student has the time, needs another set of credits and/or the program has a strong instructor to lead such an introduction of career development strategies. Finally, this presentation will involve audience participation to find out what their personal experiences have been and how they address the issue of content knowledge and applications to be used for assessment and career development. This presentation will involve audience participation to find out what their personal experiences have been and how they address the issue of content

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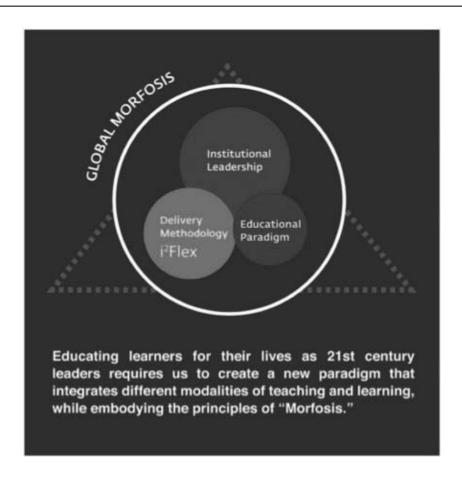
## It Takes i2Flex and a Village: Innovative School-Wide Leadership for Successful K12 Blended Learning

Maria D. Avgerinou, ACS Athens, Greece

With the advent of the 21st century, it has been recognized that the world has developed in such diverse directions and created new and particularly complex demands for citizenship, college and careers that it is no longer possible for old learning environments associated with old learning paradigms to accommodate them. The new reality has led to the development of a new vision for 21st century learning (Dede, 2010; LEAP, 2007; NCREL & the Metiri Group, 2003; OECD, 2005; Partnership for 21st Century Skills, 2006, 2009, 2011). The Partnership for the 21st Century Skills framework (2006; 2009; 2011) advances such skills as information and communication, inter-personal and self-directional, and also being well versed with the current and emerging technologies, as critical to prepare students successfully cope with the demands of the ever changing world of the post-industrial era of information revolution. For these learning outcomes to be achieved it is not sufficient anymore to "confine" teaching in the intersection between knowledge and pedagogy (i.e. Pedagogical Content Knowledge/PCK by Shulman, 1986; 1987). Schools need to systematically capitalize on the affordances of new technologies (i.e. Technological Pedagogical Content Knowledge/TPCK by Mishra & Koehler, 2006). Moreover, schools are called to utilize more learner-centric pedagogies with specific focus on the unique profile of the digital learner (Prensky, 2001). Over the past decade we have increasingly witnessed systematic endeavors of a student-centered integration of new and emerging educational technologies, resulting in an unprecedented growth, and subsequent firm establishment of online and blended learning at all levels of education, including various forms of Virtual K12 Schooling (Davis & Niederhauser, 2007; Rice, 2012; Watson, Murin, et al., 2010). The culminating point of all efforts related to online (and blended) learning, was their salutation as the disruptive force that can transform the factory-like structure of today's educational institutions. Clayton Christensen, Harvard Business School Professor who coined the term of art Disrupting Innovation (Christensen, Horn, & Johnson, 2011), argues that by 2019 50% of all high school courses will be delivered online.

The American Community Schools (ACS) of Athens believe that traditional schooling is not the most productive and relevant avenue for learning. As a K12 international school, we are also affected by an idiosyncratic set of factors such as lack of prescribed curriculum, multicultural environment, high faculty mobility, high student mobility and ensuing rolling admissions, which greatly affect the overall planning and modus operandi of the school. Finally, we strongly support the complete alignment among school learning outcomes, university and market needs (Avgerinou, Gialamas, & Tsoukia, 2014).

Given these characteristics, and in response to the above global educational reform, we have developed our own education paradigm, Morfosis (Gialamas & Pelonis, 2009) defined within the 21st century framework, as a holistic, meaningful, and harmonious educational experience, guided by ethos. Morfosis is implemented via a school-wide, action research-based effort to integrate our own model of blended learning (i.e. i2Flex= internet-based, independent and flexible) with innovative leadership/partnership. The presentation discusses all aspects of blended learning as applied innovation in ACS-Athens and makes recommendations pertinent to K12.



