

BALKAN SOCIETY FOR PEDAGOGY AND EDUCATION

BASOPED-BG

# **Ict in the Education of the Balkan Countries**

Varna, 2010

**Compilation and general edition**

Assoc. Prof. Dr Rossitsa Penkova

Assoc. Prof. Dr Violeta Mircheva

Assist. Prof. Nikolina Tsvetkova

Assist. Prof. Mirena Legurska

2010 Balkan Society for Pedagogy and Education  
**ICT IN THE EDUCATION OF THE BALKAN COUNTRIES**  
ISBN 978-954-326-149-9

# CONTENTS

FOREWORD .....	13
----------------	----

## CHAPTER 1

### ICT IN THE EDUCATION OF THE BALKAN COUNTRIES

ICT (INFORMATION AND COMMUNICATION TECHNOLOGY) IN ALBANIAN SCHOOLS. NATIONAL PROGRAM REALIZATION OF ICT IN EDUCATION.....	14
--	----

*Ilir Bozgo (Albania)*

INTEGRATING COMPUTERS IN EDUCATION – THE BULGARIAN EXPERIENCE.....	21
--	----

*Petya Asenova (Bulgaria)*

INFORMATION AND COMMUNICATION TECHNOLOGIES (ICT) IN THE GREEK EDUCATIONAL SETTING .....	28
--	----

*Konstantinos Bikos (Greece)*

IMPLEMENTATION OF ICT IN THE EDUCATION OF THE REPUBLIC OF MACEDONIA.....	35
--	----

*Vera Stojanovska (F.Y.R.O.Macedonia)*

ICT IN THE ROMANIAN EDUCATION – A STATE OF THE ART.....	42
---	----

*Emil Stan, Ioana Herseni (Romania)*

ICT IN SERBIAN EDUCATION: CHALLENGES AND EXPERIENCES.....	47
---	----

*Gordana Zindović-Vukadinović, Snežana Marković (Serbia)*

USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES (ICT) IN TURKEY FROM 1930'S TO THE PRESENT .....	56
---	----

*Buket Akkoyunlu (Turkey)*

## CHAPTER 2

### THEORETICAL AND METHODOLOGICAL ASPECTS OF USING ICT IN EDUCATION

ICT, POLICIES AND STRATEGIES IN THE ALBANIAN EDUCATIONAL SYSTEM.....	62
--	----

*Ermonela Ruspi, Lindita Sinanaj (Albania)*

EXTENSION OF A LMS TO SUPPORT THE ANALYSIS OF TACIT KNOWLEDGE.....	66
--	----

*Diana Boyadzhieva, Nikolay Netov (Bulgaria)*

WHAT ARE THE EFFECTS OF APPLYING ICT IN THE TEACHING PROCESS?.....	76
--	----

*Snezana Mirasceva (F.Y.R.O.Macedonia)*

MODELS FOR IMPROVING STUDENTS' EDUCATION VIA VIRTUAL AND INTERACTIVE METHODS ...	73
--	----

*Liliana Todorova (Bulgaria)*

CONTINUING TRAINING & APPLICATIONS OF NEW TECHNOLOGIES IN THE EVERYDAY LIFE OF PEOPLE WITH VISUAL IMPAIRMENT .....	81
---	----

*Athina. A. Sipitanou, Irini Syka-Lerioti, Ioanna Zaharou (Greece)*

METHODOLOGICAL ASPECTS OF USING ICT IN EDUCATION .....	89
<i>Tatjana Ulanska, Snezana Savin Kirova (F.Y.R.O.Macedonia)</i>	
ADVANTAGES AND DISADVANTAGES OF THE USE OF INFORMATION TECHNOLOGIES IN DIDACTIC COMMUNICATION .....	93
<i>Gabriel Albu (Romania)</i>	
METACOGNITIVE MODELLING IN THE CONTEXT OF ICT.....	98
<i>Cristian Vasile (Romania)</i>	
USING EDUCATIONAL SOFTWARE.....	103
<i>Roxana Enache, Adina Pescaru (Romania)</i>	
THE USE OF LEARNING LOG IN ONLINE EDUCATION.....	109
<i>Tamara Nikolić Maksić, Bojan Ljujić (Serbia)</i>	
PROSPECTIVE TEACHERS' COMPUTER USE .....	113
<i>Nurten Sargin, Hacer Tor, Bahadır Bozoglan (Turkey)</i>	
THEORETICAL ASSUMPTIONS OF USING ICT IN EDUCATION.....	118
<i>Daniela Jakimova, Vlado Petrovski (F.Y.R.O.Macedonia)</i>	
AN INVESTIGATION OF RELIABILITY AND ITEM ANALYSIS OF EXAMS OF A DISTANCE EDUCATION PROGRAM .....	121
<i>Akın Efendioğlu, Emel Ültanir (Turkey)</i>	
PROVIDING MOTIVATION VIA ANIMATION TECHNIQUES IN WEB-BASED DISTANCE EDUCATION.....	125
<i>Y.Gurcan Ultanir, Asli Tirnovali (Turkey)</i>	
DISTANCE LEARNING INFORMATION AND COMMUNICATION TECHNOLOGY.....	129
<i>Corina Iurea, Cristina Georgiana Safta (Romania)</i>	
EFFECTS OF OPEN-ENDED AND CLOSE-ENDED EXPERIMENTAL TECHNIQUES ON SUCCESS, ATTITUDE AND PSYCOMOTOR BEHAVIOURS OF STUDENTS .....	133
<i>Feride Çelik, Renan Şeker (Turkey)</i>	
COMPARATIVE EXAMINATION OF COMPUTER AND INTERNET USAGE OF PISA BALKAN COUNTRIES .....	138
<i>Yasemin Koçak Usluel, Hülya Kelecioğlu, Sacide Güzin Mazman (Turkey)</i>	
HOW IMPORTANT IS ICT FOR LIFELONG LEARNING? .....	144
<i>Melek Demirel, Özcan Demirel</i>	
THE USE OF ICT IN TRANSFERABLE COMPETENCIES DEVELOPMENT AND ASSESSMENT .....	151
<i>Alina Crişan, Liviu Crişan, Radu Adrian Munteanu (Romania)</i>	
THE EVALUATION OF DIGITAL STORYTELLINGS AS AN ICT TOOL .....	156
<i>Gulhiz Pilten (Turkey)</i>	
THE EVALUATION OF THE INSTRUCTIONAL TECHNOLOGY AND MATERIAL DESIGN TEXTBOOK ACCORDING TO LEARNING PRINCIPLES .....	162
<i>Ebru Solmaz (Tove e imeto na ediniq avtor!), Fatma Mansur (Turkey)</i>	

