



## DDLUB - Looking Forward to Online Education

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### Abstract

The acronym DDLUB will be used to identify the Department for Distance Learning of the University of Bucharest, Romania. This department was established in 1999, based on the university's Senate Decision. The University of Bucharest has been actively contributing to the development and modernization of Romanian education, science and culture. A brief chronological history is presented on the official site. During 2015, DDLUB will celebrate 16 years of existence and the University of Bucharest will celebrate 151 years of existence.

The DDLUB's achievements, during the period 1999-2013, in the domain of promoting ICT in education, were presented in the article "Modernizing the University – Enhanced Teaching and Learning through Digital Technologies" published in the Journal of Sciences Education named "REPERE", ISSN-L 2247-1065, volume 7, number 1(2013).

The present article is aiming to outline the DDLUB's actions (2014-2015) aiming to prepare this department for ONLINE system of education. This article might be considered a case-study. In the first chapter, some aspects related to the ONLINE education, all over the world, and the trends anticipated for 2015 are summarized.

In the second chapter, the author presents the current status of the DL (Distance Learning) system in Romanian education, particularly within DDLUB; in practice RO-DL is very similar with blended-Learning system from Western countries. Fortunately, just now, the Romanian DL system of education needs only a small step forward to become fully ONLINE!

The third chapter presents the "online actions/elements" implemented within DDLUB and the feedback received from the student and the staff. This article might be considered as DDLUB case-study. There are a number of pictures included in the article based on the assumption that "a picture is worth a thousand words". The 4th chapter includes the conclusions.

### 1. ONLINE education, all over the world

The author[1] and the DDLUB team (Department for Distance Learning of the University of Bucharest, [2], Romania) were continuously focused on the modernizing of the system of education, particularly in the area of distance learning and online education. A recent survey [3] provides interesting data, Fig.1.

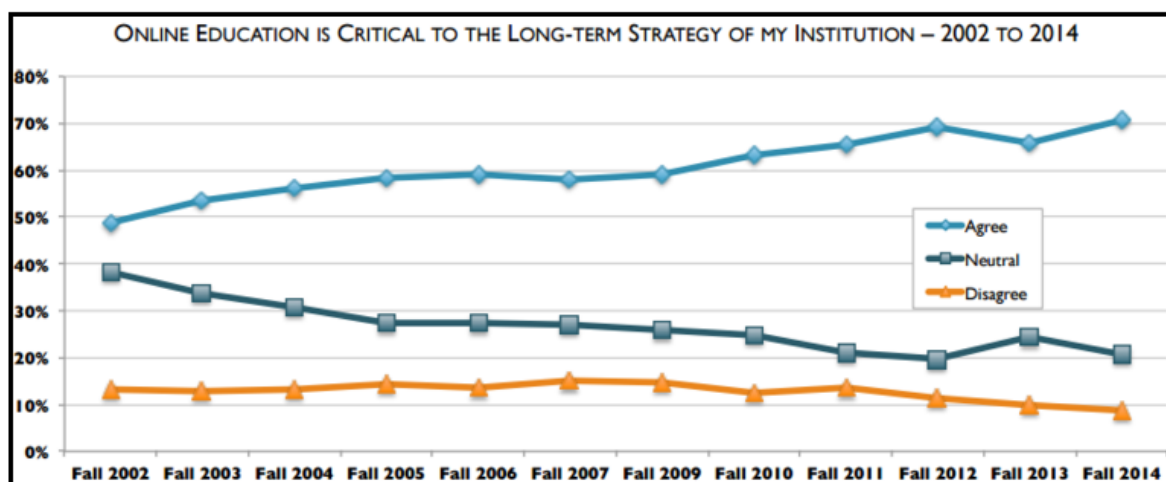


Fig.1. Babson survey research group

We notice that 70% of the participants agreed that online is a strategic issue for the future development of the educational institutions. Where are our university?



