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Recent Technological Advances in Education

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

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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

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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


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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-Echeverria: 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 Laboratoired'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 VenezuelanCompany” (VENALUM), “Steel Venezuelan Company” (SIDOR), Trolleybus System in Venezuela (TROLMERIDA), 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

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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.

eReaders in ESP Teaching

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Abstract: The aim of the work is to present the way electronic readers (eReaders) could be used in ESP (English for Special Purposes) teaching at institutions of higher education, based on the example of the Polytechnic of Rijeka, Croatia, and the textbook prepared by their ESP teacher at the Transport Department (Road and Rail Transport and Postal Services). The textbook offers texts with both technical terminology and structures typical for ESP, in this case Postal Services terminology and Passive, as well as the glossary.

One of the media, exploding in popularity both among teachers and students alike, is eReader, a portable digital reading device, designed primarily for the purpose of reading electronic books, having other practical advantages suitable for ESP teaching and learning, such as: text-to-speech feature, incorporated The New Oxford American Dictionary, price – compared to the price of books, no glare, insignificant weight, usable in classroom and everywhere else, adjustable text sizes, bookmarking and annotations.

Key-Words: eReader, ESP teaching, higher education, students

1 Introduction

One of the main purposes of teaching ESP is to make students able to read scientific books, magazines, Internet articles, and to draw information from them, as well as to facilitate their communication with experts in the given field and perform particular job-related functions. The most outstanding feature which makes ESP, in this case technical language, different from general English is terminology, but also the structures and their distribution.

Teachers all over the world have at their disposal various media and technologies that optimally contribute to learning and teaching processes. Undeniably, eReader is the one gaining most in popularity, and its supremacy in teaching and learning is just a matter of time. One of its outstanding features is that besides offering visual material (text), it also provides the auditive stimuli (voice). E.g. Kindle Touch and Kindle Touch 3G are voice output electronic book (eBook) readers. These multi-touch portable eBook readers include a text-to-speech feature that will read aloud all books in English that are loaded onto the reader. [2]. This is the feature that can be utilized in ESP teaching, since it provides the auditive element as well, i.e. it offers possibility not just of reading the textual material, but also hearing it.

Since ESP students, future experts in corresponding fields, are exposed to international words in their mother tongue, errors are inevitable in mastering English terminology. Besides the positive transfer on the semantic level, there is a negative transfer / interference on the phonological level – accent, vowels, consonants, and diphthongs. At this level errors are more likely to occur because of the differences between L1 (source language) and L2 (target language). At this point the eReader and its feature of reading aloud enter the scene.

2 Background

Few professional and research works related to this topic can be found. However, the situation has been changing recently. When we try to look at the

basic settings of ESP then it becomes clear why this is the case. The definitions of ESP themselves offer differences in approach. So for example [9] define ESP more like an approach than a product. Accordingly, ESP is not necessarily tied to a particular type of language, teaching materials and methodologies. [10] defines ESP making more accurately the distinction between absolute and variable characteristics – teaching is designed to meet specific needs of the learner, and variable characteristics – teaching related to skills to be learned, e.g. reading only, not taught according to any pre-ordained methodology. Interesting to observe is a definition by [13] stating that ESP is "target oriented" process organized in the form of courses, and the need for ESP is derived from detailed analysis of the purpose and methods of achieving these targets. The definition by [11] is clearly influenced by that of Strevens, although extended, defining ESP absolute characteristics through meeting specific needs of the learner, method and type of performing ESP courses. ESP makes use of the underlying methodology and activities of the discipline it serves and it is centered on the language (grammar, lexis, register). Variable characteristics may be related to or designed for specific disciplines; may use, in specific teaching situations, a different methodology from that of general English; ESP is likely to be designed for specific age groups of learners, requiring specified assumptions, such as for instance, at least basic knowledge of the language system.

In terms of this work it means that the practice leaves full freedom of using teaching materials and aids, eReaders included as well. Since sometimes pragmatic approach allows that the end justifies the means, in time of rapid application of ICT in all the fields, the use of eReaders will become a necessity. The need for ESP was brought about by increasing demand for English proficiency in certain specific fields, but it is also the result of application of linguistic and methodological principles in teaching. Teaching materials are determined by teaching goals. Thus the use of a particular teaching material or aid could be connected to basic issues regarding ESP as a process, such as: What is the reason or motive for learning a foreign language and what is the purpose of learning?

