USING E-LEARNING TO BRING ECONOMIC DEVELOPMENT TO REMOTE RURAL AREAS

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ABSTRACT

If information and communication technologies will be used in providing distance education to children and adults that live in remote areas, a new perspective will open for them and for their community. The introduction of e-learning in rural areas will help not only the children whose school is far away, but also the adults who want to pursue higher education or specialization courses in different fields. The human resources from remote areas will have the possibility to learn new skills and competencies. These new qualifications acquired via e-learning will contribute to the economic development of the rural area and also to the development of the whole community. People will learn new useful things about agriculture and also about non-agricultural economic activities that can be implemented in their area.

KEYWORDS: *E-learning, Human Resources, Economic Development, Remote Rural Areas.*

1. INTRODUCTION

The economic development of a country or a community is achieved through its people. If we want our economy to develop in a sustainable way we must invest in the future human resources - the children and in the present human resources - the adults.

The good quality human resources are the most valuable asset a state can have. They are worth more than gold, because they are productive and make profit in every field possible, from industry to agriculture and services.

In order to cultivate the best human resources possible a country must provide to children and also to adults good quality education and health. Children must be able to beneficiate from the best kindergartens, schools and universities possible, and adults must have the chance to attend to improvement courses or to qualification and requalification training courses. If the children and the adults have no possibility, for various reasons, to attend to courses they must be presented with an alternative.

In the 21st century the technology is evolving at a rapid pace. Information and communications technologies are used to provide a new form of education via Internet. E-learning offers everyone the possibility to study even if they can't attend school.

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2. PROBLEM STATEMENT

Mehrotra, Hollister and McGahey (2001) point out that in the present times, instantaneous communication between two individuals anywhere on earth is possible, widely available and affordable. It is not necessary anymore for teachers and students to gather together at specified times and places to engage in education. Today's technology allows mankind the opportunity to meet society's needs for a more widespread education at lower costs, a learning process developed for specific audiences, and provided in circumstances suited to the needs of the students.

The challenge for educators is to find the proper combination of technologies that best mimics the teacher-student approach that worked so well in traditional education. Meeting this challenge requires an understanding of what technologies are compatible with distance education, what are the costs and benefits of each type of technology and how well the technology serves the educational purpose (Mehrotra et al., 2001).

Cohen, Bloom and Malin (2006) point out that because the costs of information and communication technologies are decreasing we can find them in the classrooms of the poorest, most remote and sparsely populated areas. The introduction of this new technology can increase the quantity and the quality of education by facilitating distance education.

Garrison (2011) describes how the term e-learning came into use in the mid-1990s along with developments in the World Wide Web and interests in asynchronous discussion groups. The goal of e-learning was to create a community of inquiry independent of time and location through the use of information and communications technology.

An educational community of inquiry is a group of individuals who engage in purposeful critical discourse and reflection to construct personal meaning and confirm mutual understanding. Presenting e-learning from this perspective reflects a particular educational approach using the possibilities of new and emerging technologies to build collaborative constructivist learning communities (Garrison, 2011).

Garrison (2011) highlights the fact that e-learning is formally defined as „electronically mediated asynchronous and synchronous communication for the purpose of constructing and confirming knowledge." The technological foundation of e-learning is the Internet and associated communication technologies, and the two most important applications that form e-learning are online and blended learning.

Clark and Mayer (2016) define e-learning as „instruction delivered on a digital device (such as a desktop computer, laptop computer, tablet, or smart phone) that is intended to support learning."

The authors mentioned above emphasize the fact that the purpose of e-learning is to help the individuals achieve school-based or general-interest learning goals or to help organizations build skills related to improved job performance (Clark & Mayer, 2016).

Clark and Mayer (2016) point out that e-learning can take many forms: asynchronous e-learning designed for self-study available upon demand, synchronous e-learning which is instructor-led e-learning presented at a fixed time, and they also include here the e-courses

- developed primarily to provide information (inform courses) as well as those designed to build specific job-related skills (perform courses).

The benefits gained from utilizing these new technologies depend on the extent to which they are used in ways compatible with human cognitive learning processes. When researchers become so excited about cutting-edge technology that they ignore the human mental limitations, they may not be able to use technology in ways that support learning (Clark & Mayer, 2016).

