

# **BLENDED LEARNING**

## **IN THE AGE OF SOCIAL CHANGE AND INNOVATION**

Proceedings of the  
3rd World Conference on Blended Learning

Agnieszka Palalas  
Helmi Norman  
Przemysław Pawluk (Eds.)

**ISBN:** 978-618-82543-3-6

**Main Title:** Blended Learning in the Age of Social Change and Innovation

**Subtitle:** Proceedings of the 3rd World Conference of Blended Learning

**Editors:** Agnieszka Palalas, Helmi Norman & Przemyslaw Pawluk (Eds.)

**Place of Publication:** Greece

**Publisher:** International Association for Blended Learning



## Table of Contents

### Papers

Mobile the Efficacy of Blended Learning Models of Teacher Professional Development .....	1
<i>Susan Ruckdeschel</i>	
Why OER for Blended Learning 2017 .....	9
<i>Rory McGreal</i>	
Unraveling the Multidimensional Structure of Information Literacy for Educators .....	13
<i>Kamran Ahmadpour</i>	
Different Forms of Assessment in a Pronunciation MOOC – Reliability and Pedagogical Implications .....	34
<i>Martyna Marciniak, Michal B. Paradowski and Meina Zhu</i>	
Blended Learning in Primary School - Looking for a New School Formula .....	42
<i>Dorota Janczak</i>	
How to Organize Blended Learning Support in Higher Education .....	46
<i>Janina van Hees</i>	
The Use of Mobile Educational Application (MobiEko) as a Supplementary Tool for Learning.....	51
<i>Mohamad Siri Muslimin, Norazah Mohd Nordin and Ahmad Zamri Mansor</i>	
Dronagogy: A Framework of Drone-based Learning for Higher Education in the Fourth Industrial Revolution .....	55
<i>Helmi Norman, Norazah Nordin, Mohamed Amin Embi, Hafiz Zaini and Mohamed Ally</i>	
Reconfiguring Blended K-12 Professional Learning Through the BOLT Initiative .....	63
<i>Constance Blomgren</i>	
A Proposed Blended Educational Framework for Administration of Enterprises in Nowadays' Greek Financial Crisis .....	68
<i>Thalia Vasiliadou, Evgenia Papadopoulou and Argoustos Tsinakos</i>	
Create a blended mobile learning space with Whatsapp .....	76
<i>Alice Gasparini</i>	
Mindfulness in Online and Blended Learning: Collective Autoethnography .....	84
<i>Agnieszka Palalas, Anastasia Mavraki, Kokkoni Drampala and Anna Krassa</i>	
Effective Use of Online Tools in Engineering Classes .....	97
<i>Yasemin Bayyurt and Feza Kerestecioglu</i>	
Investigating the Reasons for Low Level of Interaction in a Blended Course .....	102
<i>Aysegül Salli and Ulker Vanci Osam</i>	



Assessing the Value of Virtual Worlds for Distance Education Students through Collaborative Role-playing activities - An explanatory case study .....	109
<i>Sofia Nteliopoulou, Vasileios Kratidis and Argoustos Tsinakos</i>	
Integrating Blended Learning Tools into University Courses: A Survey of Student Perceptions .....	117
<i>Erkan Arkin</i>	
The Needs Analysis of Developing an Information Literacy Education Model Based on School Culture Shaped by Hidden Curriculum .....	125
<i>Lee Chua Lee, Nabeel Abdallah Abedalaziz, Saedah Siraj and Helmi Norman</i>	
Instructional Design for Blended Language Learning: Methodological Considerations and Course Applications Guiding the Effective Design of Blended Language Courses .....	132
<i>Daria Mizza</i>	
Reflecting MOOC-Blend Experience in “Teaching Writing in an ESL Context” .....	145
<i>Harvati Hashim, Melor Md. Yunus and Helmi Norman</i>	



## Keynote Presentations

Mobile Technologies and Social Media for Assistance .....	151
<i>Agnes Kukulska-Hulme</i>	
Trends and Predictions in Blended Learning .....	152
<i>Joe Ganci</i>	
Virtual Classes as a Tool for Enhancing Interpreting Competences .....	153
<i>Agnieszka Biernacka</i>	

## Invited Speaker

Khan Academy in the Context of Blended Learning .....	154
<i>Lech Mankiewicz</i>	

## Practitioner Presentations

Curriculum Development Using Project Management Skills .....	155
<i>Philip Cowcill</i>	
How AR and VR Can Impact Blended Learning – Looking Past the Hype .....	156
<i>Philip Cowcill</i>	
The Business English Blend .....	157
<i>Karen Eini and Tal Levy</i>	
Tell the Tale of TEL: How to Support a Language Team in the Blended Learning Arena .....	158
<i>Tal Levy and Karen Eini</i>	
A Blend of Pecha Kucha and Business English .....	159
<i>Karen Eini and Tal Levy</i>	
The Pustulka Project: Developing Online Testing Software for English for Specific Purposes .....	160
<i>Aleksandra Łuczak</i>	
Going Hand in Hand: Blended Learning and University Students? .....	161
<i>Anna Ayliffe</i>	
Gamification in Education: How Story Can Change the Meaning .....	162
<i>Daniel Pazura</i>	
Drawing on Social Networks Online and Offline: An Introduction to Surveying Techniques.....	163
<i>Alisa Masiejczyk</i>	
Telecollaboration in Language Teacher Preservice Education – A Bottom-Up Perspective .....	164
<i>Elżbieta Gajek</i>	
The Effects of Blended Learning in India .....	165
<i>Kanar Deep Bedi</i>	



## Panel Discussions

Blended Language Learning .....	166
<i>Agnieszka Palalas (Chair)</i>	
Using Technology in Blended Learning .....	167
<i>Joe Ganci (Chair)</i>	
Pedagogy Shift in Blended Learning - Trends and Challenges .....	168
<i>Argoustos Tsinakos (Chair)</i>	

## Posters

The Secret is in the Blend - Promoting Digital Literacy Through the Use of a Global Project .....	169
<i>Tal Levy and Karen Eini</i>	
Adult Literacy Mobile Learning Solution in a Blended Learning Context .....	170
<i>Przemysław Pawluk, Agnieszka Palalas and Norine Wark</i>	



## Preface

This collection contains all the papers presented at IABL2018: The 3rd World Conference on Blended Learning held on April 18-21, 2018 in Warsaw, Poland, one of the key cultural and educational centres of Europe. This year's conference was organized by the International Association for Blended Learning (IABL; <http://iabl.org/>) and hosted by the Institute of Applied Linguistics of the University of Warsaw. This volume reflects the diverse perspectives of all conference participants: researchers, teachers, professors, administrators, trainers, instructional designers and developers, technology experts, and students representing eleven countries and a range of educational learning and training contexts, as well as socio-cultural backgrounds. Contributions from across the globe representing all educational sectors and a wide variety of industries are included in the proceedings. Innovative blended learning research, solutions, strategies, and practices discussed by leaders in the field are encapsulated in this document, along with research findings resulting in new ideas, innovative practices, and experience that were also shared during the conference.

The International Association for Blended Learning is an international non-profit organization whose goal it is to transform global education through its contributions to the field of blended learning. The IABL aims to promote excellence in teaching, training, and research in blended learning through the engagement of international scholars and practitioners to meet the needs of today's global learners. IABL is the custodian of the annual IABL conference series organized as a key knowledge and research exchange forum where professionals and practitioners share their expertise, experience, and research in blended learning. The annual IABL conference is also a networking event for IABL members from all over the world who represent a variety of contexts, cultures, and perspectives.

The IABL conference invites critical inquiry and debate on theories, approaches, principles, applications, and the implementation of blended learning across educational and training settings. IABL2018 main themes included the following:

- Pedagogy of blended learning
- Blended learning in practice
- Design of blended learning
- Technology in blended learning
- Future of blended learning
- Blended approach to corporate training
- Blended learning for special needs learners
- Blended learning in language acquisition
- Blended learning in K-12
- Blended learning in higher education
- Blended learning for development / in developing countries
- Blended learning in teacher professional development



The IABL 2018 Proceedings document the contributions of this year's conference. Proposals from across the globe and all educational sectors were submitted and carefully considered for inclusion in the conference program. All submissions were reviewed by at least two referees from the IABL 2018 international Program Committee based on the full text of the submitted manuscript for short and long papers, and on abstracts for practitioner presentations, posters, panels, and workshops. The submissions for short and long papers were subjected to a double-blind peer review and evaluated on the basis of the originality of the work, the validity of the results, chosen methodology, writing quality and the overall contribution to the field of blended learning. Similarly, the abstracts were reviewed based on the originality of the work and ideas, their applicability, and practicality in the blended learning field, writing quality and the contribution to the field. The authors were encouraged to incorporate the reviews and feedback in preparation of the final versions of their papers. All the approved submissions which were presented at the conference are included in the proceedings.

The IABL 2018 proceedings hence comprise the following categories of papers and other presentation types:

Full papers (printed in their entirety); they report on original and significant work in research, development, and applications regarding one or more aspects of blended learning.

Short papers (full text included) describe new work or work that is still in progress, relevant to one or more aspects of blended learning.

Keynotes (brief abstracts provided): three world-renowned experts presented their keynotes, namely, Professor Dr. Agnes Kukulska-Hulme from The Open University, UK, Joe Ganci from eLearningJoe, LLC, USA, and Dr. Agnieszka Biernacka from The University of Warsaw, Poland.

Panels (abstracts provided): 4-5 people presented their views and arguments on a specific theme or issue related to blended learning, and subsequently discussed them with the audience.

Practitioner presentations (abstracts included) shared best practices in teaching and training in the blended learning context. IABL 2018, being a blended conference, invited both face-to-face and virtual presenters. The virtual presentations were delivered by presenters who could not attend the conference in person but whose papers had been accepted for IABL2018 (in keeping with the Submission Guidelines). Each virtual presentation consisted of a pre-recorded video (paper presentation) and/or virtual presentation, and a 10-minute synchronous presenter-audience chat via Skype. Virtual presenters were asked to submit their proposal using the same guidelines as face-to-face presenters, choosing from the following three categories: long paper, short paper, and practitioners presentation. All blended sessions were moderated on site by a Virtual Presentation Moderator to ensure optimal interaction between the virtual presenter and the f2f audience.

These proceedings comprise the complete texts of all accepted full and short papers as well as abstracts of the other presentation types shared during IABL 2018. In total, 19 submissions were selected and delivered as full and short papers. Abstracts of 11 practitioner presentations, 3 panels, 2 posters, as well as 3 keynote talks and an invited presentation are also included.

The authors who have contributed to these proceedings are researchers, practitioners, instructional designers and developers from both educational and commercial organizations representing 11 countries: Poland, Canada, Greece, UK, Israel, Turkey, India, Malaysia, Netherlands, Italy, and the USA. We would like to extend our thanks to all participants for their contributions to the conference program and to the IABL 2018 Proceedings. A special *Thank you* goes to the members of the international Program Committee for their expert contributions and dedicated assistance with the paper reviews and decisions.

- Mohammad Abu - OmarAl-Quds Open University, Palestine



- Mashael Alhammad - Arab Open University, Kuwait
- Mohamed Ally - Athabasca University, Canada
- Yasemin Bayyurt - Boğaziçi University, Turkey
- Andrzej Bugajak - Zespół Szkół Ogólnokształcących w Kluczborku, Poland
- Ridzwan Che Rus - Sultan Idris Education University, Malaysia
- Liliana Cuesta Medina - Universidad de La Sabana, Colombia
- Scott Dunham - Canadian Memorial Chiropractic College, Canada
- Elżbieta Gajek - University of Warsaw, Poland
- Marek Hyla - Accenture, Poland
- Irwan Mahazir Ismail - Universiti Tun Hussein Onn, Malaysia
- Lech Mankiewicz - Polish Academy of Science, Poland
- Hussein Mansour - Naif Arab University for Security Sciences, Saudi Arabia
- Hend Merza - Arab Open University, Saudi Arabia
- Shaju Nalkara - Arab Open University, Saudi Arabia
- Helmi Norman - Universiti Kebangsaan, Malaysia
- Agnieszka Palalas - Athabasca University, Canada
- Przemysław Pawluk - George Brown College, Canada
- Anthony Ralston - University of Alberta, Canada
- Sene Salimata Mbodji - Ministry of Education, Senegal
- Demetrios Sampson - Curtin University, Australia
- Daniyar Sapargaliyev - University of Wolverhampton, UK
- Khaled Suwais - Arab Open University, Saudi Arabia

We would like to express our gratitude to sponsors and supporters of the conference: ILS UW, e-mentor.edu.pl, Personel & Zarządzanie, Warsaw Convention Bureau, and Austrian Air-line.

I hope that these proceedings, which capture the collective knowledge of a variety of experts, sectors, and programs from diverse cultural and educational contexts, will assist you in implementing blended learning in your practice.

See you at IABL 2019.

Agnieszka Palalas, Ed.D.

*IABL President*

April 7, 2018  
Toronto

Agnieszka Palalas  
Przemysław Pawluk  
Helmi Norman





# Papers





# The Efficacy of Blended Learning Models of Teacher Professional Development

**Susan Ruckdeschel**

Literacy Solutions and more, Inc.

New York, USA

*sdeschel@gmail.com*

## ABSTRACT

With the enactment in 2014 of the Every Student Succeeds Act, teacher evaluation mandates were loosened, and states were no longer required to have systems of teacher evaluation in place based on student test scores. District-provided professional learning could focus not just on teaching teachers how to move up assessment scores, but on what teachers needed to effectively deliver aligned curriculum. The purpose of this qualitative case study was to examine the perceptions, beliefs, attitudes, and real learning experiences of K-12 classroom teachers as they transferred blended learning experiences to live classroom environments in support of a Common Core-aligned curriculum. The sample consisted of 14 K-12 classroom teachers in special education, English Language Arts, English as a Second Language, high school and middle school core content areas in social studies, science, and mathematics. Teachers were selected based on their adoption of a Common Core-aligned curriculum as required by their district or their state. Participation was voluntary. Four teachers were from the state of Florida, and 10 were from New York State. Findings concluded that blended learning was capable of delivering teacher professional development that impacts classroom teaching, particularly when teaching to the Common Core State Standards as teachers adopt and adapt aligned curriculum materials. The findings may lead to better allocation and alignment of resources, strategies taught, and training in teaching-mandated materials in online and blended learning formats when using a standards-aligned curriculum.

## Author Keywords

teacher professional development, professional learning, blended learning, literacy, best practices

## INTRODUCTION

Blended learning, in earlier years known as “hybrid” models of instruction, combines contextualized learning in an online environment with live (synchronous) and asynchronous (on-demand) elements (Caudle, 2013). This model of instruction is a promising option for educators and educational leaders in meeting needed hours for re-licensure, new teacher evaluation mandates, and bridging budget and curriculum shortfalls with strategy and resources designed to improve teacher effectiveness (Beattie & Jordan, 2011; McFarlane, 2011). An effective instructional delivery platform used for teacher professional development, when combined with real-time instruction via internet-based technologies, can have a direct impact on student learning outcomes (Dash, De Kramer, O'Dwyer, Masters, & Russell, 2012). Online and blended learning can deliver instruction to learners capable of facilitating the acquisition of newly acquired K-12 teaching skills (Herrington et al., 2009).

Blended learning for adult learners continues to rate favorably as an on-going and sustainable learning tool against traditional face-to-face, or site-based professional learning (Matzat, 2013; Mayer, 2014; McConnell, Parker, Koehler & Lundeberg, 2013). Teachers were found to transfer learning at higher rates when time was short and the curriculum expectations were rigorous and high (Blankstein, 2016; Venables, 2014). One such learning management system, *Moodle*®, was designed to reflect a Sociocultural-Constructivist learning model through hands-on, contextualized and collaborative activities. The highly contextualized nature of *Moodle*® aids in effective and efficient augmentation of curriculum. *Moodle*® allows educators to leverage with highly engaging classrooms through collaborative and constructive Moodle-based learning activities (Despotović-Zrakić, Marković, Bogdanović, Barać, & Krčo, 2012). As a result, adult learners are found to be more likely to transfer new learning to their classroom instruction (Herrington et al., 2009).

Traditional face-to-face faculty support has been found to have limited effects in changing pedagogical practices and attitudes among teachers overall (Sugar, van Tryon, & Slagter, 2014). The blended learning environment as a solution for teacher profession development has taken on recent interest as state Departments of Education, and the school districts that report to them prepare to implement new professional development mandates that require teacher evaluations be tied to student assessment results. Since passage of the Common Core State Standards, many state Departments of Education developed other mandates designed to retain a highly qualified teaching force (Sawchuk, 2011). A number of these mandates took effect in the 2014/2015 school years in response tighter teacher accountability for student academic outcomes. Florida, for example, now requires that teachers complete 20 hours of Exceptional and Special Education (ESE) coursework for re-licensure (State of Florida Bureau of Educator Certification, 2014). New York State has similar



requirements for English as a Second Language certifications, where teachers must complete hours as part of their on-going professional credentialing (Certification Office of Teaching Initiatives NYS Education Department, 2016). While teachers remain individually responsible for fulfilling licensure requirements, districts are still required to spend a portion of federal and state money on teacher professional development (U.S. Department of Education, Office of State Support for Formula Grants, 2015). With tightening budgets, blended learning models are among the cost effective measures districts can take to meet these mandates without depleting, or jeopardizing, budgets.

### **STATEMENT OF THE PROBLEM**

In general, there is a lack of information regarding what the best practices are in blended learning that leads to positive change in teacher attitudes about teaching to the Common Core State Standards (Blanktein, 2016; McFarlane, 2011; Yukawa, 2010; Yukawa & Harada, 2011). Without knowledge of best practices, teachers charged with teaching to a Common Core-aligned curriculum are challenged (Blanktein, 2016). As districts move to blended learning for delivery of professional development, this medium is additionally charged with effective delivery of the best practices that support teaching to the Common Core State Standards, particularly as they use federal and state funding to pay for it. This study looked specifically at attitudes and experiences of teachers in teaching with a Common Core-aligned curriculum. There is a gap in research regarding the selection and design of quality of blended instruction in teacher professional development as it influences a positive mindset toward teaching to the Common Core State Standards (Chia-Pin, Chin-Chung, & Meilun, 2014). Effective professional development must include research-based strategies designed to improve knowledge and skills that transfer to K-12 instruction (Chia-Pin et al., 2014; Marzano, 2015). This gap is further widened in the lack of studies on blended learning and the transfer of teaching strategies to live environments (McFarlane, 2011; Yukawa, 2010; Yukawa & Harada, 2011).

Despite the delivery medium, teachers too often do not transfer new learning to live classroom environments (Herrington et al., 2009). Online asynchronous and synchronous learning opportunities, or blended learning, continue to engage teachers through the availability and use of resources when practical and available (Matzat, 2013). This type of learning is further optimized through blended forms of contextualized instruction that provide more opportunities for trial-and-error learning. Teachers are more likely to retain what they learn and thus transfer the learning to the classroom when learning is hands-on (Littlefield, 2012; Matzat, 2013).

With the limited impact of face-to-face faculty development, along with a need to tighten budgets and new school district accountability for teacher evaluation mandates, online learning is viewed as a cost effective way to meet the professional development needs of teachers (Beach, 2012; Emerling, 2005). Online instruction as a stand-alone can typically invoke strong teacher-student and student-to-peer interactions (Beach, 2012; Bradley, 2011). In addition to interacting with each other, learners must also interact with content (Bradley, 2011). Conceptual frameworks suggest that integration of empirical cognitive, constructivist, and behaviorist principles with online learning can increase the likelihood of student transfer into the field, and that course effectiveness hinges on development, configuration, methodology, and presentation (Bradley, 2011). Participant interaction is of equal weighting to online development, coupled with principles from empirical learning theory (DiMichele, 2016; Hathaway & Norton, 2012). Multiple forms of online teacher professional development have been studied for effectiveness in delivering quality teacher preparedness. Researchers have concluded that teachers are likely to transfer new learning into their classrooms when new learning is taken from online and blended, or hybrid, learning environments as compared to one time live workshops (Hathaway & Norton, 2012). Results in favor of job-embedded, online professional development that combine asynchronous learning with synchronous coaching via Skype remain favorably high (Brooks, 2010; Jones & West, 2010; Littlefield, 2012; McFarlane, 2011).

Studies advocate in favor of blended learning online courses that involve peer interaction by offering social, mentor, and technical support for new teacher evaluation mandates (Brooks, 2010; Littlefield, 2012; Moisey et al., 2011). Studies of teacher effectiveness related to professional development offerings in hybrid, or blended, learning environments for knowledge transfer and pedagogical outcomes have yielded favorable results (Dash et al., 2012).

### **PURPOSE OF THE STUDY**

The purpose of this qualitative single case study was to determine the perceptions, attitudes and experiences of course participants related to their capacity and confidence to transfer new learning to live teaching environments in adopting a Common Core-aligned curriculum. Participants enrolled in blended learning courses on K-12 research-based language arts teaching methods that work into a Common Core pedagogy. Participants were provided with access to new resources, participated in learning forums, and planned for classroom implementation throughout a 10-week course of blended learning. Bridging the lack of new knowledge transfer (or learning gaps) that typically results from traditional live teacher professional development was a driving objective. Learning transfers to live classroom environments for full implementation when research-based strategies are used (Chia-Pin et al., 2014; Marzano, 2015). A knowledge gap exists regarding a lack of information of what best practices in blended learning lead to a change in teacher practices and attitudes when teaching to the Common Core State Standards. A lack of information also exists about teacher attitudes when teaching to a Common Core-aligned curriculum (McFarlane, 2011; Yukawa, 2010; Yukawa & Harada, 2011). This study looked specifically at attitudes and experiences about teaching to a Common Core-aligned curriculum in blended learning.



## RESEARCH METHOD AND DESIGN

This study focused on one cohort, consisting of 14 teacher participants who taught in school districts in Florida and New York State (see Table 1 for experience distribution). Teacher participants' districts had either adopted the Common Core State Standards, or used their own state standards, aligned to the Common Core State Standards. Participants also used Common Core-aligned curriculum in their districts. Sampling included a cross section of teachers with multiple levels of teaching experience. Teachers received instruction on application of research and evidence-based strategies to real classroom environments as the strategies and methods supported the Common Core State Standards. Coaching components encouraged the transfer of teaching strategy to immediate classroom practice throughout schools in participating states. Teachers implemented newly planned ideas in a highly contextualized blended learning environment, after which they taught and reflected on new strategies learned throughout the 10 weeks allocated for course completion. Consultant coaches provided implementation support a minimum of three times throughout the study.

Discipline	No. Teachers	State
Middle School English Language Arts	1	NY
Elementary School, all subjects	6	NY
Elementary School, all subjects	2	FL
Middle School core content: Math, Science, Social Studies	4	NY
High School core content: Math, Science, Social Studies	2	NY
Middle School Fine Arts	1	NY
High School Fine Arts	1	NY
Special Education	2	NY

**Table 1. Teacher experience distribution**

Courses were taught using research-based materials with strategies and grade-appropriate teaching methods, new knowledge of Common Core pedagogy, access to electronic and printable resources, participation in learning forums, planning and preparation for implementation of new strategies learned. A consultant coach provided asynchronous coaching sessions to guide participants in new knowledge transfer and implementation. Instruction was designed to transfer to teachers' K-12 classrooms for full and immediate implementation of units and lessons designed (course artifacts).

## FINDINGS AND INTERPRETATIONS

**Theme 1: Practice teaching CCSS strategies.** When asked to describe the best professional learning in live settings previously taken and how they applied the learning, the majority of teacher participants (57.2%) had previously participated in online learning. This number was evenly split between those that took online learning with a blended learning component (x%), and those that took straight self-paced learning without blended learning (28.6%). Participants named resources, teaching of specific Common Core-aligned strategy, and opportunities to observe live and virtual examples as having aided in making adjustments to their own instruction and direct transfer of skills to the classroom. Recent professional learning experiences were described as having involved some adoption of, and adaptation to, digital learning such as Smartboard training, use of online materials that accompany a new curriculum, or setting up digital classrooms. These findings emerged from the needs assessments and mid-course interviews. The researcher was led to It can be concluded that live training was not sufficient and that the field experiences embedded in blended learning can make a difference in teacher perceptions of their skills readiness, ability, willingness, and enthusiasm for teaching the Common Core. Blended learning offers teachers opportunities to access resources, plan with strategy and embed resources. In addition, they have multiple opportunities to implement and reflect on learning as a result of actionable instructor feedback (MacDonald & Poniatowska, 2011). All of this worked into their perceptions of confidence, competence, and readiness to teach.

**Theme 2: Access to resources.** Based on the physical artifacts produced throughout 10-week study course, it was observed that teachers realized ease of access. This was indicated by the resources they used to align planned curriculum, and by designing comprehensive lessons with embedded resources and strategies. Each participant designed a comprehensive lesson in each course, which contained from 5 to 10 resources. Resources included graphic organizers, differentiation tools, state and Common Core-aligned electronic and digital resources, and strategy guides with specific



methods outlined in the printable content books. Open source digital resources taken from the course to use alongside, or as part of, the lesson were also included. By providing teachers with access to a variety of resource choices, they were allowed to exercise full pedagogical control over design, and thus applied skill in aligning those resources with teaching strategies or with existing curriculum to further align it to student needs and state standards. As participants discussed new learning and new learning leveraged with current practices on specific strategy use as demonstrated in discussion forums and artifacts, confidence was built upon. Teachers realized they could further refine former practices to more effectively meet the needs of their students.

**Theme 3: Differentiating instruction.** The needs assessments and mid-course interviews indicated that teachers needed more differentiation strategies to be able to effectively teach with a Common Core-aligned curriculum and meet the needs of mixed ability classrooms. Grouping of students, and various ways in which to group them, was viewed as an aid in the differentiation needed to teach all students in one setting. Differentiation with scaffolding was also indicated as an aid to chunk, or break down, rigorous content for special education students and struggling learners. Teachers indicated a need to differentiate and scaffold for low socio-economic students due to the increased rigor required of Common Core instruction. Grouping to keep students motivated and engaged were also named as high priorities. Course artifacts indicated that teachers indicated knowledge about their students and where the learning gaps were, particularly as they encountered curriculum that did not either fill these gaps or provide resources to allow for differentiation.