EVALUATION OF PROFESSIONAL DEVELOPMENT PROGRAM PRACTICES IMPLEMENTED TOWARD WEB-BASED CONTENT DEVELOPMENT .....	167
<i>Bunyamin Yurdakul, Oner Uslu, Derya Yildiz, Esra Cakar (Turkey)</i>	
AN ASSESSMENT OF INFORMATION TECHNOLOGY CURRICULUM IN TURKISH VOCATIONAL HIGH SCHOOLS IN ANKARA .....	168
<i>Kader Bicer, Ercan Kiraz (Turkey)</i>	
THE EFFECT OF SOCIAL SHARING NETWORKS TO EDUCATION .....	174
<i>Süleyman A. Sulak, İnalet Hakkı Çizmeci (Turkey)</i>	
E-LEARNING – A NEW MEANS OF ACHIEVING EDUCATION .....	180
<i>Corina Iurea, Cristina Georgiana Safta (Romania)</i>	
PEDAGOGICAL ASPECTS OF USING NEW MEDIA IN EDUCATION.....	184
<i>Vance Bojkov (Serbia)</i>	
MEDIA INFLUENCE ON ADOLESCENTS' AGGRESSIVENESS .....	187
<i>Simona Georgiana Eftimie, Alina Mărgarițoiu (Romania)</i>	
THE INTERNET AND NEW MEDIA CULTURE.....	193
<i>Tatiana Shopova (Bulgaria)</i>	
EDUCATIONAL PORTALS AS INFORMAL LEARNING TOOLS IN COMPUTER LITERACY .....	198
<i>Nikolaos Fachantidis, Vassiliki Papadopoulou (Greece)</i>	
RISKY INTERNET USE IN MEDIATING GENDER DIFFERENCES IN CYBER BULLYING AND CYBER VICTIMIZATION .....	203
<i>Özgür Erdur-Baker, Sadegül Akbaba-Altun (Turkey)</i>	
FUNDING PROGRAMS TO DEVELOP AND INTRODUCE NEW TECHNOLOGIES IN TECHNICAL AND VOCATIONAL EDUCATION HISTORICAL RESEARCH .....	207
<i>Azarias A. Mavropoulos, Anastasia A. Pampouri (Greece)</i>	
ICT IN ADULT EDUCATION GUIDANCE AND INFORMATION .....	214
<i>Katarina Popović, Jovan Miljković (Serbia)</i>	

### **CHAPTER 3**

#### **ICT IN PRE-SERVICE AND IN-SERVICE TEACHER TRAINING**

TODAY'S TEACHERS AND ICT IN EDUCATION IN ALBANIA.....	219
<i>Gezim Sala, Liljana Reçka (Albania)</i>	
TEACHER AS AGENT BETWEEN THE WORLD FAST-TRACKING AND STUDENTS .....	223
<i>Kiril Barbareev (F.Y.R.O.Macedonia)</i>	
PROSPECTIVE TEACHERS' PERCEPTIONS REGARDING THE USE OF ICT IN EDUCATION "COMPETENCIES, ATTITUDE-BELIEF AND BARRIERS" .....	232
<i>Ahmet, OK, Gulcin Tan Sisman (Turkey)</i>	
ACADEMIC DISHONESTY OR NOT: ARE THE PROSPECTIVE TEACHERS FAMILIAR WITH INTERNET PLAGIARISM AND ITS PREVENTION? .....	242
<i>Ahmet Ok, Esra Eret (Turkey)</i>	

