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## Recent Technological Advances in Education

- *Proceedings of the 9<sup>th</sup> International Conference on Educational Technologies (EDUTE '13)*
- *Proceedings of the 1<sup>st</sup> International Conference on Engineering and Technology Education (ETE '13)*

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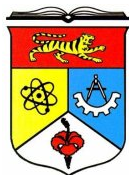
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## Plenary Lecture 1

### Sustainable Initiatives, Ecological and Green Design Implementations in Interior Architecture Education



#### Assistant Professor Gozen Guner Aktas

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**Abstract:** The concept of sustainable, ecological and green design is significant topics that are discussed from lots of different disciplines around the world in the last decade. The importances of those concepts are increasing everyday; while the world population is increasing and the overall quantity of natural resources is decreasing. The conflict of this century can be identified as “an increase in peoples’ life quality while a decrease in the overall consumption of natural resources”. On the other hand the built environments and the construction sector is the area which uses an important amount of energy and materials that are produced by world resources. Researches identify that 50% of the energy and the materials that are produced with world resources are used by the building sector in the world. Interior Architecture and interior design discipline has an important role in construction and built environment sector to provide contribution to the ecological and green design concepts. This study aims to evaluate the ecological and green design concepts within the built environment discipline. Ecological and green design approaches in interior spaces are important parameters for the concept of sustainability and ecological. Energy and emissions in interior spaces with lighting, ventilation, air conditioning thermal comfort, insulation, finishing materials and the surface treatment systems and their contributions to the concept of ecological and green will be awared. Ecological and Green design approaches are discussed in build environment by different scales. Interior architecture as a complex discipline can give great contributions to those concepts. The design of interior spaces can be considered as a complex process from the perspective that, the interior space ought to meet various human needs (ecological, physiological, emotional and socio-cultural) and as a result should stimulate life styles, functional necessities and various senses. On the other hand, interior spaces are the main living areas of the human beings. People spend most of their lives in interior spaces. So it is essential to discuss the concepts of Ecological and Green in interior spaces. Interior architecture discipline can give a great contribution to those concepts by using healthier interior materials, less polluting and more resource-efficient practices that promote the wellbeing of building occupants and results in less drain of the urban infrastructure and natural resources. This important contribution to the area starts from the interior education the concepts of sustainability, ecological and green design should be one of the primary parameters in the educational period. Sustainable initiatives, ecological and green design implementations in interior spaces should be introduced during the educational period of the profession. This study will discuss those concept in the interior architecture education and in design studios.

**Brief Biography of the Speaker:** Gozen Guner Aktas graduated from Bilkent University, Interior Architecture and Environmental Design department in Turkey in 1997. She worked as a research assistant and completed her masters degree in Interior Architecture and Environmental Design at Bilkent University in 1999. She continued her professional career in some of the most important design firms of Turkey as an Interior Architect. She completed more than 50 Interior Architecture projects. During her professional career she also completed her PHD degree in Interior Architecture and Environmental Design department at Hacettepe University in Turkey. She is presently continuing her academic studies as an Asst. Professor at TOBB University of Economics and Technology in the department of Interior Architecture and Environmental Design. Her research interests are; public life and interior space relations, public interior spaces, recreational interior spaces, sustainability in interior spaces, ecological and green design in interior architecture. She is the member of Chamber of Interior Architects of Turkey.

## Plenary Lecture 2

### Interactive Educational Technologies for Interior Design History Courses



#### **Assistant Professor Nur Ayalp**

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**Abstract:** Interior Design education aims to lead students to enhance quality of life. In creating interior environments to support human habitation, multi dimensional approach is vital. Designing interior is not just a technical practice but also captures socio- cultural problems also. Moreover, this technical and socio-cultural knowledge strongly interact with each others. For this purpose, curriculum consisted, courses scale form technical to theoretical. Like all disciplines; history courses create a base for develop social and cultural perspective in order to solve interior design problems. In other words, history of interior design course is fundamental in developing route to students' future professional identity. Even though the history courses lead to create a cultural perspective in education, mostly considered as a theoretical knowledge consist of 'old' images. Apart from gaining knowledge form a text book, history courses should also guide students to gain a vision in heritage preservation. That is, interior design history course has multidimensional responsibility. There are many different teaching techniques in history classes. The plenary speech aims to discuss these different techniques and especially focuses on the interactive teaching techniques. Is history courses only consist accumulation of historical knowledge, or it has ability to interact?

**Brief Biography of the Speaker:** Nur Ayalp is Associate Professor in the Department of Interior Architecture and Environmental Design in TOBB ETU University. Nur Ayalp was born in Adana, Turkey on 18 May 1976. Nur Ayalp took bachelor degree of Interior Architect and Environmental Designer from Bilkent University, Turkey in 1999. She took her master of fine arts degree from same university in 2001. She also worked as a research assistant in Bilkent University during master education. She worked as an Interior Architect in MRA Architecture and Construction Firm between 2001-2004. She is a member of Chamber of Interior Architects in Ankara, Turkey. She took her PhD degree from Hacettepe University in 2008. Her researches are focused on renovation of interiors, cultural settings and environmental psychology.