Teachers were required to include in all lesson plans, or artifacts, from 3 to 10 digital differentiation resources. Examples include polling tools, Buzzmath and Kahoot, online math games, and online picture dictionaries. Identified differentiation practices included: questioning strategies, strategies for higher order thinking through Socratic seminars and discussions (structured peer feedback); vocabulary strategies, formative assessments, common reading and writing practices across content areas, explicit teacher modeling, visual support, peer evaluation with problem solving, and metacognitive strategies. Other ideas such as adequate wait-time and teacher modeling were reinforced throughout lesson design, or artifacts, as pertinent components to achieving the student outcomes as a result of differentiation. Flexibility in thinking with regard to completion was also indicated in order to differentiate. This included the allowance of more completion time, and differentiating the materials for certain students to provide different options to chunk ideas first before committing to final products; working students through metacognition to aid in the process used to reach the end result in mathematics, setting up collaboration opportunities, use of protocols to engage students in discussions, use of learning styles when planning instruction, and identifying learning gaps prior to grouping and differentiating. Formative assessments used to evaluate differentiated learning were embedded to include anecdotal records, think-pair-share observations, exit ticket, and diagram labeling. As a result, it was concluded that when respondents have access to resources combined with opportunities to learn, practice, use and observe examples of explicit differentiation and scaffolding practices in mixed-ability classrooms, especially when teaching with a CCSS-aligned curriculum, they felt more competent about teaching with new approaches, and about transferring new learning theory into the classroom.

**Theme 4: Use of specific strategies.** All participants, in interviews and in discussion forums, felt that use of content area literacy practices was important, and that there were more to be gleaned from blended learning due to the massive nature of online and open source resources. The forums response indicators concurred that common practices were equally important across all content areas. Application of specific strategies with which to differentiate, and ability to prompt students to think at higher levels, were relevant to moving theory to classroom practice, as such practice flowed from feelings of competence. Such strategies included teaching students how to apply metacognition (analyze their own thinking), use scaffolds and graphic organizers combined with repetition and constant review. Perspectives on live in-service and the benefits of having a live person conduct professional learning workshops and seminars versus blended learning were mixed. The results showed division among favoring live in-service due to the ability to see, and question, live examples, and practicing with online resources gleaned through blended learning to field testing. This qualitative case study did not include comparative data, however; these comparisons were articulated among study participants.

Throughout discussion forums and in post-course interviews, teachers indicated that blended learning was effective in teaching new methods and strategies due to the volume of strategies teachable and resources available in one course. Named repeatedly among participants were the following strategies: questioning, common assessments and strategies for all content areas, graphic organizers, visual aids, grouping strategies, and vocabulary. The use of electronic tools included learning style inventories, video, podcasts, polls, digital storytelling, digital field trips, surveys, and math games. These were found to be useful in planning and for follow-up classroom instruction.

**Theme 5: Change in pedagogical practices.** Teachers using CCSS-aligned curriculum expressed frustration at having to use material that did not meet, or consider the needs of, all their learners, for example special education students, or students reading well below grade-level. Knowledge about how to modify those materials while remaining in keeping with CCSS objectives gave them new hope, competence in, and confidence about using the curriculum. Teachers charged with teaching to the CCSS without specifically-aligned curriculum were given strategies and tools in blended learning with which to teach, along with viewing asynchronous examples of classroom application to clarify understanding. This enabled them to embed practices in planning documents for immediate classroom application. For those with access to students, they could reflect on implementation and discuss how it worked in their classroom, receive feedback from the instructor on how to modify or differentiate in both the planning and implementation stages.



Discussion forum topics included: The Value of Common Assessments, Using Student Artifacts, Assessment Design, Questioning Approaches, Goals for This Course, Common Core Shifts, Scenario Response (some courses had hypothetical scenarios to respond to), The Impact of Text on Reading, Common Assessments, Being Data-Driven, Reflection on Student Data, Best Practices, Structuring Academic Discussions, Academic Vocabulary, High Quality Questioning, Video Reflection (from 3 to 5 per course), and all courses contained a Final Course Reflections forum. Discussion forums indicated that teachers were enthusiastic about, and felt competent and skilled in, teaching with a CCSS-aligned curriculum as a result of the blended learning course in the resources provided, strategies taught, and on-going dialogue about student learning (see Table 2).

Course	Frequency of Indicators	Mean
Formative Assessment for the Common Core	25	1.8
Implementing Tiered Intervention Strategies	26	1.9
Assessment that Drives Instructional Decision-Making	21	1.5
Data-Driven Instructional Strategies	18	1.3

**Table 2. Frequencies of theme 5 mentioned in discussion forums**

While blogs were not a used data source and hence, not a part of the triangulation process in this case study, courses had at least one external blog designed into each of them to provide teachers with opportunities to continue pooling and sharing resources in an open source environment beyond the life of the course. The blogs had a similar effect, drawing from the same users repeatedly to share and comment on resources throughout the course duration, and upon course expiration. This result aligns with other authors who have found consistent and widespread use of, and access to, resources coupled with mentoring and on-going peer support over a designated period time allows educators success in online, web-based professional development (Cochrane, 2011; Herrington et al., 2009; Hodes et al., 2011).

In the post-course survey, participants were asked again what pedagogical beliefs and practices they felt were most effective in teaching to the Common Core State Standards in meeting the needs of all of their students, and what teaching strategies from previous online and blended learning they learned were effective in teaching to the Common Core. The responses were similar to the mid-course survey in naming visual support, higher-level thinking, enthusiasm/motivation, and differentiation however in addition them theme of modifying materials, even if they are already aligned in a packaged curriculum, to more tightly align with the Common Core and to differentiate for students. Problem solving and higher order thinking were also named.

Feedback on assignments, course artifacts, proved to be important assets to participants. Participants often submitted assignments with specific questions seeking specific feedback, other times they revised artifacts to reflect instructor feedback. This feedback was scaffolded from one assignment to another, then incorporated into the final course assignment providing evidence of a change in pedagogical practices as embedded in course artifacts.

## **CONCLUSIONS AND RECOMMENDATIONS**

Teacher professional development has a direct impact on student achievement (Marzano, 2003, 2015). Delivery of online professional learning has a direct impact on student achievement (Dash et al., 2012; Macdonald & Poniatowska, 2011; McConnell et al., 2013). Combined with research-based practices, professional development delivered in blended learning can have positive outcomes when teaching to the Common Core State Standards as teachers adopt and adapt materials, and as they learn new strategies to teach their students (Gaytan & McEwen, 2010; McFarlane, 2011).

Effective online instructional delivery also has a direct impact on student achievement (Dash et al., 2012; Macdonald & Poniatowska, 2011; McConnell et al., 2013). A result of this qualitative single case study was that teacher participants achieved renewed enthusiasm, and a willingness to teach with a CCSS-aligned curriculum as a result of the blended learning provided. Participants' perceptions, attitudes, and experiences throughout the course of blended learning professional development helped build their confidence in transferring new learning to live teaching environments as a direct result of access to resources, live and asynchronous coaching, and embedded planning.

## **Recommendations for Future Research**

A review of the literature supporting varied learning settings provided insights about the online teaching practices that lead to immediate classroom transfer, and the combination most likely to result in effective K-12 classroom implementation. This study deepened and contributed to this body of knowledge about learning transfer as it applies to teaching to the Common Core State Standards in blended learning. Further research could focus on continued study of K-12 educators, as





they seek to learn new application of strategies that align with state standards or new state mandates when adopted by their state. New technologies from synchronous and asynchronous online and blended learning continues to offer re-licensure, training, and on-going professional learning solutions when combined with real classroom experiences in adaptation of the aligned curriculum they are charged with using. Learner outcomes can inform which technologies have the highest potential in meeting them. The New York State Department of Education for example, as of 2016 require teachers to receive additional hours of English as a New Language, or ENL, training as part of their re-licensure. As of 2014, the State of Florida mandated additional hours of Exceptional Learner Education, or ESE, training as part of re-licensure (State of Florida Bureau of Educator Certification, 2014). Comparative studies could look at blended learning that takes exclusively online asynchronously and synchronously as this study did, versus blended learning with the majority of it taking place on-site using blended learning to house follow-up session materials. The use of open source blogs and wikis inside blended learning can also be evaluated qualitatively for their utility in further great teaching skill, and immediate learning transfer.

Online blended learning, no matter what technologies are used, can provide Departments of Education, and the teachers they serve, with assurances that training is current with opportunities to gain resources that aid in furtherance of state outcomes and mandates. With a proper alignment combination of technologies and sufficient interactions among them, learners will have the opportunity to directly transfer new learning to the classroom, and should continue to be offered as a viable option in keeping with new technologies. Recommend some specific new studies here

Further research into other social networking opportunities as on-going support for teachers can aid in the provision of new, on-going, and affordable resources to support professional learning. It is another way to offer continued support teachers. A comparative study looking at open source versus district-created social networking resources could expand this recommendation by looking at the utility of providing it in-house with district cohorts and district approved materials, versus open source on the World Wide Web.

Finally, further exploration of the blended learning resources and the takeaways that teachers find the most useful in implementing specific directives could become a solution to delivering these resources in a systemic and cost effective way with teacher participation (Cochrane, 2011). All efforts should be made to direct teachers to those resources and align them with the instructional directives they are charged with following through on. Further research into how to make this alignment in the most efficient and cost effective way would be timely as new technologies continue to find their way to the World Wide Web and the open source marketplace.



## REFERENCES

- Beach, R. (2012). Can online learning communities foster professional development? *Language Arts*, 89(4), 256-262. Retrieved from <http://www.ncte.org/journals/la/>
- Blankstein, A. M. (2016). *Excellence through equity: Five principles of courageous leadership to guide achievement for every student*. Alexandria, VA: Association for Supervision and Curriculum.
- Bradley, W. E. (2011). A conceptual framework for the design and evaluation of online learning modules in professional training and academic education in business. *The Business Review*, 18(1), 20-27. Retrieved from <http://asbbs.org/files/2011/ASBBS2011v1/PDF/B/BradleyW.pdf>
- Brooks, C. F. (2010). Toward 'hybridized' faculty development for the twenty-first century: Blending online communities of practice and face-to-face meetings in instructional and professional support programmes. *Innovations in Education and Teaching International*, 47(3), 261-270. doi:10.1080/14703297.2010.498177
- Caudle, L. A. (2013). Using a sociocultural perspective to establish teaching and social presences within a hybrid community of mentor teachers. *Adult Learning*, 24(3), 112-120. doi:10.1177/1045159513489112
- Certification Office of Teaching Initiatives NYS Education Department. (2016).
- Chia-Pin, K., Chin-Chung, T., & Meilun, S. (2014). Development of a survey to measure self-efficacy and attitudes toward web-based professional development among elementary school teachers. *Journal of Educational Technology & Society*, 17(4), 302-315.
- Cochrane, T. D. (2011). Beyond the yellow brick road: Mobile Web 2.0 informing a new institutional e-learning strategy. *Journal of Asynchronous Learning Networks*, 15(4), 60-68. doi:10.1080/09687769.2010.529110
- Dash, S., De Kramer, R., O'Dwyer, L. M., Masters, J., & Russell, M. (2012). Impact of online professional development on teacher quality and student achievement in fifth grade mathematics. *Journal of Research on Technology*, 45(1), 1-26. Retrieved from <http://iste.org>
- Despotović-Zrakić, M., Marković, A., Bogdanović, Z., Barać, D., & Krčo, S. (2012). Providing adaptivity in Moodle LMS Courses. *Journal of Educational Technology & Society*, 15(1), 326-338.
- DiMichele, A. (2016). *Ensuring high-quality curriculum: How to design, revise, or adopt curriculum aligned to student success*. Alexandria, VA: Association for Supervision and Curriculum.
- Emerling, B. A. (2005). *Transforming professional development for an American high school: A lesson study inspired, technology powered system for teacher learning*. Thousand Oaks, CA: Corwin Press.
- Gaytan, J. A., & McEwen, B. C. (2010). Instructional technology professional development evaluation: Developing a high quality model. *Delta Pi Epsilon Journal*, 52(2), 77-94.
- Hathaway, D., & Norton, P. (2012). An exploratory study comparing two modes of preparation for online teaching. *Journal of Digital Learning in Teacher Education*, 28(4), 146-152. Retrieved from <http://files.eric.ed.gov/fulltext/EJ972456.pdf>
- Herrington, A., Herrington, J., Hoban, G., & Reid, D. (2009). Transfer of online professional learning to teachers' classroom practice. *Journal of Interactive Learning Research*, 20(2), 189-213.
- Hodes, C. L., Foster, J. C., Pritz, S. G., & Kelley, P. (2011). Structuring professional development with an online community. *Journal of Educational Technology Systems*, 39(3), 295-319. Retrieved from <https://www.baywood.com/journals/PreviewJournals.asp?Id=0047-2395>
- Jones, P., & West, E. A. (2010). Moving toward a hybrid teacher education course: Supporting the theory to practice challenge in special education. *Journal of Special Education Technology*, 25(2), 45-56.
- Littlefield, C. M. (2012). *Hybrid course design and delivery: Faculty approaches, essential components, and the impact of professional development in community colleges* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3538955)
- Macdonald, J., & Poniatowska, B. (2011). Designing the professional development of staff for teaching online: An OU (UK) case study. *Distance Education*, 32(1), 119-134. doi:10.1080/01587919.2011.565481
- Marzano, R. J. (2003). *What works in schools: Translating research into action*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Marzano, R. J. (2015a). *Creating and using learning targets & performance scales: How teachers make better instructional decisions*. City, State: Marzano Laboratories.
- Marzano, R. J. (2015b). *Processing new information: Classroom techniques to help students engage with content*. Princeton, NJ: Association for Supervision and Curriculum Development.



- Matzat, U. (2013). Do blended virtual learning communities enhance teachers' professional development more than purely virtual ones? A large scale empirical comparison. *Computers and Education*, 60(1), 40-51.
- Mayer, R. E. (2014). Incorporating motivation into multimedia learning. *Learning and Instruction*, 29, 171-173. doi:10.1016/j.learninstruc.2013.04.003
- McConnell, T., Parker, J., Eberhardt, J., Koehler, M., & Lundeborg, M. (2013). Virtual professional learning communities: Teachers' perceptions of virtual versus face-to-face professional development. *Journal of Science Education and Technology*, 22(3), 267-277. doi:10.1007/s10956-012-9391-y
- McFarlane, D. A. (2011). Are there differences in the organizational structure and pedagogical approach of virtual and brick-and-mortar schools? *Journal of Multidisciplinary Research*, 3(2), 83-98.
- Moisey, S., Ostashewski, N., & Reid, D. (2011). Applying constructionist principles to online teacher professional development. *International Review of Research in Open and Distance Learning*, 12(6), 143-156. Retrieved from <http://www.irrodl.org/index.php/irrodl/article/view/976/1958>
- Sawchuk, S. (2011). Teacher evaluations key to state chances for NCLB waivers. *Education Week*, 31(14), 21-22. Retrieved from [http://www.edweek.org/ew/articles/2011/12/14/14waive-bargain\\_ep.h31.html](http://www.edweek.org/ew/articles/2011/12/14/14waive-bargain_ep.h31.html)
- (2014). State of Florida Bureau of Educator Certification, Florida Legislature Statute No. 1012.56. Tallahassee, FL.
- Sugar, W., van Tryon, P. J., & Slagter. (2014). Development of a virtual technology coach to support technology integration for K-12 educators. *TechTrends*, 58(3), 54-62. doi:10.1007/s11528-014-0752-7
- U.S. Department of Education, Office of State Support for Formula Grants. (2015). Washington, DC.
- Venables, D. (2014). *How teachers can turn data into action*. Alexandria, VA: ASCD.
- Yukawa, J. (2010). Communities of practice for blended learning: Toward an integrated model for US education. *Journal of Education for Library and Information Science*, 51(2), 54-75. Retrieved from <http://www.alise.org/jelis>
- Yukawa, J., & Harada, V. H. (2011). Authentic learning is not just for students: It's for librarians, too! *School Library Monthly*, 27(4), 5-8.





# Why OER for Blended Learning 2017

**Rory McGreal**  
Athabasca University  
Alberta, Canada  
*rory@athabascau.ca*

## ABSTRACT

OER are learning resources that have been released under an open license permitting their free use/modification. OER render this knowledge accessible to all. Digital locks and restrictive licences seriously hinder the use of commercial content. blended learning makes use of a wide variety of digital devices for use by students and faculty using several operating systems that are not compatible with “locked” content. The free sharing of OER is an essential element in any blended-friendly learning environment.

## Author Keywords

Blended, Open Educational Resources, OER, DRM, copyright, licences

## INTRODUCTION

The diffusion and growing widespread availability of OER, combined with the extended reach of intelligent phones and tablets has opened up blended learning environments for educational institutions who are innovative enough to break away from the traditional classroom mode of teaching. Education institutions worldwide continue to face significant challenges related to providing increased access to high quality education, while containing or reducing costs.

Open Educational Resources (OER) constitute an important resource with the potential to facilitate the expansion of quality education and learning opportunities worldwide. OER refers to full courses, course materials, modules, textbooks, streaming videos, tests, software, curriculum and any other tools, materials or techniques used to support access to knowledge. OER are important for blended learning because unlike closed commercial content, OER can be reused and repurposed for a wide variety of different courses and digital devices.

The relevance of OER is augmented by the exponential growth in online accessibility afforded by the wide range of new mobile devices that can be used effectively to support blended learning. Today, there are more than 6 billion blended subscriptions accessible on cellular networks by more than 90% of the world’s population out of a world population of 7.5 billion. Significantly, more than 75% of these users are in developing countries where there are nearly three billion internet connexions. Significantly, today, most Internet users only access the network through mobile devices (ITU, 2017). The world is now mobile.

This growing trend toward blended computing combining the power of personalised classes and computer networks has opened the door for learners and teachers to access the world’s knowledge from almost anywhere, at anytime. The internet houses the world’s treasure of knowledge. In this context the role of OER in providing learners and teachers with learning content, applications, games etc. is becoming increasingly more relevant. The internet is the world’s intellectual commons and OER renders this knowledge accessible to all.

## DIGITAL RIGHTS MANAGEMENT

OER are not just “helpful” in blended learning. Rather, OER are essential for blended learning. This essential need for OER is driven by the educational publishers who are applying DRM (Digital Resources Management) or technical protection measures (TPM) otherwise known as digital locks.. The locks are accompanied and rendered effective with the use of restrictive licensing.

Publishers can technically control how, when, where, and with what specific brands of technological assistance users are able to access content and applications. For example some ebook publishers abridge the content and ensure that it is so difficult if not impossible to read that it is “worthless” (Richard, 2011). Moreover, they also deliberately cripple their devices to ensure that only their “approved” uses are possible. This is often problematic for disabled users. The visually impaired, for example are denied use of a text to speech function and in many cases cannot even increase the text size (Gonzalez, 2016). Moreover, many proprietary systems still disable highlighting, annotating, hyperlinking, and even dictionary access -- these features are important for educational uses and essential for blended learning.



Different formats are nearly always problematic when mixing and mashing materials. OER can be changed and altered for use in a wide range of courses and in different formats without permission. Even simple printouts are not possible in many cases through removing the printing capability (or by prohibitory licensing or both) (Elibra & Starpath, n. d.) Hyperlinking is a normal learning activity that is often disabled. The devices are often purposely crippled, so that content and applications cannot be ported to other devices. Permissions of all kinds also need to be re-sought for tampering with the material for re-use, re-purposing or mixing, even if fair use allows for it. This can become an impractical burden putting a real damper on blended learning, which relies on the existence of large collections of open and accessible resources.

Even if a format becomes obsolete, users have no recourse when they cannot technically move their content to other devices and applications. Of particular concern for the disabled, proprietors also disable the ability of audio readers to access the content. Audio readers are becoming popular especially for people with visual disabilities and even with commuters on long trips (Elibra & Starpath, n. d.)

Blended learning becomes problematic when mixing and mashing is not permitted. Publishers wish to control and restrict the use of their content in courses, the formats, devices, and other conditions of use of their content. They wish to lock in and control their customers. For example the Amazon Kindle and Microsoft Reader use DRM (Digital Rights Management) restricted formats (AZW and LIT respectively). On the other hand Adobe's PDF format allows for free use, but many older PDF documents cannot be re-flowed to blended devices easily. The open EPUB format is used by many publishers for production purposes, but then they convert it to their proprietary formats for public release.

DRM software enables the tracking of users and protects content. It is used by copyright owners to control, limit and restrict what users can do with their content (Subramanya & Yi, 2006). It is sometimes referred to as TPM (Technological Protections Measures) and it is also used as a tool to turn different uses of the content or application into a separate business deal, with restrictions and permissions. Because of this, some critics refer to DRM as Digital Restrictions Management (Brown, n. d.) These restrictions extend to both the hardware and the software. DRM can limit the devices that you are able to employ in accessing an application or content. It can technically restrict you to using the proprietor's website, determining how, when, where you can use the application or content and with what devices.

DRM is considered to be a necessary evil by the publishers to protect their content from pirates and viruses. DRM can (and has) been used to prevent lawful licensees from accessing their own purchased content. The DRM used in ebooks and audio books blocks legitimate users from porting their content to other devices; in many cases, DRM has been used to delete legally purchased products from legitimate devices. Amazon at one point entered customers' computers and deleted their version of George Orwell's book *1984* (Fried, 2009). The Sony RootKit scandal was one example of a company deliberately using its DRM to surreptitiously insert a virus into licensees' computers without their knowledge or permission, causing significant disruption (Marson, 2005). Even so, DRM continues to prevent market competitors from participating, and effectively stifles much innovation. Because of this DRM can be seen as the kiss of death to blended learning, which is particularly affected by DRM.

Blended learning demands flexibility and cannot live with technical restrictions that limit the capabilities of digital media. Blended learning is also based on trust among the participating students and instructors. As they share resources, the participants must have confidence that their personal information is not used for purposes other than those of learning and sharing with other students and the teacher. Companies using DRM have a history of open ended and indiscriminate collection of private information for unauthorized purposes, using DRM to disclose personal information for inappropriate purposes (Canadian Internet Policy and Public Interest Clinic, 2007; Pandey, 2016). In many, if not most jurisdictions, companies have the right to invade your computers and networks without notice and without your permission, and to disable content and software for any real or imagined reason.

### DIGITAL LICENSES

The proprietary licenses (that users must accept in order to access the content or applications ("I agree")) are also a major impediment to blended learning. Licensing restrictions can add needless complications to downloading the content sometime making it so difficult that users simply give up. Fortunately this practice is not endemic. Content re-use and format shifting, as has been noted is technically disabled, and this is reinforced with restrictive licensing that prohibits the practice. Even if one wants to retain the same format, proprietary content is licensed to only one computer "for use solely on this device" (eBooks.com, n. d.), so learners who switch computers even with the same operating system are often restricted from doing so, or at a minimum they must contact the owners and request special permissions and/or register with a company.

Licenses prohibit, not only copying and printing, but also modifying, removing, deleting, and augmenting (improving) or "in any way exploiting any of the eBook's content". This stipulation along with the "sole device" stipulation effectively



negates any attempts at blended learning using such software, even if institutions are prepared to pay, pay again and keep paying for the same licences until they expire. And, if institutions don't keep paying they may no longer be able to access the data or records linked to that product. Licences also prohibit the transfer of content to other students when teachers wish to use blended devices with a different group of students in later semesters.

Restrictive licensing exempts software publishers from ALL liability under consumer protection law. There is no "product" to purchase. Not only does the "purchaser" have no rights, no requirements are placed on the publisher, nor any requirement that a product even work. And, the publisher has no liability when they turn off the content or application for whatever reason, legitimate or otherwise. They can also change these and other clauses of the contract at any time. In fact, whenever software is upgraded the contract can be changed and often is, but never for the benefit of the user (Brown, n. d.) For those educators who wish to avail themselves of their fair dealing (or fair use) rights, these licences can effectively negate them along with the right of first sale that normally allows buyers to resell their purchases (EBIA, 2010). The licence represents a contract agreed to by the licensee to not avail themselves of their fair dealing rights or first sale rights. Publishers claim that contract law trumps fair dealing.

The predicament of an iPad owner in Luxembourg puts the question of geographical restrictions in a clear light. Even though he would like to legally purchase content, he cannot because it is not available in his country. He can find material on pirate sites, but he wanted to buy legally and could not. Another commentator, talks about user "anger" noting that geographical restrictions using DRM are "the most pressing issue" (Americaneditor, 2010). Google's "Geographical Constraint" error message along with YouTube's "This video is not available in your country" are notorious examples of this, when users get an error message when they attempt to download books or videos that are not licensed in their country. For instructors, of course a legal purchase is mandatory, so in many countries they are effectively excluded from using vast amounts of relevant content (Wolf, 2011). For borderless online courses from institutions that deliver lessons to many different countries, the restrictions effectively prevent them from using this content. The copyright owners are encouraging piracy through these geographical controls that prohibit legitimate uses. Fairfield (2017) even contends that these restrictive licences are destroying the concept of property ownership and returning us to the feudalism of the middle ages. He counsels us to "vigorously exercise our rights to use, repair and modify our smart property, and support efforts to strengthen those rights."

## CONCLUSION

Publishers have declared war on technology, using lawsuits, legislatures and clever public relations to restrict the ability to sell and use new technologies. They are trying to entrench their copyright monopoly and outmoded business models. Lynch (2001) warned that publishers want to control "in infinite detail all use and duplication of material, monitor that use, and possibly charge for it on a transactional basis if they don't block it out of hand". They have waged a continuous war aiming to extend their rights at the expense of education and the general public. Barlow (1996, p. 15) presciently warned "The greatest constraint on your future liberties may come not from government but from corporate legal departments laboring to protect by force what can no longer be protected by practical efficiency or general social consent" (Barlow, 1996).

Rather than fighting head-on these rich and powerful interests, educators can bypass them by using OER. Publicly financed content creations should remain open to all and rendered accessible to the public over the Internet. Rather than remain trapped behind the overly restrictive proprietary environments that publishers are creating, educators can make use of OER to localize, mix and match the materials on whichever device, application or operating system they choose, wherever they live. As blended learning evolves, the content needs to be open so that it can be freely used by all, without the restrictions imposed on us by commercial educational content.