Nowadays, we can find on the market, important providers for online courses like: Coursera, Udacity, edX, Open2Study (Australia), Iversity (Germany) etc. One of the most impressive MOOC (Massively Open Online Course) providers is Coursera. Two Stanford University Computer Science professors, Daphne Koller and Andrew Ng, have launched Coursera [4], in April 2012: "Coursera is an education platform that partners with top universities and organizations worldwide, to offer courses online for anyone to take, for free". We noticed on 6th March, 2015: 11,794,432 Courserians, 977 courses, from 116 partners. A list of the most popular courses [5] on Coursera, by looking at each course's search ranking on Google and the related activity on Twitter, Facebook and Google+ was published:

1. Computer Science 101 (Stanford University)
2. Machine Learning (Stanford University)
3. An Introduction to Interactive Programming in Python (Rice University)
4. Cryptography I (Stanford University)
5. Model Thinking (University of Michigan)
6. Gamification (University of Pennsylvania)
7. Startup Engineering (Stanford University)
8. A Beginner's Guide to Irrational Behaviour (Duke University)
9. Functional Programming Principles in Scala (École Polytechnique de Lausanne)
10. Statistics One (Princeton University)

They are currently working on a suite of mobile apps for iOS and Android, a better collaborative learning environment and an expanded Signature Track offering to solve the accreditation problem.

## 2. The Romanian Distance Learning

Our department, the DDLUB, is currently running DL courses, according to the standards established by the Romanian Agency ARACIS [6]. A careful analysis of the RO-DL system reveals the fact that, in practice, this is a blended learning system, [7]. Let us compare a face-to-face course with a DL version of the same course.

**The face-to-face course** having 2 hours per week allocated for lectures provided by the teacher, 2 hours per week allocated for seminars /workshops (practical activities) and 4 ECTS. ECTS measures the hourly volume of all activities requested to a student, during the whole semester. Just in this case,  $4 \text{ ECTS} = 4 \times 25 = 100$  hours, the total number of hours one student has to allocate for this course. If we count the total hours allocated to obligatory didactical activities we find:  $2 \times 14 + 2 \times 14 = 56$  hours which are mainly on-campus, face-to-face with academic staff. The remaining  $100 - 56 = 44$  hours are allocated to the individual student's activities like: study of the manuals /books, solving the homework, communication and collaboration through electronic platforms (Internet), problem /project based learning etc. The final examination counts for 2-4 hours (face-to-face). In conclusion, in the agenda of the traditional model of education, the students are on-campus (face-to-face) for  $(58-60)/100 = 58-60\%$  of total time spent with this course. In brief, the students are "in the cloud" 40-42% of total ECTS time.

**The same course implemented in DL methodology.** According to ARACIS standards, the traditional face-to-face lectures are replaced by individual study, performed by the students: any place (/anywhere), any time and any pace. The activities like seminars /workshops are replaced by: (i) on-campus (face-to-face) tutorials, usually, 2x4 hours (sometimes 2x3 hours) per semester; (ii) plus 20 hours (sometimes 22 hours) per semester devoted to prepare the TMA (Tutor Marked Assessments). Anyway, the DL total time ( $2 \times 4 + 20$  or  $2 \times 3 + 22$ ) is equal with 28 hours, the total from traditional on-campus education. The final examination is similar with the traditional one: 2-4 hours, ONLY face-to-face. In conclusion, based on the ARACIS framework for DL, the DL students are on-campus (face-to-face) for  $\{(6-8) + (2-4)\}/100 = 8-12\%$  of total time; meanwhile 92-88% of total time, the DL students are using electronic platforms to communicate and collaborate with their classmates and with academic staff. In brief, the students are "in the cloud" 88-92% of total ECTS time.

Author's point of view: (i) the RO-DL is much closer to online system of education (100% of time "in the cloud"); (ii) the implementation of the online education needs a small step forward including a proper legislative framework (which may be created as an extension of the DL legislation) and a new online pedagogy (which may be created by improving the existing DL pedagogy). The problem is in the "decision makers' garden"!