THE STATE OF TEACHERS IN TURKEY IN THE USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES.....	249
<i>Ayşe Mentiş Taş, Sabahattin Çiftçi (Turkey)</i>	
OPTIONAL MULTIMEDIA TEACHER TRAINING - PROGRAM "TECHNOLOGY CREATION OF DIDACTIC TESTS".....	253
<i>Katia Stoyanova (Bulgaria)</i>	
PERSPECTIVES ON FUTURE TEACHERS OF SCIENCE ICT COMPETENCES FORMATION.....	259
<i>Gabriela-Paula Petruța, Emanuel Soare, Elena Dănescu (Romania)</i>	
ICT IN THE PREPARATION OF FUTURE TEACHERS .....	264
<i>Iliana Petkova (Bulgaria)</i>	
INTEGRATING ICT IN TEACHER EDUCATION – A CASE STUDY AT "GOTSE DELCHEV" UNIVERSITY.....	268
<i>Zoran Zdravev (F.Y.R.O.Macedonia)</i>	
THE INSTRUCTIONAL VALUE OF POWERPOINT PRESENTATIONS IN TEACHER EDUCATION .....	272
<i>Ahmet Saban, Beyhan Nazli Kocbeker Eid (Turkey)</i>	
THE USE OF ICT IN ROMANIAN FUTURE TEACHER'S TRAINING CURRICULUM.....	277
<i>Claudiu Langa, Emanuel Soare (Romania)</i>	
COMPUTER TEACHER CANDIDATES' SELF-EFFICACY BELIEFS ABOUT THEIR ROLES IN SCHOOL TECHNOLOGY PLANNING .....	282
<i>Aslihan Saban (Turkey)</i>	
COMPUTER TEACHER CANDIDATES'VIEW'S ON USE OF NON-ETHICS OF INFORMATION TECHNOLOGIES.....	287
<i>Semseddin Gunduz, Ahmet Naci Coklar, Agah Tuğrul Korucu (Turkey)</i>	
FUTURE TEACHER'S PERCEPTIONS ON USING ICT IN THE PROCESS OF TEACHING SOCIO-HUMANISTIC DISCIPLINES .....	292
<i>Claudiu Langa (Romania)</i>	
TEACHERS AND MODERN EDUCATIONAL INFORMATION TECHNOLOGY.....	297
<i>Emilija Petrova Gjorgjeva (F.Y.R.O.Macedonia)</i>	
TEACHERS' MATERIAL USE: MAREŞAL MUSTAFA KEMAL PRIMARY SCHOOL SAMPLE .....	301
<i>Süleyman Arslantaş, Yahya Çikili, Nejmi Yildirim, Ertan Dündar, Selahattin Alan (Turkey)</i>	
PRE-SERVICE TEACHERS' OPINIONS ABOUT THEIR TEACHER COMPETENCIES AND USE OF TECHNOLOGIES .....	307
<i>Raşit Özen, Zekeriya Nartgün, Şenay Sezgin Nartgün (Turkey)</i>	
THE OPINIONS OF THE SOCIAL STUDIES PRE-SERVICE TEACHERS ABOUT THEIR PROFICIENCY LEVELS WITH RESPECT TO ICT.....	314
<i>E. Özlem Yiğit, Kerem Çolak (Turkey)</i>	
AN INSPECTION OF PRESERVICE TEACHERS' MISCONCEPTIONS ABOUT INTERNET RELATED CONCEPTS.....	319
<i>Uğur Başarmak, Mehmet Fikret Gelibolu, Esma Aybike Bayir (Turkey)</i>	

E-SIMULATIVE (PRO-ACTIVE) MEDIA FOR EDUCATION – A NEW INSTRUMENTATION FOR TEACHERS' TRAINING .....	324
<i>Iglika Angelova (Bulgaria)</i>	
ICT IN TEACHERS' IN-SERVICE TRAINING PROGRAMS: A COMPARATIVE RESEARCH IN GREECE AND SERBIA.....	328
<i>Katerina Kedraka, Milica Marusic, Maria Vergeti (Greece)</i>	
THE IMPACT OF INFORMATION TECHNOLOGY (IT) ON THE DEVELOPMENT OF TEACHERS .....	333
<i>Elena Dănescu, Emanuel Soare, Paula Petruța Gabriela (Romania)</i>	
ICT FRONTIERS: EDUCATIONAL ROBOTICS IN GREEK SCHOOLS AND TEACHER'S TRAINING.....	338
<i>Nikolaos Fachantidis (Greece)</i>	
THE ICT CERTIFICATION CONTENT OF IN-SERVICE TEACHERS TRAINERS IN GREECE: THE CASE OF SECONDARY EDUCATION HISTORY SUBJECT.....	342
<i>Dimitris Mavroskoufis (Greece)</i>	
USE OF COMPUTER-AID TRAINING PROGRAMS IN DISORDERS OF LANGUAGE THERAPY .....	347
<i>Alina Mărgarițoiu, Simona Georgiana Eftimie (Romania)</i>	
GEOGRAPHY TEACHERS' COMPETENCES FOR INTEGRATING ICT IN EDUCATION .....	353
<i>Daniela Angelova-Gancheva, Ganina Zdravkova (Bulgaria)</i>	

## **CHAPTER 4**

### **ICT IN THE PROCESS OF EDUCATION AND UP-BRINGING (PRE-SCHOOLS, PRIMARY AND SECONDARY SCHOOLS)**

DIFFERENTIATION AND ICT: WEBQUESTS IN GREEK SCHOOLS .....	357
<i>K. Bikos, D. Paschalidis (Greece)</i>	
CURRICULUM DESIGN AND THE NEW ICT PARADIGM .....	363
<i>Emanuel Soare, Elena Dănescu, Gabriela–Paula Petruța (Romania)</i>	
SECONDARY SCHOOL STUDENTS' SELF-EFFICACY BELIEFS IN EDUCATIONAL INTERNET USE.....	367
<i>Veysel Demirer, Ismail Sahin (Turkey)</i>	
EFFECTS OF USING NEW INFORMATION TECHNOLOGIES (NIT) IN FORMAL EDUCATION.....	373
<i>Roxana Enache, Adina Pescaru (Romania)</i>	
TEACHING STRATEGIES IN THE EDUCATIONAL PROCESS AND LEARNING BY COMPUTER.....	379
<i>Cvetanka Mitrevska, Vesna Mundishevska Veljanovska, Vangelka Trajkovska (F.Y.R.O.Macedonia)</i>	
STUDENTS' PREPAREDNESS FOR THE CHALLENGES OF E-LEARNING .....	386
<i>Vera Stojanovska, Aneta Barakoska (F.Y.R.O.Macedonia)</i>	
THE EFFECT OF COMPUTER AIDED TEACHING TO THE 7TH GRADE STUDENTS' COMPREHENSION OF "A JOURNEY TO THE INTERIOR STRUCTURE OF MATTER" SUBJECT.....	391
<i>Renan ŞEKER, Tezcan KARTAL (Turkey)</i>	
GENDER AND ICT: AN ACTION RESEARCH IN TEACHING HISTORY WITH ICT.....	398
<i>Chr.Palazi, S.Ziogou-Karastergiou, K. Deliyanni-Kouimtzi (Greece)</i>	

