THE 15TH EDITION OF THE INTERNATIONAL CONFERENCE
EUROPEAN INTEGRATION
REALITIES AND PERSPECTIVES

Role-Based eLearning vs. eService-Learning – Modern Educational Approaches Based on Mobile and Social 21st-Century Technologies

Laura Danilescu[1]

Abstract: Role-based e-learning has led to a student-centered way of learning, adopting Internet technologies. The new technologies of Web 2.0 and social networks undoubtedly have the potential to improve the role-based learning of e-learning. However, not only will the evolution of technology influence future directions for role-based e-learning, but it will also involve factors related to changing educator perceptions and changing student roles. The continuous evolution of role-based e-learning is based on three main factors: technology, educators, and learners. (Sandra Wills, 2011). eService-learning is an educational approach that combines learning objectives with community service to provide a pragmatic, progressive learning experience while meeting societal needs. The new information technologies support the learning process by meeting the needs of the learning process and at the same time support the interaction between the student and the technology, which takes place at the concept level. Technologies have the role of functioning as intellectual tools that allow students to construct more meaningful personal interpretations and representations of the world. An eService-Learning course provides the students with real-world experiences that they cannot obtain from a textbook, traditional lectures, and fictitious lab assignments. An eService-Learning model cultivates skill sets and on-the-job training that is a very valuable asset for future jobs.

Keywords: role play; learners; teachers; competencies; content developer; hybrid training; key skills; technological trends

Role-Based eLearning

Role-based learning in face-to-face contexts is a powerful approach at all levels of education, but particularly within many further and higher education contexts and as part of the trainer's toolkit (Bolton & Heathcote, 1999; Levy, 1997). The arrival of e-learning makes it possible to engage with different types of role play, for example, international and inter-institutional collaborations, role plays blending online and face-to-face interaction, role plays blending synchronous and asynchronous media including recordings of the sessions, and role-play within distance learning contexts. It is now possible to conduct elaborate, rich and responsive role-play activities where the identity of the participants is not immediately apparent, where they may use avatars or inhabit 3D virtual worlds as part of the role play. As people are increasingly able to create and publish resources online themselves there is also potential to incorporate artifacts created by participants themselves into the role play as it develops, creating an even more dynamic, blended e-learning experience for learners. (Sandra Wills, 2011).

[1] Senior Lecturer PhD, Faculty of Economic Sciences, "Danubius" University of Galati, Romania, Address: 3 Blvd. Galati, Romania, Tel.: + 0372361102, Corresponding author: ldanilescu@univ-danubius.ro.

Several recent academic research projects describe the groups of elements and the results of their interaction that constitute the generic Role-Based eLearning activity, with the additional objective of making them reusable in a new learning context. (Sandra Wills, 2011).

One of these projects proposed that quality Role-Based eLearning includes groups of elements as shown in Figure 1, with evaluation as a common element. From the learner's perspective, these groups of elements are perceived as:

- tasks to be performed;
- resources to support the activity of learning and accomplishing tasks;
- guidance for carrying out actions;
- evaluation which is the element of feedback, self-assessment, and finality of the learning process.