### 3. DDLUB case-study.

During its history (1999-2015), DDLUB has been focused on two main objectives: (i) to design, to implement and to develop new type of education within University of Bucharest: distance learning, blended learning, flipped classrooms and online education (2015+); (ii) to promote the digital technology in education: virtual campus(2003+), eLearning (2003+), Google Apps for Education (2010+), GAFE as LMS(2014+), Google Classrooms(2014+), online courses (2015+) etc.

The author, as a key person of the DDLUB, will present very recent actions aiming to design, to implement and to test online courses. In our vision, there are two important elements that an institution needs to master: (i) LMS-Learning Management System, as one essential online learning tool; (ii) the existence of the learning resources for online learning. The key element LMS will be reported by another article/author. Now, we will focus on the learning resources for online learning.

The DDLUB team is already experienced in producing eLearning resources which are considered perfectly adequate for online learning. We learnt this lesson from CISCO Networking Academy Program which has enrolled /trained millions of students all over the world. Consequently, the DDLUB team has prepared eLearning resources dedicated to the students interested in obtaining the ECDL Certificate: version MSOffice 2000, version MSOffice 2007, MSOffice 2010. The next 3 figures are screen captures from the last versions of these eLearning training resources.

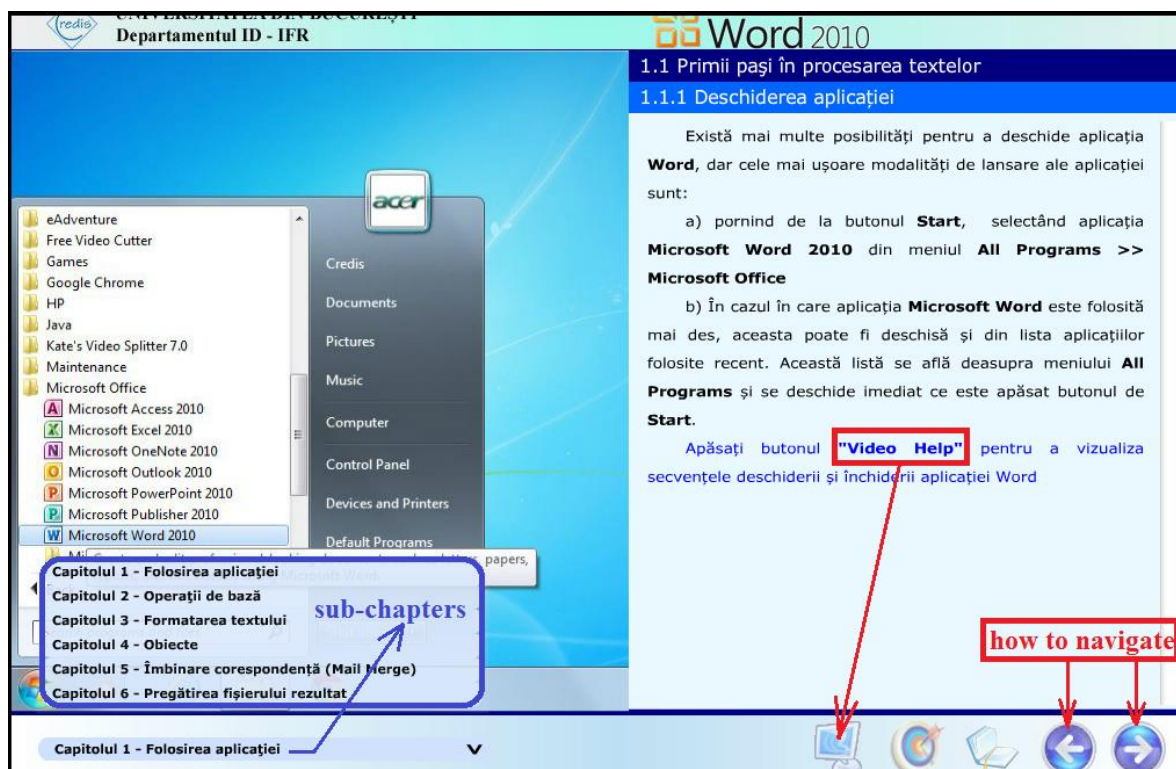


Fig.2. eLearning training resource for WORD (MSOffice 2010)

