

An Analysis of Acceptance of ECDL Certificate for Administrative Professions

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Abstract. *This research paper analyzes the acceptance of European Computer Driving Licence (ECDL) certificate in labor market in Republic of Croatia. ECDL Foundation has successfully delivered certification programs to 10 million people throughout 148 countries, in 41 languages. ECDL certificate should be used as evidence of computer literacy and computer competence. The certificate is accepted in strategic documents in Republic of Croatia - its applicability and usefulness is observed in this research. The study was conducted by observing the ads for jobs advertised on the web portals. All ads for administrative and similar jobs were observed on a particular day: March 18th 2010; and a second survey was conducted on February 26th 2012.*

Keywords. ECDL, computer literacy, computer competence, labor market, lifelong learning

1 Introduction

ECDL is a program of the Council of European Professional Informatics Societies (CEPIS), and implemented by the European Computer Driving Licence Foundation (ECDL Foundation) based in Dublin and nationally accredited IT organizations, through authorized test centers. Croatian Informatics Association (HIZ) is authorized for the implementation of programs in Croatia.[25]

This research was discussed problems of definitions of computers skills such as computer literacy and computer competence. This are the terms which since 2004, are recommended to be replaced with a Start ECDL and ECDL Core diploma by HIZ. The research will show whether it is actually accepted in business practice in Republic of Croatia. Acquisition and recognition of ECDL Program represent one of the possible applications of the concept of lifelong learning. "Implications of the concept of lifelong learning are changing understanding of education and the abandonment of

the traditional belief that education is intended only for children and youth, not adults".[10]

ECDL education can be attended by everyone, literally from 7 to 77 years. ECDL program include ICT knowledge that an average citizen might need in his/her daily life and work.

On the other hand this research is focused also on Croatian business practice. A survey conducted earlier concluded as follows: "... data collected in this study indicate that the Croatian organization cannot say that are improving knowledge and skills of their employees to meet the demands of new technologies, increase their productivity and become more competitive." [11] That study shows that Croatian companies are not interested in investing in the development of ICT skills of their employees.

It is interesting to find out if they are then interested in hiring employees who already possess certain ICT skills, and also how the companies express their request for such workers. Do they use the ECDL standard or not.

2 Objectives, hypotheses and research subject

The objectives of this study were to determine whether employers in hiring new employees are demanding from them specific knowledge/skills on the computer usage, whether ICT skills are a requirement for hiring new workers. The aim is to determine acceptance of ECDL standards in the Republic of Croatia in practice. ECDL standard was accepted in the strategic documents - this research is based on the practical value of someone who possess ECDL certificate. The following hypotheses are formulated to be accepted or rejected:

H1: Employers in Croatia when seeking new employees for administrative and related jobs as a condition require computer literacy or computer competence

H2: ECDL start diploma is accepted for administrative and related jobs in the Republic of Croatia as a certificate to prove computer literacy.

H3: ECDL Core diploma is accepted for administrative and related jobs in the Republic of Croatia as a certificate to prove computer competence.

3 Theoretical frameworks

ECDL is the international standard for end user ICT skills competence within the international business community. ECDL Foundation's certification programs are used to increase the value of human capital and achieve productivity gains through developing competent students and employees. This certificates have been widely adopted by all levels and sizes of organizations - within education systems (secondary and vocational levels), Governments (Public Administrations and Ministries), and commercial organizations (Small and Medium Enterprises (SMEs) to large multinationals).[21] The quality of certifications coupled with their vendor-neutral status makes ECDL Foundation's programs the first choice of organizations around the world. Certification provides objective verification of employees' skills and demonstrates their competency to a recognized standard. Certification offers the following benefits:

- Defines the set of skills that employees need to be effective
- Provides a means to assess workforce skills and build a training plan
- Proves employees have the skills to carry out their work competently
- Offers a clear measure of the return on investment in training
- Acts as motivation for employees to complete the training

ECDL Foundation has successfully delivered certification programs to 10 million people throughout 148 countries, in 41 languages.[21]

ECDL program consists of seven modules: Concepts of ICT; Using the computer and managing files; Word processing; Spreadsheets; Using Databases; Presentation; Web browsing and communication.