## REFERENCES

- Barlow, J. P. (1996). Selling Wine without Bottles: The Economy of Mind on the Global Net *High noon on the electronic frontier: Conceptual issues in cyberspace* (pp. 9 - 34). Cambridge MA: MIT Press.
- Brown, P. (n. d.). What is DRM? Digital Restrictions Management, Retrieved from [http://www.defectivebydesign.org/what\\_is\\_drm](http://www.defectivebydesign.org/what_is_drm)
- Canadian Internet Policy and Public Interest Clinic. (2007, September). Digital Rights Management and consumer privacy: An Assessment of DRM applications under Canadian privacy law Retrieved from [http://www.cippic.ca/uploads/CIPPIC\\_Report\\_DRM\\_and\\_Privacy.pdf](http://www.cippic.ca/uploads/CIPPIC_Report_DRM_and_Privacy.pdf)
- EBIA. (2010, September 29). eBook License agreement. Retrieved from <http://www.ebia.com/Copyright/Licenses/eBook>
- eBooks.com. (n. d.). Customer license. Retrieved from <http://www.ebooks.com/information/customerlicense.asp>



- Elibra and Starpath. (n. d. ). All about ebooks. Retrieved from [http://www.starpath.com/elibra/about\\_index.htm](http://www.starpath.com/elibra/about_index.htm)
- Fairfield, J. A. T. (2017, September 5). The 'internet of things' is sending us back to the Middle Ages. *The Conversation*. Retrieved from <https://theconversation.com/the-internet-of-things-is-sending-us-back-to-the-middle-ages-81435>
- Fried, I. (2009, July 17). Amazon recalls (and embodies) Orwell's '1984'. *CNet News*. Retrieved from [http://news.cnet.com/8301-13860\\_3-10289983-56.html](http://news.cnet.com/8301-13860_3-10289983-56.html)
- Gonzales, F. (2016, December). Learning-disabled students face failure and isolation as they struggle to absorb content. *Prism*, 29(4). Retrieved from <http://www.asee.org/>
- ITU. (2017). ICT Facts and figures 2017 Retrieved from <https://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2017.pdf>
- Lynch, C. (2001). The battle to determine the future of the book in the digital world. *First Monday*, 6(6), 66. Retrieved from [http://firstmonday.org/issues/issue6\\_6/lynch/index.html](http://firstmonday.org/issues/issue6_6/lynch/index.html)
- Pandey, J. (2016, May 3). Privacy Issues with DRM. Retrieved from <https://cis-india.org/internet-governance/blog/privacy-issues-with-drm>
- Richard the Lionhearted. (2011, September 5). Comments on five alternatives to expensive textbooks by Ritika Puri. *Globe and Mail*. Retrieved from <http://www.theglobeandmail.com/globe-investor/personal-finance/household-finances/five-alternatives-to-expensive-textbooks/article2145784/comments/>
- Subramanya, S. R., & Yi, B. K. (2006). Digital Rights Management. *Potentials IEEE*, 25(2), 31 - 34. Retrieved from [http://ieeexplore.ieee.org/xpl/freeabs\\_all.jsp?arnumber=1649008](http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=1649008) doi:10.1109/MP.2006.1649008
- Wolf, J. S. (2011, June 1). iPad owner in Luxembourg. Retrieved from <http://www.blendedread.com/forums/archive/index.php/t-114431.html>



# Unraveling the Multidimensional Structure of Information Literacy for Educators

Kamran Ahmadpour  
PTP\_Adult Learning and Employment Programs  
Ontario, Canada  
kamrana@ptp.ca

## ABSTRACT

In today's world of rapidly proliferating information and the emerging trend in education to integrate the digital world with in-class teaching, educators need to re-examine the complexity of information literacy which provides the basis for learning in the Information Age. The purpose of this study is to develop a framework for an understanding of information literacy in the digital world. A comprehensive search was conducted among the peer-reviewed journal articles to detect the major research themes in developing the notion of information literacy in the 21<sup>st</sup> century. An analysis of 100 peer-reviewed articles revealed that information literacy entails more dimensions than have been envisaged before. A framework, called the “multidimensional framework”, was developed to present the key themes and elements that are essential in gaining an understanding of information literacy in the digital age. This multidimensional framework unravels the intricate structure of information literacy and organizes its themes and elements into five dimensions: cognitive, technological, social, affective, and metacognitive.

## Keywords

information literacy, blended learning, digital learning, information literacy framework, digital technology and education

## INTRODUCTION

Blended learning in its simplest definition intends to integrate the classroom face-to-face learning environment with the online learning environment. With the transition of instruction to an online environment, we are not only trying to free our learners from time and space; we are also trying to free them from control and acknowledge their freedom and independence in the actual world of rapidly proliferating information. Along with this freedom and independence comes a complexity of skills required to harness the wealth of information available. It is the responsibility of educators to understand this complexity and provide supports. As educators, it is imperative for us to be observant of the challenges or barriers our learners might face in identifying, retrieving, organizing, and analyzing information they need in the digital world. Unraveling the complexity of information literacy also helps us understand how the surfeit of information affects our learners' experiences.

## BACKGROUND

Information literacy skills are widely acknowledged as being essential to academic performance and are particularly important in a digital context (Jeffery et al., 2011). With a solid understanding of information literacy, we, as educators, can function more effectively as we are heading towards blended learning and decentralization in education. The concept of information literacy has



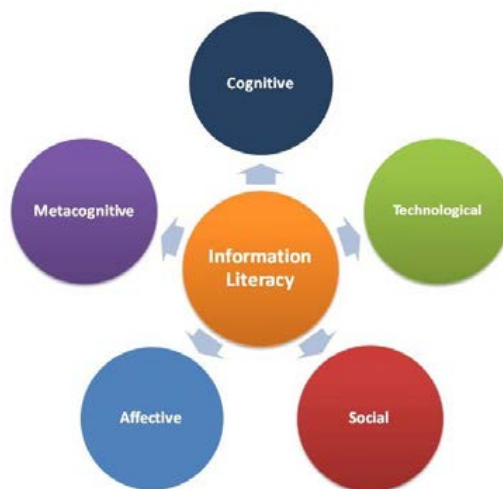
evolved and grown since it was coined by Zurkowski in 1974, who viewed information literacy more as a problem-solving approach. To him, information literates were those who had the "skills for utilizing the wide range of information tools as well as primary resources in molding information-solutions to their problems (Zurkowski, 1974, p. 6). Later, information literacy was conceptualized by the library sector as learning about information sources that libraries offer (Pinto et al., 2010). The American Library Association [ALA] (2000) first defined information literacy as "a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information" (p.1). Next, it was associated with information technology, technical skills, digital literacy and databases (Pinto et al., 2010). Information literacy further developed through the lenses of critical thinking and evaluation skills (Spiranec & Zorica, 2010), affective competencies (Kuhlthau, 1991; Nahl, 2001; Julien & McKechnie, 2005; Bilal & Bachir, 2007; Lopatovska & Mokros, 2008), and social skills, when Web 2.0 technology provided a plethora of online opportunities for collaboration, communication, and sharing (Mokhtar et al. 2009; Spiranec and Zorica 2010). Finally, experts in education utilized the notions of constructivism and social constructivism to integrate information literacy in the context of a collaborative learning environment (Spiranec and Zorica, 2010; Farkas 2012).

## METHOD

Several procedures were undertaken to ensure a high quality review of the literature on information literacy. First, peer-reviewed journal articles for one decade of the 21st century, between 2004 and 2013, were used to ensure the quality of information. Second, to form a comprehensive and relevant collection of articles, a wide range of keywords related to information literacy in the digital age was used. Third, a variety of well-established educational databases were searched. Fourth, the reference section of the key articles was searched in order to find additional relevant references. Finally, key online journals on information literacy were investigated independently to identify articles that might not have been indexed in the databases. The references were also closely examined to avoid duplications and irrelevant results. The search process produced 100 peer-reviewed articles.

## OVERVIEW

Based on a comprehensive review of the literature a new framework for understanding the concept of information literacy is proposed. Figure 1 illustrates the five most frequent dimensions explored in the current study.



**Figure 1. The multiple dimensions of information literacy**





### THE COGNITIVE DIMENSION OF INFORMATION LITERACY

The first dimension of information literacy is the cognitive dimension. In education and information literacy, the cognitive dimension enters when there is a need to make a distinction between various types of learning activities and objectives: cognitive, affective, and psychomotor (Bloom et al., 1956); cognitive, affective, physical (Kuhlthau, 1991); cognitive, technological, and ethical (Calvani et al., 2008); and individualistic or cognitive process versus social practice viewpoint (Savolainen, 2009; Lloyd, 2007, 2012; O'Farrill, 2010).

According to Schroeder and Cahoy (2010), information literacy used to be viewed merely on its cognitive dimension. Calvani et al. (2008) define the cognitive dimension as “being able to read, select, interpret and evaluate data and information taking into account their pertinence and reliability” (p. 187). The cognitive dimension, however, incorporates tacit and complex mental processes that cannot be captured in a single definition. Secker (2008) views information literacy not as skills, but as interconnected high-level abilities that reside within us.

From the literature review, eleven themes emerged for the cognitive dimensions (Figure 2). Each of these will be discussed in turn.

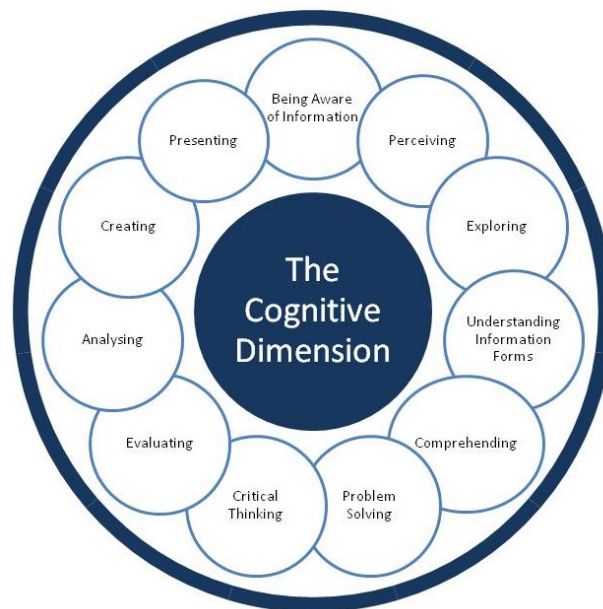


Figure 2. The Cognitive Dimension of Information Literacy

#### Being Aware of Information

Before anything, individuals should become aware of their lack of information (Fainburg, 2009). Information need occurs once one recognizes that his or her knowledge is not sufficient to satisfy a need (Norbert & Lwoga, 2013). An awareness of information need is necessary but is not sufficient to lead to information seeking behavior. Individuals should also be aware that the information they need exists and is accessible. They should be aware of available sources of information (Abdi, Partidge, & Bruce, 2013), collaborative information (Shah & Marchionini, 2010), the purpose of information providers (McKinney, Jones, & Turkington, 2011), and the functions and processes of service providers (O'Farrill, 2010).



### **Perceiving**

Studies show that there is a relationship between individuals' perceptions of the usefulness, quality, and accessibility of information, and their engagement in the information seeking activities (Marton & Choo, 2012). Individuals often examine the benefits of an informer's reputation, respect, and authority, and they continue their activity of receiving or sharing knowledge based on their perceived cost and benefit exchange (Cyr & Choo, 2010). Individuals' perceptions have also been examined in health information literacy. According to Marton and Choo (2012), an individual's threat perception of a health issue such as the susceptibility, seriousness, and consequences of an illness plays an important role on his or her information seeking behavior.

### **Exploring**

The ability to explore effectively through the current flood of digital information is such a key element that Hockly (2012) calls it "searchliteracy". The actual search, however, occurs through a phase of quick scanning (Lazonder & Rouet, 2008) or going through available sources in order to gain a better understanding of the topic (Nichols, 2009). It is not enough to go through oceans of information. Rather, one needs not only to understand the sources, to use search techniques such as Boolean logic, truncation searching, and RSS feeds effectively, but also to come up with search strategies that help explore the best needed information (Spring, 2010). Contrary to what is often believed, the main focus for forming a research question or thesis statement does not occur at the beginning of a project, but somewhere in the middle of the exploration process from the information detected (Kuhlthau, 2013).

### **Understanding Information Forms**

In today's digital environment, information is presented in diverse ways. It is important for learners to understand how information is organized and disseminated (Whitworth, 2011) and how it is delivered in various forms, formats, media, and modes (Wen & Shih, 2008; Mackey & Jacobson, 2011). Teaching information literacy also involves introducing learners to the various forms of information, and helping them understand what type of information is needed in any specific context (Badke, 2010). Accessing, analyzing, and evaluating messages in various forms are the common elements between information literacy and media literacy (Mackey & Jacobson, 2011). Bawden (2001) notes that many authors prefer to see media literacy as a component of information literacy.

### **Comprehending**

Another cognitive element for information literacy is an individual's level of proficiency in reading and comprehending (Lazonder & Rouet, 2008; Loertscher, 2008). Comprehension, according to Wiley et al. (2009), is a process of constructing mental models out of important concepts and their relationship within a text. The clearer the relationship presented in a text, the easier it is to read and remember. Kessinger (2013), uses Bloom's revised taxonomy (Anderson et al., 2001) to list verbs such as describing, explaining, identifying, matching, and summarizing as indicative of comprehension in information seeking process (Kessinger, 2013).

### **Problem Solving**

This concept is rooted in the origin of information literacy and reflected in Zurkowski's (1974) statement that information literate individuals use tools and resources "in molding information-solutions to their problems" (p. 6). Although the focus of information literacy, later, shifted to tools and generic skills, viewing information literacy as a problem solving process has become appealing again with the new trends in education such as problem-based, project-based and competence-based approaches to learning (Brand-Gruwel, Wopereis, & Vermetten, 2005).





McKinney et al. (2011) suggest integrating information literacy into subject curriculum in order to make use of the problem solving process in an inquiry-based information literacy.

### **Critical Thinking**

Gibson (1995) considers evaluation, analysis, and synthesis as micro-skills of critical thinking. In Bloom's (1956) original taxonomy, one moves from knowledge, the lowest level of the learning hierarchy, to evaluation, the highest level. Effective use of information will not happen without the use of critical thinking (Weiler, 2005; Andreae & Anderson, 2011). Learners approach information literacy with different levels of critical thinking skills. Weiler (2005), referring to William Perry's research (Perry, 1970), maintains that critical thinking is developmental and it begins when we move beyond dualistic thinking. According to the studies of Perry (1970), intellectual development has several developmental stages: dualism (believing in a world of right or wrong), multiplicity (accepting diversity), and contextual relativism (seeing the world as relativistic and relevant to specific contexts). While not all students may get to the same level of critical thinking ability, it is necessary for instructors to help them make meaningful choices in their research (Andreae & Anderson, 2011). Therefore, programs should shift focus from the current limited approach, where there is only one right answer, to a new approach in which students are encouraged to see the multiple and complex layers of the information universe (Spiranec & Zorica, 2010).

### **Evaluating**

In the context of new technology and information overload, it is increasingly important to be able to evaluate information. Students should be able to assess the biases, hidden meanings, and agendas of communicators (Stiller & LeBlanc, 2006; Eshet, 2012). They should also be able to evaluate a wide range of factors, including the relevance of retrieved information to their own needs (Lazonder & Rouet, 2008; Calvani et al., 2008; Secker, 2008; Keene et al., 2010), reliability, such as author affiliation (Calvani et al., 2008; Kessinger, 2013), authority and authenticity (Eshet, 2012), timeliness or currency (Keene et al., 2010), credibility, through a track record of sources (Farkas, 2012), and evaluating user feedback such as comments, star ratings, and user-generated information such as Wikipedia (Mackey & Jacobson, 2011). According to Farkas (2012), scholarly information is produced anywhere, through any media, and it is important to teach our students the evaluation skills they need.

### **Analyzing**

Major areas explored in this literature include analysis of problems to identify key components and information needs (Keene et al., 2010), analysis of the structure and grounds of an argument (Secker, 2008), identification and analysis of the contexts in which information is generated (Spiranec & Zorica, 2010), and analysis of the messages in diverse forms (Mackey & Jacobson, 2011).

### **Creating**

The shift in information literacy from information retrieval to information creation is expressed in different terms: user-generated information (Jacobson & Mackey, 2013), knowledge creation (Paterson & Gamtso, 2012), recreating in innovative methods (Hockly, 2012), reproducing content in multiple media formats (Bawden, 2007; Mackey & Jacobson, 2011), reproducing existing texts, visuals, and audio pieces using digital reproduction technologies (Eshet, 2012), and information creation (Huvila, 2011). With today's technology, information seekers need to be able to synthesize ideas coming from so many different sources (Mackey & Jacobson, 2011). Web 2.0 provides an instrumental environment for students to practice synthesizing and creating ideas (Magnuson, 2013).



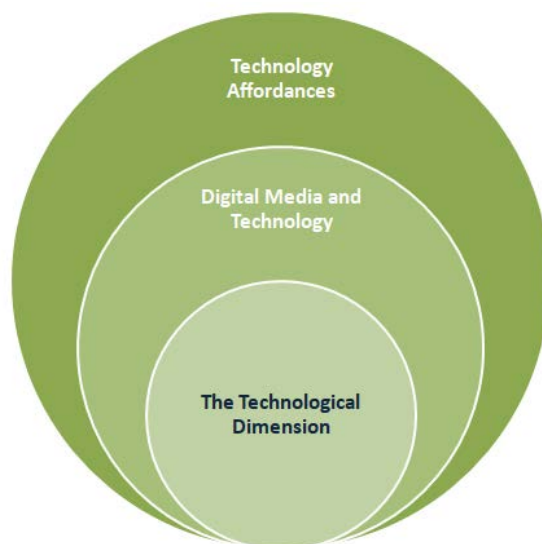
### Presenting

Finally, in the most rudimentary form of the digital information literacy scenario, a student needs to be able to present his/her writing in a digital environment (Nazari & Webber, 2012). According to Lenning and Ebbers (1999), the results can be presented in various types of interaction: physical, virtual (synchronous), and through correspondence (asynchronous). Web 2.0, as an information delivery medium (Spiranec & Zorica, 2010), encourages students to explore various channels of presenting information (Dunaway, 2011).

### THE TECHNOLOGICAL DIMENSION OF INFORMATION LITERACY

The second dimension of information literacy is the technological dimension. According to Tuominen et al., (2004), thinking about literacies without considering the technologies that shape them does not make any sense. Calvani et al. (2008) define “technological dimension” as “being able to explore and face problems and new technological contexts in a flexible way” (p. 187).

In this literature review, the technological dimension refers not only to digital tools, media, systems, or machines that enable us to effectively pick, process, produce, and present information, but also to the understanding of the affordances that technologies offer for our interaction with information (Figure 3).



**Figure 3. The Technological Dimension of Information Literacy**

### Digital Media and Technology

The information literacy we know today has been embodied by technology. Technology has simplified not only accessing and presenting information, but also collaborating with others, and creating information. According to Ng (2012), the technical dimension refers to the operational skills we need to use information and communication technology, and the operational skills developed through understanding the structure, features and capabilities of technology. Digital media and technology includes a wide range of hardware and software tools from desktop, mobile, and digital recording devices, to networking technology, communication technology, social media, cloud computing and all other information resources on the Internet and digital environment.



### Technology Affordances

Technological proficiency is more than just knowing how to use digital media and technology. Technological proficiency is the knowledge and ability to use technology flexibly and creatively for particular purposes (Eisenberg, 2008). The new understanding of technological proficiency led some researchers to explore the potentials or affordances of technology for specific purposes.

Shand, Winstead, and Kottler (2012) organize digital tools into five categories: communication, collaboration, presentation, organization, and critical thinking. According to Shand et al. (2012), to be successful learners in the 21st century, students need a new set of proficiencies, such as the ability to collect, evaluate, organize, and use information from digital sources, and success in these areas only happens through structured learning activities, facilitated by technology tools.

Eisenberg (2008) also tries to integrate the use of digital media and technology into information literacy. He argues that looking at digital tools from the perspectives of the potentials they offer allows us to move from isolated computer skills to integrated information and technology skills.

In reality, however, it is difficult to specify a tool for one specific purpose both because technology is under constant change and because technology is context-dependent. The use of presentation software such as PowerPoint, for example, used to be easily categorized under presentation. With the emergence of cloud computing, such as Microsoft Cloud and Google Docs, learners are able to use these tools for collaborative purposes. Heinrichs and Lim (2010) consider presentation tools having potentials for generating thoughts and synthesizing ideas. Nevertheless, the purpose, or purposes, technological tools serve are related to the potentials they provide, and the potentials they provide sometimes reshape our understanding. Web 2.0, for example, is now reshaping and redefining the way we understand information literacy.

Information literacy associated with Web 2.0 includes online tools such as blogs, wikis, media sharing, and social networks, as opposed to search engines, websites, and e-learning platforms of Web 1.0 (Spiranec & Zorica, 2010). Bawden and Robinson (2009) also include RSS feeds, podcasts, sites for sharing photographs and videos, social bookmarking, and virtual worlds such as Second Life in the Web 2.0 list. Before the emergence of Web 2.0, digital tools associated with information literacy were search engines, online databases, and network browsers. Web 2.0 tools have facilitated new potentials that the conventional and static Web 1.0 could not (Mills, 2010). Web 2.0 has had such an impact on the information landscape that Spiranec and Zorica (2010) propose “information literacy 2.0”, which involves employing Web 2.0 in information literacy practices.

Web 2.0 provides opportunities for new practices in information literacy. For one thing, sharing information has never been as easy as it is now. A number of Web 2.0 tools, such as Facebook, Second Life, and LinkedIn, Flickr, YouTube, and social bookmarking have made it possible for individuals to share information and collaborate online (Huvila, 2011; Jeffery et al., 2011). Secondly, massive amounts of information are being created in the digital environment every day. The opportunities provided by wikis and blogs for communication, information creation, and authority are now more familiar to students than library databases (Farkas, 2012). Wikipedia is another example of information creation and authority. Learners often use Wikipedia as a starting point for finding information, but they can also use it to understand how information is created and how to value information (Godwin 2009). In a comparison between the accuracy of content in the Wikipedia and Encyclopedia Britannica, Giles (2005) concluded that Wikipedia had more up-to-



date science and technology articles than Britannica. Giles (2005) also showed that the number of factual errors in Wikipedia is almost the same number of Britannica. Thirdly, Web 2.0 has also been considered as having the potential to encourage a reflective and critical thinking environment. When peers provide comments for each other on a blog, it creates a community involved in reflective practices (Farkas, 2012). Similarly, Wikipedia has the potential to provide an opportunity for critical thinking with regard to how information is created and controlled (Jacobs, 2010). In conclusion, Web 2.0 led to the emergence of new concepts, widening of the information environment, and a reexamination of the practical applications of information literacy (Spiranec & Zorica, 2010).

Web 2.0 technology, according to Hicks and Graber (2010), not only led to the emergence of new concepts of information such as content creation, collaboration, and conversation, but also shifted the role of users from being passive consumers to being active creators. Ultimately, Web 2.0 tools have great potential for providing an engaging learning environment in which students become active learners of information literacy (Dunaway, 2011; Farkas, 2012).

### THE SOCIAL DIMENSION OF INFORMATION LITERACY

The third dimension of information literacy is the social dimension. Traditionally, information literacy has been viewed as an isolated activity, but information literacy is not limited to an interaction between an individual's conscious mind and the media he/she seeks to examine (Shah & Marchionini, 2010). Information literacy is a social and situated practice (Lloyd, 2007, 2012). When individuals are interacting with text, they are not working in isolation, because the authors of information are part of the context and social nature of the information (Harris, 2008). Information is not neutral—it is indicative of social values and political structure (Nahl, 2001).

Similarly, the process of information seeking, evaluating, and using happens within community contexts associated with underlying meanings and values (Harris, 2008). An individual's cognitive process, such as critical thinking, is not sufficient for using information to learn. One needs to also get engaged in a process of dialogue and clarification with other involved members (O'Farrill, 2010). From a social perspective, information literacy is a negotiated practice (Lloyd, 2012), where individuals navigate through various communities, considering multiple perspectives (Spiranec & Zorica, 2010), cultural knowledge (Trace, 2007), and contexts (Harris, 2008). In this review, the social dimension of information literacy includes social interaction (collaboration, communication, sharing, and community), responsibilities (ethics and privacy), and context (Figure 4).

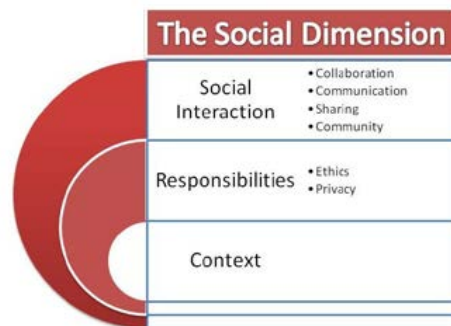


Figure 4. The Social Dimension of Information Literacy



## Social Interaction

### *Collaboration*

Collaboration is an essential skill in defining information literacy. It should be addressed as a major element of educational and organizational learning, both in theory and practice of how to seek, process and use information (Tuominen, et al., 2004; Heinrichs & Lim, 2010; O’Farrill 2010). Most information literacy models and standards miss the significance of the collaborative element as they are based on an assumption that information literacy is an individual process (Mokhtar, et al., 2009; Farkas 2012). Collaboration, as a necessary activity of a community, happens regardless of what type of media we are using, digital, oral, or written (Harris, 2008), and the potential of new technology provides opportunities that can be used to enhance one’s collaborative skills, competencies, and knowledge (Calvani et al., 2008; Secker, 2008; Jeffery et al., 2011; Whitworth, 2011). Mackey and Jacobson (2011), using the potentials of the new participatory technology, propose a shift of emphasis from viewing information literacy as a discrete set of skills to collaborative construction of information. Kauhanen-Simanainen (2005) views collaborative literacy at various levels such as local, national, and global, due to the fact that one cannot manage alone in the current digital environment.