Such questions can be ignored and the problem set in a way that the purpose or application of a specific teaching aid in ESP teaching is not in question. This attitude will allow the teacher who uses eReaders in the classroom to focus both on maximum benefits that such a teaching aid can offer and the quality of support that can be expected by its application.

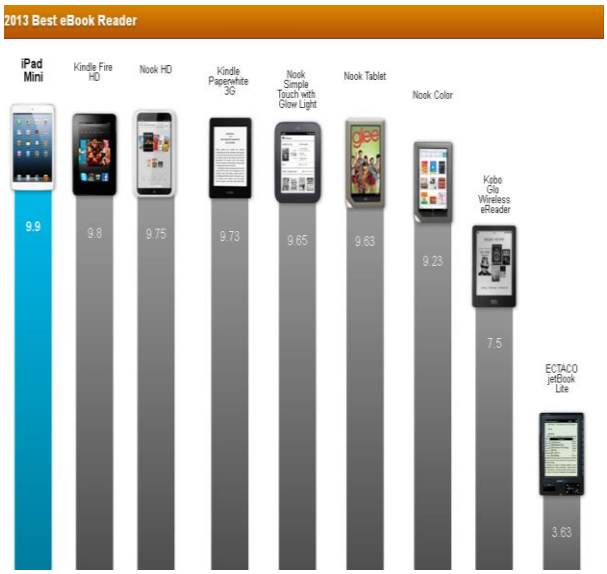

Figure 1: Comparative ratings for devices

The fact that eReaders are the form of ICT reality cannot be neglected, but we must be aware that their use can be a problem both for students and for teachers, insofar as it assumes some basic skills in the use of ICT devices and basic knowledge in the field of computer science. In such circumstances, the choice and application of eReaders can be guided by references offered by e- readers' manufacturers. Properties which determine the benchmark value of these products can vary. The following is a sample assessment for Kindle Touch 3G eReader according to TopTenReviews (Retrieved from: http:// www. toptenreviews.com/). The following were taken as quality indicators: evaluation of design quality (9.4), content (10), memory / battery life (9.4), additional features - setting the Internet and local capabilities (10). Rating scale 1-10. According to it here follows the overall rating of this device:

Advantages: The size, the speed and the quality of the Kindle Touch 3G makes it second to none, it defines eBook Readers of today.

Disadvantages: This eReader does not have removable memory.

Rating: 9.73/10 The Kindle Touch 3G is the top eBook Reader available on today's market, it is easy to use and provides the best quality we have seen in an eReader.

The diagram shows the ratings for 10 types of eReaders (From: http://www.toptenreviews.com/)

3 Presentation of using our ESP textbook loaded on eReaders

In our study we present the use of eReaders in ESP teaching at the Polytechnic of Rijeka, Croatia. The target group is the first year students at the Transport Department, Professional Study of Road Transport, Rail Transport and Postal Services. Recommended literature for this course is the textbook prepared for them by their teacher [3]. The textbook is the outcome of the years of the teacher's work experience with the students at the above mentioned institution of higher education, and specially designed to meet the needs of this specific group of learners. After diagnostic insight into the students' previous knowledge, one of the primary tasks in its creation was to make it conform to the created syllabus, as well as to achieve the indispensable correlation with the syllabi of other courses the students attend during their studies. Secondly, the students were asked to fill in a questionnaire about their wishes and preferences regarding the topics to be covered in the textbook. At this stage the proposals and ideas expressed by our part-time students were immensely appreciable and helpful, since the majority of them are already employed and work in the corresponding fields.

The goals of the English course were established:
- mastering of the fundamental vocabulary related to the profession (road transport, rail transport and postal services),
- correct pronunciation,
- practical and correct use of grammar structures, with the emphasis on the tenses and the passive voice.

Our textbook has been loaded onto the eReader. *Figure 1* shows the example of the first part of one of the units, Unit XXI – "Delivery of Postal Items", retrieved from http://www.posta.hr/main.aspx,web page of Hrvatska pošta (Croatian Post), and adapted.