For an individual to achieve a solid base of skills and knowledge, therefore attaining a minimum level of computer literacy, candidates have to complete and attain certification in a minimum of four ECDL modules. That candidate is awarded with ECDL start diploma. In order to achieve the ECDL Core certification, person must pass a test for each of the seven modules.[18][20][22]

ECDL program is supported in the Strategy of Development - Information and Communication

Technology [28] where is proposed the following plan of action: 2001 Establishment and adoption of the European system of acquiring a certificate of successful use of personal computers (ECDL - European Computer Driving License) as the basic criteria for the competence of employees in the civil services and local government; Establish a way of introducing ECDL in the process of determining competence for employees in offices of state administration and local self-government; Encourage the adoption of equal ways of licensing expertise in all public sectors, including the private sector.

In Europe and in the world there are a number of certificates to determine computer usage skills. So, for example in the UK there are 750 different IT certifications [3]. Some of the most popular certifications are as follows: ECDL, ITQ / eSkills and Microsoft Digital Literacy.

According to Figure 1 - the EDL certificate is individually most accepted certificate in business practice in 21 countries, since the term industrial certificates covered a lot of different certifications by various certification institutions.

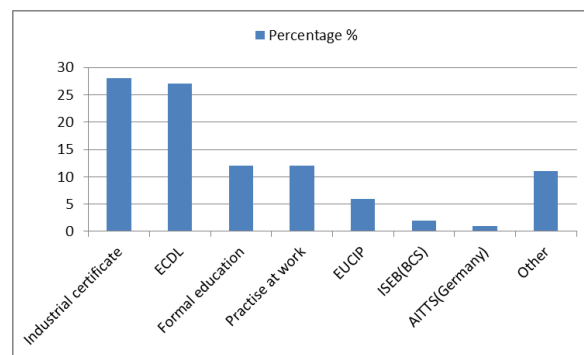


Figure 1: Methods of IT training (Weiss [17] cited by Vrček [15])

In general it can be said that there are two basic ways of measuring computer literacy. The first is through the use of self-evaluation, and second way that is focused on the execution of practical tasks (e.g. ECDL, ETS (Education Testing Service), or IC³ (Internet and Computing Core Certification)). Second way for measuring is dominant because of its focus and prevalence worldwide [12][19][24]

Recommendations of a study conducted in Turkey over 506 teachers/professors are that for improving computer literacy among teachers/professors is necessary to implement a standard such as the ECDL. Teachers/professors should be motivated and encouraged to earn the certificate. Competencies that teachers/professors gain should result in a positive evaluation of the teachers/professors as well as their career advancement and a consequent increase in wages.[7]

According to a study conducted in Norway [cited by [13]] average user who are using a computer in their everyday work is spending 2 hours and 51 minutes in asking for help in resolving problems

related to computer work, weekly. Also [quoted by [13]] Researchers at the University of Bocconi in Milan found out that Italian worker for IT illiteracy annually loses 16 working days to solve the problem when working with computer.

From the above studies are obvious importance and the need to increase computer literacy of employees.

Research which was conducted in the UK showed that those who received the ECDL certificate are saving 38 minutes a day of work time - through better use of information technology.[3] Achieving these savings in working hours employees can use that time for the execution of creative assignments that could lead to greater business efficiency.