USING ICT FOR THE PURPOSES OF CIVIC EDUCATION.....	403
<i>Snezhana Yanakieva, Mirena Legurska (Bulgaria)</i>	
SUPERVISION IN PREPARING FOR COUNSELING IN EDUCATION AND SOCIAL SPHERE.....	406
<i>Nely Boiadjieva (Bulgaria)</i>	
PROJECT-BASED LEARNING AND IMAGE-PROCESSING COMPUTER PROGRAMMES .....	410
<i>Janakieva Yanakieva, Marieta Savcheva (Bulgaria)</i>	
DIGITAL ARCHIVES - A CONTEMPORARY NECESSITY .....	415
<i>Elvira Shaplo, Liljana Reçka (Albania)</i>	
USING A SOFTWARE PRESENTING ADDITION PROBLEMS IN A REALISTIC WAY: RESULTS IN PUPILS AND TEACHERS .....	419
<i>Charalampos Lemonidis, Miltiadis Avgerinos (Greece)</i>	
THE INTEGRATION OF WIKI TOOL TO LEARNING – TEACHING PROCESS: A SAMPLE APPLICATION .....	424
<i>Turgay Baş, Yasemin Koçak Usluel (Turkey)</i>	
INFORMATION AND COMMUNICATION TECHNOLOGIES AS VIEWED BY HIGH SCHOOL STUDENTS.....	430
<i>Albena Nakova (Bulgaria)</i>	
ATTITUDES TOWARDS ENTREPRENEURSHIP AND LABOUR REALIZATION OF HIGH SCHOOL STUDENTS STUDYING INFORMATION AND COMMUNICATION TECHNOLOGIES.....	433
<i>Karamfil Manolov (Bulgaria)</i>	
LEARNING – THEORETICAL AND PRACTICAL BENCHMARKS.....	436
<i>Emil Stan, Mihaela Suditu, Cristina Safta (Romania)</i>	
STUDENT PERFORMANCE IN THE SUBJECTS BULGARIAN LANGUAGE AND LITERATURE, AND MATHEMATICS AT THE END OF BASIC EDUCATION.....	440
<i>Rossitsa Penkova, Borislav Lazarov (Bulgaria)</i>	
THE EFFECT OF THE SOFTWARE’S TO THE STUDENT SUCCEST, AT THE INSTRUCTION OF THE SIMPLE MACHINES SUBJECT, IN THE PRIMARY EDUCATION.....	445
<i>Hatice Güzel, Imran Oral, Erdal Yilmaz (Turkey)</i>	
WHAT KIND OF TEACHING MATERIALS DO ELEMENTARY TEACHERS USE IN THEIR CLASSROOMS .....	450
<i>Isa Korkmaz (Turkey)</i>	
INVESTIGATING ELEMENTARY SCHOOL SECOND STAGE STUDENTS’ USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN SOCIAL STUDIES PROJECTS .....	456
<i>Ahmet Kurnaz (Turkey)</i>	
NEW TECHNOLOGIES AND CREATIVE LEARNING: EDUCATIONAL SOFTWARE AND EDUTAINMENT FROM STUDENTS OF PRIMARY SCHOOLS.....	462
<i>Effrosini Charalampidou, Maria Vergeti (Greece)</i>	
INTEGRATION OF E-LEARNING INTO THE CURRICULUM OF ‘ELEMENTS OF NATURAL SCIENCES’ IN THE EARLY GRADES OF PRIMARY SCHOOL.....	469
<i>Snezana Stavreva Veselinovska (F.Y.R.O.Macedonia)</i>	



PRIMARY MATHEMATICS TRAINEE TEACHERS' VIEWS ABOUT A COMPUTER BASED MATHEMATICS COURSE.....	475
<i>Mustafa Doğan (Turkey)</i>	
CHILDREN AND THE SMALL SCREEN THE ROLE OF TELEVISION IN CHILD DEVELOPMENT AND EDUCATION, MIDDLE CHILDHOOD.....	481
<i>Margarita Hido, Stela Dhima, Harallamb Margariti (Albania)</i>	
THE USE OF COMPUTER IN INTEGRATED EDUCATION OF CHILDREN WITH SPECIAL EDUCATIONAL NEEDS.....	487
<i>Evgeniya Topolska (Bulgaria)</i>	
THE USE OF INTERNET IN THE EDUCATION OF PARENTS .....	491
<i>Zorica Milošević (Serbia)</i>	