Clark and Mayer (2016) highlight the fact that instructional methods that support rather than defeat human learning processes are an essential ingredient of all effective e-learning courseware. The most appropriate methods depend on the goals of the training (to inform or to perform), the learner's related skills (whether they are familiar with or new to the skills), and various environmental factors, including technological, cultural, and pragmatic constraints.

Martin and Loomis (2014) emphasize the fact that the Internet provides many tools suited for distance learning, such as: webcams, e-mail, websites, school-based chat rooms, video and audio streaming. Many online courses are a mixture of both synchronous and asynchronous instruction. In this mixt type of distance education students access the information the teacher has uploaded on the internet and then they are required to log in to a school-based chat room, on a previously established date and time, in order to interact with the other students and with the teacher.

In order to use distance education successfully, teachers must be able to organize information and design instruction to make it suitable for transmission and for student-centred learning. Teachers must also be familiar with the technology in order to create courses and to troubleshoot and solve problems. Students must also contribute to their learning and the learning environment (Martin & Loomis, 2014).

Martin & Loomis (2014) present in their study some of the new technologies that are used for online learning:

- *WebQuest* – is an activity designed by teachers which provides information to students via Internet. It is a semidirected outline of activities that students use in independent investigations: the inquiry, a task, a set of information sources, a description of the process, guidance, conclusion and evaluation (Dodge, 1995).
- *Websites* – private websites can be developed by teachers and students. These websites contain the information necessary for a specific class such as: curriculum, courses, homework, notices of class activities, results of investigations, grades, the dates of exams, student enrolment, etc.
- *Wikis* – are collaborative websites on which content can be edited by anyone who has access to it. Teachers and students can write their observation or thoughts on the wiki, ask for responses or critiques from others, respond to the entries of others and edit all content that was posted. A famous wiki is Wikipedia.
- *Blogs* – are websites that contain text, audio, photo, and video postings on a particular subject. Teachers and students can develop their own blogs in order to share with one another opinions, thoughts and reflections, to demonstrate understanding of a concept or to seek clarification.

- *Podcasts and Vodcasts* – Podcast is an auditory broadcast and Vodcast is a video broadcast over the Internet. They are one-way only, the listener or the viewer cannot communicate with the broadcaster, and are usually recorded for later access in order to explain or describe a concept or a point. Podcasts and Vodcasts are often found on blogs. In distance education teachers and students create them for the benefit of the classes.
- *Internet telephone and video calling software (Skype)* – are often available free of charge, and enable anyone in the world to make free video and voice calls to anyone else in the world who has installed the same software. This type of software is used for video conferencing and for virtual face-to-face discussions between the teacher and one or more students that take online classes (Martin & Loomis, 2014).

Horton (2006) stresses that e-learning comes in a large variety of forms and he presents them as it follows:

- ➢ *Standalone courses* – courses taken by a solo learner, at his own pace, without interaction with an instructor or classmates.
- ➢ *Virtual-classroom courses* – online class structured much like a classroom course. This type of courses may or may not include synchronous online meetings.
- ➢ *Learning games and simulations* – learning by performing simulated activities that require exploration and lead to discoveries.
- ➢ *Embedded e-learning* – e-learning included in another system, such as a computer program, a diagnostic procedure, or online Help.
- ➢ *Blended learning* – use of various forms of learning to accomplish a single goal. This type of learning may mix classroom and e-learning or various forms of e-learning.
- ➢ *Mobile learning* – learning from the world while moving about in the world. Aided by mobile devices such as PDAs and smart phones.
- ➢ *Knowledge management* – broad uses of e-learning, online documents, and conventional media to educate entire populations and organizations rather than just individuals (Horton, 2006).

Pachler and Daly (2011) present us in their book the conclusions drawn by Kanuka and Rourke (2009) about the limitations of e-learning:

- ▪ E-learning technology provides opportunities for improved access through the removal of temporal, geographical and situational barriers. But, on the other side, students' coursework is subordinated to other immediate responsibilities, and both students and instructors may experience a loss of sense of belongingness and awareness of boundaries.
- ▪ E-learning can increase the quality of course design and cost-effectiveness. But it can also result in a loss of cultural discourse, teachable moments, campus culture, academic freedom and teaching as a scholarly activity.
- ▪ E-learning technology can provide an equitable and equalizing environment. But, on the other side, students are not forced to confront their biases and prejudices.
- ▪ E-learning has the potential to facilitate higher order learning with text-based asynchronous communication technologies. But opportunities to develop extemporaneous oratorical skills are lost (Pachler and Daly, 2011).