In Wales, a training program for employees in the health institutions is implemented. After completion of training, which was attended by 1617 employees - research was carried out. The results of this study show the following: Comparing the period before and after the acquisition of ECDL certification 52.6% of the respondents rarely asking for help from other employees about working with a computer, and 84% of employees are much safer to use a computer. Also, those employees who have completed more ECDL modules have achieved greater benefits from training. Therefore by reducing the training - the full potential of ECDL education were not accomplished.[16] From this it can be seen that to achieve additional savings of work time is accomplished in two directions: employee who does not have adequate ICT knowledge does not waste your time in vain, on the other hand that employee is not consuming unnecessarily working time of employees who possess adequate ICT knowledge to explain the actions on the computer to other employees.

One study conducted in Finland showed that the practical work and exercises under the guidance of computer experts are the most effective way to learn computer skills. In addition, participants stressed the importance of technical support and sufficient time for learning and practice. Here we can only note that the ECDL just such a method of teaching, where with the help of practical tasks and without much theorizing teaches students working at a computer.[5]

In indicative survey conducted in Finland [6] was established a lack of ICT knowledge and skills of employees who were educated before 1990. They did not have any IT training, and they in current daily work must use a computer. To overcome that gap the ECDL certificate was suggested.

Results of research conducted in Switzerland [1] showed that the ECDL certificate is suitable for beginners who need to significantly improve their computer literacy, as well as to persons who have already some computer skills for providing some new knowledge. Mentioned study also stated that after a year of acquiring the certificate, the time saved by better using a computer is larger than the time needed for achieving the certification.

After considering applications of ECDL in different business branches is given an overview of the application of ECDL certification in universities in some countries. In Italy [4] is a practice of ECDL certification quite uneven. ECDL certificate is widely accepted, and almost 87% of the Universities are accredited ECDL Test Centre. On the other hand the number of ECTS credits that students acquire for successful completion of ECDL certification is not nearly equal and - ranged from 0 to 12 credits. Also surprising is the fact that universities which have adopted the ECDL Start certificate (four modules) give more credits for the successful certification compared to the universities that have adopted the ECDL Core Certificate (seven modules). Also important conclusion of cited study is that the ECDL Start certificate is accepted as "reasonable" first step in ICT education.

ECDL testing of the first year undergraduate student of Mechanical Engineering and Naval Architecture at the Faculty of Engineering in Rijeka is the first of its kind in Croatia. In addition, after using opportunity to improve their skills of using a personal computer, students were given the opportunity to acquire ECDL certification if they wanted to. [13]

There are many definitions of computer literacy, for example, U.S. Department of Education defines computer literacy as computer skills and ability to use technology to improve learning, productivity and efficiency.[2] One very clear, simple and pragmatic definition goes back to the 70s of the twentieth century. The author of this definition is A. Luehrmann [cited by [12]]: If you can tell the computer how to do things you want to do, then you are computer literate.

4 Research methodology and technology

For this study are used listings for vacant jobs placed on specialized Web portals.[23][26][27]

The first survey was conducted on March 18th 2010; a second survey was conducted on February 26th 2012, after almost two years.

The study was conducted on portals posao.hr and moj.posao.net because they are popular and most accessible source of information for the future employees.

Table 1: Information about Job Vacancies

Where are you looking for information about Job vacancies	2008	2011
On specialized Web sites	75%	83%
Press adverts	58%	36%
From family members and friends	45%	44%
From Croatian Employment Service (HZZO)	27%	81%
From particular employer	13%	17%

On social network	-	24%
Employment agencies	-	16%
I'm not looking for a Job	10%	-

In Table 1 are displayed the most popular sources of information about job vacancies in Republic of Croatia accordingly to [29][30]. Compared to the 2008 there was an increase of searching information about job vacancies on specialized Web sites from 75% to 83% or more than 4/5 of potential employees seeking a vacancy on the specialized web portals.

In Croatia, these are the following websites: www.posao.hr; www.Mojposao.net; www.hzz.hr. It is also notable that the increase in the number of persons who are informed at HZZO from 27% to 81%, and there is reduced the number of those who are informed through the press from 58% in the 2008 year to 36% in the 2011 year. An important novelty is the number of persons searching for information on social networks: because in 2008 that category was not at all in the survey and in 2011 up to 24% of persons sought information about job vacancies on this way.