### *Communication*

Another central element of the social dimension of information literacy is communication. Since Web 2.0 could easily allow students to create and share information, it has become especially useful for highlighting the importance of communication in information literacy (Magnuson, 2013). Sundin (2008) identified four approaches to information literacy: the source approach, the behavioural approach, the process approach, and the communication approach. The communication approach emphasizes the social aspects of seeking, processing, and using information, and places an increasing interest in communication and interaction between members of a community (Sundin, 2008). Spiranec and Zorica (2010) claim that due to the new information landscape, we are now entering the communication phase of information literacy.

### *Sharing*

Sharing is another key element of the social dimension of information literacy. Video, social networking posts or comments, Second Life, blogs, wikis, rating and review sites, Twitter, and YouTube are among the possible forms and methods that information is shared with people worldwide. The ease with which information can reach a global audience brings new responsibilities such as understanding the most appropriate ways of sharing information, democratic participation, and issues related to rights and authorship (Jacobson & Mackey, 2013). Sharing information in the digital and virtual worlds has made a shift from traditional authority to a new phenomenon of shared knowledge and expertise (Mills, 2010). Ease of sharing is changing the way information literacy is perceived. Information literacy has begun to be viewed as collaborative production and sharing of information (Mackey & Jacobson, 2011).

### *Community*

Community plays a significant role in the social dimension of information literacy. As a social practice, information literacy is viewed not only within an individual’s domain but also within the domain of a community (Lloyd et al., 2013). The viewpoint that information literacy needs community focuses on the interconnection between members and how they process information (Harris, 2008). When individuals produce and process information in communities, there is usually a consensus on how to interpret information as a community (Elmborg, 2006).





Harris (2008) refers to two types of communities for information literacy: communities of practice and learning communities. In a study on workplace information literacy, O’Farrill (2010) identifies the importance of community practice from a socio-constructivist perspective. For example, frontline staff members of the workplace used dialog, a social sense-making process, not individual-based skills, to validate and determine whether the information they found was applicable or not. By the same token, learning communities provide necessary contexts for information literacy practice (Soules et al., 2013).

Web 2.0 technology facilitated the creation and proliferation of learning communities (Spiranec & Zorica, 2010). The concept of community within information literacy helps learners look for the best practice and helps them think like information literate professionals such as architects, engineers, or journalists (Bruce et al., 2006). Despite the importance of community, there are hardly any standards and models of information literacy that mention the concept of community (Harris, 2008).

### **Social Responsibilities**

#### *Ethics*

Using information ethically and legally is getting more complex in the digital landscape of today due to the flow of micro-content such as blog posts and tweets (Farkas, 2012). Ethics are essential to make sure that students understand the complexity of the information environment and are able to practice ethical and responsible use of information (Mokhtar et al., 2009). It is quite easy for students to copy, paste, and adapt some digital information without realizing copyright restrictions and the notion of intellectual property that exist on the Net (Stiller & LeBlanc, 2006). An ethically information literate individual should show respect on the Net (Calvani et al., 2008), observe netiquette, and use appropriate language (Ng, 2012), deal with intellectual property issues (Mackey & Jacobson 2011), and choose an appropriate medium and style (Whitworth, 2011).

#### *Privacy*

Privacy also plays an important role in the social dimension of information literacy. According to Leung and Lee (2012), those who are more tool- and social-structure literate are less at risk of privacy violation. In addition, in collaborative social setting, the notion of personal privacy changes as individuals are willing to disclose so much personal information online (Jacobson & Mackey 2013). The scope of what is understood as information competency should be expanded to include issues related to privacy on the Net, information security, and online safety (Mackey & Jacobson 2011; Jacobson & Mackey 2013).

#### **Context**

Part of the social dimension of information literacy is an understanding the context and situations within which an information activity occurs (Harris, 2008). In other words, information literacy is about engaging with information through discourse practices that are specific to a context (Lloyd, 2005). For example, Nazari and Webber (2012) identify three types of contexts in order to conceptualize information literacy in the practices specific to online distance learning: the physical context of the learning environment; disciplinary context of the problem-solving process within the nature of a subject area; and educational context, which includes curriculum, design, pedagogy and assessment. Spiranec and Zorica (2010) introduce a wider perspective which includes any social, political, and economic ideology playing as the background behind information. Similarly, Dunaway (2011) implies that information is always affected by social, political, and economic contexts.



### THE AFFECTIVE DIMENSION OF INFORMATION LITERACY

The fourth dimension of information literacy is the affective dimension. Emotions such as uncertainty, confusion, and anxiety are crucial in our information seeking behaviours (Kuhlthau, 1991). Without inclusion of the affective dimension into our perspective towards information literacy, we are denying the natural presence of our feelings and the emotional challenges we face while we are interacting with information. For example, negative emotions such as uncertainty prior to the search (Bilal & Bachir, 2007) leads to frustration and difficulties in finding the answer. On the other hand, by acknowledging the impacts of affective factors, we are paving the way for learning how to develop our affective competence. Cahoy (2013) asserts that affective competence; the ability to manage the emotions that we encounter while seeking and producing information, is essential. As Nahl (2005) points out, individuals with low or high cognitive skills benefit from higher affective coping skills, but those with high cognitive skills and low affective skills may experience stress and difficulty in completing a search task.

Studies have also shown that affect has an impact on search strategies, drive to continue a search, and attitude towards system and performance (Lopatovska & Arapakis, 2011). In a study of affective motivation, Nahl (2005) found a positive correlation between self-efficacy, optimism, and motivation for accomplishing an online information search task. Information literacy may be more effective if learners' affective factors, behaviours, motivations, and preferences are taken into consideration (Shenton & Fitzgibbons, 2010).

The affective domain is defined as "a person's attitude, emotions, interests, motivation, self-efficacy, and values" (Schroeder & Cahoy, 2010, p. 129). Nahl (2004) identifies several affective components used in the study of information science including self-efficacy, optimism, uncertainty, time pressure, and motivation. The affective domain, according to (Nahl, 2001), is closely related to the choices we make throughout our search activities. For example, the motivation to find an article on a topic of our interest keeps us being persistent in our search process. The major themes that emerged from the analysis of the literature associated with the affective dimension include attitude, anxiety, interests, motivation, uncertainty, and self-efficacy (Figure 5). Each will be discussed in turn.



**Figure 5. The Affective Dimension of Information Literacy**



### **Attitude**

Having positive attitudes towards information literacy, information learning, and information technology are essential traits that one requires in order to interact with information effectively (Wen & Shin, 2008; Mokhtar et al., 2009). In a study on assessing students' attitudes towards information literacy, Scales and Lindsay (2005) conclude that those who displayed a broader view of information, such as connecting information literacy to human development and lifelong learning, do better in the long run than those who saw it as a particular school project and developed expertise in more mechanical aspects of information literacy. Therefore, it is important to develop learning activities that help information seekers form desirable attitudes that make them critical and effective information seekers (Farkas, 2012). The newer versions of information literacy standards began to include the notion of attitude as an important element of information literacy. For example, the *American Association of School Librarians* (AASL) broadens its scope to stress the building of attitude, or dispositions, in the 2008 version of its information literacy model (Leortscher, 2008).

Bruce et al. (2006) noted a connection between participants' perspectives of teaching and learning and their attitude towards information literacy, and this is illustrated by the way in which information literacy is taught in educational environments.

### **Anxiety**

Rosenthal (2008) found anxiety and/or stress as a major obstacle in developing digital information literacy. Information anxiety may be caused by information overload, insufficient information, poorly organized information, or inability to work with an information environment or system (Bawden & Robisonson, 2009). Anxiety suppresses and reduces the learning capacity by directing cognitive resources towards fears (Tobias, 1985, as cited in Jeffery et al., 2011). Since students often carry some level of anxiety around their research activity, strategies should be developed to reduce their level of anxiety (Cahoy, 2013).

### **Interests**

The idea that students should develop skills for exploring their own interests, whether personal or academic, is becoming pivotal in education (Shenton & Fitzgibbons, 2010). Mayer and Bowles-Terry (2013) found a connection between student engagement with information and student interests. Zanin-Yost (2012) also found that students do significantly better when their area of research is relevant to their areas of interests, such as future careers. A study about the connection between researchers' feelings and Web contents revealed that researchers' feelings are provoked by personal interest. Similarly, by introducing a personal relevance frame, Bruce et al.'s (2006) framework for information literacy emphasizes the significance of making information relevant to an individual's interests and contexts.

### **Motivation**

Knowing what motivates information seekers is definitely a crucial element. Therefore, information literacy will be more effective if it takes learners' motivations into account (Bruce et al., 2006; Mokhtar et al., 2009; Shenton & Fitzgibbons, 2010; Schroeder & Cahoy, 2010; Korobili, Malliari & Zapounidou, 2011). Studies show that low motivation narrows the scope of the search in certain contexts (Ford et al., 2001). According to Heinström (2006), who explored the relationship between intrinsic-extrinsic orientation and information literacy, intrinsically motivated information seekers display a true intention for learning, whereas extrinsically motivated students search for information just to meet the requirements. Motivation is an important factor for a researcher; the searching ends as soon as the motivation ends (Nahl, 2004).





### **Uncertainty**

Kuhlthau's (1991) findings brought attention to the notion of uncertainty and its association with feelings of confusion and anxiety in information search processes (Arapakis et al., 2008). According to Kuhlthau (2013), uncertainty is a starting point of learning, without which curiosity and exploration are extinguished. Tolerance of uncertainty leads to persistence, interest in topics, and a sense of discovery (Kuhlthau, 2013). Uncertainty gets negative when it is intense (Nahl, 2004). Studies show that complex tasks raise the level of uncertainty and consequently the levels of stress, self-doubt, and negative feelings (Kim, 2008). To minimize the negative feelings caused by uncertainty, instructors can provide affective support (Bilal & Bachir, 2007) and cognitive support by helping students generate ideas via brainstorming (Fainburg, 2009).

### **Self-efficacy**

Finally, Self-efficacy, according to Bandura (1997), is a belief in one's ability to organize and execute the actions required to achieve a goal. Self-efficacy reflects individuals' perceptions about their abilities based on their previous experiences, which affect their future actions (Jeffery et al., 2011). There have been many discussions about the relationship between self-efficacy and information literacy (Nahl, 2005, 2004; Lopatovska & Arapakis, 2011; Mokhtar et al., 2009; Schroeder & Cahoy, 2010; Jeffery et al., 2010; Cahoy & Schroeder, 2013); however, there has been limited research to articulate the nature of the connection. Nahl and Meer (1997) found a positive relationship between students' self-efficacy and their search performance. Self-efficacy and optimism also provide advantages to those who are faced with the negative impacts of uncertainty (Nahl, 2005). Kurbanoglu, Akkoyunlu, and Umay (2006) developed a 28-item scale to measure self-efficacy for information literacy. Identifying students' level of self-efficacy is important because a high level of self-efficacy might help counteract the more negative emotions of information search behaviour (Nahl, 2004).

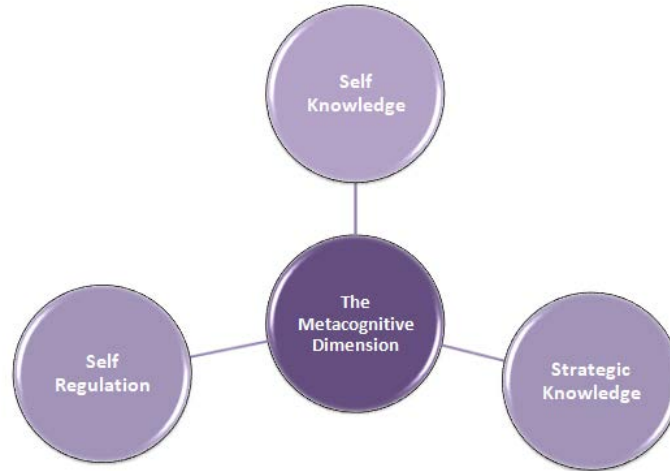
## **THE METACOGNITIVE DIMENSION OF INFORMATION LITERACY**

The fifth dimension of information literacy is the metacognitive dimension. The term metacognition was coined by John Flavell in 1971, who described it as thinking about one's own thinking (Lazonder & Rouet, 2008). Flavell developed the concept further in 1979 when he divided metacognitive knowledge into three categories: knowledge of person (oneself or others), knowledge of task (success criteria), and knowledge of strategy for achieving a goal (Gorrell et al., 2008). Eisenberg (2008) acknowledges the importance of metacognition by viewing the Big Six model as a representation of metacognition for presenting students with awareness about their own mental processes. Lazonder and Rouet (2008) define metacognition as the ability to plan, monitor, and evaluate one's own behaviour.

According to Bowler (2010) there is a consensus in the literature on at least two aspects of metacognition: control process and metacognitive knowledge. Control process is an action of self-monitoring or self-regulating. It also refers to the use of strategies to control metacognitive knowledge. Metacognitive knowledge refers to knowledge, not use—knowing that certain strategies or tasks work better.



The major themes that emerged from the analysis of the literature associated with the metacognitive dimension include self-knowledge, strategic knowledge, and self-regulation (Figure 6).



**Figure 6. The Metacognitive Dimension of Information Literacy**

#### **Self-Knowledge**

One of the central components of metacognition is self-knowledge, which refers to the awareness of one's own thought processes, strengths, weaknesses, and drives (Bowler, 2010). According to Catts (2012), metacognition is the highest level of competency in which individuals are able to explain why and how they have reached their conclusions in terms of locating, evaluating, storing, and applying information. Shenton (2013) proposes introducing metacognitive skills to youngsters so that they will be able to reflect on their own information seeking behaviour, and assess the quality of alternative approaches. According to Gorrell et al., (2008), incorporating reflection and self-assessment suggests a metacognitive act. The idea of metacognitive acts, self-knowledge, and self-awareness are evident in the work of others who may not have mentioned the term metacognition. Cahoy and Schroeder (2013) refer to studies that fostered self-awareness by asking students to reflect on their search skills and research process. In Stiller and LeBlanc's (2006) introduction of cyber-literacy, students developed self-awareness by keeping an online journal to record their activities, goals, tools, and changes in the courses of their creative process. Metacognition is also about learning how to learn. Being aware of one's own learning is as important as what one is learning. Kuhlthau (2013) implies the notion of metacognition while stating that learning how to learn in an information-rich environment is pivotal for information literacy.

#### **Strategic Knowledge**

Another important aspect of metacognition is the strategic knowledge. Strategic knowledge is the procedural knowledge that we use at the time we are unsuccessful (Bowler, 2010). Wiley et al., (2009), while stressing the role of metacognition in comprehension, report that successful readers are able to employ a range of strategies in response to their lack of success in comprehending information. Stadler and Bromme (2007) studied the role of metacognitive strategies in successfully dealing with multiple documents on the Web. They assigned four experimental groups with four different types of metacognitive strategies: evaluation prompts, monitoring prompts, both kinds of prompts, or no prompts at all. Their results indicated that those receiving



prompts outperformed the no-prompts group in successfully dealing with multiple documents and source on the Web. Similarly, Shenton and Hay-Gibson (2012) demonstrated that forms or prompts enable learners to reflect on their behaviours while seeking information.

### **Self-Regulation**

Self-regulation refers to individuals' ability to take control of their metacognition via monitoring, evaluation, and planning (Gorrell et al., 2008). An example within information literacy could be Branch's (2001) study on Web searching when individuals plan a search, monitor their progress, and evaluate their results in terms of relevance, reliability, and authority (Lazonder & Rouet, 2008). Self-regulation is a broad concept and might overlap with other concepts of metacognition (Gorrell et al., 2008), but it signifies monitoring of not only self-knowledge but also the use of strategies in the process of taking control of one's own learning, behaviour, or actions. Monitoring can take the form of self-assessment of progress (Madden et al., 2012). For example, self-assessment help individuals become conscious of their progress in finding reliable and relevant information. Similarly, it helps them in learning transfer, while individuals monitor the transferring of what they have learned in one task into new tasks (Gorrell et al., 2008).

### **SUMMARY AND IMPLICATIONS**

The framework can facilitate a more targeted and precise conversation among educators. Information literacy is a complex phenomenon. Recognizing the lenses through which we are viewing or analyzing information literacy can enhance understanding and communication among the members of learning and research communities.

The multidimensional framework can also play the role of a pedagogical tool by helping educators in a digital or blended learning environment explore the possible reasons why some students do not demonstrate acceptable educational performance while accessing online digital media and information sources. Instructors can raise questions that may help determine if the root of a particular pedagogical problem is cognitive, technological, social, affective, or metacognitive.

Similarly, blended-learning designers can use this framework as a blueprint to determine what aspects of information literacy should be incorporated for creating an effective e-learning environment for a specific purpose.

### **ACKNOWLEDGEMENTS**

I would like to thank Dr. Robin Kay at University of Ontario Institute of Technology for his invaluable feedback and insightful remarks.



## REFERENCES

- Abdi, E. S., Partridge, H., & Bruce, C. (2013). Website designers: How do they experience information literacy? *The Australian Library Journal*, 62 (1), 40-52.
- American Library Association. (2000). Information literacy competency standards for higher education.
- Anderson, L. W., Krathwohl, D. R., & Bloom, B. S. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives*. Allyn & Bacon.
- Andreae, J., & Anderson, E. L. (2011). Re-conceptualizing access. *Communications in Information Literacy*, 5(2), 74-81.
- Badke, W. (2010). Why information literacy is invisible. *Communications in Information Literacy*, 4(2), 129-141.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. W.H. Freeman and Company, New York, NY.
- Bawden, D. (2001). Information and digital literacies: A review of concepts. *Journal of Documentation*, 57(2), 218-259. doi:10.1108/EUM0000000007083
- Bawden, D. (2007). Towards Curriculum 2.0: library/information education for a Web 2.0 world. *Library and information Research*, 31(99), 14-25.
- Bawden, D., & Robinson, L. (2009). The dark side of information: Overload, anxiety and other paradoxes and pathologies. *Journal of Information Science*, 35(2), 180-191. doi:10.1177/0165551508095781
- Bilal, D., & Bachir, I. (2007). Children's interaction with cross-cultural and multilingual digital libraries. II. information seeking, success, and affective experience. *Information Processing and Management*, 43(1), 65-80. doi:10.1016/j.ipm.2006.05.008
- Bloom, B. S. (1956). *Taxonomy of educational objectives*. Vol. 1: Cognitive domain. New York: McKay.
- Bowler, L. (2010). A taxonomy of adolescent metacognitive knowledge during the information search process. *Library and Information Science Research*, 32(1), 27-42. doi:10.1016/j.lisr.2009.09.005
- Branch, J. L. (2001). Junior high students and Think Alouds: Generating information-seeking process data using concurrent verbal protocols. *Library & Information Science Research*, 23(2), 107-122.
- Brand-Gruwel, S., Wopereis, I., & Vermetten, Y. (2005). Information problem solving by experts and novices: Analysis of a complex cognitive skill. *Computers in Human Behavior*, 21(3), 487-508. doi: 10.1016/j.chb.2004.10.005
- Bruce, C., Edwards, S., & Lupton, M. (2006). Six Frames for Information literacy Education: a conceptual framework for interpreting the relationships between theory and practice. *Innovation in Teaching and Learning in Information and Computer Sciences*, 5(1), 1-18. Doi:10.11120/ital..2006.05010002
- Cahoy, E. (2013). Affective Learning and Personal Information Management: Essential Components of Information Literacy. *Communications in Information Literacy*, 7(2). Retrieved from <http://www.comminfolit.org/index.php?journal=cil&page=article&op=view&path%5B%5D=v7i2p146&path%5B%5D=172>
- Calvani, A., Cartelli, A., Fini, A., & Ranieri, M. (2009). Models and instruments for assessing digital competence at school. *Journal of e-Learning and Knowledge Society-English Version*, 4(3). Retrieved from [http://services.economia.unitn.it/ojs/index.php/Je-LKS\\_EN/article/viewFile/288/270](http://services.economia.unitn.it/ojs/index.php/Je-LKS_EN/article/viewFile/288/270)



- Catts, R. (2012). Indicators of adult information literacy. *Journal of Information Literacy*, 6(2). doi:10.11645/6.2.1746
- Cyr, S., & Choo, C. W. (2010). The individual and social dynamics of knowledge sharing: an exploratory study. *Journal of Documentation*, 66(6), 824-846. doi:10.1108/00220411011087832
- Dunaway, M. (2011). Web 2.0 and critical information literacy. *Public Services Quarterly*, 7(3-4), 149-157. doi:10.1080/15228959.2011.622628
- Eisenberg, M. (2008). Information literacy: Essential skills for the information age. *DESIDOC Journal of Library & Information Technology*, 28(2), 39-47.
- Elmborg, J. (2006). Critical information literacy: Implications for instructional practice. *The Journal of Academic Librarianship*, 32(2), 192-199. doi:10.1016/j.acalib.2005.12.004
- Eshet, Y. (2012). Thinking in the digital era: A revised model for digital literacy. *Issues in Informing Science & Information Technology*, 9, 267-273.
- Fainburg, L. I. (2009). Information seeking and learning: A comparison of kuhlthau's information seeking model and John Dewey's problem solving model. *New Library World*, 110(9/10), 457-466. doi:10.1108/03074800910997472
- Farkas, M. (2012). Participatory technologies, pedagogy 2.0 and information literacy. *Library Hi Tech*, 30(1), 82-94. doi:10.1108/07378831211213229
- Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive-developmental inquiry. *American Psychologist*, 34(10), 906-911. doi:10.1037/0003-066X.34.10.906
- Ford, N., Miller, D., & Moss, N. (2001). The role of individual differences in Internet searching: An empirical study. *Journal of the American Society for Information Science and Technology*, 52(12), 1049-1066.
- Gibson, C. (1995). Critical thinking: Implications for instruction. *RQ*, 35(1). Retrieved from [http://kb.osu.edu/dspace/bitstream/handle/1811/53705/GibsonC\\_RQ\\_1995\\_v35\\_i1\\_p27-35.pdf?sequence=4](http://kb.osu.edu/dspace/bitstream/handle/1811/53705/GibsonC_RQ_1995_v35_i1_p27-35.pdf?sequence=4)
- Giles, J. (2005). Internet encyclopaedias go head to head. *Nature*, 438(7070), 900-1.
- Gilster, P. (1997). *Digital Literacy*. New York: Wiley Computer Publishing
- Godwin, P. (2009). Information literacy and web 2.0: Is it just hype? *Program: Electronic Library and Information Systems*, 43(3), 264-274. doi:10.1108/00330330910978563
- Gorrell, G., Eaglestone, B., Ford, N., Holdridge, P., & Madden, A. (2009). Towards "metacognitively aware" IR systems: An initial user study. *Journal of Documentation*, 65(3), 446-469. doi:10.1108/00220410910952429
- Harris, B. R. (2008). Communities as necessity in information literacy development: Challenging the standards. *The Journal of Academic Librarianship*, 34(3), 248-255. doi:10.1016/j.acalib.2008.03.008
- Heinrichs, J. H., & Lim, J. (2010). Information literacy and office tool competencies: A benchmark study. *Journal of Education for Business*, 85(3), 153-164.
- Heinström, J. (2006). Fast surfing for availability or deep diving into quality: Motivation and information seeking among middle and high school students. *Information Research*, 11(4), 11-4.
- Hicks, A., & Graber, A. (2010). Shifting paradigms: Teaching, learning and Web 2.0. *Reference Services Review*, 38(4), 621-633. doi:10.1108/00907321011090764
- Hockly, N. (2012). Digital literacies. *ELT Journal*, 66(1), 108-112. doi:10.1093/elt/ccr077





- Huvila, I. (2011). The complete information literacy? Unforgetting creation and organization of information. *Journal of Librarianship and Information Science*, 43(4), 237-245. doi: 10.1177/0961000611418812
- Jacobs, H. L. (2010). Posing the Wikipedia "problem": Information literacy and the praxis of problem-posing in library instruction. *Critical library instruction: Theories and methods*, 179-195.
- Jacobson, T., & Mackey, T. (2013). Proposing a Metaliteracy Model to Redefine Information Literacy. *Communications In Information Literacy*, 7(2), 84-91. Retrieved March 7, 2014, from <http://www.comminfolit.org/index.php?journal=cil&page=article&op=view&path%5B%5D=v7i2p84>
- Jeffrey, L., Hegarty, B., Kelly, O., Penman, M., Coburn, D., & McDonald, J. (2011). Developing digital information literacy in higher education: obstacles and supports. *Journal of Information Technology Education: Research*, 10(1), 383-413.
- Julien, H., McKechnie, L. E. F., & Hart, S. (2005). Affective issues in library and information science systems work: A content analysis. *Library and Information Science Research*, 27(4), 453-466. doi:10.1016/j.lisr.2005.08.004
- Kauhanen-Simanainen, A. (2005). Collaborative information literacy by government. *The IFLA Journal*, 31(2), 183-187. doi:10.1177/0340035205054883
- Keene, J., Colvin, J., & Sissons, J. (2010). Mapping student information literacy activity against Bloom's Taxonomy of cognitive skills. *Journal of information literacy*, 4(1), 6-21.
- Kessinger, P. (2013). Integrated instruction framework for information literacy. *Journal of Information Literacy*, 7(2), 33-59. doi:10.11645/7.2.1807
- Kim, K. S. (2008). Effects of emotion control and task on web searching behavior. *Information Processing and Management*, 44(1), 373-385. doi:10.1016/j.ipm.2006.11.008
- Korobili, S., Malliari, A., & Zapounidou, S. (2011). Factors that influence information-seeking behavior: The case of Greek graduate students. *The Journal of Academic Librarianship*, 37(2), 155-165. doi:10.1016/j.acalib.2011.02.008
- Kuhlthau, C. C. (1991). Inside the search process: Information seeking from the user's perspective. *Journal of the American Society for Information Science (1986-1998)*, 42(5), 361.
- Kuhlthau, C. C. (2013). Rethinking the 2000 ACRL standards. *Communications in Information Literacy*, 7(2), 92-97.
- Kurbanoglu, S. S., Akkoyunlu, B., & Umay, A. (2006). Developing the information literacy self-efficacy scale. *Journal of Documentation*, 62(6), 730-743. doi:10.1108/00220410610714949
- Lazonder, A. W., & Rouet, J. F. (2008). Information problem solving instruction: Some cognitive and metacognitive issues. *Computers in Human Behavior*, 24(3), 753-765. doi:10.1016/j.chb.2007.01.025
- Lenning, O. T., & Ebbers, L. H. (1999). *The Powerful Potential of Learning Communities: Improving Education for the Future. ASHE-ERIC Higher Education Report, Vol. 26, No. 6.* ERIC Clearinghouse on Higher Education, One Dupont Circle, NW, Suite 630, Washington, DC 20036-1183.
- Leung, L., & Lee, P. (2012). The influences of information literacy, internet addiction and parenting styles on internet risks. *New Media & Society*, 14(1), 117-136. doi:10.1177/1461444811410406
- Lloyd, A. (2005). Information literacy. *Journal of Librarianship and Information Science*, 37(2), 82-88. doi:10.1177/0961000605055355