## **CHAPTER 5**

### **ICT IN THE PROCESS OF LEARNING HUMANITIES, NATURE SCIENCES AND MATHEMATICAL DISCIPLINES**

THE USE OF COMPUTERS AT STUDENTS' FOREIGN LANGUAGE LEARNING.....	496
<i>Yusuf Şahin (Turkey)</i>	
THE ROLE OF INNOVATIVE TECHNOLOGY IN TEACHING FOREIGN LANGUAGES.....	501
<i>Eli Vito, Aida Lamaj (Albania)</i>	
WHAT'S UP IN FOREIGN LANGUAGE TEACHING: ARGS IN LANGUAGE EDUCATION.....	505
<i>Nikolina Tsvetkova, Bistra Stoimenova, Bulgaria</i>	
INFORMATION AND COMMUNICATION TECHNOLOGIES IN FOREIGN LANGUAGE TEACHING PRACTICE .....	512
<i>Nikolay Tzankov, Yana Rangelova (Bulgaria)</i>	
A CASE STUDY ON UTILIZATION OF TECHNOLOGY IN ENGLISH LESSONS TO FOSTER ELF STUDENTS' ENGLISH LANGUAGE SKILLS.....	515
<i>Esra Eret (Turkey)</i>	
THE PERCEPTIONS ABOUT AN ONLINE INTERACTIVE LANGUAGE LEARNING PROGRAM.....	521
<i>Muhammet Servi, Bahadır Bozoğlan, Hüseyin Serçe (Turkey)</i>	
USING BLOGS AND PODCASTS IN SECOND LANGUAGE TEACHING.....	524
<i>Muhammet Servi, Hüseyin Serçe (Turkey)</i>	
THE ATTITUDES OF ENGLISH LANGUAGE INSTRUCTORS TOWARDS USING TECHNOLOGY IN AND OUT OF CLASSROOM .....	527
<i>Hüseyin Serçe, Muhammet Servi (Turkey)</i>	
USING MULTIMEDIA PRODUCTS IN THE PROCESS OF TEACHING AND LEARNING BULGARIAN .....	532
<i>Rossitsa Penkova (Bulgaria)</i>	
INFORMATION AND COMMUNICATION TECHNOLOGY IN ELT .....	537
<i>Yasin Aslan (Turkey)</i>	

THE MUSICAL EDUCATION AND ICT.....	541
<i>Penka Marcheva (Bulgaria)</i>	
COMPUTERS IN MUSIC EDUCATION.....	546
<i>Ankica Vitanova, Marija Apostolova (F.Y.R.O.Macedonia)</i>	
ALTERNATIVE EDUCATION OF FINE ARTS .....	548
<i>Mutlu Erbay (Turkey)</i>	
DEVELOPMENT OF MUSEUM EDUCATION.....	550
<i>Fethiye Erbay (Turkey)</i>	
WHAT KIND OF TEACHING MATERIALS DO GEOGRAPHY TEACHERS USE IN THEIR CLASSROOMS.....	553
<i>Ayhan Akiş (Turkey)</i>	
INTERACTIVE ONLINE VISUAL CONTENTS FOR THE LEARNING OF MATHEMATICS.....	557
<i>Karmelita Pjanic (Bosnia and Herzegovina)</i>	
THE COMPUTER AND THE INFORMATION TECHNOLOGIES IN MATHEMATICS TRAINING.....	564
<i>Nikolina Georgieva (Bulgaria)</i>	
THE ASSESSMENT OF WEB SITES AND PORTALS RELATED WITH MATHEMATICS: TURKEY CASE.....	568
<i>Nihan Sahinkaya (Turkey)</i>	
LEVEL OF USE OF INFORMATION AND COMMUNICATION TECHNOLOGY BY CLASS TEACHER CANDIDATES IN THEIR MATHEMATICAL PROJECTS .....	571
<i>Pusat Pilten (Turkey)</i>	
THE IMPLEMENTATION OF AN ELECTRONIC MODEL IN TEACHING NEGATIVE NUMBERS AND THEIR OPERATIONS.....	577
<i>Charalambos Lemonidis, Dimitrios Polytidis (Greece)</i>	
CONTEXT MODEL FOR TRAINING MATHEMATICS TEACHERS.....	582
<i>Borislav Y. Lazarov (Bulgaria)</i>	
USING ICT IN BIOTECHNOLOGY EDUCATION.....	587
<i>Ilementina Put0o, Enida PUTO (Albania)</i>	
INTERNAL DIDACTICAL DIALOGUE IN DISTANCE EDUCATION FOR BIOLOGY TEACHERS – DEPENDENCES AND REALIZATION.....	591
<i>Nadezhda Raycheva (Bulgaria)</i>	
THE VIEWS OF THE STUDENTS' ABOUT THE BIOLOGY TEACHER CANDIDATES COMPETENCIES IN THE TEACHER PRACTICE COURSES.....	596
<i>Ali Ateş, Tuğba Taflı, Güngör Keskinkiliç (Turkey)</i>	
THE KNOWLEDGE LEVELS DISTRIBUTION OF BIOLOGY TEACHERS ON BASIC MOLECULAR BIOLOGY.....	605
<i>Ali Ateş, Sami Uyaniker, Tuğba Taflı, Baştürk Kaya, Hakan Kurt, Selda Kılıç (Turkey)</i>	

THE EFFECTS OF PARENTAL FACTORS ON SCIENCE HIGH SCHOOL STUDENTS' ATTITUDES TO TOWARDS BIOLOGY COURSE AND THEIR ACADEMIC SELF-CONCEPTS.....	613
<i>Hülya Pehlivan, Pinar Köseoğlu (Turkey)</i>	
INTERNET USE IN LEARNING ENVIRONMENTS.....	621
<i>Meriç Kanbur Tuncel, Raşit Özen, Şenay Sezgin Nartgün, Türkan Argon (Turkey)</i>	
ICT AND ENVIRONMENTAL EDUCATION.....	627
<i>Selfo Oruçi, Gligor Paspali (Albania)</i>	