All ads for administrative and similar jobs were observed on a particular day: March 18th 2010; and a second survey was conducted on February 26th 2012. The research in conducted on the general population which is called in the literature list or census. Occupational categories that have been observed on Web Portals are belonging to the category of administrative and related occupations such as: Administrative and similar services, Public services, Economics and Finance, and Management. Why were observed only these professions? Precisely, because these are professions which were rated to be use a computer and office applications in their daily work. These are the employees to whom is ECDL certification most needed, and it is logical that they have some proof of knowledge of computer skills and office applications. Other professions use computers but in a different way and different applications. Aim of this research is to determine whether is for employer important that potential employees know how to use a computer. Observed ads are divided in the three categories:

- Computer Literacy
- Computer Competence
- It is not necessary

These categories were chosen in order to confirm or reject the hypothesis. But at the beginning of the study were observed numerous terms that employers indicate knowledge or computer skills. In total there were 33 different ways in which employers set the terms that potential employees should meet in order to be able to apply to their advertisement. These 33 ways for the purpose of this research were categorized into two categories above.

Following methods are applied for the purposes of this research: methods of description, classification,

direct controlled observations, quantitative analysis and statistical testing (χ^2 - test).

5 Results and Discussion

5.1 First research on March 18th 2010

A total of 160 unique ads for job vacancies were identified. Table 2 presents observed advertisements regarding to the above analysis of categories of knowledge and ability to use a computer.

Table 2: Observed job vacancies by category of the requested skills in using computers on March 18th 2010

Occupation	Computer Literacy	Computer Competence	It is not necessary
Administrative and similar services	9	15	7
Public services	4	2	7
Economy and Finance	26	50	30
Management	2	5	3
Total	41	72	47

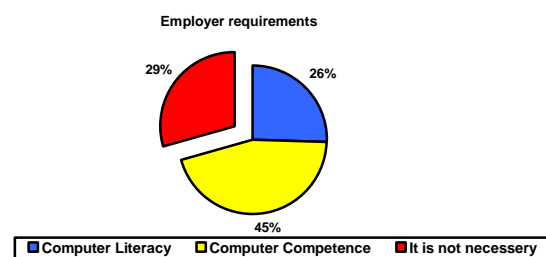


Figure 2: Employer requirements in job vacancy advertisements regarding computer usage on March 18th 2010

From Figure 2 is evident that in 71% of advertisements, employers are searching for some form of knowledge and skills in using computers. And only 29% of advertisements they do not need a person who will know how to use a computer.

5.2. Second research on February 26th 2012

Along with the presentation of the results of another study is conducted the comparison with the results of the first survey from 2010 year. In second study on a total of 129 ads for job vacancies were identified. So there has been a reduction in the number of vacancies

from 160 to 129. Seasonal phenomenon could be ruled out since both studies are conducted almost in the same period of the year.

In accordance with the first survey from 2010 in the study of the 2012 (Table 3), most of the ads still contain ads from category Economy and Finance and 75% of the ad compared to 67% of ad 2010 year, and almost completely is disappeared categories of public service and administration, with 8% in the 2010 be reduced to 1% of the ads for job vacancies.

Table 3: Observed job vacancies by category of the requested skills in using computers on February 26th 2012

Occupation	Computer Literacy	Computer Competence	It is not necessary
Administrative and similar services	5	10	3
Public services	0	0	1
Economy and Finance	24	40	35
Management	0	7	4
Total	29	57	43

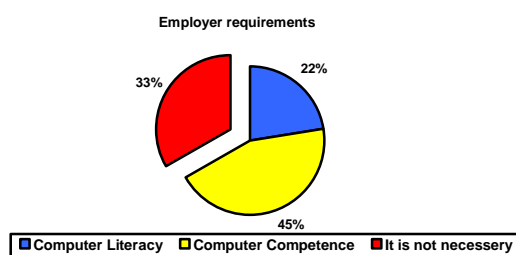


Figure 3: Employer requirements in vacancy advertisements regarding computer usage on February 26th 2012

By comparing the graphs in Figure 3 and the graph in Figure 2 it is obvious that has increased the number of employers that do not require computer skills from 29% in 2010 to 33% in the 2012 year on the detriment of computer literacy.