The Figure 2 presents the GUI and the actions that a student can decide in order to study on his pace. What we consider very efficient in using eLearning resources is the interactivity offered by the PC (a text book has not such interactivity!). The screen capture presents a video-training activity which explains the students how to access the suite Microsoft Office. Our strong recommendation for the students is: immediately after they understand the training sequence, they have to open a new browser window and to practice the newly acquired skills ("learning by doing").

We may conclude that eLearning resources foster the students to be active and to take advantage of the full potential of interactivity provided by the modern, powerful, personal computers, like in Figure 3 which presents an interactive video-training and Figure 4 which presents a self-evaluation sequence.

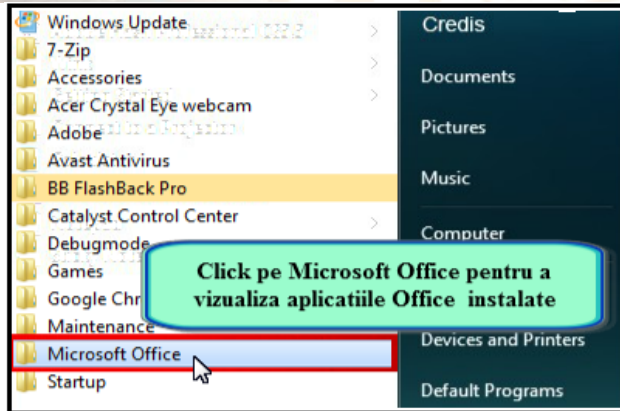


Fig.3. The eLearning training resource – the interactivity is highlighted

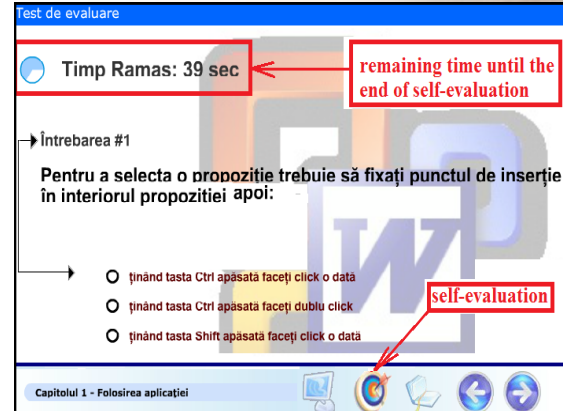


Fig.4. The eLearning training resource (self-evaluation screen)

Early in March 2015, the DDLUB team, has implemented an online (pilot test course) on Google Developer Platform, [8]. The student has to register; after that, he receives the password to access the eLearning course (implemented on the WordPress platform [9], used as content management system, CMS). The student has the opportunity to study the online-course named “Tehnologia Informatiei si a Comunicatiilor” [10], in Romanian language. Fig.5. presents the Course-Structure and the content of the first module named “STUD – Generatiile X, Y, Z”.

Course Structure
STUD = GENERATIILE X, Y, Z
Provocare - fabula pinguinului
1. Nativi vs imigranti digitali
2. Date statistice despre nativi digitali
3. STUD vs tehnologiile digitale
4. Statistici despre RO preluate din documente CE
5. “Contaminarea” incepe de la varstele cele mai fragede.
6. STUD vs stiluri de invatare
Sondaj PROF(B.Logofatu) vs STUD(FPSE), octombrie 2014
7. Poate STUD sunt interesati de informatii suplimentare
Anexa 1 – Copii, elevi eroi!

Fig.5. The online-course structure



Figure 6 presents the “course navigation system” which allows students to jump at a desired page.