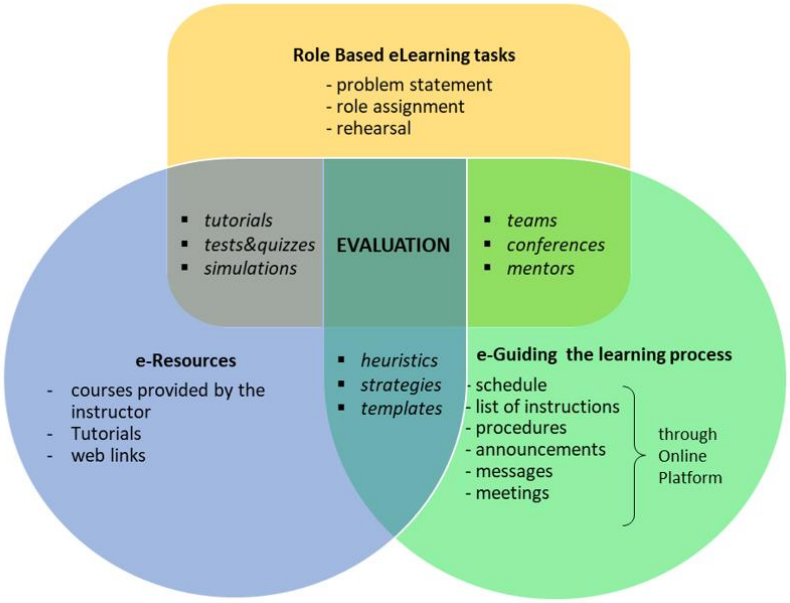

Figure 1. Role-Based eLearning Elements (Modified from (Sandra Wills, 2011))

Role-Based eLearning is a multi-valence paradigm. The purpose of assigning roles for learners can be strictly pedagogical or a combined one: technical and pedagogical. The second purpose comes from the problem that arises: to deliver, to different categories of learners, the same E-learning course but with different variations dictated by the training needs of each group

While most of the content and modules may be common, it is required to use different and more meaningful examples for different groups.

For example, a GDPR course will be taught to the following categories of learners:

1. law students;
2. employees of organizations that have to become data protection officers;
3. IT professionals who have to implement, in the existing IT applications in their organizations, modules to ensure the protection of personal data;
4. lawyers who have to identify cases of breaches of GDPR and act accordingly;

5. the general public, whose personal data have to be protected and who need to know the regulation to know their rights and how to report infringements.

These problems can be solved with Role-Based eLearning. In Role-Based e-Learning, the teacher essentially creates a single course, however different learners get to view different versions of the course. The variation may be quite small just a few pages, or relatively large, perhaps a whole module. (https://esleave.com/web/, 2020).

By using this training method, several advantages are obtained:

- reduces the effort for the development, integration and testing, as the teacher creates a single course instead of many (five as in the example given above);

- easier to update and maintain as there is a single course to maintain instead of many;

- takes up less server space as it eliminates duplication of media.

Some contemporary Authoring Systems offer Role-Based E-Learning development, being able to:

- Create or define Roles;

- Associate Pages with Roles;

- Allow the user to select a role while viewing the E-Learning course;

- Publish courses for each role.

Role-Based eLearning can help teachers to give learners the exact experience they need, while at the same time minimizing time cost and development effort.

In recent years, there have been developed specialized computer platforms to guide and support the learning process. Thus, we can find systems where roles are defined as: learner, instructor, observer, administrator. Each role can have a unique combination of tabs, by implementing functions that have been provided within the learner role to manage their learning plan and for the instructor the ability to manage learning activities and analyze results. Also, such platforms have the ability to assign a role to a user, within the entire system as well as within a specific unit of the organizational structure. The Learner role may be assigned to all students, no matter what other roles they may possess. Each student has a personalized learning plan at their disposal, based on enrollment rules and personal assignments. (https://esleave.com/web/, 2020).

Role-Based Content Development for eLearning

Another facet of Role-Based eLearning is that of the roles assigned to teachers. Not only students can be divided into roles, but also teachers. If the roles for students are assigned based on their learning needs, then the roles for teachers are assigned based on their competencies, being, of course, several teacher roles for a single content. The same reasons for reducing the effort to develop, integrate and test content have led to the idea that the re-use and interoperability of learning content should be guaranteed in order to reduce the costs and time required to develop it.

Developing e-learning content requires a lot of experience and time. It is difficult for a teacher to develop this type of rich content on his own. There must be a group of teachers working in a team. Each teacher has a role and should also have different competencies. Competency includes skills, knowledge, tasks, and learning outcomes. Also, this includes all classes of things that someone, or potentially something, can be competent in. (IMS, 2020).

There are currently many content creation tools available, and others are still in the development stage, and it is expected that some of these will holistically address competency requirements and provide a way for role-based competencies to be addressed, represented, modeled and managed so that there can be used in the content development process.

Some authors propose a role-based model where if a content developer has the ability and if the content developer satisfies the given requirement criteria or the boundary condition, then the content developer can be said to have the particular *Competency* (Kengatharaiyer Sarveswaran, 2008). Hence the Competency–Role mapping presented in Figure 2.