## Plenary Lecture 3

### Integration of Brain Based Learning, Problem Solving Enterprising Competences and E-Learning Technology in Curriculum Development of Education



#### Professor Emil Pop & Professor Camelia Barbu

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**Abstract:** Brain Based Learning is a procedure recently published in education and means using the neuro-psycho-pedagogical methods for transmitting and processing the information's, and for the assimilation, the learning and the assessment. Although there is still controversy about the methods of learning one thing is clear, brain based learning can become a new pathway in education by using new researches on the anatomical structure and bioinformatics of the human brain.

Those researches have highlighted how the brain works, the way of knowledge acquisitions, what is it the thinking, what is it the memory, what is it the human intelligence and the wisdom etc. Nevertheless together with the experience of the psycho-pedagogues and the teachers led to the use of this new knowledge in the education process under the paradigm of "brain based learning".

The dimensional data of the human brain shows a weight between 1250 and 1450 grams, representing about 2% of body weight and 20% of the oxygen consumption, 25% glucose and 15% of the blood of body. In absolute value the brain weight is exceeded only by the cetaceans (whales) and the pachyderm (the elephant) that at the weight of 5000-6000 kg have the weight of brain approximately 9 kg. The processing capacity of the brain depends on the "report of encephalisation" EQ, which takes into account the weight of the brain, the number of neurons, the flexibility neuronal networks training and the processing speed. To human EQ is between 7 and 8, the cat is 1, the dolphin between 5 and 6 and in mice is 0.3.

Using the Brain Based Learning technique there are established a set of principles: The intellectual models, The emotions, Learning in the classroom, The memory, The evaluation, The biology of brain, The unity: body, mind and brain, The time, Learning by collaboration, The training on thematic.

**Brief Biography of the Speakers:** Emil Pop graduated with BSc (Hons) in Electrical Engineering in 1967, graduated with BSc in Mathematics-Informatics in 1976 and gained a PhD in System Control in 1976, based upon the research developed at the University La Sapienza, Rome, Italy and at the University of Petrosani. He joined in 1967 the University of Petrosani. In 1990 became Professor of System Control, PhD advisor and was for many years the Head of System Control and Applied Informatics Department. In 1993 he was for 4 years General Director in the Romanian Ministry of Education and Research, from 2004 to 2008 he was Vice-Rector of the University of Petrosani in charge with the R&D and European Programs. From 2008 to 2012 he was the Rector of the University of Petrosani. In 2001 he was Visiting Professor at the University of Clausthal, Germany. In 2007 he was made Academician of the Technical Academy of Ukraine. His general research interests are in system control engineering, nonlinear systems, VLSI system design, robot control, modeling and simulation and applied informatics. In his over 40 years long didactical and research activity he coordinated about 100 national and international research projects and grants and published about 240 papers, from which over 20 in WSEAS conferences.

Camelia Barbu received a BSc in System Control and Applied Informatics Engineering in 2004, an MSc in Automatic Control Methods for Industrial Processes in 2006 and gained a PhD in System Control in 2009. She joined in 2004 the University of Petrosani. In 2011 became Lecturer of System Control Engineering. She is the Director of LLP Erasmus Programs Centre of the University of Petrosani. Her general research interests are in applied informatics, system control engineering, modeling and simulation and computer engineering. In her 9 years long didactical and research activity she took part and coordinated about 12 national and international research projects and grants and published about 60 papers, from which 8 in WSEAS conferences.

## Plenary Lecture 4

### Lifelong Learning: A Dream that Unites the World and the Mission of Universities in Its Implementation



#### Professor Francklin Rivas-Echeverría

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**Abstract:** Education is a complex, dynamic and heterogeneous activity that can be evidenced in the multiple processes, phenomena and institutions worldwide that have agreed that "education" is not a simple discrimination between educational events or not, however it is possible to identify spaces for formal, non-formal and informal, where this tripartite covers the universe of educational processes of people.

Despite of the various positions on the differentiation between formal, non-formal and informal education, it can be understood the formal and non-formal as products of intentional and systematic processes. Meanwhile, informal education occurs indiscriminately in the social and cultural contexts in which people are related and occurs diffusely.

This plenary session will discuss this tripartite mixture of education "forms" in the context of Lifelong Learning (LLL) concept, which is defined according to the European Centre for the Development of Vocational Training as: "All learning activity undertaken throughout life, which results in improving knowledge, know-how, skills, competences and/or qualifications for personal, social and/or professional reasons".

From this definition, it can be remarked that LLL involves all the individual educational or training processes developed by a person during his life. For the international education community, this notion extends the scope of "formal education", and other social spaces are defined as potentially formative spaces. It is considered the "non-formal education" as the one that includes groups or community organizations and the "informal education" the one that includes all other activities that are not contained in the previous ones and where the individual's active participation is a key issue to the achievement of educational goals that arises.