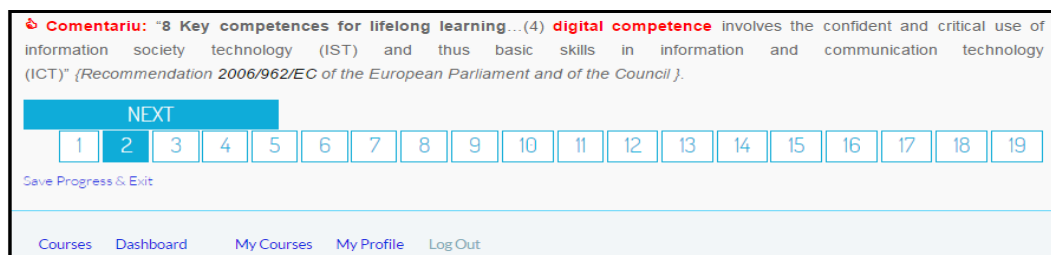


Fig.6. The course navigation system

Fortunately, we choose a hardworking student who has already studied /finished 100% of the documentation (“Course-Complete”); the dashboard presents information on student’s progress, Fig.7.

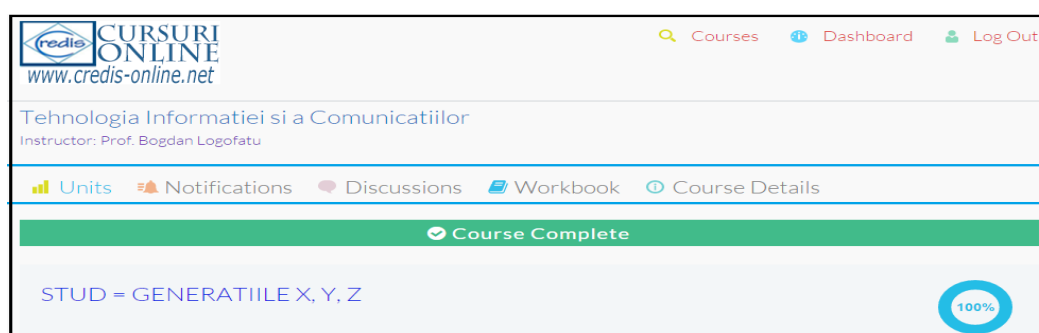


Fig.7. Student dashboard on “credis-online.net”

#### 4. Conclusions

This article might be considered a case-study concerning the new DDLUB initiative: online education. Starting with DDLUB previous experience (2014-2015), the article presents current actions aiming to prepare this department for ONLINE system of education. Based on the information presented in the Chapter 2, the author underlines that, the RO-DL (in which the DL-students are “in the cloud” for 90% of ECTS time) is much closer to online system of education (in which the online-students are “in the cloud” for 100% of ECTS time). The Chapter 3 presents some of the DDLUB training resources, developed during the period 2003-2015, and the first pilot test implementation (March 2015) of the online-course “Tehnologia Informatiei si a Comunicatiilor”, in Romanian. This implementation was done on Google Cloud infrastructure, using WordPress Platform for the online technology (CMS).

The author is optimistic and she is looking forward to a Romanian online system of education, officially recognized! We need only a small step forward based on a proper legislative framework (which may be created as an extension of the existing DL legislation) and a new online pedagogy (which may be created by improving the existing DL pedagogy). Anyway, the feedback received from students and from some members of the academic staff is very positive!

#### References

- [1] <http://www.credis.ro>
- [2] <http://www.unibuc.ro/e/n/despre/History.php>
- [3] <http://goo.gl/nkUiwA>
- [4] <http://www.coursera.org>
- [5] <http://www.diygenius.com/the-50-most-popular-courses-on-coursera/>
- [6] <http://www.aracis.ro>
- [7] <http://elseconference.eu/papers/view>
- [8] <https://cloud.google.com/>
- [9] <http://en.wikipedia.org/wiki/WordPress>
- [10] <http://104.155.44.211>