How a Virtual Campus for Digital Students (ViCaDiS) should be?

Diana Andone
“Politehnica” University of Timisoara, Romania
diana@cm.upt.ro

Prof.dr.eng. Radu Vasiu
“Politehnica” University of Timisoara, Romania
radu.vasiu@rectorat.upt.ro

Abstract: The main purpose of the Virtual Campus for Digital Students - ViCaDiS Project (2007 – 2009) is to assist international cooperation in learning by using social media and open source applications. ViCaDiS facilitates a shift from Institutional Learning Environments towards Personal Learning Environments. Digital students are young adults who have grown up with digital technologies integrated as an everyday feature of their lives. The paper describes the development of an online - mobile phone environment - ViCaDiS – Virtual Campus for Digital Students, as a co-operation between 6 universities from European Union to develop a common online learning environment enhanced with web 2.0 tools for supporting the online international co-operation at academic level. It presents also the evaluation of this new learning environment for digital students.

Introduction

This paper describes a collaborative project between 6 universities from European Union to develop a common online learning environment enhanced with web 2.0 tools for supporting the online international co-operation at academic level. The environment is named ViCaDiS – Virtual Campus for Digital Students and is supported by the EU Lifelong Learning Erasmus Virtual Campus Programme.

The project is based on the article of faith that underpins out work is that technology makes it possible to design learning situations that actively engage and guide learners while allowing them to choose their style of learning and organize their knowledge outcomes. This conceptualization of the learning environment allows learners to make the transition from learning in a physical space such as the lab or lecture theatre, to learning in a student-centered learning environment in cyberspace. Technology can change the education setting from a physical one to a virtual one. Virtual spaces may be in constant flux: they can be instantaneous, deliberate, mobile, synchronous and asynchronous. The student’s relationship with virtual space can shift rapidly and they may co-exist in several spaces at a time. These virtual spaces can play a bigger role in all aspects of higher education through the use and integration of technology (laptops, handhelds, mobile phones) and communication (wiki, blogs, SMS, podcasting, etc).

For the generation born after 1980 the digital world is even more present and pervasive than for the rest of us: for them it is the only world they know. They are the ‘digital’ or ‘Net’ Generation (Tapscott, 1998): children or teenagers who have lived all their lives in a changing but (from their perspective) a predominantly digital world. Significantly, most students in higher education now belong to this group. We have identified these students as a special group due to their characteristics (Andone, Boyne, Dron, & Pemberton, 2005a) and we consider that this community has different learning habits from students of previous generations.

The final target of the project is to build and test an eLearning environment targeted at their needs, based on the assumption of an ‘ecology’ of learning (Seely Brown & Duguid, 2000) and which will complement their usual online environments from each university by allowing them to connect, study, work and get together at international level.

Digital Students

The full results of the early studies are presented in (Andone, Dron, Boyne, & Pemberton, 2006a). The main characteristics of the digital student were identified as a result of this research. The characteristics of the
technological confident digital students were found to include a strong need for instantaneity, a desire to control their environment and to have a technology based social life (or – to communicate socially by an extensive use of technology).

From our research perspective, 'digital students' are defined as young adult students who have grown up with active participation in technology as an everyday feature of their lives. Among the characteristics that define digital students are that they take the availability of email, instant messaging and text messaging for granted, and use unlimited online resources. The digital world has had a significant impact on their habits and behaviour (Barone, 2003). They tend to use the Internet to search both for educational purposes and for information about their hobbies and interests. They use SMS (mobile text messaging) extensively for contacting their friends and colleagues, as well as IM - instant messaging. These results show that the use of multiple media and technologies is directly connected to their use in education, home and entertainment (Andone, Dron, Boyne, & Pemberton, 2006b).

Though lagging very slightly behind their UK and Finnish counterparts, the students from Eastern European countries are becoming stronger in their ICT use and understanding and have jumped several technological steps. They started using the computer, the Internet and the mobile phone at around the same time, and after just a few years they are using similar tools (SMS, Instant messaging, search engines, online playing) at much the same level as their Western colleagues (Andone, Dron, Boyne, & Pemberton, 2006a). They use the Internet for research, collaboration with other students, and as a resource for information passed on to them by other students or teachers. A large number of desirable attributes for e-learning environment emerged from the research, some of them contradictory. For instance, while participants generally want to have ‘things coming to them’ in a ‘rapid, fast way’, receiving un-requested learning objects disturbs them. It was clear that no single approach would be likely to satisfy all requirements, and an e-learning environment for digital student will need to use complementary methods and technology and leave the power of choice of the ‘right one’ to the student. The results were correlated with other research (Beasley, 2004; Dillman, 2000; Eurostat, 2003, 2004; Livingstone & Bovill, 2001; Oblinger & Oblinger, 2005; Rettie, 2002; Woods, 2002).

They simply ‘think differently’.

**ViCaDiS environment**

In **ViCaDiS (Virtual Campus for Digital Students)** a wide range of ODL actors from EU and CEE countries (Romania, Italy, Finland, Hungary, Lithuania and UK) focus on developing an innovative approach for enhancing international eLearning by moving the strength from the institutional learning environment to the personal learning environment (PLE) with focus on students. It produces an instructional or pedagogical shift inside universities eLearning moving the focus from the education materials and technology to the user-student, to user generated content.