Although e-learning has its limitations we can provide an example where using this new type of education can really make a difference.

In a study coordinated by Talabă, Gîțan, Ungureanu & Talpas (2009) Luminița Șerbănescu wrote the article „Training workforce in rural tourism with an e-learning platform” in which she presented the online educational platform she designed to train the workforce in rural tourism.

Șerbănescu enumerates the following benefits provided by the e-learning platform:

- the integrated and unified training and testing of employees,
- improving the efficiency of training resources administration,
- monitoring trainer and employee performance,
- flexibility,
- the reduction of employee training costs,
- the reduction of unproductive time,
- interactivity,
- an improved control over the information an employee receives during his training session (Talabă et al., 2009).

The development of the rural tourism is hindered by the low quality services and touristic information the potential customers receive. The low professional standard of the tourism personnel is caused by the lack of information about the practice of rural tourism and the lack of promotion possibilities. The owners of the tourist boarding houses from the rural area come from other fields and don't have the adequate training to deal with the requirements of today's tourism (Talabă et al., 2009).

Tourism is an industry which implies active utilization of workforce with diverse professional training and of different ages and sexes. For the formation of high qualification personnel is recommended organizing an adequate process of schooling and training (Talabă et al., 2009).

The online educational platform developed by Luminița Șerbănescu to train the workforce in rural tourism contains the following:

- the distribution of the necessary materials for instruction,
- PowerPoint presentations for different themes with self-testing,
- the evaluation of knowledge through online testing and projects elaboration,
- statistical reports about the level of understanding and the assimilation of knowledge (Talabă et al., 2009).

The objective of this educational platform is the qualification and requalification of workforce, to respond in a better way to the needs occurred in the evolution of the tourism labour market (Talabă et al., 2009).

The training will be done online which will give liberty to the students to organize their time and pace of work. Online meetings will be organized between students and educators, and the students will be able to communicate through chat rooms and forums. Verification sessions will be scheduled to identify through online testing and projects the level of understanding and the level of implication of the students. The results obtained by

the students will be centralized by an application which will generate a statistical analysis (Talabă et al., 2009).

The e-learning platform mentioned above offers the following advantages:

- helps to quickly integrate new employees,
- facilitates rapid updating of rules and procedures,
- reduces travel costs for training,
- intervenes in real time to optimize workforce performance,
- guarantees unitary standards in customer service,
- clarifies post-training questions at any time,
- users choose the time of training,
- students learn quickly and find information easily (Talabă et al., 2009).

3. RESEARCH QUESTIONS/AIMS OF THE RESEARCH

The questions we would like to find answers for are the following:

Can e-learning be successfully implemented in Romania?

Is e-learning an alternative for the children and adults that have problems in attending school or university courses?

Can dropout rates be reduced by introducing e-learning?

Can authorities provide for students and teachers all the IT&C devices needed for e-learning and the necessary training for using them properly?

Can authorities provide training courses via e-learning in different fields for adults who want to start a business in the rural area, to improve themselves in their line of work or to learn a new profession?

We believe the answer to all the above questions is affirmative.

The objective of this article is to offer some feasible solutions to the problems that occur in providing education in remote areas, and to show that we can stimulate economic development in rural areas with the help of e-learning. These solutions can be implemented with success in Romania because the Internet coverage area is expanding fast.

4. RESEARCH METHODS

In this article we used mainly the qualitative method in order to obtain the extensive data about the usage of information and communication technologies in providing distance education via e-learning. Quantitative analysis is also used, particularly with regard to statistical data. The techniques used here are: a case study on Romanian e-learning and its application in the rural areas, and the analysis of the theoretical works in this field.

5. FINDINGS

In order to demonstrate that providing e-learning via Internet is possible in Romania, we will present in the following table the official statistical data taken from Eurostat that shows the great potential of the Internet and the existent coverage area.