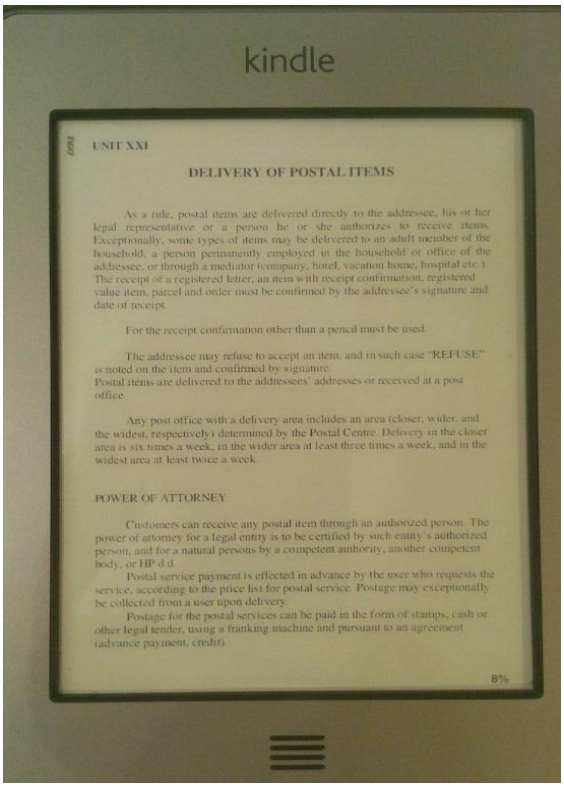

Figure 1: Example of the Textbook [3] unit on Kindle Touch eReader

Apart from the text itself, students have at their disposal The New Oxford American Dictionary with over 250,000 entries and definitions already incorporated in their eReaders, letting them instantly look up the definition without ever leaving the book, by simply selecting the word with the cursor and the definition will automatically display at the bottom of the screen [4], which makes easier the understanding of the text. The use of this dictionary can facilitate the comprehension, but to a certain extent. At this stage of ESP acquisition, a specialized dictionary is indispensable. Since there are still no adequate specialized English – Croatian dictionaries for the three fields in question, the textbook loaded onto the eReader comprises a glossary to accompany each single unit separately. See *Figure 2*. This way the students will understand and acquire new vocabulary, but they won't do it without errors. Hence the need for an eReader that has text-to-speech feature. It is not intended just to allow people with visual impairments listen to texts, but can be fruitfully used in ESP learning and teaching.

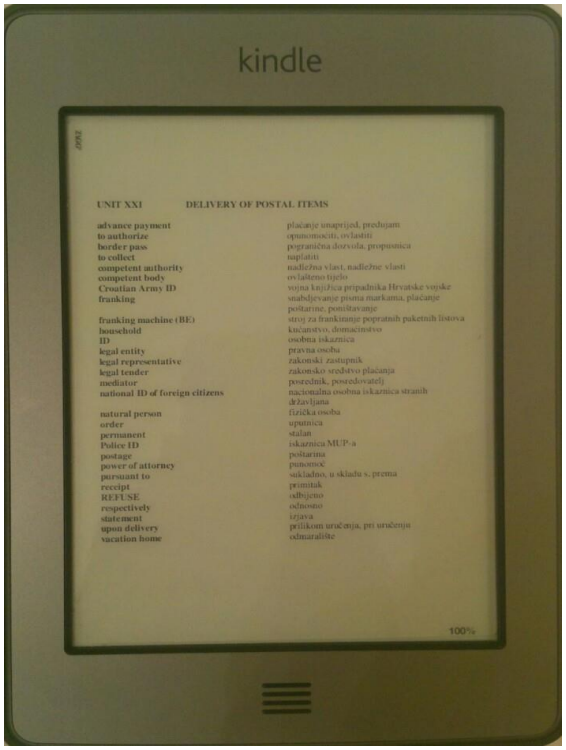

Figure 2: Example of the Textbook [3] unit glossary / vocabulary

The advantage which facilitates the acquisition of new vocabulary in ESP is the fact that the words are not as polysemic as they are in GE (general English), but apart from a small number of errors on vocabulary / lexical level, phonological errors still occur if the students rely on their teacher as the only source of correct pronunciation and accent. During the classes, they can hear the teacher pronouncing new words only once or a few times, while an eReader lets them listen to the text as many times as they wish, wherever they are, thus improving their pronunciation skills.

In the unit we present, there appear international words and words borrowed from the English language, such as: postage, legal, authorize, credit, hotel, identity, document, army, transport. In fact, in [3], appears the type of exercise asking the students to find, during the first reading (or listening), as many international words as they can, i.e. the words they would understand even if they had never learnt English. They identify such words with no difficulties. When it comes to pronunciation, the students try to identify the foreign sounds with the sounds in their own language and make errors, i.e. according to [5] phonemes which have neither similar nor equivalent phonemes in Croatian get transphonemized or replaced by a different Croatian phoneme.