There will be a role mapping that describes what competencies are needed to play a role. A system that uses this model easily gives the information as to who can play a particular role in content development for eLearning. This model helps educational institutions to identify the competencies of the people and to plan for the e-Learning content development. Also what learning content can be developed and what cannot be developed can be easily identified. In addition to the above benefits, this model also helps to exchange the expertise information in a standard way that can be easily rendered in various systems. (Kengatharaiyer Sarveswaran, 2008).

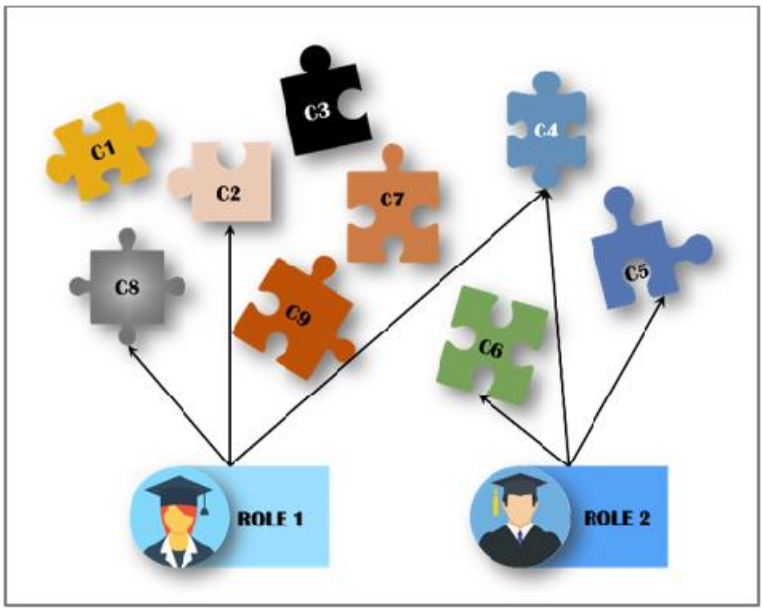

Figure 2. Competency – Role mapping (modified from (Kengatharaiyer Sarveswaran, 2008))

eService-Learning

What is service-learning? The National Service-Learning Clearinghouse (2013) defined service-learning as "a teaching and learning strategy that integrates meaningful community service with instruction and reflection to enrich the learning experience, teach civic responsibility, and strengthen communities.". Service-based learning allows students of all ages to apply what they learn in the classroom to solve real-world problems, thus deepening the knowledge gained and actively contributing to solving community problems.

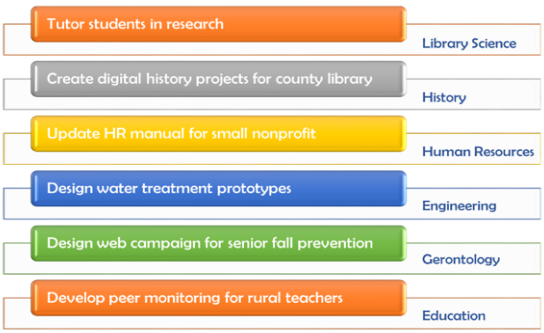

Figure 3. eService-Learning Applications (Jean Strait, 2015)

eService-Learning combines service-learning and online learning. Specifically, eService-Learning is a service-learning course in which training and / or service is done partially or completely online (Waldner L. M., 2012).

Potential eService-Learning applications exist in many disciplines (Figure 3 provides examples). A significant achievement is that the geographical gap is eliminated, so that, for example, a student in environmental engineering in Romania to research best practices for preventing water pollution in the service of local fishing communities in the Amazon basin. eService-Learning creates a world of opportunities to connect students with communities around the globe.

In eService learning, the basic components of service, learning, and reflection can take a different form due to the online environment; for example, reflection often takes place through interactions, journals, movies, or blogs in an eService learning course. Moreover, the service, although still community-based, may reflect a larger global or professional community than the local physical community.

Researchers in the field of education (Waldner L. M., 2012) have identified four types of eService-Learning: the Extreme eService-Leaming and three distinct forms of hybrids, wherein instruction and/or service are partially online.