Table 1. Level of internet access – households %

Geo/Time	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
EU (28 countries)	55	60	66	70	73	76	79	81	83	85	87
EU (27 countries)	55	60	66	70	73	76	79	81	83	85	87
Euro area (changing composition)	57	62	67	71	74	76	79	81	83	85	87
Belgium	60	64	67	73	77	78	80	83	82	85	86
Bulgaria	19	25	30	33	45	51	54	57	59	64	67
Czech Republic	35	46	54	61	67	65	73	78	79	82	83
Denmark	78	82	83	86	90	92	93	93	92	94	97
Germany	71	75	79	82	83	85	88	89	90	92	93
Estonia	52	57	62	67	69	74	79	83ᵇ	88	86	88
Ireland	57	63	67	72	78	81	82	82	85	87	88
Greece	25	31	38	46	50	54	56	66	68	69	71
Spain	43	50	53	58	63	67	70	74	79	82	83
France	55	62	69	74	76	80	82	83	83	86	86
Croatia	41	45	50	56	61	66	65	68	77	77	76
Italy	43	47	53	59	62	63	69	73	75	79	81
Cyprus	39	43	53	54	57	62	65	69	71	74	79
Latvia	51	53	58	60	64	69	72	73	76	77ᵇ	79
Lithuania	44	51	60	61	60	60	65	66	68	72	75
Luxembourg	75	80	87	90	91	93	94	96	97	97	97
Hungary	38	47	53	58	63	67	70	73	76	79	82
Malta	54	59	64	70	75	77	79	81	82	82	85
Netherlands	83	86	90	91	94	94	95	96	96	97	98
Austria	60	69	70	73	75	79	81	81	82	85	89
Poland	41	48	59	63	67	70	72	75	76	80	82
Portugal	40	46	48	54	58	61	62	65	70	74	:
Romania	22	30	38	42	47	54	58	61ᵇ	68	72	76
Slovenia	58	59	64	68	73	74	76	77	78	78	82
Slovakia	46	58	62	67	71	75	78	78	79	81	81
Finland	69	72	78	81	84	87	89	90	90	92	94
Sweden	79	84	86	88	91	92	93	90	91	94ᵇ	95
United Kingdom	67	71	77	80	83	87	88	90	91	93	94
Iceland	84	88	90	92	93	95	96	96	:	:	98
Liechtenstein	:	:	:	:	:	:	:	:	:	:	:
Norway	78	84	86	90	92	93	94	93	97	97	97
Switzerland	:	:	:	:	:	:	:	91	:	:	93ᵇ

Data source: Eurostat.   : = not available   b = break in time series

In the table from above it is presented the percentage of households who have internet access at home. All forms of internet use are included. The population considered is aged 16 to 74.

We can observe from the statistical data that the countries who had in 2007 the lowest percentage of households with internet access was recorded in Bulgaria, Romania, Greece and the Czech Republic. The states that had the highest percentage were Iceland, Netherlands, Sweden, Norway and Denmark.

Over the years the trend was ascending. And in 2017 the highest percentage of household with internet access was recorded in Netherlands, Iceland, Denmark and Norway. The lowest percentage was in Bulgaria, Greece, Lithuania, Romania and Croatia.

In Romania the percentage of internet access in households was 22% in 2007, and since then it had an ascending trend. The recorded statistical data is the following: 30% in 2008, 38% in 2009, 42% - 2010, 47% in 2011, in 2012 was 54%, 58% in 2013, in 2014 was a break in time series and the recorded percentage was 61%, in 2015 was 68%, in 2016 – 72% and in 2017 was 76%.

In 2007, 2008 and 2009 Romania had the biggest growth of the percentage of internet access in households from 22% to 30% and finally to 38%. And from 2013 to 2014 was recorded the smallest growth from 58% to 61%.

If we compare Romania's percentage with the percentages of the other Community countries we can observe that our country is not in top 10, but we have the potential to grow and evolve, if we put some effort in it and if authorities do their job.

6. CONCLUSION

The statistical data presented above shows that Romania's central and local authorities can introduce successfully e-learning in the rural and remote areas. The Internet access in Romanian households was in 2017 – 76%, which makes the implementation of this idea possible and feasible.

The information and communications technologies are much more affordable in the present times, and our authorities can make a little effort to purchase them in order to provide education to children that are unable to go to school.

From the implementation of e-learning in the rural area will benefit the whole community, not only the children and their parents. Adults will have the possibility to attend to various courses that can help them to learn a new occupation or to improve their knowledge in their own field.

Some of them may have the opportunity to start a new business which will help the entire community by creating new jobs for the unemployed and generating economic development. These little businesses, like the agro-tourist boarding houses, which we mentioned in our example of applied e-learning courses in the rural area, can make a good publicity not only to the region but to the whole country.

ACKNOWLEDGMENT

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