- Lloyd, A. (2007). Learning to put out the red stuff: Becoming information literate through discursive practice. *The Library Quarterly*, 77(2), 181-198.
- Lloyd, A. (2012). Information literacy as a socially enacted practice: Sensitising themes for an emerging perspective of people-in-practice. *Journal of Documentation*, 68(6), 772-783. doi:10.1108/00220411211277037
- Lloyd, A., Kennan, M. A., Thompson, K. M., & Qayyum, A. (2013). Connecting with new information landscapes: Information literacy practices of refugees. *Journal of Documentation*, 69(1), 121-144. doi:10.1108/00220411311295351
- Loertscher, D. (2008). Information literacy: 20 years later. *Teacher Librarian*, 35(5), 42-43.
- Lopatovska, I., & Arapakis, I. (2011). *Theories, methods and current research on emotions in library and information science, information retrieval and human-computer interaction* Elsevier. doi:10.1016/j.ipm.2010.09.001
- Lopatovska, I., & Mokros, H. B. (2008). Willingness to pay and experienced utility as measures of affective value of information objects: Users' accounts. *Information processing & management*, 44(1), 92-104. Doi:10.1016/j.imp/2007.01.020
- Mackey, T. R., & Jacobson, T. E. (2011). Reframing information literacy as a metaliteracy. *College & Research Libraries*, 72(1), 62-78.
- Madden, A. D., Ford, N., Gorrell, G., Eaglestone, B., & Holdridge, P. (2012). Metacognition and web credibility. *The Electronic Library*, 30(5), 671-689. doi:10.1108/02640471211275710
- Magnuson, M. L. (2013). Web 2.0 and information literacy instruction: Aligning technology with ACRL standards. *The Journal of Academic Librarianship*, 39(3), 244-251. doi:10.1016/j.acalib.2013.01.008
- Marton, C., & Chun Wei Choo. (2012). A review of theoretical models of health information seeking on the web. *Journal of Documentation*, 68(3), 330-352. doi:10.1108/00220411211225575
- Mayer, J., & Bowles-Terry, M. (2013). Engagement and assessment in a credit-bearing information literacy course. *Reference Services Review*, 41(1), 62-79. doi:10.1108/00907321311300884
- McKinney, P., Jones, M., & Turkington, S. (2011). Information literacy through inquiry. *Aslib Proceedings*, 63(2/3), 221-240. doi:10.1108/00012531111135673
- Mills, K. (2010). A review of the "Digital turn" in the new literacy studies. *Review of Educational Research*, 80(2), 246-271. doi:10.3102/0034654310364401
- Mokhtar, I. A., Foo, S., Majid, S., Yin, L. T., Luyt, B., & Yun-Ke Chang. (2009). Proposing a 6+3 model for developing information literacy standards for schools: A case for Singapore. *Education for Information*, 27(2), 81-101. doi:10.3233/EFI-2009-0877
- Nahl, D., & Meer, M. P. (1997). User-Centered Assessment of Two Web Browsers: Errors, perceived self-efficacy, and success. In *Proceedings of the ASIS annual meeting*, 34, 89-97.
- Nahl, D. (2001). A conceptual framework for explaining information behavior. *Simile*, 1(2), N.PAG.
- Nahl, D. (2004). Measuring the affective information environment of web searchers. *Proceedings of the American society for information science and technology*, 41(1), 191-197. doi:10.1002/meet.1450410122
- Nahl, D. (2005). Affective and cognitive information behavior: Interaction effects in internet use. *Proceedings of the American Society for Information Science and Technology*, 42(1), NA-NA. doi:10.1002/meet.1450420196





- Nazari, M., & Webber, S. (2012). Loss of faith in the origins of information literacy in e-environments: Proposal of a holistic approach. *Journal of Librarianship and Information Science*, 44(2), 97-107. doi: 10.1177/0961000611436095
- Ng, W. (2012). Can we teach digital natives digital literacy? *Computers & Education*, 59(3) 1065-1078. doi:10.1016/j.compedu.2012.04.016
- Nichols, J. T. (2009). The 3 directions: Situated information literacy. *College & Research Libraries*, 70(6), 515-530.
- Norbert, G. L., & Lwoga, E. T. (2013). Information seeking behaviour of physicians in Tanzania. *Information Development*, 29(2), 172-182. doi: 10.1177/0266666912450449
- O'Farrill, R. T. (2010). Information literacy and knowledge management at work: Conceptions of effective information use at NHS24. *Journal of Documentation*, 66(5), 706-733. doi:10.1108/00220411011066808
- Perry, W. G. (1970). *Forms of intellectual and ethical development*. New York: Holt, Rinehart and Winston.
- Pinto, M., Córdón, J., & Gómez Díaz, R. (2010). Thirty years of information literacy (1977—2007). *Journal of Librarianship and Information Science*, 42(1), 3-19. doi:10.1177/0961000609345091
- Rosenthal, R. L. (2008). Older computer-literate women: Their motivations, obstacles, and paths to success. *Educational Gerontology*, 34(7), 610-626. doi:10.1080/03601270801949427
- Savolainen, R. (2009). Information use and information processing. *Journal of Documentation*, 65(2), 187-207. doi:10.1108/00220410910937570
- Scales, B. J., & Lindsay, E. B. (2005). Qualitative assessment of student attitudes toward information literacy. *portal: Libraries and the Academy*, 5(4), 513-526.
- Schroeder, R. & Cahoy, E. S. (2010). Valuing Information Literacy: Affective Learning and the ACRL Standards. *portal: Libraries and the Academy* 10(2), 127-146.
- Secker, J. (2008). Social software and libraries: A literature review from the LASSIE project. *Program*, 42(3), 215-231. doi:10.1108/00330330810892640
- Shah, C., & Marchionini, G. (2010). Awareness in collaborative information seeking. *Journal of the American Society for Information Science and Technology*, 61(10), 1970-1986. doi:10.1002/asi.21379
- Shand, K., Winstead, L., & Kottler, E. (2012). Journey to Medieval China: Using Technology-Enhanced Instruction to Develop Content Knowledge and Digital Literacy Skills. *The Social Studies*, 103(1), 20-30. DOI:10.1080/00377996.2011.559434
- Shenton, A. K., & Fitzgibbons, M. (2010). Making information literacy relevant. *Library Review*, 59(3), 165-174. doi:10.1108/00242531011031151
- Shenton, A. K., & Hay-Gibson, N. V. (2012). Evolving tools for information literacy from models of information behavior. *New Review of Children's Literature and Librarianship*, 18(1), 27-46. doi:10.1080/13614541.2012.650961
- Shenton, A. K. (2013). Information-seeking, information literacy and cognitive psychology. *School Librarian*, 61(2), 77+.
- Soules, A., Nielsen, S., Lee, H. Y., & Rifae, K. A. (2013). Embedding information literacy in an MA TESOL program. *New Library World*, 114(1), 32-43. doi:10.1108/03074801311291947
- Špiranec, S., & Zorica, M. B. (2010). Information literacy 2.0: Hype or discourse refinement? *Journal of Documentation*, 66(1), 140-153. doi:10.1108/00220411011016407
- Spring, H. (2010). Learning and teaching in action. *Health Information and Libraries Journal*, 27, 327-331, doi: 10.1111/j.1471-1842.2010.00911.x



- Stadtler, M., & Bromme, R. (2007). Dealing with multiple documents on the WWW: The role of metacognition in the formation of documents models. *International Journal of Computer-Supported Collaborative Learning*, 2(2-3), 191-210. doi:10.1007/s11412-007-9015-3
- Stillier, E., & LeBlanc, C. (2006). From computer literacy to cyber-literacy. *Journal of Computing Sciences in Colleges*, 21(6), 4-13. doi:10.1145/1130000/1127445
- Sundin, O. (2008). Negotiations on information-seeking expertise. *Journal of Documentation*, 64(1), 24-44. doi:10.1108/00220410810844141
- Trace, C. B. (2007). Information creation and the notion of membership. *Journal of Documentation*, 63(1), 142-164. doi: 10.1108/00220410710723920
- Tuominen, K., Savolainen, R., & Talja, S. (2005). Information Literacy as a Sociotechnical Practice1. *The Library*, 75(3), 329-345.
- Weiler, A. (2005). Information-seeking behavior in Generation Y students: Motivation, critical thinking, and learning theory. *The Journal of Academic Librarianship*, 31(1), 46-53. doi: 10.1016/j.acalib.2004.09.009
- Wen, J. R., & Shih, W. L. (2008). Exploring the information literacy competence standards for elementary and high school teachers. *Computers & Education*, 50(3), 787-806. doi: 10.1016/j.compedu.2006.08.011
- Whitworth, A. (2011). Empowerment or instrumental progressivism?: Analyzing information literacy policies. *Library Trends*, 60(2), 312-337. Retrieved from [http://muse.jhu.edu/journals/library\\_trends/v060/60.2.whitworth.html](http://muse.jhu.edu/journals/library_trends/v060/60.2.whitworth.html)
- Wiley, J., Goldman, S., Graesser, A., Sanchez, C., Ash, I., & Hemmerich, J. (2009). Source evaluation, comprehension, and learning in internet science inquiry tasks. *American Educational Research Journal*, 46(4), 1060-1106. doi:10.3102/0002831209333183
- Zanin-Yost, A. (2012). Designing information literacy: Teaching, collaborating and growing. *New Library World*, 113(9/10), 448-461. doi:10.1108/03074801211273920
- Zurkowski, P. (1974). *The Information Service Environment: Relationships and Priorities*. Washington DC: National Commission on Libraries and Information Science, ERIC Clearinghouse on Information Resources. ED 100391.



# Different Forms of Assessment in a Pronunciation MOOC – Reliability and Pedagogical Implications

**Martyna Marciniak**

Institute of Applied  
Linguistics, University of  
Warsaw, Poland

*martyna.marciniak@student.  
uw.edu.pl*

**Michał B. Paradowski**

Institute of Applied  
Linguistics, University of  
Warsaw, Poland

*m.b.paradowski@uw.edu.pl*

**Meina Zhu**

Department of Instructional  
Systems Technology, Indiana  
University-Bloomington, USA

*meinzhu@umail.iu.edu*

## ABSTRACT

Peer assessment has long been used as an alternative to instructor assessment of students' learning. Yet, its receivers are often skeptical about the effectiveness and validity of the evaluation (e.g. Strijbos, Narciss & Dünnebier, 2010; Kolowich, 2013; Formanek *et al.*, 2017; Meek, Blakemore & Marks, 2017). Still, other studies (e.g. Cho & Schunn, 2007; Gielen *et al.*, 2010; Ashton & Davies, 2015) have found peer grading to be reliable and valid when accompanied by proper guidance, and that when used appropriately, it may benefit both the learners who receive the feedback and those who provide it (Dochy, Segers & Sluijsmans, 1999; Barak & Rafaeli, 2004).

Nowadays peer assessment remains an element vital to the existence of massive open online courses (MOOCs), and is widely recognized by the research community as a topic which needs to be investigated in detail and improved in the future. Massive open online courses whose primary focus is second language learning (LMOOCs) are organized by various institutions around the world. Nevertheless, publications addressing issues related to this type of course are fairly scarce (*cf.* Bárcena & Martín-Monje, 2015).

Pronunciation routinely accounts for a major share of communication breakdowns in non-native speaker interactions as well as communication between native and non-native speakers (*cf.* e.g. Paradowski, 2013; Pawlas & Paradowski, under review). Yet, in many language classrooms its teaching is brushed off in favor of imparting other skills. Luckily this shortage is increasingly being addressed with the ready availability of CALL. We present a small case study of peer assessment reliability in the context of a Japanese pronunciation MOOC offered by one of the popular online providers.

A phonetic analysis of the first author's speech recordings has been carried out using Praat software (Boersma & Weenink, 2017) in order to assess the accuracy of feedback obtained from course participants. On its basis, an evaluation of the pronunciation has been made and then compared with assessment provided by peers, a TA involved in the course, and an independent Japanese native speaker teacher.

Although the peers' comments conveyed a general idea about progress, their feedback was not sufficiently detailed. More reliable was the assessment by the TA. Still, an evaluation completed by an independent Japanese native speaker showed that a person not involved in any way in the MOOC was easily able to make even more observations. Thus, assessment appeared objective and reliable only after triangulating all the sources of feedback.

The study revealed that peer assessment may not produce reliable results if the process of evaluation is not sufficiently facilitated; namely, when there are no explicit guidelines and preparatory training exercises provided for the participants. The peer evaluation was difficult to perform in a helpful manner since the assignments lacked clearly constructed rubrics. Thus, future language courses, particularly those that concentrate on productive skills such as speaking, ought to implement clear rubrics together with a grading tutorial.

## Author Keywords

peer assessment, validity, reliability, language MOOCs (LMOOCs), pronunciation

## PEER ASSESSMENT IN MOOCs

*Peer assessment* can be defined as “the process of a learner marking an assessment of another learner, for the purposes of feedback and/or as a contribution to the final grade” (Mason & Rennie, 2006:91). Its main advantage is that it stimulates learners to adopt the role of a person who grades work, thereby making them take time to reflect on the topic (*ibid.*). Nevertheless, the scholars state that it is crucial to inform everyone taking part in the process about its established goals as well as provide instructions on how and what to assess, because only on condition that these issues are understood can peer assessment be a valuable experience.

Peer assessment has long been used as an alternative to instructor assessment of students' learning. However, its receivers are often sceptical about the effectiveness and validity of the evaluation (Strijbos, Narciss & Dünnebier, 2010; Kolowich, 2013; Formanek, Wenger, Buxner, Impey & Sonam, 2017; Meek, Blakemore & Marks, 2017). Still other studies (e.g. Cho & Schunn, 2007; Gielen, Peeters, Dochy, Onghena & Struyven, 2010; Ashton & Davies, 2015) have found peer grading to be reliable and valid when accompanied by proper guidance. It has also been argued that when used appropriately, it may benefit both the recipients and the providers of the feedback (Dochy, Segers & Sluijsmans, 1999; Barak & Rafaeli, 2004).



Peer assessment has been particularly vital to the existence of massive open online courses (MOOCs). The notion was first introduced in 2008, when Stephen Downes from the National Research Council of Canada and George Siemens of the Technology Enhanced Knowledge Research Institute at Athabasca University launched their *Connectivism and Connective Knowledge* course, presently known as CCK08 (Harber, 2014a:37). The person to use the label for the first time was David Cromier from the University of Prince Edward Island, who called the courses “MOOCs” in a talk with the course designers (*op. cit.*:39). Since that moment the number of courses offered as well as participants enrolling in them started growing rapidly; as indicated in a report compiled by the HarvardX Research Committee at Harvard University and the Office of Digital Learning at MIT, in the first year when the two institutions commenced the edX platform together (from autumn 2012 to summer 2013), the number of registrations equalled 841,687 with 597,692 individual users, 43,196 of whom successfully completed courses (Ho *et al.*, 2014:2). George Siemens himself commented on these high figures stating that even though the courses eventually opened by his team attracted around 20,000 registrants in total, “it’s hardly a blip on the Coursera scale (where student numbers in excess of 100,000 seems to be the norm)” (Siemens, 2012). As a consequence, in an article published in *The New York Times*, 2012 was proclaimed “The Year of the MOOC” (Pappano, 2012). Bearing in mind that the increasing worldwide interest in MOOCs is believed to continue in the future (Bárcena & Martín-Monje, 2015:2; “The return of the MOOC”, 2017), it appears reasonable to consider such courses as a promising field of study.

Massive open online courses offer learning materials which can be accessed through the Internet. Pappano (2012) states that although MOOCs are usually free of charge and readily available to anyone who wishes to access them without prerequisites, participants cannot expect the course creators to guide them through the learning process at all times. Thus, the overall experience that students are going to get is based to a great extent on the design of the course and its mechanics. At the core of MOOCs are instructional videos usually not longer than a dozen minutes (*op. cit.*). The courses also include tests that check participants’ comprehension, homework assignments, final quizzes, and forums which enable the learners to communicate with one another as well as with the staff. As Elena Bárcena and Elena Martín-Monje point out in their (2015) publication *Language MOOCs: Providing Learning, Transcending Boundaries*, any subject seems possible to be rendered into a MOOC, which only proves the form’s universality and versatility.

The reasons for introducing the peer assessment system into MOOCs are of a practical nature. According to Kulkarni *et al.* (2013:3), open-ended assignments are difficult to be checked by a machine, thus normally require a person who would assess them. This view is supported by other researchers, for instance Bachelet *et al.* (2015). What is more, engaging people other than course staff in grading participants’ work is simply inevitable taking into consideration the incredibly high numbers of learners (Harber 2014b:69). As far as the methods of providing feedback are concerned, Harber gives examples of MOOCs during which self- or peer-grading was employed with use of rubrics that included criteria of evaluation, but he also warns that this method has its drawbacks; for instance, it requires a certain level of language proficiency and scoring abilities from those performing the assessment (*op. cit.*:72). Stressing the importance of peer assessment as a potentially efficient tool in massive online courses, Lackner *et al.* (2014) include this element in their checklist which has been designed as a valuable tool for MOOC creators. However, at the same time they underline that rules of peer review should be simple and made known to all the parties involved in the process (*op. cit.*:4).

### Language MOOCs

Educational technology has also made many inroads in foreign language education (Paradowski, 2015:38). Yet, while other fields have been better represented and analysed, publications addressing foreign language courses (LMOOCs) are still fairly scarce (Bárcena & Martín-Monje, 2015). This paper is an attempt towards filling the gap by analysing the effectiveness of peer feedback in a pronunciation LMOOC.

Massive open online courses whose primary focus is a foreign language (LMOOCs for short) are organised by various institutions, and as one could expect the majority concern languages with the highest numbers of speakers worldwide, namely English and Spanish (Bárcena & Martín-Monje, 2015:6). In the opinion of Maggie Sokolik, the type of assessment chosen for an LMOOC should match the unique goals agreed on by the course designers, but at the same time the author admits that grading open-ended assignments such as essays or spoken responses is difficult for numerous reasons. She pays attention to peer assessment as well and claims that grading in this case requires “a rubric developed by the instructor” on the basis of which learners “assess [each other’s work] on a number of points” (Sokolik, 2015:24). However, this method also has disadvantages of its own: the participants may not be competent enough so as to use peer assessment effectively, some biases might be displayed (for instance with regard to the place of origin of those being evaluated), and language proficiency can play a significant role in one’s capability of providing meaningful feedback. Nevertheless, the author concludes that the best solution could be a mixture of different types of assessment, such as “auto-scored multiple-choice or text-input items, in tandem with self-evaluation, and an effective discussion mechanism” (*op. cit.*:25).

### PRONUNCIATION

An area of language that routinely accounts for a substantial share of communication breakdowns in non-native speaker interactions as well as communication between native and non-native speakers is pronunciation (Paradowski, 2013; Pawlas & Paradowski, under review). Yet, in many language classrooms its teaching is brushed off in favour of imparting other skills. One solution here is computer-assisted language learning (CALL), including LMOOCs.



## THE MOOC

This case study is based on the first author's experience with a Japanese pronunciation MOOC offered by one of the popular online providers. During the course, the participants needed to complete one pronunciation assignment each week. They were supposed to record their own version of a short dialogue in Japanese and upload it to the platform. The recordings were subsequently assessed by peers, although the last and the longest of the recordings was graded and commented on by a teacher assistant instead of other participants.

### Data triangulation

For the purpose of data triangulation, the analysis relied on four sources: i) a phonetic analysis of the first author's speech recordings with Praat (Boersma & Weenink, 2017), ii) assessment of the same stimuli, provided by peers, iii) feedback from a TA involved in the course; iv) commentary by an independent Japanese native speaker teacher not involved in the course. The primary foci of the analyses were three aspects of Japanese phonology: i) word accent, ii) intonation, and iii) length of long vowels.

### Summary of errors

Table 1 presents all the types of the first author's mistakes which were revealed in the phonetic analysis along with the number of occurrences and examples. The highlighted morae indicate the problem area. In total, 28 discrepancies were detected between the original recordings and the author's renditions. 19 mistakes concerned word accent and 9 intonation. Within the two categories, the errors have been arranged by their gravity – the greater the probability that the mistake could result in a misunderstanding in communication, the higher it appears in the table.

Type of error	No. of occurrences	Examples
1. Word accent – rise and fall of pitch switched	7	<i>kasa, demo, muzukashii</i>
2. Word accent – rise of pitch on the wrong mora	2	<i>suggoku, ame</i>
3. Word accent – fall of pitch on the wrong mora	1	<i>tanoshimi-ni</i>
4. Word accent – unnecessary rise of pitch	5	<i>nen-niwa, kyō-wa</i>
5. Word accent – unnecessary fall of pitch	3	<i>tōkyō-de, shadōingu</i>
6. Word accent – rise of pitch missing	1	<i>natta</i>
7. Intonation – excessive rise of pitch	1	<i>gozaimasu</i>
8. Intonation – fall of pitch instead of a rise	4	<i>desu-ne</i>
9. Intonation – rise of pitch instead of a fall	2	<i>shiterun desu, shimashita</i>
10. Intonation – excessive fall of pitch	1	<i>desu-ne</i>
11. Intonation – fall of pitch missing	1	<i>tsukurimashita</i>

Table 1. Summary of pronunciation errors

Provided below are two illustrative examples of the mistake. Fig. 1 reveals a rise of pitch on *su* in the second unit of the model recording, which is missing from the researcher's rendition, where an increase in pitch takes place on the subsequent mora *go*. In Fig. 2, while in the model version the utterance ends with a noticeable increase of pitch on mora *ne*, in the researcher's rendition the intonation is falling.

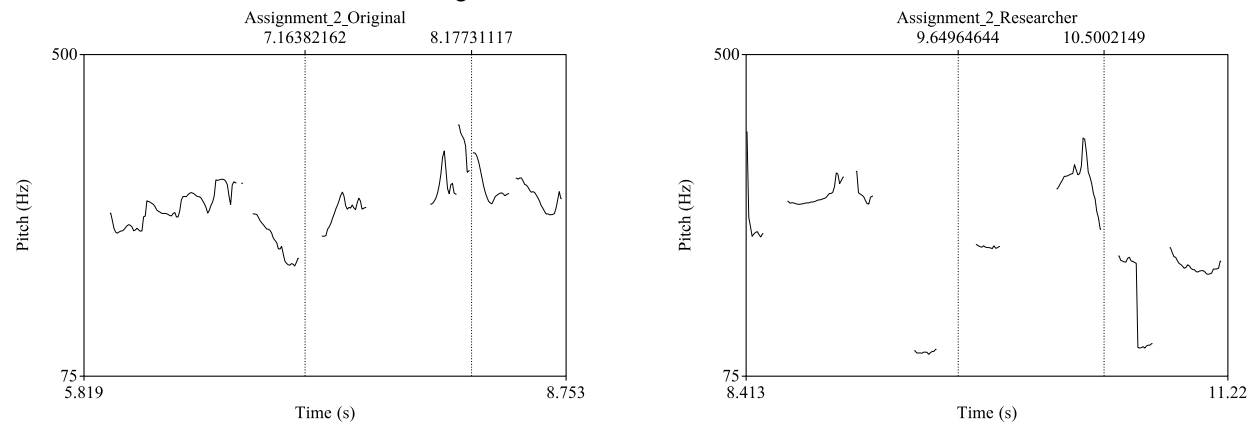


Figure 1. Word accent example: *Tōkyō orinpikku* (1) *suggoku* (2) *tanoshimi-ni* (3)





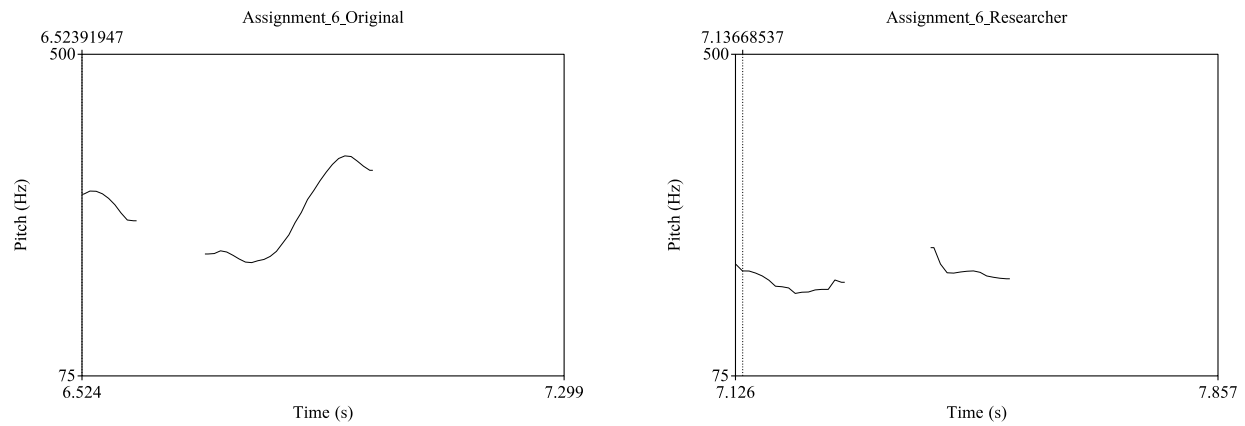


Figure 2. Intonation example: *Desu-ne*

#### Length of long vowels

In total, the recordings contain 38 long vowel sounds, 19 each in the original and the researcher's versions. In the vast majority of cases (34), these are long *ō* sounds. There are also 2 *ū* and 2 *ā* sounds. The average length of long vowels in the original recordings equals 0.164 s. The duration of the longest sound is 0.261 s and the shortest 0.104 s. The average duration of long vowels in the researcher's versions equals 0.173 s. The duration of the longest sound is 0.279 s and the shortest 0.046 s.