Considering the results of both studies where only one ad explicitly mentioned ECDL it is possible to conclude that Strategy settings of Croatian government did not carried out. In Strategy of development - Information and Communication Technology is stated as follows: "... proposes are the establishment and adoption of the European system of acquiring a certificate of successful use of personal computers (ECDL - European Computer Driving Licence) as the basic criterion for the training of employees in the state administration and local self-government ..." [28] Nor the significance and importance of the ECDL certification [9] "... It is

possible to see the importance of ECDL for every single person, especially for those people who are looking for a job and now entering into the sphere of labor. With ECDL they prove their qualifications and ability to use computers."

Unfortunately, these forecasts have proved wrong, people who entered labor market and have the ECDL certificate are not recognized as a separate computer literate people and employers do not need to specifically require ECDL certificate in advertisements for job vacancies.

6 Conclusion and Implications

The first hypothesis is supported.

The first hypothesis was confirmed in the first study on ground that out of observed 160 ads - 113 ads literally included a request for some kind of computer literacy or computer competence. It is about 70.62% of the total number of ads that are more than two thirds of the total advertised job vacancies observed. According to the chi-square test in the first study on March 18th 2010 employers who are require and do not require knowledge of the computer usage are not equally represented ($\chi^2 = 27.225$, $p < 0.001$).

In second study out of 129 observed ads there are a total of 86 ads that require some kind of computer literacy or computer competence - that is exactly 2/3 of the total number of ads. According to the chi-square test in second study of February 26th 2012 employers who are requiring and who are not requiring knowledge of the computer usage are not equally represented ($\chi^2 = 14.333$, $p < 0.001$).

Second and third hypothesis should be rejected.

ECDL is mentioned in only one ad and only in the first survey, conducted on March 18th 2010 in the category of economy and finance, for the position of Secretary of Administration in M-profile Zabok. Even in this ad was not state the exact name of the ECDL certification, whether it is an ECDL Start or ECDL Core Diploma, but just - passed ECDL course. In second survey conducted on February 26th 2012, is not a single ad for a vacancy where as condition states ECDL in any form.

Both studies have shown that employers need employees who know how to use a computer and office applications. On the other hand, employers have no clear idea how to express this requirement. They express this requirement in a total of 33 different ways. Regardless of the Strategy of Development - Information and Communication Technology, regardless of all the efforts of Croatian Information Technology Society in popularizing ECDL standards and issued 27,637 ECDL Start certificate and 18,736 ECDL Core diploma [25] still ECDL standards is not accepted in business practice in Croatia. Still ECDL Start certificate is not replaced the term Computer literacy and ECDL Core diploma term Computer competence. So we still do not have a

certain standard that employers have guarantee that the potential employee has specific expertise in the field of computer usage. Rather, we have a standard, named the ECDL, but it is not accepted in practice. Therefore, employers must still conduct its own tests of usage of computers for their future employees and doing so to unnecessary waste their money and time, and the question is what the value of the results of internal tests is.

A limitation of the study is that only are observed ads for job vacancies, and is not determined why employers do not put in the ads that they are searching for people with the relevant ECDL certificates. Whether employers do so because they are not aware of the existence of these certificates, or do not recognize them as good enough for their needs. This should identify future research.

Also in this research is not determined whether employers in hiring new workers give priority to candidates who, regardless of the conditions in the ad still submit their ECDL diploma. Are these candidates at an advantage compared to those who do not have ECDL certificate. For answers to these questions should be conducted additional research and investigate the procedures for hiring new workers.

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