The goal of ViCaDiS is to create an attractive environment for all students within the European Union states, using already existing tools that will be enhanced with new tools wanted by the new generation of students. An innovative multilingual ICT-based environment unique in Europe (as an international virtual campus) it incorporates several open educational resources (library, glossary, external links, student projects, course activities), open educational tools (wiki, blog, forum, calendar, podcasting, instant messaging communication, audio-video conferencing over IP, RSS, mobile text messaging, mobile accessibility to ViCaDiS) and promotes social networking as an instructional method.(www.vicadis.net)
Mobile technologies development

Mobile Technologies are related to mobile phones, multimedia phones, personal digital assistant (PDA) devices etc. and services tailored for mobile devices. Mobile technology related learning resources consist of functionalities, contents and pedagogical paradigms adapted to benefit from the use of mobile technologies. The quality of e-learning solutions is based on three factors: (1) teaching and learning competencies, (2) paradigms and paradigm shifts, (3) infrastructure and technology.

To benefit from mobile technologies we must decide: How to be aware of mobile technology related possibilities? How to evaluate the educational potential of those possibilities for institutional and personal learning environments? How to implement selected technologies? How to support the use of mobile technologies?

In the development of learning and teaching related competencies the following aspects should be considered: What are the current competencies related to mobile and non-mobile learning and teaching? How should the competencies be developed? How to use the competencies in a purposeful way?

In the development of paradigms and planning of paradigm shifts the following aspects should be considered: What are the benefits and restrictions of current paradigms? How to evaluate the potential of new paradigms? How to evaluate the need of paradigm changes? How to conduct a paradigm shift in a successful way?

ViCaDiS (Virtual Campus for Digital Students) Project collected information in two questionnaires related to the educational use of mobile technology. Respondents to both questionnaires were recruited through e-learning related e-mailing lists or through e-learning courses. The 1st questionnaire was targeted to find out the educational potential and probability to be used of mobile technologies (Questionnaire 1), (Results 1). The 2nd questionnaire was targeted to find out what kind of devices and services are used and how fast the device base is renewed. The questionnaire were made using the ZEF methodology (ZEF Solution, Anttila 2007) and the related service. The results help to find out on which technologies one should concentrate first concerning the implementation of mobile technologies. The greatest potential was found in VoIP – audio and video communication and conferences with mobile devices. The possibility to access services with computers and mobile devices (dual-device-option) was evaluated high. Other technologies with great potential were: WAP 2.0 – Secure login to web pages, learning environments and social web services, web browsing with mobile devices, web based calendar and calendar...
activities, timed messages from calendar activities, PoC – immediate sharing of documents, and SMS – rich content download services (Rutkauskiene et al 2008).

The quality of e-learning is based on teaching and learning related competencies, pedagogical paradigms or solutions in use, proper non-mobile and mobile services, cost effective communication channels and the mobile device base of m-learners, teachers and tutors. ViCaDiS questionnaires pointed out that Flexible Mobile Communication is highly appreciated (VoIP, PoC), Dual Device Interface is important when applicable and WAP 2.0 has a great potential. The potential of NFC and GPS Technologies has not yet been recognized widely.

![E-learning and m-learning Potential](image)

**Figure 2.** E-learning and m-learning potential of some services

The diagram in Fig. 2 is in a normalized form from the ZEF methodology questionnaire. The first implementation steps of mobile learning technology concentrated on services which have achieved top scores in the upper half of the normalized diagrams: to check and send e-mail messages, to receive reminder messages from your calendar, to receive information about changes in your calendar and to browse and update your internet calendars (personal and learning related).

Students need mobile features that support them to keep on track of the learning process and changes in the learning process, and they should be used if they create added value to learners.

**Evaluation**

In the ViCaDiS project the development has been paid attention to all these layers. In the core of the ViCaDiS Campus we have a mobile interface also. Social media tools not-integrated in the learning environment have been considered by adding social media related IDs in user profiles to facilitate ad-hoc use.

Pedagogical Paradigms, teaching and learning competences, technology related competences, existing culture and available technology are affecting how mobile technology and social tools are used or will be used.
We are studying now the impact of the various features on the experience of the new student generation. The environment was used in normal University course (Technical English) and during the Technical Placement in the Industry by groups of both “digital” and “non-digital” students. Another use for informal learning was to gain information and share the experiences of student mobilities between the partner universities in the ERASMUS programme. The usage made of the environment is measured, and qualitative evaluation (interviews) are carried out to establish attitudes and preferences. We also evaluated the environment for its desirability to the study group of students (digital and non-digital). To evaluate the desirability we used a usability methodology developed by the Microsoft Usability Lab (Benedek, 2002) focussing on the ‘product reaction cards’ method. We developed a large set of word cards that formed the basis for a sorting exercise and more importantly a discussion about the use of the environment. Since there is a bias to give positive feedback in the university relations already established, we made sure that at least 40% of the set consisted of negative words and phrases and tried to make the set cover a wide variety of dimensions. Each word was placed on a separate card and the set was given to the students at the end of the course module. On the first round each of the students was asked to pick the words that best describe their “experience in using the ViCaDiS”. The evaluation process is still taking place until the end of May 2009, when the academic semester will end and the final evaluation (a questionnaire using the ZEF methodology (Andone, Dron, Boyne, & Pemberton, 2006b) will be used).

Conclusions

The results indicate that an eLearning environment which has the described tools and involves student control leads to greater engagement in the learning process and a higher level of satisfaction of the group which we identified as digital students.

The study results played a key role in directing our eLearning environment development strategy and have influenced some major decisions. One such decision concerned the appropriateness of formal learning structures for Internet and Mobile phone based services.

References