For each sound the difference has also been calculated between the duration of both versions (original and researcher's). The average difference equals 0.044 s. The biggest difference in measurements of the same sound is 0.125 s and the smallest 0.006 s. The median difference equals 0.029 s. There are 6 instances in which the original extended vowel sound is longer than its equivalent in the researcher's rendition, with the differences between 0.027 s and 0.088 s. The researcher's realisation is longer than the model in 13 cases, with the differences between 0.006 s and 0.125 s. A summary of all the long vowel durations measured in seconds is provided in Table 2.

Word	Target	Actual production	Difference
<i>omedetō</i>	0.104	0.145	0.041
<i>arigatō</i>	0.151	0.122	0.029
<i>nijū</i>	0.138	0.101	0.037
<i>tōkyō</i>	0.168	0.174	0.006
<i>tōkyō</i>	0.117	0.195	0.078
<i>sō</i>	0.147	0.176	0.029
<i>tōkyō</i>	0.177	0.090	0.087
<i>tōkyō</i>	0.170	0.193	0.023
<i>ohayō</i>	0.133	0.159	0.026
<i>ohayō</i>	0.151	0.276	0.125
<i>kyō</i>	0.209	0.226	0.017
<i>sō</i>	0.167	0.210	0.043
<i>kinō</i>	0.261	0.279	0.018
<i>benkyō</i>	0.134	0.046	0.088
<i>dō</i>	0.201	0.216	0.015
<i>benkyō</i>	0.158	0.088	0.070
<i>hontō</i>	0.152	0.202	0.050
<i>nōto</i>	0.199	0.172	0.027
<i>kādo</i>	0.186	0.218	0.032

Table 2. Length of long vowels



### Peer assessment

Table 3 presents the content of the comments by peers who evaluated the recordings of the researcher's pronunciation.

Very good pronunciation, you sounded almost identical to the example. Keep up the good work :)
Dobrze.
i think it is good but needs more security for talk! gambatte ne! [Keep up the good work!]
It was easy to understand.
Sounds great!
悪くないと思います [I think it is not bad]
Everything sounds great except the second "Tokyo". Instead of とうきょう [tōkyō], it sounded like とっきょう [tokkyō].
Good morning, you have a good pronunciation, just a little intonation.
sounds clear and accent is good.
Accent on 雨 [ame] is not correct.
Good fluency and intonation.
excellent rhyme and pitch. after listening to yours I see where I made my errors.
あれ [are] sounds as if it is only one mora. Otherwise amazing.
Well done.
Very good, great accent, great intonation.
good
頑張ろう [Keep up the good work]
発音が適切で、意味がわかる [Pronunciation is appropriate and meaning understandable]
Good.
I think your pronunciation was good.
内容がよく伝わりました。とてもきれいな発音でした。 [You have conveyed the message well. Very clear pronunciation.]
Great!
good
GOOD

**Table 3. Peer assessment**

Compared with the results of the phonetic analyses, the peers did not notice (or chose not to write about) many mistakes in the assignments, relating to both pitch accent and intonation. Very few peers stated the precise nature of the pronunciation errors. The remaining feedback was formulated rather vaguely. It seems that the co-participants did not listen carefully enough to pay attention to all the errors, but were satisfied if a speech sample was comprehensible on the whole.

Instead, a trait shared by quite a few comments was the need to cheer the participant to study hard and try her best. Such willingness to support one another and build a community spirit among the participants was the strongest at the beginning of the course.

### TA's feedback

The opinion cited below was offered by a teacher assistant as assessment of the last, sixth assignment, and constituted the instructor feedback offered in the course:

"It was very good pronunciation that communicated your intention. The accent for "ええ" [ee] and "でも" [demo] was not correct. It sounded like "LH". The correct accent is "HL".

The accent for "だから" was not correct. It sounded like "LHH". The correct accent is "HLL". Be careful of pitch. "ノー





ト" [nōto] sounded like "ノト" [noto]. Be careful of the long vowel sound. Keep trying your best to practice your pronunciation!"

In comparison with the results of the phonetic analysis, the TA pointed out 3 out of the 7 word accent mistakes committed by the researcher. As far as intonation is concerned, even though no remarks have been made by the teacher, there were 6 inaccuracies found between the original and the researcher's versions in the phonetic analyses. As far as the long vowels are concerned, the TA mentioned one sound whose duration was too short. In this case, the difference in length between both versions was 0.038 s. However, in the same assignment there were 5 instances in which the difference was even higher – in 3 of them it was actually the researcher's vowel that was longer, and these cases were not referred to by the TA. For this reason, pitch graphs were investigated once again. It transpires that although the difference in vowel length was relatively not the most significant one and the pitch pattern in the researcher's version was generally correct, it might have been that her rise of pitch on mora *no* was too sharp, thus creating the impression of the vowel being too short. In the original version, pitch increases more smoothly. As observed subsequently by the native speaker, this too might have contributed to the impression that the researcher switched to stress accent instead of pitch accent.

#### *Assessment by a native Japanese speaker*

Below is a complete commentary by a native Japanese speaker, a lecturer of Japanese literature and language teaching:

"In the Japanese language word accent is carried out by lowering voice pitch. However, in the researcher's case there is no pitch accent. Using the so-called stress accent, she incorrectly accentuates mora *ma*, which results in an unnatural pronunciation.

"There is a mistake in the pronunciation of mora *wa*. The researcher pronounces it as if it were a diphthong.

"The pitch should fall after mora *so*. In the researcher's version it rises after this mora.

"*Benkyō* should be pronounced with a long vowel at the end. In the researcher's version the last mora seems to be missing and the word sounds like *benkyo*.

"Here we can observe a common problem with intonation. The researcher uses a rising pitch instead of a falling one, which is why the interjection *ee* sounds as if it were a question.

"The pronunciation of both utterances is correct.

"There is an accent error in this utterance as well. According to the accentuation rules of the conjunction *dakara*, it should be pronounced with the pitch falling after mora *da*. The researcher's pitch is low on mora *da* and it rises after this mora.

"The voiceless alveolo-palatal sibilant /ç/ and vowel /i/, which are represented in kana by the symbol し, are wrongly realised by the researcher as /si/.

"The pronunciation of the utterance is correct."

The feedback in the native speaker's opinion is on pronunciation as a whole, and thus goes into some aspects that were not taken into consideration in the phonetic analyses. Consequently, his remarks shed new light on the issues discussed.

To begin with, the native speaker pointed to a total of 5 pitch accent errors, 3 of which had also been noticed by the researcher. The remaining 2 mistakes consisted in switching from pitch accent to stress accent within a phrase, an inaccuracy the researcher was not aware that she was guilty of. Surprisingly, the academic pointed to only 1 intonation mistake throughout all the recordings. Apart from that he discovered 2 flaws in the length of long vowels, namely in his opinion it was too short. In these cases, the difference between the duration of the original and researcher's vowels equalled 0.087 s and 0.088 s. Still, there were 2 other instances of the vowel length being similarly longer in the original recordings which were not spotted by the native speaker. What is more, the academic disregarded opposite cases of the researcher pronouncing the vowels longer than the original. It might have been that these were less noticeable; however, in one case the difference equalled 0.125 s, which is considerably more than the ones pointed out.

Among the additional elements identified by the native speaker, the most important issue was inappropriate articulation of particular morae, namely *wa*, *re* and *shi*. This is an issue even some Japanese people struggle with. Furthermore, he paid attention to 2 errors which were fairly obvious although not detected by the researcher, that is mistakenly replacing one mora with another and deleting one mora at the end of a verb. The academic also stated that the researcher's pronunciation was good in 5 utterances, despite the phonetic analysis revealing deviations.

The numbers in Table 4 indicate how many of the specific errors were found in the particular analyses.

Type of mistake	Phonetic analysis	Native Japanese speaker	Peer assessment	TA
Rise and fall of pitch switched	7	2	X	3
Rise of pitch on the wrong mora	2	X	1	X
Fall of pitch on the wrong mora	1	X	X	X



Unnecessary rise of pitch	5	1	X	X
Unnecessary fall of pitch	3	1	X	X
Rise of pitch missing	1	X	X	X
Excessive rise of pitch	1	X	X	X
Fall of pitch instead of a rise	4	X	X	X
Rise of pitch instead of a fall	2	X	X	X
Excessive fall of pitch	1	X	X	X
Fall of pitch missing	1	X	X	X

Table 4. Summary of mistakes

Type of mistake	Native Japanese speaker	Peer assessment	TA
Gemination instead of a long vowel	1 (東京 <i>tōkyō</i> )	1 (東京 <i>tōkyō</i> )	X
Wrong articulation of morae	6 (れ <i>re</i> , し <i>shi</i> , は <i>wa</i> , ん <i>n</i> )	X	X
Wrong mora pronounced	1 ( <i>kattokunakya</i> )	X	X
Mora missing	1 ( <i>chau-yo</i> )	X	X
Stress accent instead of pitch accent	2 ( <i>gozaimasu</i> )	X	X
Long vowel too short	1 ( <i>benkyō</i> )	X	1 ( <i>nōto</i> )

Table 5. Additional errors found in the assessment but not in the phonetic analysis

### SUMMARY OF THE FINDINGS

In sum, while peers' comments conveyed a general idea about progress, the feedback was not sufficiently detailed. Much more reliable was the assessment by the TA (in line with common observations that people can learn much more from those who are more experienced and better educated than from similarly ignorant peers; Paradowski, 2015:46). However, the commentary by the independent Japanese native speaker indicates that a person not involved in the MOOC is easily able to make even more observations. The take-home message is thus that assessment objective and reliable only after triangulating all the available sources of feedback.

### PEDAGOGICAL IMPLICATIONS

The findings have important pedagogical implications. They demonstrate that peer assessment may not produce reliable and helpful results when there are no explicit guidelines and preparatory training exercises provided for the participants. Consequently, future language courses, particularly those that concentrate on productive skills such as speaking, ought to implement clearly constructed rubrics together with a grading tutorial.

### REFERENCES

- Ashton, S. & Davies, R. S. (2015). Using scaffolded rubrics to improve peer assessment in a MOOC writing course. *Distance Education*, 36(3), 312-334. doi: [10.1080/01587919.2015.1081733](https://doi.org/10.1080/01587919.2015.1081733)
- Bachelet, R., Zongo, D., & Bourelle, A. (2015, May). Does peer grading work? How to implement and improve it? Comparing instructor and peer assessment in MOOC GdP. In *European MOOCs Stakeholders Summit 2015 Proceedings Papers*, pp. 224-233.
- Barak, M. & Rafaeli, S. (2004). On-line question-posing and peer-assessment as means for web-based knowledge sharing in learning. *International Journal of Human-Computer Studies*, 61(1), 84-103. doi: [10.1016/j.ijhcs.2003.12.005](https://doi.org/10.1016/j.ijhcs.2003.12.005)
- Bárcena, E. & Martín-Monje, E. (2015). Introduction. Language MOOCs: an emerging field. In E. Martín-Monje & E. Bárcena (Eds.), *Language MOOCs: Providing Learning, Transcending Boundaries* (pp. 1-15). Berlin: De Gruyter. <https://www.degruyter.com/view/books/9783110422504/9783110422504.1/9783110422504.1.xml>
- Boersma, P. & Weenink, D. (2017). Praat: doing phonetics by computer [computer software]. Version 6.0. <http://www.fon.hum.uva.nl/praat/>
- Cho, K. & MacArthur, C. (2010). Student revision with peer and expert reviewing. *Learning and Instruction*, 20(4), 328-338. doi: [10.1016/j.learninstruc.2009.08.006](https://doi.org/10.1016/j.learninstruc.2009.08.006)
- Cho, K. & Schunn, C. D. (2007). Scaffolded writing and rewriting in the discipline: A web-based reciprocal peer review system. *Computers and Education*, 48(3), 409-426. doi: [10.1016/j.compedu.2005.02.004](https://doi.org/10.1016/j.compedu.2005.02.004)
- Dochy, F., Segers, M. & Sluijsmans, D. (1999). The use of self, peer and co-assessment in higher education: A review. *Studies in Higher Education*, 24(3), 331-350. doi: [10.1080/03075079912331379935](https://doi.org/10.1080/03075079912331379935)



- Formanek, M., Wenger, M. C., Buxner, S. R., Impey, C. D. & Sonam, T. (2017). Insights about large-scale online peer assessment from an analysis of an astronomy MOOC. *Computers & Education*, 113, 243-262. doi: [10.1016/j.compedu.2017.05.019](https://doi.org/10.1016/j.compedu.2017.05.019)
- Gielen, S., Peeters, E., Dochy, F., Onghena, P. & Struyven, K. (2010). Improving the effectiveness of peer feedback for learning. *Learning and Instruction*, 20(4), 304-315. doi: [10.1016/j.learninstruc.2009.08.007](https://doi.org/10.1016/j.learninstruc.2009.08.007)
- Harber, J. (2014a). Where did MOOCs come from? In same, *MOOCs*. Cambridge, MA: MIT Press, 19-46.
- Harber, J. (2014b). What makes a MOOC? In same, *MOOCs*. Cambridge, MA: MIT Press, pp. 47-88.
- Ho, A. D., Nesterko, S., Seaton, D. T., Mullaney, T., Waldo, J., & Chuang, I. (2014). HarvardX and MITx: The first year of open online courses. (HarvardX and MITx Working Paper No. 1). Retrieved from [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2381263](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2381263)
- Huszcza, R., Ikushima, M. & Majewski, J. (2003). Fonetyka i prozodia. In M. Melanowicz & J. Linde-Usiekiewicz (Eds.), *Gramatyka japońska* (pp. 17-114). Kraków: Wydawnictwo Uniwersytetu Jagiellońskiego.
- Kolowich, S. (2013, Mar 18). The professors behind the MOOC hype. *The Chronicle of Higher Education*, 18. <http://www.chronicle.com/article/The-Professors-Behind-the-MOOC/137905>
- Kulkarni, C., Pang Wei, K., Le, H., Chia, D., Papadopoulos, K., Cheng, J., Koller, D., & Klemmer, S.R. (2013). Peer and self-assessment in massive online classes. *ACM Transactions on Computer-Human Interaction*, 20(6). doi: [10.1145/2505057](https://doi.org/10.1145/2505057)
- Lackner, E., Kopp, M., & Ebner, M. (2014). How to MOOC? – A pedagogical guideline for practitioners. In Roceanu, I. (Ed.). Proceedings of the 10th International Scientific Conference “eLearning and Software for Education” Bucharest, April 24-25, 2014. Bucharest: Editura Universitatii Nationale de Aparare “Carol I”, pp. 215-222. doi: [10.12753/2066-026X-14-030](https://doi.org/10.12753/2066-026X-14-030)
- Mason, R., & Rennie, F. (2006). Peer assessment. In same, *Elearning: The Key Concepts*. New York: Routledge, 90-91.
- Meek, S. E. M., Blakemore, L. & Marks, L. (2017). Is peer review an appropriate form of assessment in a MOOC? Student participation and performance in formative peer review. *Assessment & Evaluation in Higher Education*, 42(6), 1000-1013. doi: [10.1080/02602938.2016.1221052](https://doi.org/10.1080/02602938.2016.1221052)
- Omuro, K., Baba, R., Miyazono, H., Usagawa, T. & Egawa, Y. (1996). The perception of morae in long vowels: Comparison among Japanese, Korean, and English speakers. *The Journal of the Acoustical Society of America*, 100(4), 2726. doi: [10.1121/1.416186](https://doi.org/10.1121/1.416186)
- Pappano, L. (2012, Nov 2). The year of the MOOC. *The New York Times*. <http://www.nytimes.com/2012/11/04/education/edlife/massive-open-online-courses-are-multiplying-at-a-rapid-pace.html>
- Paradowski, M. B. (2013). [Review of the book *Nature and Practical Implications of English used as a Lingua Franca*. Barbara Seidlhofer]. *The Interpreter and Translator Trainer*, 7(2) [Special Issue: *English as a Lingua Franca. Implications for Translator and Interpreter Education*], 312-20. doi: [10.1080/13556509.2013.10798856](https://doi.org/10.1080/13556509.2013.10798856)
- Paradowski, M. B. (2015). Holes in SOLEs: Re-examining the role of EdTech and ‘minimally invasive education’ in foreign language learning and teaching. *English Lingua Journal* 1(1), 37–60.
- Pawlas, E. & Paradowski, M. B. (under review). Communication breakdowns in ELF conversations: Causes, coping strategies, and implications for the classroom.
- Siemens, G. (2012, Jun 3). What is the theory that underpins our moocs? [Web log comment]. Retrieved from <http://www.elearnspace.org/blog/2012/06/03/what-is-the-theory-that-underpins-our-moocs/>
- Sokolik, M. (2015). What constitutes an effective language MOOC? In E. Martín-Monje & E. Bárcena (Eds.), *Language MOOCs: Providing Learning, Transcending Boundaries* (pp. 16-32). Berlin: De Gruyter. <https://www.degruyter.com/view/books/9783110422504/9783110422504.2/9783110422504.2.xml>
- Srijbos, J. W., Narciss, S. & Dünnebier, K. (2010). Peer feedback content and sender's competence level in academic writing revision tasks: Are they critical for feedback perceptions and efficiency? *Learning and Instruction*, 20(4), 291-303. doi: [10.1016/j.learninstruc.2009.08.008](https://doi.org/10.1016/j.learninstruc.2009.08.008)
- The return of the MOCC. Established education providers v new contenders (2017, Jan 12). *The Economist*. <http://www.economist.com/news/special-report/21714173-alternative-providers-education-must-solve-problems-cost-and>
- Venditti, J. J. (2005). The J ToBI model of Japanese intonation. In J. Sun-Ah (Ed.) *Prosodic Typology: The Phonology of Intonation and Phrasing* (pp. 172-200). Oxford: Oxford University Press. doi: [10.1093/acprof:oso/9780199249633.003.0007](https://doi.org/10.1093/acprof:oso/9780199249633.003.0007)



# Blended Learning in Primary School - Looking for a New School Formula

**Dorota Janczak**

University of Warsaw

*dorota@oeiizk.waw.pl*

## ABSTRACT

Blended learning is still in its preliminary stage, especially in primary education. It is important to analyse its implementations and the teaching theories behind it and to ask proper questions which can lead to the key answers: Can blended learning be a new formula for primary school education and under what conditions? It is not easy to find the answers since there are different ways of understanding blended learning, various models used in its execution along with a limited amount of research. However, we can try to assess some beliefs put into blending learning by at least examining the main claims of its supporters.

## Author Keywords

blended learning, primary education, new technologies, primary school, ICT, hybrid education

## INTRODUCTION

Times are constantly changing along with the way we live our lives, the same should happen with today's schools. Increasingly new technologies have sprung up recently, bringing school's new possibilities but also new concerns. New technologies surround us in our everyday life and using them is inevitable; therefore, we should not deny our schools the opportunity of using them, but we should do something quite the opposite – we should take full advantage of them to make learning better. Throughout history, educators around the world have tried to find the best possible school formula and one of the more recent ideas is blended learning.

Therefore, two questions come to mind which we could explore: Is blended learning the answer for a new educational approach in primary schools? Under what conditions will it bring positive results and make primary education better?

## WHAT IS BLENDED LEARNING?

Blended learning has been with us for more than two decades, but it is still in its initial phase and constantly evolving. It, like any other kind of learning formula, comes in many shapes and sizes. Generally, there is no one-and-only method for learning and the same happens with blended learning. There is more than one definition of it and has been titled with different names. We have seen a dramatic growth of its use in elementary and secondary education around the world in recent years, and particularly in the US it has become predominant – in 2013 more than 75% of school districts offered online or blended learning options (Murin, Vashaw, & Gemin 2014). Therefore, it should come as no surprise that in 2012 the definition of blended learning in reference to K-12 education was developed in the US. Horn and Staker define it as "...a formal education program in which a student learns at least in part through online learning with some element of student control over time, place, path, and/or pace and at least in part at a supervised brick-and-mortar location away from home. The modalities along each student's learning path within a course or subject are connected to provide an integrated learning experience" (Horn, Staker, 2012).

The authors of the definition also depicted four models of blended learning that categorise the majority of blended-learning programs emerging across the K-12 sector today.

However, only the first of them, the Rotation model is used in primary schools. The three others: Flex model, A La Carte model and Enriched-Virtual model are used only with older students, and this criteria and reason are why only the first model will be described in this paper.

The Rotation model is "a program in which within a given course or subject (e.g., math), students rotate on a fixed schedule or at the teacher's discretion between learning modalities, at least one of which is online learning. Other modalities might include activities such as small-group or full-class instruction, group projects, individual tutoring, and pencil-and-paper assignments" (Horn, Staker, 2012). Its sub-models are Station Rotation, Lab Rotation, Flipped Classroom and Individual Rotation.

## Beginning the assessment

It is not easy to assess if blended learning is the right answer in our calls for a new primary school formula. The main reason is the rather limited amount of empirical research for blended learning in K-12 education and the fact that the available literature is produced largely by policy and advocacy organisations which are often seen as the main promoters



of the blended learning ideas introduced in the available research papers (Barbour, Clark, DeBruler, Bruno 2014). The assessment and comparison can be even more complicated because of different ways in the understanding of blended learning around the world. Yet we can try to take a closer look and reflect upon its worth by using the available information and asking the right key questions.

A well-known promoter of the idea for blended learning among American schools, Michael B. Horn noticed, “Whether blended learning works or not is a frustrating question because the answer is always going to be ‘it depends’. (...) Depends on how it's implemented, how well teachers are trained. ... It's unlikely to be that blended learning magically causes better learning, and more likely, that it offers better opportunity to provide each student with what he needs when he needs it” (Sparks 2015).

Thus, he and the second co-author of the definition introduced the key points of blended learning to help and instruct teachers of its “high quality” implementation. Firstly, according to them, blended learning should be personalised – it should reflect the needs of every student, not only the needs of a class as a group. Secondly, it should aim for proficiency and every student should attain a fluency in the knowledge and skills they need to achieve before going on to the next level. Thirdly, it is important to have high expectations of our students. Every one of them should plan their goals and aim at achieving high and clear standards. Fourthly, in blended learning the leading role is in student’s hands, thus every one of them is responsible for their learning, in choosing the methods, information and tools. Every one of them is much more self-dependent and owns their learning process.

#### **WHY IS THE APPROACH CONSIDERED AS PROMISING?**

The papers which describe the idea of blended learning and attempts its implementation show it in a very good light and as a promising solution, on the other hand, critics of the approach call it just a great hype. Therefore, what is the truth?

The co-author of the definition and a key supporter of blended learning claims that it is the “new model that is student-centric, highly personalised for each learner, and more productive, as it delivers dramatically better results at the same or lower cost” (Horn and Staker 2011, 13). There are more hopes and beliefs put into blended learning but let us try to assess it by only focusing closer on these claims.

#### **Student-centric**

Well-practiced blended learning provides students with autonomy (a student sets appropriate learning goals and takes charge of their own learning), promotes student ownership over learning, enables students to learn at their own pace but also enables more individual contacts with teachers (because of the different organisation of students and teachers work).

Blended learning involves much more than just introducing technology, it also demands good teaching and changes the teacher’s role from “sage on the stage to guide on the side”. It goes even further and offers an opportunity to rethink the organisation of teachers teaching (no more one-teacher-must-do-all model but working in teams where teachers specialise in theirs target roles for example as a developer or guide) and students learning (individual sessions with adaptive learning systems, group work, individual work guided by teachers etc.). To use the blended learning model, teachers should help their students become self-directed, self-disciplined and motivated for learning but also having self-efficacy related to technology and both face-to-face and online communication. Should “use technology daily to analyse and utilise real-time data to differentiate instruction, customize learning and to engage students in deeper learning” (Patrick, Kennedy and Powell, 2013).

Laura Kassner noticed in her blended learning literature review that “numerous studies highlighted the importance of shifting pedagogy in moving from traditional f2f to blended and online learning scenarios, not simply changing the medium. Skilful online teaching is ultimately focusing on the facilitation of good communication in ways that promote quality interactions, student engagement, and connections” (Kassner 2013).

Unfortunately, different schools and different teachers choose a different kind of pedagogy approach and not all of them have changed their way of teaching enough. Teachers need to be trained on “how to motivate individual learners, enhance student interaction and understanding without visual cues, tailor instruction to particular learning styles, and develop or modify interactive lessons to meet student needs” (Watson, 2007, p. 13). The ideal educational process, also in a blended learning environment, should draw upon investigating problems and issues rather than memorise or seeking final answers.

#### **High personalisation for each learner**

The main way of personalising education in the blended learning model is the use of self-paced programs, adaptive online instructional content, and the facilitation of small-group instruction for students. The idea is that students learn online using adaptive learning systems which let them gain new knowledge and develop new skills in a special way, going through the tailored paths. Teachers analyse data gathered by the programmes to understand their students’ needs and organise their face-to-face part of the learning process being focused on the quality of human interactions with their students. Teachers meet their students in small groups or individually because using online programmes let them earn some time to use it in teaching through a constructivist approach.

However, “adaptive learning systems (the new teaching machines) do not build more resilient, creative, entrepreneurial or desire for greater choice, in all its manifest forms, with the equity needed for a society to flourish. Computer adaptive learning systems are reductionist and primarily attend to those things that can be easily digitised and tested (mathematics,





science and reading). They fail to recognise that high-quality learning environments are deeply relational, humanistic, creative, socially constructed, active and inquiry-oriented” (McRae 2013).