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### How Dialogical Learning Can Be Authentic and Mobile?

Anne-Maria Korhonen & Sanna Ruhalahti, Hamk University of Applied Sciences / Professional Teacher Education Unit, Finland

#### Pocket sized authentic, dialogical and mobile learning

This article deals with the development measures for the current academic year at HAMK Professional Teacher Education Unit, as connected with developing the teacher education study module in a more mobile and collaborative format. The selected study module was the Networks in professional education. The aim was to deepen and extend vocational training into teachers networks. With the planning launch, we wanted to find a pedagogical model based on interaction and collaborative learning for the implementation of the study module learning process.

A natural choice was the DIANA (Dialogical Authentic Netlearning Activity) model, developed by Principal lecturers Helena Aarnio and Jouni Enqvist. The original roots of the model are from the turn of the new millennium and, from the perspective of dialogical and collaborative working, the basic principles also apply splendidly to the modern world of mobile devices. The key point of departure in the birth of the Diana model was to clarify how net-based learning becomes a reality. Implementation of the model requires a genuine dialogical learning community, commitment on the part of learners and the teacher, and a solid presence on the net. (Aarnio & Enqvist 2001, 11-13.)

#### The DIANA model

Authentic dialogical learning on the net and community-based, constructive professional expertise can be segmented into an operational model by which it is easy to discern the components of learning as well as the dynamics of the model. The DIANA model is made up of four cornerstones (Fig. 1), which support authentic learning dialogically. (Aarnio & Enqvist 2001, 30 - 31.)

The developers of the model (Aarnio & Enqvist 2003; 2004), refer to net-based teaching, but the model is equally well-suited to modern, flexible and mobile learning environments. The peer learning groups had an important role. Moreover, there was a desire to link the dialogical learning process to collaborative knowledge-building and thinking.

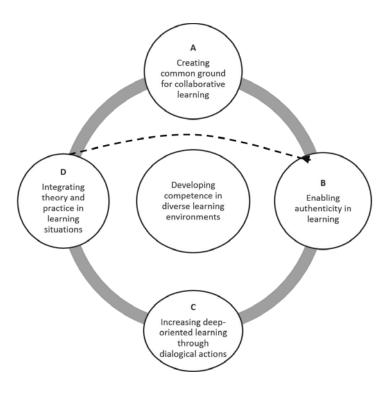


Fig. 1. The four cornerstones of the DIANA model (Aarnio & Enqvist 2014).

According to Aarnio (2014), operations compliant with the four cornerstones (Fig. 1) segment and structure the learning process. Cornerstone A creates the common ground for collaborative and dialogical learning. Cornerstone B deepens authenticity in learning community and student worked-out authentic questions and design connected with the learning goals of the study module. Deep-oriented learning through dialogical actions take place in the next cornerstone C. Students are working and building knowledge together about the subject being studied. Cornerstone D links theory and practice together. The students weave synthesis in a community-based manner as well as look for missing pieces (new questions) vs the learning goals of the study module.

#### mLearning apps

With the learning process being open and transparent, learning often becomes meaningful. When the problem of learning or competence is real, the authentic situation arouses the interest to clarify the matter more deeply and also from theoretical starting points. It's possible to learn in authentic learning environments with mobile devices. This needs teachers guidance.

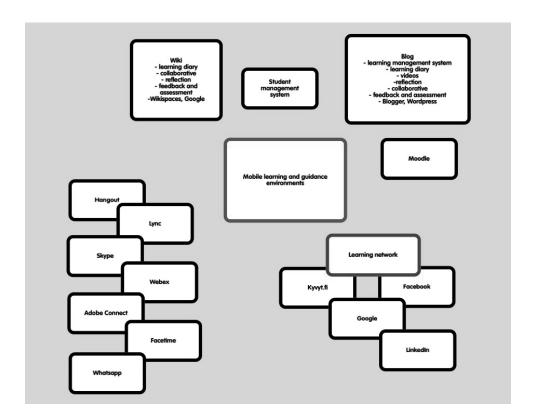


Fig. 2 Mobile learning environments

Nowadays net and mobile applications are abundantly available. Some examples of applications which may be used in mobile learning are segmented in the figure (Fig. 2).

