

Remote and Mobile Technologies in Modern Education

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...To exist is to change, to change is to
mature, to mature is to go on creating oneself endlessly...

Henri Bergson

Knowledge sharing and knowledge transfer must be regarded as a demand in the international knowledge society. Education and training, research and innovation, creativity - are the main columns of a knowledge society that encompasses the entire world. Education is everyone's foundation for personal development, autonomy and integration into society and the working world. Research enhances a society's cultural vitality and enables the critical questioning of the present as well as the building of the future.

Education is becoming more high tech with the use of laptops, handheld computers, mobile phones and i-Phones present in the classroom. In addition the internet plays a large supporting role in today's educational environment. The use of WiFi in the classroom or laboratories - locally and/or remotely - appears beneficial to the learning process. Students would have the opportunity to interact with the teacher, others students and outsiders. The initial purpose for a WiFi connection is to network more than one computer in order to share a broadband internet connection in a home or office. WiFi is a more convenient method of networking devices together, avoiding the various cables otherwise needed for the network. WiFi is primarily used for data applications though it is quickly being used for less work related situations, and is becoming popular with home entertainment.

The Center for Valorization and Transfer of Competences CVTC (<http://fizica.unitbv.ro/cvtc>) – founded 12 years ago in “Transilvania” University of Brasov – together with important European partners, having in mind this ideas, started one International Association of Online Engineering IAOE (<http://www.online-engineering.org>). This association is an international non-profit organization with the objective of encouraging the wider development, distribution and application of Online Engineering (OE) technologies and it's influence to the society. In the same time IAOE organize important conferences and publish more referenced journals. The main Remote Engineering and Virtual Instrumentation Conference (REV) will be organized this year 28 June – 1 July in Brasov by Transilvania University (<http://fizica.unitbv.ro/rev2011>) .

A lot of water has flown under the bridge since the invention of the telephone to the present days where mobile phones are in vogue currently. The materialization of the mobile phone did not happen overnight, but it is a chain of developments that finally led to the mobile technology as it exists today.

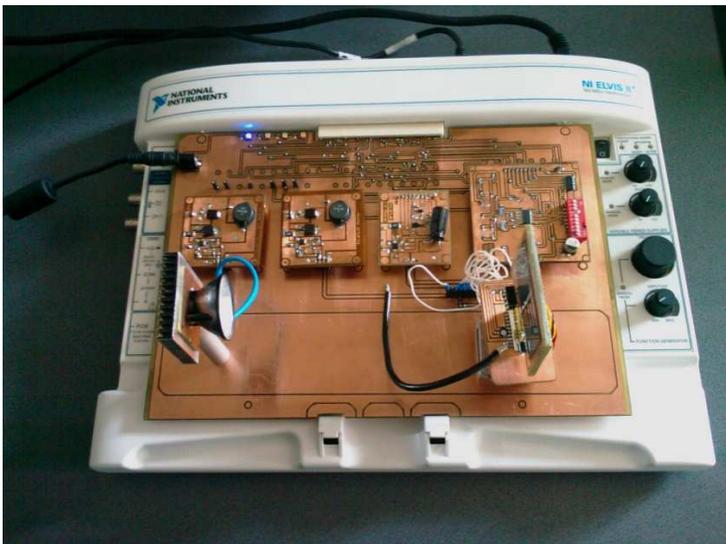
The advent of portable devices has a significant impact on the manufacturing industry. Remote programming, monitoring, diagnosis, debugging and configuration are now possible by using off-the-shelf PDAs or cellular phones.

Ready or not, mobile media and communication look like they're here to stay. It's probable that more schools and instructors in the near future will make more of their content accessible through mobile devices. Certainly, some schools have already made mobile versions of their websites, and some instructors incorporate social media like Twitter and Facebook, which can be used via mobile devices.

What do you think of remote and/or mobile learning? If you aren't already using it, do you feel more inclined toward it, or is its place in education overrated? If you are using mobile-oriented instruction, what advice would you give to those who aren't?

Last year's Web activities send out a clear signal to the market: mobile is different and mobile is hot. The advance of touchscreen devices, app stores and new advertising approaches/formats are all coming together in a new kind of interactive mobile internet, a brave new place, where new content, new experiences and even new mobile search services will set the bar e. g. for mobile commerce, mobile video and TV.

Creative innovation as the result of research and development is, in connection with innovative education, the driving force for growth, income and affluence. Hence, it is the basis for a country's capability to compete in a globalized world. Innovations that are ready for marketing are necessary components of economic development. Investment in innovative machines and here we think at the new educational standard **NI ELVIS** - National Instruments Electronic Laboratory Virtual Instrumentation Suite system, can only be successful if there are the people with the necessary know-how of how to operate them. Through its entire history, mankind is characterized by creativity. From the dawn of civilization, there is no field of knowledge that had not been touched by creativity.



The new NI ELVIS II, my DAQ (www.ni.com) and AX-1 (www.inexglobal.com)
Technologies promoted by Creativity Laboratory of CVTC

Educational

In the Creativity Laboratory of CVTC we try to implement all the new devices, sensors, systems and concepts in order to be able to develop new and valuable remote laboratory technologies based on the real physical instruments (devices) and also to implement creatively new virtual instruments and create flexible **Remote Engineering (RE)** technologies.

NI ELVIS allows the students to understand that the technically objects do not might to be create without one ideational plan. They notice that creativity there is, in time, before of the creation. They must present to the teacher they ideas regarding the new prototyping action and only after this they have the right to start concrete realisation.

With this occasion the students learn that the notions of inventiveness and innovation are the same notions as creativity and creation, but moved in the technical domain. Inventiveness will produce new original ideas and innovation is the realization of the ideas in the concrete shape.

Top universities from around the world are using NI LabVIEW and NIELVIS to enhance their engineering curriculum (http://www.ni.com/academic/ni_elvis/universities_using_nielvis.htm). Courses in electrical engineering, mechanical engineering, physics, and biomedical engineering all use the powerful combination of LabVIEW and NI ELVIS to teach topics including instrumentation, circuits, measurements, controls, and signal processing (see our specialization on **Physical Engineering** oriented on “instrumentation”: <http://www.youtube.com/watch?v=E7UfM-qgDY0>).

Today, Internet not only determines a lot of jobs, but it becomes a lifestyle. Internet has changed the concept of neighborhood, of sharing space, the learning methodology, and so many chapters of our life that our above sentences might be as extrapolation of this „wind of change”.