These Extreme eService-Learning courses are often customer-based (Waldner L. &., 2008), focusing on creating a tangible and well-defined product (policy analysis, grant, etc.) for the community partner (client), in the time interval specified for the course. These courses are often based on real-time webinars or other synchronous and asynchronous virtual communications with the community partner, to ensure that students get the information they need to develop a useful product and present it to the partner.

Beyond Extreme eService-Learning courses, the other three types of eService-Learning courses are hybrids (see Figure 4). In Hybrid I, the training is completely online; In Hybrid II, the service is completely online. Hybrid III is a true hybrid eService-Learning course, with aspects of both on-site and online training and service.

The Hybrid I (online training) model presents an online class in which the service is performed locally on-site, thus allowing students to experience the hands-on service in a local context.

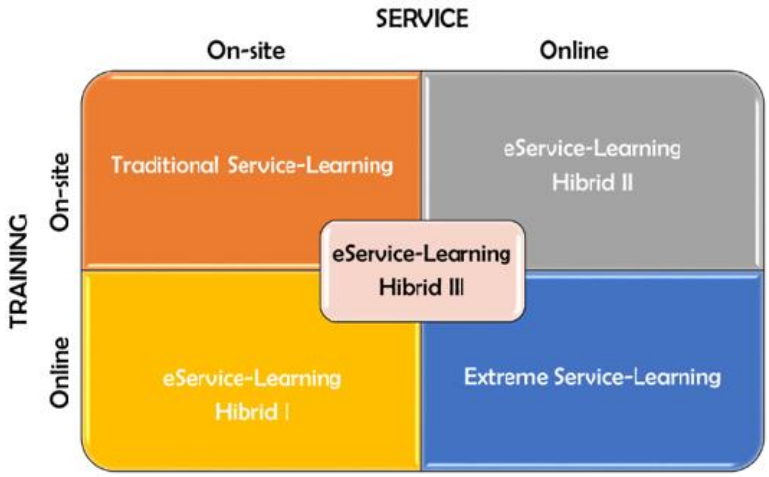

Figure 4. Four Emerging Types of eService Learning (Jean Strait, 2015)

Hybrid I involves field trips, which allows students to implement the products they have developed during the online instruction of the course (e.g., the website of goods for sale in a disadvantaged region, reviewing the health conditions of the disadvantaged region). The Hybrid I model demonstrates the potential of eService learning to serve local communities in a practical physical way, no matter where students live.

The Hybrid II (online service) model presents a class on the spot where the service is 100% online. This hybrid usually appears in an information technology or web design course and empowers students to build online resources such as websites and more.

The Hybrid III model (blended) refers to a blended class that offers instruction and service partially on-site and partially online. These blended Hybrid III types cover a large range of courses, thus they can be either transactional or transformational depending on the specific design of the course and the degree of student immersion in the service setting.

eService-Learning is an ideal vehicle for teaching 21st-century skills. Proponents of 21st-century skills development suggest that today's students will need a radically different set of skills than was needed for previous generations (Partnership for 21st Century Skills, 2009). "Within the context of core knowledge instruction, students must also learn the essential skills for success in today's world, such as critical thinking, problem-solving, communication and collaboration" (Partnership for 21st Century Skills, 2013). Lectures and notes memorization will no longer be enough for this generation of students. Students don't just have to listen; they have to do.

Specifically, in order to develop key skills, students need to engage in practical applied learning projects that foster the development of three core competencies: (a) learning and innovation skills, (b) information, media and technology skills; and (c) life and career skills (see Figure 5).

Examining the competencies of the 21st century, we can see why eService-Learning is an ideal solution for teaching and educating these skills. By definition, eService-Learning requires learning and innovation, as students need to think creatively and deliver a product, collaborate with others, and communicate clearly with their fellows and community partner.

EService learning fits very well with the category of information, as students need to estimate and evaluate the information to produce or serve the community partner. They must also apply the technology effectively to deliver the product and / or communicate with the community partner in

some cases. At its core, eService-Learning also develops career skills, requiring students to interact effectively with others, manage products or service schedules, and be accountable to others.