Thus, teachers need to bear in mind that adaptive learning systems can divert their and their student’s attention to only the ‘basics’ of the taught subjects. The machine will not build confidence, social, cooperation and creativity skills that children need in our times. As Dewey (1938) said, “Education is not preparation for life; education is life itself.” That is why there is a need for thoughtful planning of the learning process which can help students achieve those skills too. The majority of learning should take place with the instructor who “must have the ability to create a blended classroom environment, to engage the student. The core of Blended Learning should take place during designated classroom instructional time and student control (when, where and how) should serve as an academic supplemental opportunity” (McRae, 2015). Successful learning should be socially constructed and occurs in an active and inquiry-oriented process that engages people in social, emotional, cultural and deeply intrapersonal experiences.

### **More productive**

Blended learning was understood by Horn and Staker as being more productive because it “delivers dramatically better results at the same or lower cost”. Even if we stay within this understanding of productivity in education we still will have problems to find strong evidence for that statement.

As we can read in the Blended Learning Report May 2014, “a majority of teachers at most sites reported that their blended models were more effective at helping students recall basic facts than at helping them develop higher order thinking skills”. As we continue reading we will find that, “Strong classroom/learning lab management practices are critical into ensuring student productivity in online environments. Teachers and lab monitors alike stressed the importance of establishing the proper academic culture, norms, and behaviour management practices for a blended learning model to be successful. Allows students to be more productive and have better results” (Snow, Mislevy, Gallagher, Wei 2014). That is why it is unsafe to claim, that we can reduce costs using blended learning and still be able to talk about better results. Sometimes reducing the cost in blended learning schools was achieved by replacing qualified teachers by less paid “individual learning specialist” (Danner, 2010), using cheaper online courses lead by people without any certifications (Dwinal, 2015) or letting student learn with the help of adaptive learning systems or other online materials even as much as 50% of time spent at school (Strauss, 2013).

Blended Learning, in order to be as effective as it can be, should ensure that the teacher remains the content expert and instructional leader of the classroom. The devices and digital tools, which should be of course of the highest quality as well, still are nothing more than just tools for the teacher. That is why no cutting of costs in this sphere should be made.

### **THE CONCLUSIONS**

There is a big risk of misunderstanding the idea of blended learning and make it blended in name only. The most important condition for high quality blended learning is a clear understanding of underpinned educational theories. In this model, technology is important, but as long as it is constructed by pedagogy and sound educational reasoning. But actually, which theory from these following two is the real basis of this model? The behaviouristic approach used with adaptive learning systems, which treat a student as a passive and reactive person, or constructivism from students’ personal interactions with both peers and teachers? Can we use both of them simultaneously? Is it possible to mix them and really help our students?

The key part of the blended learning definition - “element of student control” - underlines the necessity of changing the roles of teachers to facilitators of learning, monitors of progress and coaches but also the need for greater student’s responsibility for their own learning.

It is true that adaptive learning systems used in schools allow students to learn at their own pace, using their own paths and strategies giving them immediate feedback and the possibility of tracking their progress, nevertheless, personalised learning cannot be achieved by the use of “teaching machines” and their special algorithms alone. Because learning prepares students for life and is an integral part of it as well, it should allow them to develop their critical thinking, creativity, problem-solving skills and give them the possibility for the fulfilment of their own ideas, the possibility for serendipity and diversity in their activities, just to name a few. Learning is a dialogue with another person, which involves a richness of interactions with peers and teachers which are essential in a student’s development. We can be certain that students cannot learn using “teaching machines” alone without the support of a qualified teacher-constructivist who is interested in their knowledge and skills, who tries to know them better and is able to guide them wisely, engage, offer activities suitable for each and every one of them, support them on their path of discovering the world, but also help them to build their autonomy and self-awareness. Is using programmed learning to earn time for more individual interactions with teachers worth its price? Are we ready (equipped with enough knowledge, skills, money, etc.) to develop these kinds of tools and resources to really help students, without the risk of harming them (we could think here for example about the problem of the time children spend with screens in the blended learning model)?

Blended learning student-centred instructions should mean active and interactive learning both during online and face-to-face contact sessions, as well as a challenging and rigorous learning environment and optimisation of student’s learning by assessing progress and providing student supports.





Blended learning can be effective through fundamental redesign of the instructional model, through the change of the dynamic between the teacher and the student. It is not about looking for cost reduction but more about empowering teachers for better-supporting students and making their learning experiences engaging and meaningful. All by providing educators with a toolkit of strategies, methods and resources.

Are the conditions shown earlier the only ones which should be taken into consideration? Of course not. We could ask many more questions and a lot of research has to be done in this area. Blended learning in primary schools is still rather at its preliminary stage, both when we think about the pedagogical theory which supported it and the implementation practice. Thus, it is time for asking questions rather than gathering answers; the trick is we need to be careful in order to find and ask the right ones.

## REFERENCES

- Barbour, M. K., Clark, T., DeBruler, K., Bruno, J., (2014). Evaluation and Approval Constructs for Online and Blended Courses and Providers [http://digitalcommons.sacredheart.edu/cgi/viewcontent.cgi?article=1231&context=ced\\_fac](http://digitalcommons.sacredheart.edu/cgi/viewcontent.cgi?article=1231&context=ced_fac) [accessed Jan 10, 2018].
- Danner, J. (2010). Rocketship Hybrid School Model – Half The Teachers and Twice the Pay. <https://web.archive.org/web/20151225122624/http://dkfoundation.org/news/rocketship-hybrid-school-model-half-teachers-and-twice-pay> [accessed Jan 10, 2018].
- Dwinal, M. 2015. “Solving the Nation’s Teacher Shortage: How online learning can fix the broken teacher labor market.” Clayton Christensen Institute website. <https://www.christenseninstitute.org/publications/solving-the-nations-teacher-shortage> [accessed Jan 10 2018].
- Horn, M.B., Staker, H. (2011). The Rise of K–12 Blended Learning. Report. Innosight Institute. <http://www.christenseninstitute.org/wp-content/uploads/2013/04/The-rise-of-K-12-blended-learning.pdf> [accessed Jan 01, 2018].
- Horn, M. B., Staker, H. (2012). Classifying K–12 Blended Learning. Innosight Institute, <https://www.christenseninstitute.org/wp-content/uploads/2013/04/Classifying-K-12-blended-learning.pdf> [accessed Jan 10, 2018].
- Kassner, L., (2013). Mix it Up with Blended Learning in K-12 Schools: A Review of Literature, [https://scholarscompass.vcu.edu/cgi/viewcontent.cgi?referer=https://www.google.pl/&httpsredir=1&article=1009&context=merc\\_pubs](https://scholarscompass.vcu.edu/cgi/viewcontent.cgi?referer=https://www.google.pl/&httpsredir=1&article=1009&context=merc_pubs) [accessed Jan 01, 2018].
- McRae, P. (2013). Rebirth of the Teaching Machine through the Seduction of Data Analytics: This Time It's Personal. <http://philmcrae.com/2/post/2013/04/rebirth-of-the-teaching-maching-through-the-seduction-of-data-analytics-this-time-its-personal1.html> [accessed Jan 10, 2018].
- McRae, P. (2015). Blended learning: The great new thing or the great new hype? The Washington Post. [https://www.washingtonpost.com/news/answer-sheet/wp/2015/06/21/blended-learning-the-great-new-thing-or-the-great-new-hype/?utm\\_term=.ac6902c968ef](https://www.washingtonpost.com/news/answer-sheet/wp/2015/06/21/blended-learning-the-great-new-thing-or-the-great-new-hype/?utm_term=.ac6902c968ef) [accessed Jan 10, 2018].
- Patrick, S., Kennedy, K., Powell, A., (2013) Mean What You Say: Defining and Integrating Personalized, Blended and Competency Education. <https://www.inacol.org/resource/mean-what-you-say-defining-and-integrating-personalized-blended-and-competency-education/> [accessed Jan 10, 2018].
- Snow, E., Mislevy, J., Gallagher, L., Wei, X., (2014) Blended Learning Report May 2014. Michael & Susan Dell Foundation. <https://secure.edweek.org/media/msdf-blended-learning-report-may-2014.pdf> [accessed Jan 10, 2018].
- Sparks, D., S., (2015). Blended Learning Research Yields Limited Results, <https://www.edweek.org/ew/articles/2015/04/15/blended-learning-research-yields-limited-results.html> [accessed Jan 10, 2018].
- Strauss, V. (2013). Rocketship charter schools revamping signature ‘Learning Lab’. The Washington <http://www.washingtonpost.com/blogs/answer-sheet/wp/2013/01/25/rocketship-charter-schools-revamping-signature-learning-lab> [accessed Jan 10, 2018].
- Watson, J. (2007). A national primer on K-12 online learning. Washington, DC: National Council on Online Learning. <https://files.eric.ed.gov/fulltext/ED509633.pdf> [accessed Jan 10, 2018].
- Watson, J., Pape, L., Murin, A., Vashaw, L., & Gemin, B. (2014). Keeping pace with K–12 digital & blended learning: An annual review of policy and practice. Durango, CO: Evergreen Education Group. Retrieved from <http://kpk12.com/reports>, [https://www.researchgate.net/publication/305800460\\_Online\\_blended\\_and\\_distance\\_education\\_in\\_schools\\_Introduction](https://www.researchgate.net/publication/305800460_Online_blended_and_distance_education_in_schools_Introduction) [accessed Jan 10, 2018].



# How to Organize Blended Learning Support in Higher Education

**Janina van Hees**

SURFnet

The Netherlands

*Janina.vanhees@surfnet.nl*

## ABSTRACT

Redesigning your educational concept by making use of technology helps to improve the quality of university education and to offer programmes in a more tailor-made way. However, developing a well-designed teaching concept costs time and requires expertise. Not only expertise about the subject content, but also expertise about multimedia, animation, instructional design etc. The design of educational innovation in an institution of higher education becomes teamwork in which different specialisms cooperate. How do you organize this cooperation of disciplines within a university?

SURF is publishing a whitepaper, based on 5 case-studies of different higher education institutions and the way they support their lecturers in revising their educational programmes: the TU Delft, Utrecht University, Erasmus University Rotterdam, Utrecht University of Applied Sciences and Saxion University of Applied Sciences.

Four elements of choice emerge:

- Should innovation be institutionalized in a specific 'innovation programme' within the university?
- Should a university equip its own professional video studio and hire experts for video, 3D, animations etc?
- Should the process of innovation be a bottom-up process, leaving the initiative mainly with the lecturers, or is some top-down pressure advisable?
- Should different support service for lecturers be combined into a one-stop-shop? (such as IT services, didactic advice etc).

In this paper, we will summarize the choices these 5 universities have made and deduct recommendations to higher education institutions in general. This can provide inspiration to institutions which still have to find their own answers to these questions.

## Author Keywords

HEI, support structures, educational innovation, organisational aspects

## INTRODUCTION

"If there were eight days in a week, the redesign of education with ICT would already have taken place a long time ago", a teachers who was interviewed for the SURF whitepaper told us. As matters stand today, however, an overload of work among teachers is the rule rather than the exception in higher education in the Netherlands. Higher education institutions that focus on improving education with the help of technology should therefore send the clear message to teachers: we support you wherever we can. This means investing in excellent guidance, good facilities, making efforts to familiarize teachers with the available facilities, showing appreciation for the end result and organizing knowledge sharing. In short: providing an excellent support structure.

So what does an excellent support structure look like? SURF is currently concluding a research project in which we collected information from 5 Dutch institutes of higher education about the way they support their teachers in revising their educational programmes through ICT. The TU Delft, Utrecht University, Erasmus University Rotterdam, Utrecht University of Applied Sciences and Saxion University of Applied Sciences served as case studies. On the basis of the choices they made, we identified basic decisions each higher education institute needs to make when designing a support structure for teachers which will enable them to innovate their lectures with the help of ICT elements.



## DESCRIPTION OF CHOICES

### Educational Vision

The educational vision of the institution is an important basis for the redesign of education. For example, an educational vision could describe why the institution expects blended learning as an educational concept to increase the quality of education, as in the vision of Saxion University of Applied Sciences. This educational vision already shows that Saxion explicitly sees the use of ICT as a means to achieve better education. Often an educational vision is an elaboration of the strategic plan of the institution, in relation to education. For example, Erasmus University (EUR) uses online learning to support a number of core objectives of the institutional strategy, such as improving the quality of education, internationalization and reaching new target groups. A redesign of education is more successful if everyone knows clearly why the institution is committed to it. It also serves as an anchor point during the redesign process: does what I am doing match with my institution's educational vision? It is therefore essential that everyone within the institution is familiar with the educational vision and that it is widely supported.

### Innovation program or regular process?

All 5 higher education institutions who were interviewed within this research project, choose to accelerate educational innovation with ICT by establishing a central program. A dedicated budget, central management and the support of the Executive Board make it easier to get matters moving across the entire organization. There is better overview, forces may be joined. There is also more capacity available for further development and upscaling. The organization of knowledge sharing on educational innovation is faster under a central administration. However, a program is always finite. A way will have to be found to include educational innovation in the regular organization over time.

A good example is the small-scale innovations, called grassroots projects, of Delft University of Technology (TU Delft). Initially, they received a project budget. Nowadays grassroots are seen as 'regular educational improvement' and are therefore not financed separately. Employees of Educate-it, the innovation program of Utrecht University (UU), are currently working on a blueprint for the support organization for the Education and IT domain in 2020. It must continue the work of the innovation program by that time and make it more sustainable.

For an institution that is just starting out with educational innovation, a project-based approach is indispensable, according to all interviewed institutions. A well-executed project or program offers more possibilities to experiment, to find out what teachers need, to respond flexibly to developments and to scale up quickly where necessary.

### Innovation budget

How much money should you invest in teacher facilitation as a higher education institution? And how do you spend that money wisely? Such considerations are based, among other things, on the size of the institution, the number of students, the equity capital and the strategic goals the institution pursues. It also makes a difference whether the budget is divided centrally, for example through tenders, or that faculties have their own dedicated budgets for educational innovation. That makes it difficult to compare innovation budgets.

When asked about a rough estimate of the distribution of the budget, it proves difficult for the institutions to make a clear distinction between the innovation budget and money for current affairs. An example from TU Delft: the investment in a studio has already been done in the past, but starting up an innovation program helps to obtain a budget for the studio. One conclusion can be drawn from the estimates: the institutions mainly invest in people, in manpower. Approximately half of the innovation budget (40 to 70 percent) goes to support staff of all types. The investment in facilities, licenses and tools is lower, depending on the institution, between 15 and 40 percent. For professionalization, the institutions spend between 15 and 25 percent of the budget. It should be noted that some support staff, such as the e-learning developers at TU Delft, are responsible for teacher professionalization and that it is therefore not always possible to distinguish between these items. Another element that is difficult to compare is the extra time teachers are allocated through a reduction of their teaching responsibilities. This is often up to the faculties. Estimates about which part of the budget is used for this vary greatly.

### Central or decentralized support?

A large number of higher education institutions that are more experienced in teacher facilitation, are currently working on centralization of the support structure. In one central location, various disciplines in the field of support and professionalisation are brought together. This concerns, for example, professionalization trajectories, educational research, audiovisual support, spaces for experiments and initiatives in the area of knowledge sharing, which have previously been housed at various locations, centrally and decentrally, within the institution. For instance, Utrecht University has a new Center for Academic Teaching, the TU Delft a Teaching Lab, the Erasmus University Rotterdam is working on a Community for Learning & Innovation and Utrecht University of Applied Sciences has a Learning Innovation Network Center by Teachers.



### *Centralized support organization*

An advantage of centralization is that it makes things easy for the teacher. He can turn to one address, or at least to fewer addresses than before, for all questions and actions. A central organization accommodates both educational and technical experts. The central support organization is therefore, if it is well-organized, optimally able to unburden the teacher and facilitate the best possible redesign of the education. By organizing professionalisation and knowledge sharing centrally, it is possible to bring the quality of education to a higher level in a sustainable way. That is, at least, if the central organization succeeds to maintain a direct connection with teachers. The disadvantage of a central organization is that the distance to the teacher can literally and figuratively be great. Higher education institutions often consist of several branches, spread over a city or even over several cities. Centralization of support can raise the threshold to educational innovation, especially when a teacher is expected to go somewhere where he does not know anyone and where he normally never comes. In addition, lethargy and bureaucracy may be lurking.

### *Decentralized support organization*

Opposite central support is decentralized support: educational and technical supporters form a flying team around the teacher, in the vicinity of his own educational location. This requires a lot of flexibility from the supporting organizations and a larger amount of facilities. It is an intensive and relatively expensive form of support.

In practice, many institutions work with an intermediate form, which partly derives from the historical autonomy of faculties. They often have their own forms of teacher facilitation, apart from central and decentralized facilities. The advantage of support at faculty level is that teachers often find their way to support staff well. The disadvantage is fragmentation: every faculty draws up its own plan. In addition, the faculty facilities may impede upscaling and sustainability. For example, some faculties of the EUR had already invested themselves in teacher facilitation in such a way that they saw little gain in setting up a one-stop shop.

### *Ensuring the connection*

Lecturers react differently to the question of whether a central or a more decentralized organization is preferred. The interpretation of centralization makes a lot of difference. It is especially important that people feel involved and helped. Also in centralized support structures, it is possible to ensure that there is a direct connection with the teachers. Utrecht University for example resolves this by appointing faculty contact persons. They can answer questions about educational innovation themselves, but are also in close contact with the central program Educate-it and, if necessary, call in the help of Educate-it specialists. It works much the same way at Utrecht University of Applied Sciences and TU Delft. They also work with a faculty contact person. Support staff from the central program also spend part of their time in the faculty location, where there is a lot of demand for their expertise. Because often the same central support staff are deployed at the same faculties, they gain more knowledge of the faculty and become familiar faces.

### **Specialist support staff or generalists close to the teachers?**

For educational innovation with ICT you need a multidisciplinary team. In addition to teachers and student assistants, the team may include e-learning developers, instructional designers, an animator, an editor or a marketing professional. Institutions have to ask themselves whether they have all the necessary expertise on board or whether an addition is needed to reach the desired level. Do you educate people, attract them from outside, or hire them? Which expertise do you need on a regular basis, which do you need incidentally?

The interviewed institutions opt for both, depending on the needs of the teacher. With the use of specialists, it is possible to produce educational material of which the (digital) design is of high quality. An additional advantage is that the material can be used as a 'billboard' for the institution. If the end result looks good, teachers and students will be more enthusiastic about educational innovation with ICT. But too much professionalism can also increase the threshold to get started in the first place. Many teachers prefer to try things out themselves, instead of being directly in the spotlights of a real studio. The deployment of student assistants is also a lot cheaper. They are close to the target group and look at the educational material through the eyes of students.

In practice, the institutions ensure that they have the specialists (temporarily or otherwise) in house, but that they can also facilitate more easily accessible forms of support. For example, early adopters learn new skills from the VR specialist who is employed full-time at Utrecht University of Applied Sciences, but teachers who are redesigning a course for the first time can turn to an innovation manager from their own organization with their questions. At TU Delft, numerous students support lecturers in their educational innovations, but they also receive help from specialized e-learning developers and instructional designers.

### **Communication and knowledge sharing**

A good support organization in itself is not sufficient. Teachers need to know that the institution encourages educational innovation or even makes it obligatory. They need information about where they can go, what the benefits are, how much time is spent, what kind of support is available and what forms of appreciation they receive for it. Communication and knowledge sharing thus form an important part of teacher facilitation. One of the choices an institution must make is how it shapes that communication and knowledge sharing.

Many teachers prefer to be inspired by innovative colleagues, rather than by external trainers for instance. Colleagues generate more trust, because they discuss within the educational context and subject matter what a tool can contribute to



education. The institutions therefore make extensive use of ambassadors. These educational innovators speak at lunch sessions, workshops and teaching days, to inspire their colleagues.

Institutions come up with all sorts of creative ways to bring teachers in contact with innovators from inside and outside their field. This often takes place in an informal setting, such as a lunch or a café, but also at symposiums and during professionalization courses the educational innovators are frequently used. Online the institutions share information, experiences, tools and tips in blogs and videos.

Communication, knowledge sharing and stimulation are connected to each other in practice. Teachers who are proud of their educational innovation will like to talk about it with colleagues. They consider it an important form of appreciation to be asked by the institution to give presentations. And as we will see below, it is true that valuation is crucial to stimulate educational innovation.

#### **Bottom-up or top-down initiative?**

Teachers must remain the owner of the educational program they offer. There is little difference of opinion about this with the interviewed institutions. However, in order to initiate an improvement in education with the help of ICT, it is important that every department within the organization is aware of the added value of educational innovation in organizing effective educational programs. This means that teachers must feel owner of educational changes; that faculties encourage teachers to develop blended education; that education directors and managers feel the need for innovation.

Although the lead for a redesign of a course lies with the lecturer, not everyone is ready to take major steps. Not all faculties feel the same drive and passion. Deans, administrators and directors must stand up to stimulate and value innovation throughout the institution. How big their involvement must be is a consideration that every institution will have to make.

TU Delft stimulates a bottom-up approach as much as possible, but focuses on the outlines, for example by selecting topics that take precedence and approaching active teachers because their subject or ambition fits the ambitions of the institution. Utrecht University involves all departments in the mission of the innovation program, but does not make anything mandatory: the central support organization only facilitates when a specific question comes from a teacher, a lecturer team or a faculty. The Utrecht University of Applied Sciences tackles it very differently. Their Executive Board have decreed that by 2020 all programs have to related to the fourteen design dimensions that the university has formulated in its educational vision. Ninety percent of the programs are working on a redesign of education. This means that almost all employees are involved in educational innovation; as an assignment from the Executive Board, but at its own discretion.

#### **Professionalization**

All institutions consider teacher professionalization an important activity to achieve quality improvement in education. In part, this professionalization takes place during the innovation process (learning by doing). Presentations from educational innovators or blogs in the context of knowledge sharing all contribute to informal teacher professionalization. In addition, each higher education institution offers teachers opportunities to increase their own educational qualities. Institutions decide for themselves which skills fall under the Basic qualification for Didactical Competence (BDB) or the Basic Qualification for Education (BKO). There is no general quality requirement for teachers in the field of ICT skills.

At Utrecht University of Applied Sciences, an institution-wide blended learning course is part of the BKO, SKO and EKO (basic, senior and expert qualification for higher professional education teachers). Saxion has set up a compulsory course of study in relation to the BDB that relates to redesign of education. In addition, each institution described offers all kinds of workshops and varied forms of knowledge sharing, with which teachers can improve their knowledge and expertise in the field of ICT and innovation.

Teacher professionalization is a broad topic that requires more elaboration. SURF has made a start with the publication of the report 'From teacher professionalisation to educational development. Inventory of the status quo of ICT teacher professionalisation' written by Ineke Lam en Riekje de Jong (2015).

#### **Extra appreciation for educational innovation or not?**

A first step towards innovation in education can be taken simply by paying attention to educational innovation and the use of ICT in professional development trajectories. But this does not guarantee that teachers will really get started to innovate their own education. Far too often teachers feel that the appreciation for education only exists on paper. Adrie Verhoeven, assistant professor of biochemistry at the Erasmus MC, expressed this feeling as follows: "Many teachers want to innovate, but they also have to deal with patient care and research. There are only a few fools who are totally into education. This is not a thing to do; they don't get anywhere in their career. Being busy with educational innovation is not rewarded. As long as this does not change, teachers will not innovate. But I am one of those fools. "

Virtually all institutions focus initially on the pioneers of educational innovation, in the hope that an oil spill will start. But as long as this sentiment is shared so broadly, the oil slick does not reach the range that is hoped for. Appreciation is essential to get the large group of more conservative teachers to join. This could be in the form of more salary, or in the time that a teacher receives to redesign his education, but also in the form of attention for the performance delivered, the interest of peers, the appreciation of students and because initiatives in the field of education have a positive influence on the career of the teacher in question. Appreciation starts with the allocation of budgets to project proposals to promote educational innovation. Appreciation also means that failed experiments will not be punished. The choice to give no





appreciation for education still occurs frequently in practice. This of course has negative consequences for the enthusiasm of teachers to innovate and the speed with which innovations are embraced.

## CONCLUSIONS

By analysing 5 case studies of Dutch universities, we have been able to draw a number of conclusions about the choices which institutions have to make when arranging support structures:

The interviewed institutions believe that creating an innovation programme is indispensable to accelerate innovation. With the aid of a central budget and central management, an overview and concentration of forces becomes available. There is also more room for further development and upscaling. A central program will create opportunities to operate outside existing frameworks.

For education innovation with ICT you need a multidisciplinary team. The interviewed institutions opt for multidisciplinary teams of educational experts, technical experts and student assistants, where necessary supplemented with specialists, such as animators or 3D designers. In this way, they can facilitate both small educational experiments and large online educational projects. More and more institutions are also starting a Teaching Lab, where teachers have the freedom to try out new educational technology.

A third item of choice is whether educational innovation should be initiated bottom-up from individual teachers, or that you exert some top-down pressure in order to bring about educational renewal. The universities which were interviewed support initiatives that come from the lecturers or faculties themselves, among other things by creating freedom to experiment. The disadvantage of this is that institutional developments such as open learning materials or learning analytics do not come to fruition as easily. Bottom-up or not, for all institutions it is essential that the teacher retains ownership over education.

Another striking development is that those institutions who have been involved in educational innovation for some time now choose to merge support for teachers in a central location, a “one-stop-shop”. Traditionally, these services function separately, for example the ICT department, educational advice and building management. Educational innovation with the help of ICT, however, requires cooperation in new structures.

This SURF publication, which is due for publishing in February/March 2018, is intended to inspire educational institutions that want to encourage educational innovation. It doesn't provide a “one-and-only definite recipe” for organizing support structures of educational innovation, but it does give many examples of well-reasoned choices made by five forerunners in Dutch higher education.

## ACKNOWLEDGMENTS

This submission is based on the concept text for a SURF whitepaper titled ‘Keuzehulp voor het faciliteren van Onderwijsinnovatie met ICT’, due to be published in Feb/March 2018.

## REFERENCES

Lam, I., De Jong, R. (2015). [Rapport Inventarisatie van de status quo van ICT-docentprofessionalisering](#). SURF.