#### Fits in a pocket

The planning of the learning process was launched from the learning goals set in the study module. After this, the process was configured in accordance with the four cornerstones of the DIANA model, observing the dynamics of the pedagogical model. In the planning of the learning process, the authenticity of the learning process was regarded as important.

The students created a common ground for working and for goal-oriented learning. The structured dialogical learning process enabled the development of competence and knowledge-building interactively. The selected applications and programs generated authentic and dialogical learning on their part, in addition to mobile learning. All learning and working environments in use were appropriate for mobile devices and enabled studying that was independent of location.

#### **Conclusions**

On the basis of the survey we conducted, it is possible to say that there was a need for dialogicality and authentic learning in a supporting mobile study module. Future vocational teachers need increasingly more flexible information and communication technology-related usage skills, combined with pedagogical knowledge.

After the development work and realization, it must be noted that the study module's learning outcomes surprised us positively. Authentic learning and dialogical community, as well as the building of knowledge, established enough space for even the most diverse kinds of final products. Each peer learning groups' own authentic question settings enabled this. The learning results of the study module were significantly impacted by the students' peer learning groups strong sense of community, which inspired, encouraged and enabled each one to bring their own strengths into dialogical learning.

The adaptation of the model to various vocational fields and mobile functions is possible, and the student teachers considered that they had obtained expertise for their own teacherhood.

Authenticity as a mobile teacher was significant to this development process. From our perspective, the courage to teach authentically during this study module created the possibility for the creation of and support for authentic learning situations, whilst believing in the results of authentic and dialogical learning.

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## Institutional Transition to Increased Technology-Enhanced Learning: Change, Culture and Systems

Margaret Korosec, University of Hull, UK

# Increased Technology-Enhanced Learning: The Role of Change Facilitators and Institutional Systems

Change facilitators can accelerate implementation of technology-enhanced learning strategy within higher education institutions. The overwhelming task of strategy implementation may cause friction between different roles within the institutional system. This friction is inevitable though it may hamper progress of the implementation and may ultimately hinder the effectiveness within the institutional system. Case studies have shown that the separate role of the change facilitator within the context of operationalizing institutional change will have a positive impact.

## VID VIDEO EDUCA

## Easily Embracing Video In and Outside the Classroom: Kaltura Video Management Platform

Justin Beck & Jeffrey Newman, Kaltura, USA/UK

Video presents an expanded world of new opportunities for traditional, hybrid, and online education efforts. Educators are in search of a media integration which enhances and simplifies the teaching experience. Administrators want to attract the right students to their institution and meet the rising media expectations of students and faculty. Through our studies we have found that most institutions are eager to efficiently leverage the capabilities that video can provide to enhance course content and to foster student engagement. Does your institution have a unified media content strategy that enables each of these challenges to be addressed? Come meet with Dr. Shay David, Co-Founder/CRO and Justin Beck, Kaltura's VP for Education for an interactive discussion on the latest trends in education video, and demonstration of technologies that enable the effective deployment of highly interoperable video content in a centralized fashion to enhance teaching and learning, drive better results and engage your community wherever they may be, today and into the future.

## Olive Green: The First Interactive Feature Film Designed to Teach English - from Idea to Implementation

Krzysztof Biedalak, Alicja Jankowiak & Leszek Lewoc, SuperMemo, Poland

In the early 1990s, SuperMemo pioneered the application of spaced repetition to computer-aided learning, ever since having a significant track record in cognitive psychology research and its implementation in knowledge acquisition[1]. With the latest OliveGreenTheMovie.com project, SuperMemo sets another milestone applying edutainment to effective learning. Olive Green is a ground-breaking combination of an interactive feature movie[2], a computer game and an English learning course. We are ready to share our experiences and insights from the process of creation and development of this product.

Learning requires remembering. Yet, remembering is usually one of the least attractive aspects of any learning experience. In SuperMemo we believe that helping learners to remember data efficiently and for a long time is one of the best ways of using IT in education. What is more, we have always claimed that rote learning should be fast, efficient and measurable. With the data coming from more than one million users collected over a period of 20 years, we have been optimizing our methodology and our spacing algorithms are now close to optimum. To further improve our users' learning results, we extended our learning toolbox with *Olive Green*, most likely the first ever full-feature interactive action movie aimed at teaching English.