By definition, eService-Learning will require students to interact with technology in a virtual environment, as opposed to traditional service-learning.

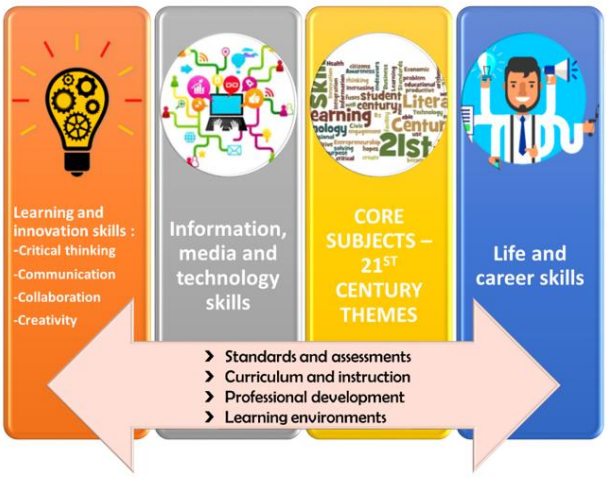

Figure 5. Core Components of 21st Century Skills (Modified from (Jean Strait, 2015))

Conclusions

Technological trends include the widespread adoption of well-known technologies that have gained popularity through the use of mobile computers:

- electronic books;

- augmented reality which is the concept of combining (augmenting) virtual data (information, media, live-action) with what we see in the real world, in order to improve the information we can perceive with our senses;

- Integrating large public databases with data visualization techniques that has a major impact on how students interact with real data;

- mobile computing and cloud computing which were listed as the first two technological trends, with geo-everything and personal web as intermediate trends.

As students around the world have increased access to high-quality teaching materials through open educational resource initiatives and e-books, educators are coming to understand that their role is moving away from being a gateway to information. Instead of providing knowledge, educators themselves learn to provide learning and look for quality learning models, such as role-based e-learning. However, there are few guidelines for a successful transition and new approaches to teaching require a type of effort associated with all forms of innovation. (Sandra Wills, 2011).

Such future high-tech scenarios will become more and more important and professional development opportunities will continue to be important. Educators will need access to repositories of quality learning models and advice in adapting their individual implementation of the selected design. For role-based e-learning, communities of practice are emerging around a shared platform, and the good news is that there are more such platforms in the online environment.

Regarding eService-Learning, it can be assumed that it will have many future applications. As in schools, more alternative programs become available, it makes sense that students will be using eService-Learning in multiple communities and with multiple partners. When these same students enter higher education institutions, they will want to use this as a learning format. Community organizations could offer businesses community engagement for their employees by using eService-Learning models in the workplace. It can also be estimated that eService-Learning could be an untapped vehicle for older people and people with disabilities who are not able to leave their homes. (Jean Strait, 2015).

References

https://esleave.com/web/. (2020). Retrieved from An HTML5 based content development platform to create content for e-learning**.**

IMS, G., C. (May, 2020). *https://www.imsglobal.org/*. Retrieved from https://www.imsglobal.org/competencies/rdceov1p0/imsrdceo_bestv1p0.html.

Jean Strait, K. J. (2015). *eSERVICE-LEARNING Creating Experiential Learning and Civic Engagement Through Online and Hybrid Courses.* Sterling, Virginia: Stylus.

Kengatharaiyer Sarveswaran, S. F. (2008). Role-Based Competency Modeling for eLearning Content Development. *International Information Technology Conference.* Colombo, Sri Lanka.

Partnership for 21st Century Skills. (2009). Retrieved from http://www.p21.org/storage/documents/P21_Framework_Definitions.pdf.

Partnership for 21st Century Skills. (2013). Retrieved from http://www.p21.org.

Sandra Wills, E. L. (2011). *The power of role-based e-learning designing and moderating online role play.* New York: Routledge.

Waldner, L. (2008). Client-based courses: Variations in service-learning. *Journal of Public Affairs Education*, pp. 219-239.

Waldner, L. M. (2012). E-service-learning: The evolution of service-learning to engage a growing online student population. *Journal of Higher Education Outreach and Engagement*, pp. 123-150.