## CHAPTER 6

### ICT IN HIGHER EDUCATION AND MANAGEMENT

USING ICT FOR IMPROVING STUDENT SERVICES IN HIGHER EDUCATION.....	630
<i>Natasha Angeloska Galevska, Katerina Pejкова (F.Y.R.O.Macedonia)</i>	
LIFE WITHOUT INTERNET AND UNIVERSITY.....	636
<i>Şenay Sezgin Nartgün, Raşit Özen, Meriç Tuncel (Turkey)</i>	
BULGARIAN HIGHER EDUCATION AND ICT: THE CASE OF SOUTHWEST UNIVERSITY.....	644
<i>Valentina Milenkova (Bulgaria)</i>	
ADVANTAGES OF USING ICT IN HIGHER EDUCATION.....	649
<i>Biljana Petkovska, Dragana Koceva (F.Y.R.O.Macedonia)</i>	
EMPLOYING ASYNCHRONOUS ICT APPROACHES IN HIGHER EDUCATION: THE CASE OF THE GREEK OPEN UNIVERSITY.....	652
<i>L. Iliadis, S. Iliadou-Tachou (Greece)</i>	
TRANSFORMING UNIVERSITIES IN AN ERA OF DIGITAL COMPETITION: COMPARATIVE VIEWS AND CRITICAL ASSUMPTIONS.....	657
<i>Maria Sitziouki (Greece)</i>	
ICT WITHIN UNIVERSITY TRAINING – A STUDENT'S PERCEPTION.....	663
<i>Otilia CLIPA, Aurora Adina IGNAT (Romania)</i>	
A STUDY INTO CYBER BULLYING AMONG UNIVERSITY STUDENTS IN KONYA, TURKEY.....	670
<i>Nurten SARGIN, Zuhâl GÜVEN (Turkey)</i>	
LEARNING WITH NEW MEDIA: CREATING A POSITIVE IMPACT ON ENGINEERING EDUCATION.....	675
<i>Georgeta Ploesteanu, Ion Marghescu (Romania)</i>	
THE IMPACT OF ICT IN STUDENTS' LIFE.....	679
<i>Valentin Cosmin BLÂNDUL (Romania)</i>	
A COMPARISON OF ONLINE EDUCATIONAL ADMINISTRATION PROGRAMS IN THE US AND TURKEY.....	684
<i>Ayhan Aydin, Coşkun Erdağ, Yılmaz SARIER, Şengül Uysal (Turkey)</i>	
DISTANCE EDUCATION IN TURKEY: EVALUATION OF THE POSTGRADUATE EDUCATION IN EDUCATIONAL ADMINISTRATION FROM FACE-TO-FACE TEACHING TO INTERNET-BASED EDUCATION.....	689
<i>Ayhan Aydın, Şengül Uysal, Yılmaz Sarier, Coşkun Erdağ (Turkey)</i>	

DETERMINING THE COMPUTER ANXIETY LEVELS OF SCHOOL ADMINISTRATORS .....	693
<i>Gör. Seda Yılmaz (Turkey)</i>	
HOW SHOULD CLASSROOM MANAGEMENT BE IN FAVOUR OF CONSTRUCTIVIST LEARNING IN INFORMATICS CLASSES? .....	699
<i>Mustafa Karaağaçlı (Turkey)</i>	
THE EXAMINATION OF PROJECT PREFERENCES FOR "PROJECT DEVELOPMENT AND MANAGEMENT" COURSE BY COMPUTER AND INSTRUCTIONAL TECHNOLOGY DEPARTMENT STUDENTS .....	706
<i>Ahmet Naci Coklar, Semseddin Gunduz (Turkey)</i>	
THE EVALUATION OF THE OPINIONS OF PRINCIPALS, TEACHERS AND STUDENT ON PROFICIENCY OF TEACHERS TO CHANNELIZE STUDENTS TO TECHNOLOGY USAGE .....	711
<i>Selahattin Alan, Selahattin Avşaroğlu, Fatih Koçak, İlker Durdal, Süleyman Arslantaş, Tuncay Karabulut (Turkey)</i>	
CASE STUDY ON THE USE OF LABORATORIES IN THE TEACHING OF SOCIAL STUDIES LESSON ...	716
<i>Gül Tuncel, Özge Ayva</i>	
IMPORTANCE OF HERITAGE EDUCATION IN UNIVERSITY .....	722
<i>Nuri Özer Erbay (Turkey)</i>	
USE OF ICT AND NATURAL HERITAGE IN ALBANIA .....	724
<i>Gentian Ruspi, Kozeta Sala (Albania)</i>	
CULTURAL HERITAGE, PEDAGOGY AND EDUCATION: A DIGITAL CONNECTION .....	728
<i>Kosmas Touloumis (Greece)</i>	
OPINIONS OF FACULTY OF EDUCATION STUDENTS ABOUT FACEBOOK .....	733
<i>Erkan Tekinarslan, Melih Derya Gurer (Turkey)</i>	
WHAT IS THE SOCIAL PRICE OF INFORMATICS ?! .....	739
<i>Gina Florica Stoica, Sorin Cananau (Romania)</i>	
MULTICULTURAL EDUCATION .....	743
<i>Ertuğrul Aydın (North Cyprus)</i>	
PROFESSIONAL STANDARDS AND CULTURE FOR HEALTHY FEEDING .....	747
<i>Klementina Puto, Rexhep Shkurti, Arjola Bacu (Albania)</i>	
SEXUAL HEALTH EDUCATION, THE BEST VACCINE FOR THE PREVENTION OF THE HIV/AIDS .....	751
<i>Klementina Puto, Rexhep Shkurti (Albania)</i>	
MENTORING AS A DRIVING FORCE FOR PROFESSIONAL DEVELOPMENT .....	756
<i>Styliani Giossi, Efthymios Valkanos (Greece)</i>	

## THE USE OF LEARNING LOG IN ONLINE EDUCATION

**Tamara Nikolić Maksić, Bojan Ljujić**

University of Belgrade, Serbia

Even though, writing is a very common follow-up course-work activity and the students are required to perform different writing assignments, it would be wrong to make an assumption that writing automatically fosters and contributes to learning (Hübner, Nückles and Renkl, 2010). However, writing can effectively affect learning if “specific strategies of self-regulated learning are explicitly supported by the writing task” (Ibid. p. 18). One common example is a learning journal, entailing journaling or keeping a journal with a specific content – learning. Namely, when keeping a learning journal, student is asked to make on going records on her/his progress in learning activity. When kept electronically, it is usually referred to as a learning log.