- Phonemes are replaced by the nearest native phonemes or combinations of them [5].
- Most English diphthongs have no equivalents in Croatian [5].
- Croatian has five basic vowels: *i* /i/, *e*/e/, *a*/a/, *o*/o/, *u* /u/. [5].

E.g. postage /'pəʊstidʒ/

- /p/- there is an equivalent with differences [5]. There is a slight difference in the strength of obstruction and explosion. Croatian voiceless plosives are not aspirated like their English counterparts [5].
- /əʊ/ - the English closing diphthong has no equivalent in Croatian [5]. Our students tend to replace it by / ɒ/ or /ɒu/.
- /s/ - there is a true equivalent in Croatian.
- /t/ - there is an equivalent with difference in articulation. The English plosive is alveolar, while the Croatian one is dental.
- Croatian *dž* /dʒ/ has lower resonance than English /dʒ/.

The other common errors made by our students:

Correct English pronunciation	vs.	**Students' pronunciation**
legal /'li:gl/	→	/'l**e**g**a**l/ or /'l**i**g**a**l/
authorize /'ɔ:θəraiz/	→	/'**auto**raiz/
credit /'kredit/		no significant errors
hotel /həʊ'tel/	→	/'h**o**tel/ or /h**o**'tel/
identity /ai'dentəti/	→	/'**i**dentiti/
document /'dɒkjʊment/	→	/'d**o**k**u**ment/
army /'a:mi/	→	/'a**r**mi/
transport, *n.* /'trænspɔ:t/	→	/'tr**a**nsp**or**t/ or /tr**a**ns'p**or**t/

Concerning the accent (stress), we have noticed typical errors, i.e. emphasizing the wrong syllable in a word, such as in words *transport* and *hotel*, apart from the fact that the stress in English is characterized mainly by intensity, while in Croatian it consists of three elements: intensity, melody and quantity.

Furthermore, if the students use just a printed textbook or any other written media without the eReader, according to [5] they will form their pronunciation on the basis of the original orthography, following the basic rule of Croatian,

which says to read the words phonetically, as they are written.

Regarding the above mentioned, if there is no a CD to accompany an English textbook, such as in our case, the eReader is the best possible choice to assist in the pronunciation proficiency.

Regarding grammar structures, for this presentation we have chosen the Passive voice (see *Figure* 3), not just because it is abundant in our Unit XXI [3] (e.g. "Postal items *are delivered* directly to the addressee …", "…some types of items *may be delivered*…", "The receipt of a registered letter, …..*must be confirmed*…", "Postage service payment *is effected* in advance by the user…..", etc. but also because the passive voice is very important in English, and according to [6], the passive voice of a verb is particularry common in English for special purposes (ESP), so it must be paid an adequate attention. According to data resulting from general English (GE) analysis, passive forms make up 11.07% of verb forms (and e.g. in ESP in criminal disciplines, passive forms make up 28.53%, nearly every third verb predication).