Universities are participating in continuous education for society, however, there is currently a resizing university task proposing a "third university mission," which is the knowledge transfer and social responsibility, creating cooperative networks between social, economic, political and stakeholders, drawing up plans that provide different options, if possible, tailored to individual or group needs.

Following this vision of the third university mission, the European Community encourages a reflection space approach with Latin America through the project Transatlantic Lifelong Learning: Rebalancing Relations (TRALL). TRALL project is granted by ALFA III program of the European Commission, and 20 Latin American and European academic institutions (15 in Latin America and 5 in Europe) are involved, for the criteria and interests unification, promotion and development related to Lifelong Learning activities.

In addition, in this plenary session it will be presented the TRALL project objectives, phases and prototype models that have been developed under the project methodological framework.

**Brief Biography of the Speaker:** Francklin Rivas-Echeverría: Systems Engineer, MSc. in Control Engineering and Applied Science Doctor. Full professor in Control Systems Department, at Universidad de Los Andes, Venezuela. He has been invited professor in the Laboratoire d'Architecture et d'Analyse des Systemes (LAAS, Toulouse-France) and some Venezuelan and international Universities. He has also been technical advisor for "Venezuelan Oil Company" (PDVSA), "Aluminum Venezuelan Company" (VENALUM), "Steel Venezuelan Company" (SIDOR), Trolleybus System in Venezuela (TROLLMERIDA), HALLIBURTON-USA, among others. He has created and is the Director of the Intelligent Systems Laboratory and is the head of the University consulting unit (UAPIT-ULA).

Over 200 publications in high level conferences and journals: the main topics of his papers are: Artificial Intelligence, Intelligent Control, Automation Systems and Industrial Applications. He has applied AI results to many fields: Processes Control and Supervision, Oil production, Steel production processes, among others. Also, has developed several tools for automatic control teaching. He is coauthor of two books concerning Artificial Intelligence and Nonlinear Systems.

He is the Project Manager of the TRALL Project in Venezuela.

Halliburton awarded him a recognition for "contributions and dedication to the development of petroleum technology."

Recognition awarded by Magazine "RevistaGerente" as one of the 100 most successful Managers in Venezuela. September 2012.

## Plenary Lecture 5

### Ensuring Learning and Teaching Standards and Quality Outcomes in Assessing Final Year Engineering Projects



**Associate Professor Mohammad G. Rasul**  
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**Abstract:** The final year engineering projects (FYEPs) is the culminating learning experience of engineering programs. It requires students to demonstrate that they can integrate knowledge, skills and professional graduate attributes developed during the program and perform at a standard expected of graduates. Accreditation guidelines require engineering programs to show that students are capable of personally conducting and managing an engineering project to achieve a substantial outcome to professional standards. These requirements are also required from international engineering accreditation agreements such as Washington Accord and International Engineering Alliance. The purpose of this presentation is to outline the development of tools and processes to ensure the required quality outcomes in FYEP areas are achieved. In particular, the talk will outline on; Tools to evaluate how well students can apply much of the knowledge gained during their university studies in solving a real life problem (i.e. a good practice guideline for assessment of FYEPs based on the Threshold Learning Outcomes for Engineering); Clear definition of educational purposes and expectations of FYEPs, particularly in the key area of research skills; and Benchmarking of these outcomes based assessment practices with industry partners and with Competency Standards of Institution of Engineers in the respective country.

**Brief Biography of the Speaker:** Associate Professor Mohammad Rasul obtained his PhD in the area of Energy, Environment and Thermodynamics from The University of Queensland, Australia. He received his Master of Engineering in Energy Technology from Asian Institute of Technology, Bangkok, Thailand. His first degree is in Mechanical Engineering. Currently, he is an Associate Professor in Mechanical Engineering of the School of Engineering and Built Environment at Central Queensland University, Australia. He is specialised and experienced in research, teaching and consultancy in the areas of thermodynamics, energy (industrial and renewable) and environment, and resource industries and sustainability. He has published more than 200 research articles/papers both in reputed journals and refereed conferences including 7 book chapters, two edited books, one awarded paper in a refereed journal and two awarded papers at conferences in the area of energy and thermodynamics. His research has made significant impact to national and international scientific communities through a large number of citations and h-index. His contributions to the professional community have been demonstrated through his varied roles and activities, such as membership of national and international technical, scientific and advisory committees, membership of different professional organizations and various organizing committees. He has been leading and contributing to the strategic research on Resource Industries and Sustainability in Energy and Environment. He has also made significant contributions in engineering education research and scholarship. He has published several refereed conference papers and book chapters in the area of project based learning and innovative teaching practices. He has edited a book on Developments in Engineering Education Standards: Advanced Curriculum Innovations published by IGI Global publisher in USA.