Generally speaking, learning log is a tightly focused academic journal that is created by the student who is engaged in a learning process, using the electronic means to conduct it. According to Baker (2003) the log shows the date of the learning experience, and thus describes how much time was spent in the learning event. Besides that, it shows the source of the learning experience (web site, journal, interview, etc.), and even more importantly, the actual learning and insights the student experienced. Capturing questions and comments that come to students’ mind, it documents expectations, difficulties or disappointments of the learning experience, providing the faculty with information and insights into a student’s skill at identifying own strengths and weaknesses as a learner. It also records the student’s progress and comprehension of the topic.

Even though the log documents student’s learning experiences, typically, it is not merely about documenting learning outcomes and learning process obtained in a preceding learning event, but it is rather an opportunity to engage in planning, drafting, and revising. These writing activities contribute to learning by transformation of knowledge (Berthold, Nückles and Renkl, 2007). “By arranging the text in a new way, a writer reorganizes and elaborates her/his knowledge” (Alamargot and Chanquoy, 2001 in: Ibid., p. 565).

Therefore, learning logs are employed in various domains and learning contexts and can be used for a number of purposes. For example, the log can serve as the basis for generating Frequently Asked Questions (FAQs), support class discussion, initiate further content analysis, serve to make connections to previous individual learning experiences and assess the students’ learning (Baker, 2003).

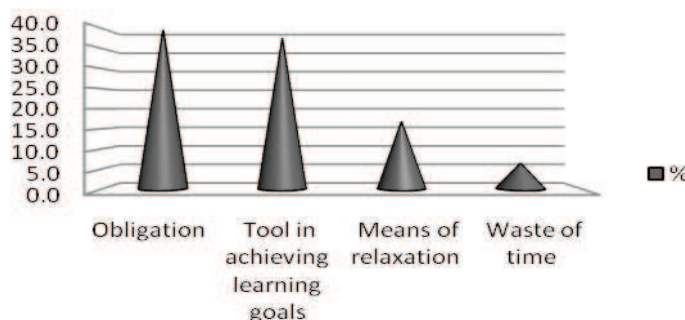
The learning log, as we employ it, is a student’s written reflection of her/his learning experiences and outcomes over the online course at the university. The main function of such log was to enrich traditional university course that took place partly in a computer classroom and was partly conducted online from home. On the one hand, the aim was to enhance critical reasoning in order to foster a deeper processing and better retention of the learning contents (Nückles et al., 2004). On the other, the aim was to promote reflection and thus, encourage students to become more independent and take responsibility for their own learning (Moon, 2006). An online learning log was conceptualized as a writing assignment for students to be performed as a follow-up online course activity. At each unit, given weekly during two semesters, students were instructed to write down a text in which they reflect on the previously presented educational content. A brief instruction about how and what to write was given followed by a list of suggestions and advices concerning the learning journal writing in general (see Nikolić Maksić, 2008). As Berthold, Nückles and Renkl (2007) suggested, and that

was thoroughly explained to students, the most important is that when writing an entry in learning log, students should ask themselves what they do not understand, why not, and finally, what can be done to bridge this gap in understanding.

At the end of the semester, the students were asked to fill a questionnaire on their experiences in keeping the learning log. The research sample included 48 students of the fourth year of Andragogy study group at The Faculty of Philosophy, University of Belgrade, of whom 87.5% were women (42), and 12.5% were male (6).

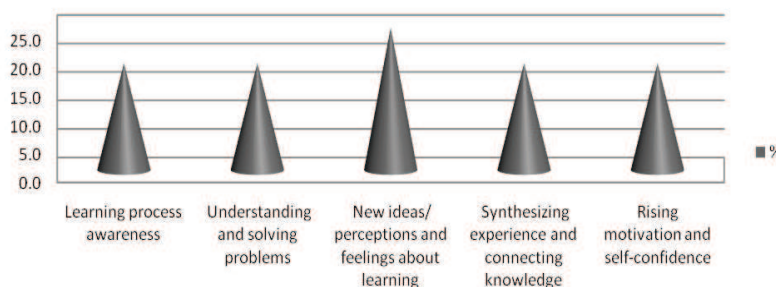
In regard to students' experience of keeping the learning log, two categories were distinguished as the largest. These are the categories of those who experience keeping the learning log as an obligation (or 39.6% of them 19) and those who see it as a tool in achieving learning goals (learning the material, solving various problems and maintaining attention, etc.), and of them 37, 5% or 18 respondents. Eight students (16.7%) experienced a learning log as a means of relaxation, while there are those who believe that writing a learning log is a waste of time (3 respondents or 6.3%).

**Experience of keeping the learning log**



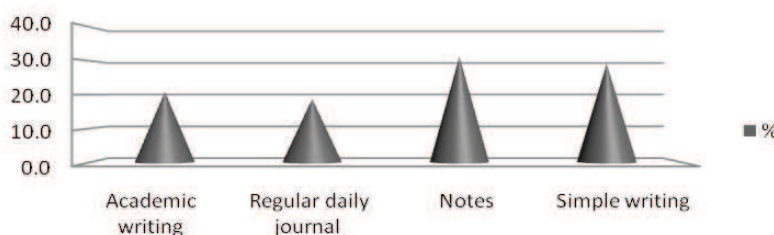
When asking the students what they perceive to be the main goal of keeping the learning log, we have found considerable consistency in the various categories of respondents. 18.8% of them believe that the main objective of keeping the learning log lies in raising the awareness of the learning process, increase of motivation, autonomy and self-confidence. Same number believes that main goal is the understanding of specific problems related to learning and their resolution and knowledge reflection. Also, the same number of respondents sees the main goal in synthesizing experience and making the connection between knowledge and personal growth. Slightly more respondents (12 or 25.0%) believe that the main goal of keeping the learning log results in providing new ideas, perceptions and feelings about the learning process.