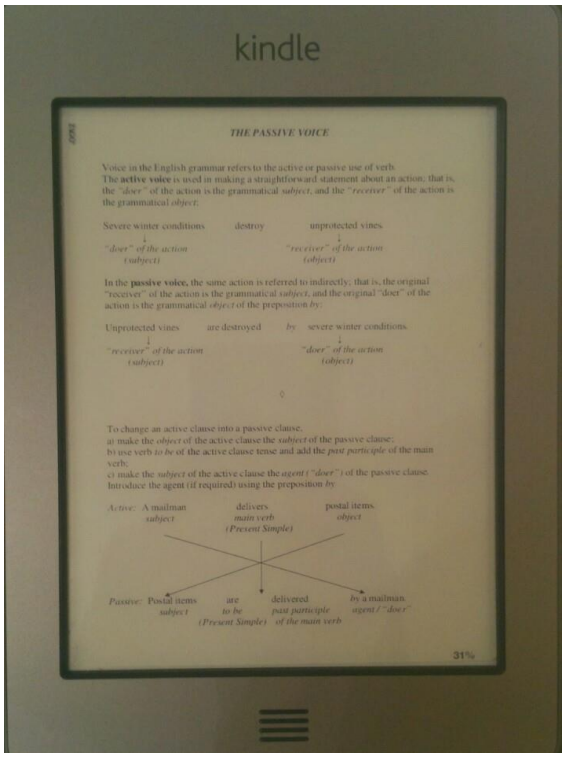

Figure 3: Example of the Textbook [3] grammar structure / Passive

The passive voice is much more used in English than in Croatian, and the best way to translate it is by using the Croatian active voice (especially if the agent is mentioned), or as [7] says, probably 90 per cent of the passive sentences spoken or written are of the type replacing the indefinite pronoun or reflexives in other languages. Croatian belongs to Slavonic languages, where the reflexive verb is used instead, therefore making it sometimes difficult for our learners to use and translate passive correctly.

eReader has not proved to be of significant help with grammar structures, in this particular case, the passive voice. It reads aloud the explanatory text, but when it comes to arrows, such as in the basic principle of transforming an active sentence into the passive one, it does not "see" them, and as a consequence, it does not read them. The teacher's intervention in this case is indispensable. (See *Figure 3*). The same happens in grammar exercises, (like in *Figure 4),* where students are asked to fill in the blank lines in sentences with particular grammar structure, in this case – passive of the verbs in brackets. With exercises on English tenses, the same problem arises, when the text should be completed using the appropriate form of the verbs in brackets / boxes and inserted on the blank lines. The eReader is not programmed to "see" the blank lines in sense of reading them.

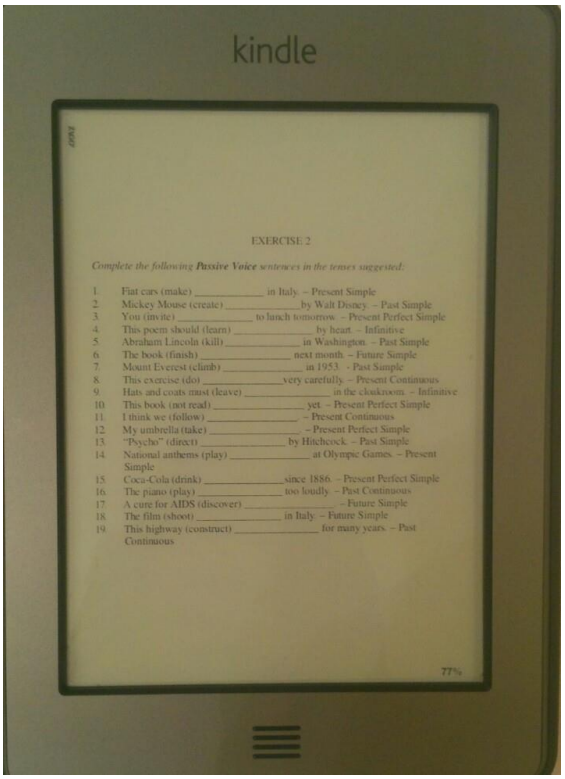

Figure 4: Example of the Textbook [3] exercise / Passive

4 Conclusions

Owing to possibilities offered by new electronic inventions in use today, such as eReaders, the quality of GE and ESP teaching has been improving, changing types of learning and teaching activities and the role of instructional material.

Students, being always open to and delighted by new technologies, are more than ready to try them. eReader has proved to be a valuable and practical aid, due to many reasons, such as being lighter than a paperback, enabling to keep our library with us wherever we go, featuring high-contrast E Ink display which delivers clear, crisp text and images, screen that reads like real paper, with no glare, enabling reading as easy in bright sunlight as indoor, possibility of starting reading in seconds, fast and free wireless delivery, simple to use, no setup, no software to install, no computer required to download content, having adjustable text sizes, faster page turns, reasonable price, and what is most important in ESP, it has text-to-speech feature, incorporated the New Oxford American Dictionary, the possibility of setting the default language to English (US and UK), or six other languages.

As a final conclusion, we want to point out that eReader's role in ESP teaching and learning is undoubtedly valuable, especially on the levels of vocabulary and pronunciation, but not really useful when it comes to grammar structures, unless some of its features get upgraded. The text-to-speech feature should also be improved, so that the speaker will sound more natural, regarding the diction.

In addition, eReaders do not have the possibility of setting Croatian as a default language, which is another disadvantage.

The use of eReaders in ESP is the matter of present and future alike, but it should be used in combination with other teaching methods and aids.

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