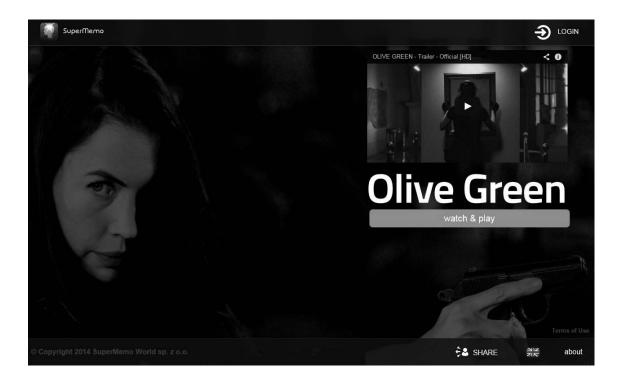
What has an e-learning company got to do with producing an interactive feature movie? Well, we decided to make a movie because:

- we know how hard it is to stay motivated in a self-learning course,
- anyone would rather watch an interesting movie than sweat over a coursebook,
- learning should be fun,
- "educational" films we have seen so far were usually notoriously boring (Remember those wooden dialogues and dull characters placed against a static background? Alas, we have done a couple of them too, at SuperMemo),
- language learning should be all about natural immersion,
- we were inspired by things like: language instruction feature film idea (like of *Slim John*[3]), online video interactivity (like *Bank run*[4]), simple games and improving quality of speech recognition technology.

Olive Green is an edutainment learning environment that uses the interactive action film to immerse our users in a rich language content. Created from scratch, the movie script and dialogues strictly follow a course syllabus to teach English from A1 to C1 level. In the film, games, quizzes and plot forks are embedded to engage the learners, focus their attention and invite them (couch potatoes included) to unveil alternative story threads. The learning content is intertwined with the engaging movie scenes and SuperMemo method supporting effective memorization. To start with, the characters in the film use standard pronunciation (both British and American). As the story develops, both the language and English accents are more and more varied. Also, while the audience's visual and auditory modalities are addressed through the movie experience, interactions in games also call the kinaesthetic and tactile learning modalities into action.

Speech recognition is used to engage learners in speech-driven interactive dialogues, helping to develop their pronunciation and communication skills. The learner's task is to take part in a dialogue, as a film character or a film character's interlocutor, and to react to a question or to ask a question based on a given line of dialogue, while maintaining grammatical correctness. The sentence can be recorded by speaking into a microphone and using the speech recognition tool. If the sentence is grammatically and phonetically correct, it will be accepted and the virtual interlocutor will continue or the learner will be directed to the next exercise. If the learner makes a mistake, the interlocutor will helplessly say that, unfortunately, they can't understand. Users who can't or don't want to use a microphone can type their sentence in instead.

The biggest challenges and risks posed by the project, from the perspective of an e-learning developer and publisher, included (1) combining engaging movie plot with requirements of a learning curriculum, and (2) plunging into professional movie production area. We believe we have succeeded in both, producing a riveting, suspenseful, high-quality film based on a precise plan of language learning progression.



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- [2] http://vmi.tv/case-studies/article/107
- [3] http://en.wikipedia.org/wiki/Slim\_John
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# Tapping into the Power of Peer-to-Peer Interaction and Learner-Generated Video: The Kiddify Case Study

Paula Laurel Jackson, Kiddify, Germany

Kiddify is a video platform where young individuals under 18 are inspired to share their skills and knowledge with their peers around the world. Young individuals can create their own video tutorials on topics of their choice. The videos are then translated into different languages and users can create their own response/feedback via video.

The presentation discusses the concept behind Kiddify and briefly introduces the platform as a case study to explore the potential of learner-created tutorials as an effective means of knowledge transfer. The questions, which guide the study are: *Does the peer-to-peer learning take on effect by the mere fact that the learner is the same age as the "tutor"? Is there any difference in how peer-to-peer learning environments may be perceived, received and internalised versus that in which an adult/older teacher is present?*