**The main goal of keeping the learning log**



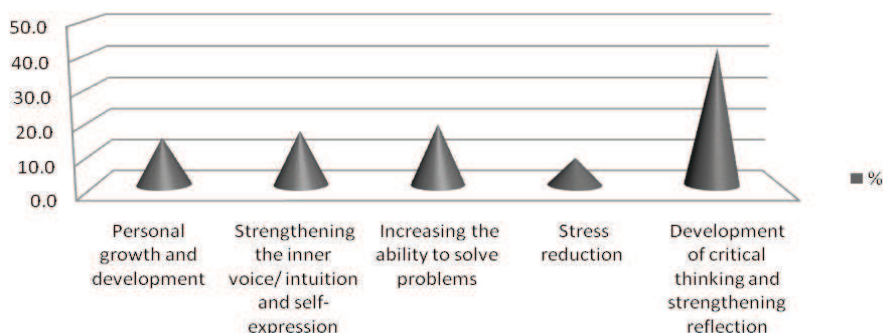
Among our respondents learning log most often takes the form of notes, as 15 of respondents (31.3%) indicated. When writing a log, 14 of them (or 29.2%) are simply followed by writing what ever comes to their mind. 10 (20.8%) practice academic writing form, while nine students (18.8%) preferred writing a learning log in a form of regular daily journal.

**Dominant form of learning log**



The most respondents think that the main benefit of keeping the learning log is in the development of critical thinking and strengthening reflection (20 respondents representing 41.7%), nine of them (18.8%) believe that the most benefit is in increasing the ability to solve problems, eight of them (16.7%) see benefits in strengthening the inner voice, intuition and self-expression. Seven respondents (14.6%) as a major benefit of keeping the learning log recognize the personal growth and development, and only four believe that the main benefit is the stress reduction (or 8.3%).

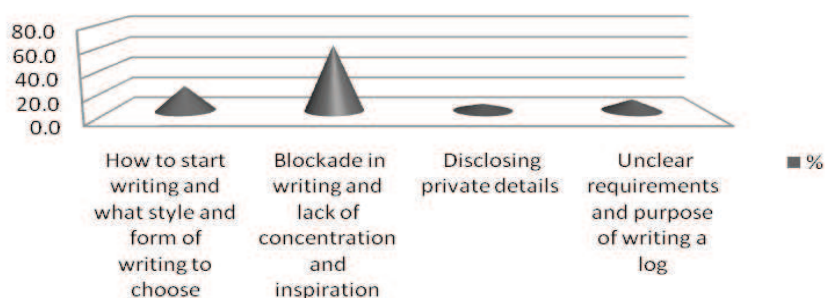
**Benefits of keeping the learning log**



Concerning the obstacles in writing and keeping the learning log, however, 29 students (60.4%) had the most difficulties with experiencing blockade in writing, and lack of concentration and inspiration. For eleven respondents (22.9%), the biggest obstacle in writing the learning log is related to the problem of how to start writing and what style and form of writing to choose. Nevertheless, five (10.4%) met with the problem of unclear requirements and purpose of writing a log. The main difficulty for three (6.3%) was a problem of disclosing private details.



**Obstacles in writing the learning log**



To conclude, we could say that there were students who experienced keeping the learning log as useful in achieving the learning goals, but there were those who experienced it simply as any other class assignment. Students listed different categories of goals in regard to keeping a learning log, which in our opinion suggests that there may be many positive effects of this activity. Also, they adopted different styles of writing, which would mean, that they should probably feel free to choose their own style in order to enjoy writing and develop positive attitude towards a log. For the most respondents, the main obstacle in keeping a log was experienced blockade in writing, together with lack of concentration and inspiration. However, students listed different benefits of keeping the learning log. Since the students usually have little or no previous experience in keeping the learning log, it is important to provide them with guidance and instruction by explaining the purpose and benefits, by giving examples, and by keeping the track of their progress. It is important for students to understand that learning log serves its purpose only under condition of putting a substantial amount of time and a considerable commitment to self-improvement and achievement on their part (Baker, 2003).

## References

1. Baker, J. H. (2003). Teaching Tip: The Learning Log. *Journal of Information Systems Education*, 14 (1), pp. 11-14.
2. Berthold, K., Nückles M. and Renkl, A. (2007). Do Learning Protocols Support Learning Strategies and Outcomes? The Role of Cognitive and Metacognitive Prompts. *Learning and Instruction*, 17, pp. 564–577.
3. Hübner, S., Nückles M. and Renkl, A. (2010). Writing Learning Journals: Instructional Support to Overcome Learning-Strategy Deficits. *Learning and Instruction*, 20 (1), pp. 18-29.
4. Moon, J. A. (2006). *Learning Journals: A Handbook for Reflective Practice and Professional Development* (2<sup>nd</sup> ed.). New York, NY: Routledge.
5. Nikolić Maksić, T. (2008). Dnevnik učenja u obrazovanju odraslih. U zborniku radova: Alibabić, S. i Pejatović, A. (Urednici): *Obrazovanje i učenje – pretpostavke evropskih integracija*. Beograd: Institut za pedagogiju i andragogiju Filozofskog fakulteta u Beogradu (str. 169-176).
6. Nückles M. et al. (2004). The Use of Public Learning Diaries in Blended Learning. *Journal of Educational Media*, 2 (1), pp. 49-66.