# The Use of Mobile Educational Application (MobiEko) as a Supplementary Tool for Learning

**Mohamad Siri Muslimin**

National University of  
Malaysia (UKM)  
Selangor, Malaysia  
*msiri@siswa.ukm.edu.my*

**Norazah Mohd Nordin**

National University of  
Malaysia (UKM)  
Selangor, Malaysia  
*drnmn@ukm.edu.my*

**Ahmad Zamri Mansor**

National University of  
Malaysia (UKM)  
Selangor, Malaysia  
*azamri@ukm.edu.my*

## ABSTRACT

This study aims to develop a mobile application (App) for teaching Microeconomics courses at Polytechnics institutions. By combining this APP with blended learning and ubiquitous learning, this research proposes to construct effective education environment and strategies that can help the learning and teaching of students and instructors of economics profession with this auxiliary tool. It describes recent progress in this area, and explains the potential of mobile blended learning for educational institutions. Furthermore, it presents an innovative solution which is a blended learning platform that combines mobile learning with the concepts of classroom teaching, mobile learning and learning from books into a native Android course app. The concepts comprise blended learning, which combines mobile educational application with classroom face to face learning, and mobile learning, which represents learning “on the go” on smartphones anytime, anywhere.

## Author Keywords

Mobile learning, blended learning, educational apps, MobiEko App

## INTRODUCTION

The innovations of information technology and digital communication in recent years have made a profound impact on education and learning; as a result, the forms and tools of learning are changing dramatically. In recent decades, mobile device provides quick access to obtain information, promoting education from traditional classroom teaching and learning methods to technological based teaching and learning environment and encourage teachers and students to participate actively so that educational process more attractive and interactive (Nordin, Amin, & Yunus, 2010). Therefore, the scenario and pedagogy in teaching and learning process should be redesigned in order to meet the needs of the 21st century education. Mobile learning products and services with new learning content and apps creating a lot of anticipation in the learning community these days. Mobile devices such as smartphones, iPad, tablet and netbook are generally used in this technological savvy environment. Certainly, the mobile devices have established its significant status in this technology era because mobile capability to fulfil and meet the needs of the society. Students bring these technologies anywhere, at any time for their daily affairs. Educators should look upon this phenomenon as a challenge. The concept of 'anytime' and 'anyplace' of mobile learning should be utilized in enhancing the pedagogical activities in delivering lessons (Bidin & Ziden, 2013). Sharples (2000) states that we are living in an era of knowledge explosion and need to constantly improve our knowledge and skills, so we can solve problems and develop other capabilities. Learning is no longer confined to classrooms; rather, learning should be lifelong, pluralistic, as well as comprehensive, and can be assisted by various media and technology to enhance its effectiveness. Technology-enhanced learning is expanding rapidly because of research showing the benefits for learners in terms of engagement, convenience, attainment and enjoyment (Sharples, Taylor, & Vavoula, 2005).

Considering the evolution of teaching and learning which drive by the advancement of information technology world, this study aims to design and develop a novel mobile learning application called “MobiEko” to be used in learning Microeconomics module in Malaysian Polytechnics. The MobiEko application is planned to be applied in blended learning scenario to support instructors and students for teaching and learning, leveraging on the affordance and ownership of mobile devices.

## GENERALIZE BLENDED LEARNING

Not only students but also educators should be fortified to vary their educational approaches and to avoid limiting their practice to only traditional methods of instruction. In the context of Economics teaching and learning process, most teachers are stuck on traditional methods that have been in practice for many years. A specific example would be the chalk-and-talk method, which is defined as a traditional method of education in which the teacher addresses the students and uses the blackboard to provide examples or illustrations (Ding & Li, 2011; Joshi & Marri, 2006). In Addition, most of Economics concepts exhibits a high level of abstraction which often imposes great difficulties for students to learn it. In many situations, the concepts are isolated, without comprehensive understanding the correlations of each piece of knowledge point on the whole picture (Moos van Wyk, 2015). Many students who take economics classes get bored and uninterested in the material taught because of these outdated teaching methods. If teachers could use more effective methods in the



economics courses they teach, their students would be able to better comprehend the information. The issue is that academics cannot teach the same way they have trained a decade ago but need to shift to accommodate the diverse of mobile-generation student population in their teaching styles.

To address this issue, we believe a generalized blended learning (mobile blended learning and face-to-face learning methodology) may contribute to this. It is well-known that virtual environments offer great educational value in the process of information transmission and interactive participation, either in synchronous (live chat, video conference) or asynchronous mode (forums and chats). In such process, the face-to-face teaching and evaluation can be used to develop analytical expressions and problem-solving capabilities related to mathematical matters. Lecturers at this stage can get physical feedback about the effectiveness of their knowledge transmission to students. Then the understanding of some specific conceptual issues is further assessed and reinforced via asynchronous learning through mobile educational application developed. Basically, the blended environments offer students and lecturers an opportunity to interact via on-line communication through threaded discussion. In other words, blended or hybrid learning involves both face-to-face and online teaching and learning environments for students and instructors. In blended teaching and learning environments, both instructors and students can benefit from the best features of these two-different media of instruction by providing the opportunity to advance in their own pace. In general, after completing the face-to-face session of the blended course, the students can complete the online requirements of the course (recorded lectures, activities, forum discussions, assignments and so on) anytime anywhere via using their personal computers and mobile devices (smart phones, tablets and so on). Moreover, blended learning allows face-to-face learning model with conventional methods with the use of various approaches, strategies and learning methods whereas with online methods can provide online materials without limitation of space and time, and also learners able to gain more information from various sources to support the learning process. In sum, higher education systems need to redesign and look at how they can suit and shift the instructional environment to the benefit of both students and academics.

#### MOBILE APP INTEGRATION INTO THE BLENDED LEARNING SETTING

‘MobiEko’ is an educational application in the form of a mobile app. The application was designed and developed by the researcher to make teaching and learning of Microeconomics concepts more interesting and enjoyable for teachers and students, and to bridge the gap between formal pedagogic education and informal forms of education, with which students come into contact outside. MobiEko app can be used either for self-learning by the students or as a teaching aid for the Microeconomics instructor, who can prompt the students to use it and then assume the role of a ‘guide on the side’. The approach adopted in the design of the application was that of active, exploratory learning within a multimedia environment that combines access to hypermedia learning material in the form of HTML pages, web, and interactive games.



Figure 1. MobiEko features

Through navigation within the environment of the application, the student can think and reflect about the concepts presented in the learning material and to test his/her understanding of these concepts through the engaging and amusing activity of mobile application. The design of MobiEko app comprise several interactive features, including user profiles, course materials, educational video, self-assessment, quiz, links, portfolio, games, chat, feedbacks and pocket tools. (Fig. 1). The learning material comprises texts, images, and interactive animations. The application runs on Android Operating System and uses AppiePie: a free web-based application that provides varieties of modules and components for both Android and Apple platforms. A user has to download and install the MobiEko application onto their mobiles to get the full access to the learning activities.

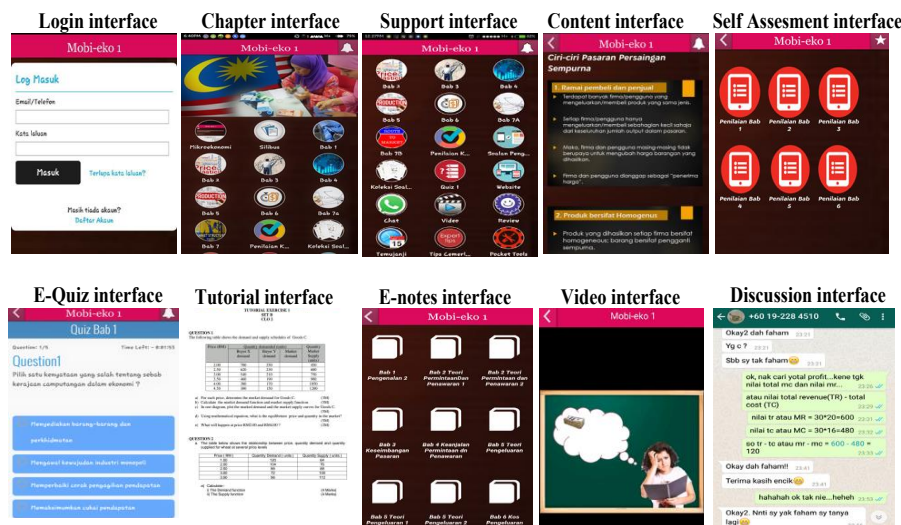
The developed “MobiEko” smartphone app was designed to be user-friendly. Touching the start-up screen makes the main menu appear. The mobile application is developed by dividing the content of the application into four main activities namely as learning menu, learning activities, assessment activities and support activities (table 1). The learning menu consists of offline notes, online notes and main chapter for every topic while learning activities provide activities like problem-solving, tutorials, portfolio, video, and gamification incorporated for strengthening and enrichment elements. For the assessment activities, the MobiEko application integrate quizzes, test and past year test so that student able to review and exercise the quizzes and test. Lastly, the support section provides the additional activities that can support learning as an enrichment and reinforcement activity for students. Among the activities provided in the support section are information, chatting section, feedback and reflection, appointment, tips and pocket tools. Meanwhile, the log in menu, home menu and some features of MobiEko application are shown in fig.2.



Components/ Menu	Modules/ icon	Description
Learning menu	E-notes Main chapter Links (website)	Presenting information, providing offline and online learning notes, interactive notes & link to another website
Activities menu	Portfolio Educational video M-enrichment Gamification	Preparing teaching and learning activities, providing individual & group activities, discussions & presentations, gamification and self- reflections
Assessment menu	Self-assessment Quiz Archive test	Opportunity to think hard about the concepts presented in the learning material and to test his/her understanding of the topics.
Support menu	User profile Chat / WhatsApp Feedback Learning tips Pocket tools Survey	Provide support for learning activities, provide learning links & encouragement.

**Table 1. Main component of MobiEko application**

Mobile blended learning refers to educational concepts that integrate special mobile learning activities into blend or non-blend learning as to encourage higher-order thinking skills. These include active discussion through WhatsApp chat (Ismail Mohamed Nazul, Ellyza, Manisah, Normah, & Haliza, 2014; So, 2016), Edmodo portfolio (Enriquez, 2014; Giang, Minh, & Noi, 2014), enrichment activities (Chau, 2014) and interactive games (Asikhia & Vora, 2017). Active discussion via WhatsApp application which embedded in MobiEko application provide a medium for learners and instructors collaborate with each other and construct knowledge online. Portfolio features allow learners to develop and publish a piece of writing, which other learners can then comment upon. An effective teaching/learning process must stimulate intellectual curiosity and offer a sense of enjoyment that will move the students from the passive role of recipients of information to the active role of builders of knowledge. One way to achieve higher-order and critical thinking is to provide learners with a complex problem, such as a case study to solve, and use discussion platform and portfolio as shared online collaborative spaces for interaction. Likewise, the blended learning method has given opportunity for student to further explore their own (*self-exploratory*) materials and other sources of reference, deepen the learning, knowledgeable about the topic and related topics, improve student constructivism and improve student understanding (Alipor, 2010).



**Figure 2. MobiEko interfaces and menu activities**

### Ideas for Mobile Blended Learning Activities with MobiEko application

1. Course preparation - the mobile educational application (MobiEko) can be used as a preparation material for students and lecturers by clearly defining what to learn and put together course materials that serve the learning outcomes.
2. Homework for face-to-face classes - various activities provided through the application can be used for face-to-face discussions in the classroom



3. Flipped classroom - The mobile flipped classroom scenario is very similar to the mobile blended classroom learning. The students can work on several problems in order to prepare for the next session. This helps the students have familiarized themselves with some contents and discuss the students' questions.

4. Group activities - facilitate discussions in which groups of students should learn about different argumentation lines, e.g., for a role play session. The student separated into groups and assign the related question to them. The task and activities were designed in a way that students have completely independent insights on the topics and integrate with them during the discussion session.

## CONCLUSION

In this paper, the work-in-progress of MobiEko - an Android version of mobile learning application has been reported. The concept of mobile learning application seems to be an interesting and mobile educational application have the potential to provide a different and exciting learning experience for users. Therefore, a mobile educational application should be given the opportunity to offer their benefits in the learning process especially in the context of blended learning. The importance of blended learning integration is justified by the fact that learning activities which can be realized both in the classroom and in the e-learning environment. Furthermore, blended learning provides a number of important advantages for both teachers and students, making them active participants of the learning process responsible for the results of their own work. The suggested learning mode helps to keep pace with the time and correspond to new requirements of the educational system where information technologies and the use of online resources play a vital role.

## REFERENCES

- Alipor, A. (2010). A Blended Education Program Based On Critical Thinking And Its Effect On Personality Type And Attribution. *Turkish Online Journal of Distance Education*, 11(April), 185–196.
- Asikhia, I. S., & Vora, A. (2017). To Enhance Engagement for An Evaluating The Use Of Manifest Justice In The Washington State Juvenile Rehabilitation Administration. *Journal of the American Academy of Child & Adolescent Psychiatry*, 56(10), S191. <http://doi.org/10.1016/j.jaac.2017.09.121>
- Bidin, S., & Ziden, A. A. (2013). Adoption and Application of Mobile Learning in the Education Industry. *Procedia - Social and Behavioral Sciences*, 90, 720–729. <http://doi.org/10.1016/j.sbspro.2013.07.145>
- Chau, C. L. (2014). Positive Technological Development for Young Children in the Context of Children's Mobile Apps. *Journal of Chemical Information and Modeling*, 160. <http://doi.org/10.1017/CBO9781107415324.004>
- Ding, M., & Li, H. (2011). On the Application of Multimedia in Economics Teaching. *International Education Studies*, 4(3), 2010–2012. <http://doi.org/10.5539/ies.v4n3p88>
- Enriquez, M. A. S. (2014). Students' Perceptions on the Effectiveness of the Use of Edmodo as a Supplementary Tool for Learning, 6–11.
- Giang, T. N., Minh, N. V. A. N., & Noi, H. A. (2014). Edmodo - A New And Effective Blended Learning Solution Edmodo - A New And Effective Blended, (June).
- Ismail Mohamed Nazul, Ellyza, K., Manisah, M. S., Normah, A. A., & Haliza, H. (2014). WhatsApp: Komuniti Maya dalam Teknologi Komunikasi Mudah Alih. *Sains Humanika*, 3(1), 23–30. Retrieved from [www.sainshumanika.utm.my](http://www.sainshumanika.utm.my)
- Joshi, P., & Marri, A. R. (2006). An Economics Methods Course?: Challenges of Teaching an Economics Education Methods Course for Secondary Social Studies Preservice Teachers. *The Social Studies*, 97(October), 197–202. <http://doi.org/10.3200/TSSS.97.5.197-202>
- Moos van Wyk, M. (2015). Teaching Economics. *International Encyclopedia of the Social & Behavioral Sciences*, (April), 83–88. <http://doi.org/10.1016/B978-0-08-097086-8.92072-5>
- Nordin, N., Amin, M., & Yunus, M. (2010). Mobile Learning Framework for Lifelong Learning. In *International Conference on Learner Diversity 2010* (Vol. 7, pp. 130–138). <http://doi.org/10.1016/j.sbspro.2010.10.019>
- Sharples, M. (2000). The design of personal mobile technologies for lifelong learning. *Computers & Education*, 34(3–4), 177–193. [http://doi.org/10.1016/S0360-1315\(99\)00044-5](http://doi.org/10.1016/S0360-1315(99)00044-5)
- Sharples, M., Taylor, J., & Vavoula, G. (2005). Towards a Theory of Mobile Learning. *Proceedings of mLearn*, 1(1), 1–9. <http://doi.org/citeulike-article-id:6652555>
- So, S. (2016). Mobile instant messaging support for teaching and learning in higher education. *Internet and Higher Education*, 31, 32–42. <http://doi.org/10.1016/j.iheduc.2016.06.001>





# Dronagogy: A Framework of Drone-based Learning for Higher Education in the Fourth Industrial Revolution

**Helmi Norman, Norazah Nordin, Mohamed**

**Amin Embi, Hafiz Zaini**

Faculty of Education,  
Universiti Kebangsaan Malaysia  
Bangi, Selangor, Malaysia

*helmi.norman@ukm.edu.my;*

*drnmn@ukm.edu.my; hafiz87.zaini@gmail.com*

**Mohamed Ally**

Center for Distance Education,  
Athabasca University  
Alberta, Canada

*mohameda@athabascau.ca*

## ABSTRACT

The Economic World Forum has suggested that the fourth industrial revolution impacts the world in three megatrends which include physical, digital, and biological trends. Drone technology is one of the physical megatrends that have the potential to re-design education towards the fourth industrial revolution. Yet, as the technology is newly made for the public, its' affordances in learning environments are still not fully understood. Hence, the study investigates drone-based learning in higher education settings and develops a framework for its' integration as a learning strategy. The study uses a case study to explain how small autonomous drones could be integrated using problem-based learning and MOOCs using the pedagogical-space-technology framework. The case study illustrates that that drone-based learning could be used as a learning strategy in different learning contexts and the proposed framework could be used to guide integration of drone-based learning in higher educational settings.

## Author Keywords

Drone-based learning, fourth industrial revolution, pedagogy-space-technology framework, 4IR learning strategy, higher education

## INTRODUCTION

In the fourth industrial revolution (4IR), the blurring of physical, digital, and biological worlds is affecting the educational landscape. Technological advancements in 4IR such as drones in the physical world, Internet-of-Things (IoT) in the digital world, and synthetic biology in biological world is offering educational affordances that have been never possible (World Economic Forum, 2016). As learners today are digital natives, blending teaching and learning with technology is important to engage them in learning. Yet, merely using technology without well-designed pedagogy may lead to disruption of learning rather than engagement (Sattar et al., 2017). Design of the “right” blended between pedagogy, space and technology is crucial is ensuring both instructors and learners are empowered during teaching and learning (Schwab, 2017).

One of the emerging technologies of 4IR is drones. Drones could be considered relatively new technologies as they have used in the past for military purposes. The emerging aspect of drones are they are available in the current public market, as drones' usage have shifted from military purposes (e.g. for intelligence) to agricultural, passenger and delivery drones (Floreano & Wood, 2015). For agriculture, drones have been utilized to monitor tree plantations. In a study by Torres-Sanchez et al. (2015), drones were used to gain information on geometric features of agricultural trees for optimization of crop management operations. The drones assisted farmers in terms of three-dimensional (3-D) features such as canopy area, tree height and crown volume that were important information for plantation status. With regards to delivery drones, Dubai created a “buzz” by the launching of the world's first “drone taxi” for passenger transport. BBC (2017) reported that the drone can autonomously take passengers and transport two passengers other locations via use of mobile apps (BBC, 2017; Nneji et al., 2017). As for delivery drones, several companies such as Amazon are using drones for delivery services. In late 2016, Amazon launched the “Prime Air” service that offers transportation of small goods and products via drones within a maximum air time of 30-minutes (Amazon, 2017). This spurred a discussion of on customer-drone relationship in which service-delivery drones with regards to consumer-brand relationships were studied (Ramadan et al., 2017).

Albeit emerging usage of drones in various sectors, the usage of drones in education is still new. Previous studies have shown educational affordances of drones in fields of geology (Jordan, 2015), journalism education (Marron, 2013), model-based learning (Mirot & Klein, 2014), and environmental chemistry (Fung & Watts, 2017). In environmental chemistry, Fung and Watts (2017) used drones for environmental sampling experiments. The drones were used to find suitable sampling sites in which they could collect samples for their experiments. In addition, drones assisted students in risk assessment – whether the sites were suitable for land exploration and the degree of safety at the potential sampling site. In model-based learning, Mirot and Klein (2014) modeled activities and features of the drones to teach about situational analysis, in which students analyze situations and scenarios (in this case, setting up and flying the drones) and map them to produce mental models. In relation, Jordan (2015) and Marron (2013) describe the potential of drones to be applied in geology and journalism education. The former explained that drones could be potentially aerial surveys, field mapping,



and monitoring (i.e. dangerous or hard-to-reach locations such as volcanoes and overhanging rocks outcrops). The latter highlighted that drones could be integrated in journalism as newsgathering tools.

Despite all these potential and educational affordances, there are still limited frameworks and models to guide integration of drone-based learning in higher educational settings (Fungs and Watts, 2017). Previous research related to framework or models of drones include studies by Jacques et al. (2016), Zapata Garcia et al. (2016) and Appelbaum & Nehmer (2017). In the study of Jacques and colleagues (2016), a framework for collaborative learning was produced by using drones as the subject matter. Here, students were required to design and manufacture drones, and this assisted them in production of drone conceptions. As for Zapata Garcia's (2016) study, a project-based learning toolkit was developed for automation and robotics engineering, where a series of activities were designed in development of an aerial robotic system (i.e. drone). With regards to Appelbaum & Nehmer (2017) study, they studied on frameworks for internal and external auditing in which they proposed a framework for prototype inventory counts. Although these studies proposed drone-based frameworks, the studies used drones as educational outputs rather than offering frameworks that assist educationists in designing learning environments by integration of drones. Moreover, there are also limited frameworks that link drones to the aspects of pedagogy, space, and technology. As such, in resolving the issues and filling in the gaps, this study investigates the educational affordance of drones (i.e. consumer quadcopters) and develops a framework of drone-based learning for 4IR higher education. The study also links the framework with the design of pedagogy, space and technology for 4IR.

#### PROPOSED FRAMEWORK FOR DRONE-BASED LEARNING IN 4IR HIGHER EDUCATION

The proposed framework for drone-based learning is adapted from the works of Radcliffe (2009) and Floerano & Wood (2015). Radcliffe (2009) proposed a pedagogy-space-technology framework for design and evaluation of learning places. In the framework, all three aspects (pedagogy, space and technology) influenced each other in a reciprocal manner, in which an intended pedagogy could influence arrangement of space, while a space could equally influence what people do in it and influence teaching and learning patterns. Similarly, a learning space could influence opportunities and constraints on a type of technology, while a particular technology could influence how a learning space is utilized by educators and learners. Thus, the study adapts the pedagogy-space-technology framework and links the framework for framing drone-based learning. The proposed framework for drone-based learning in 4IR Education is illustrated in Figure 1.

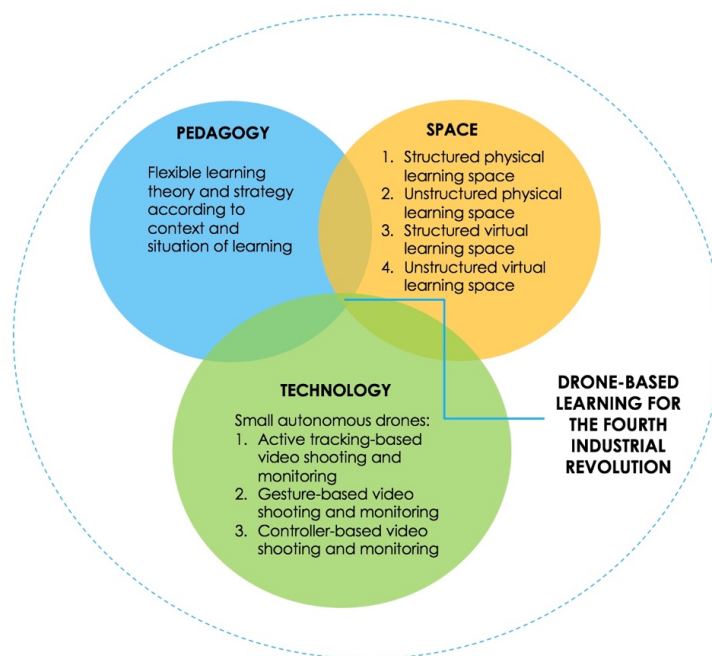


Figure 1. Framework of drone-based learning for 4IR higher education

#### Technological aspect

By definition, drones are unmanned aerial devices (UAVs) and are aircrafts that are controlled by human pilots which are not onboard. Drones range from quadcopters, helicopter drones, RTF drones, delivery drones, photography drones and racing drones (Floerano & Wood, 2015; Jacques et al., 2016). This study focuses on small autonomous drones, specifically, quadcopters (or rotorcrafts) that are available in the market for the public. In development of the framework, drone-based learning is linked to the perspectives of pedagogy, space, and technology by Radcliffe (2009). In a review on small autonomous drones, Floerano & Wood (2015) explains that drones have three-levels of autonomy, which are sensory-





motor autonomy, reactive autonomy, and cognitive autonomy. Autonomy of drones can be related to robot autonomy, where autonomy is based on their abilities to carry out tasks without human interventions based on aspects such as current state and sensing. At first level autonomy (sensory-motor autonomy), drones can perform high-level human commands (e.g. move to a global positioning system or fly at a given altitude). At the next level autonomy (reactive autonomy), drones are capable of avoiding obstacles, take off, land, coordinate with other moving objects, and maintain a predefined distance from the ground. In the highest autonomy level (cognitive autonomy), drones can carry out simultaneous localization and mapping, recognize objects and humans, plan and learn (Floreano & Wood, 2015). Based on the three levels of drone control autonomy, the educational affordances of small autonomous drones can be categorized as follows: (i) active tracking-based video shooting and monitoring; (ii) gesture-based video shooting and monitoring; and (iii) controller-based video shooting and monitoring.

Active tracking-based video shooting is related to video shooting that is performed by the drone on an intended fixated object or area. This is performed by using geolocations and video imagery tracking (Hosseinpour et al., 2016). Using the active tracking feature, drones video shoot on a fixated target and follow the movement of the target without the interventions of humans using controllers. For instance, drones can be used to video shoot a student conducting fieldwork without the student having to control the drone. Gesture-based video shooting involves human operators using hand gestures to command and control drones as well as give directions of movements. This is done via machine vision techniques using locally on-board video cameras on drones. When a hand gesture indicating an intended direction of drones are given, the drone estimates the angle and distance by the estimated hand direction and face score system (Nagi et al., 2014). Controller-based video shooting is typically type of video shooting that can be performed by drones. The controller is usually connected via radio or Wi-Fi signals and in some cases connected to mobile phone or tablet PCs for visualization of during video shooting.

### **Space aspect**

The space aspect is defined by Radcliffe (2009) as physical learning spaces or places. In relation, Wilson (2009) elaborated on the physical learning space concept, explaining that learning spaces are on the continuum of two ends of unstructured and structured physical learning spaces. Structured physical learning spaces are spaces that are designed for teaching and learning, such as collaborative teaching and learning spaces. Unstructured physical learning spaces are informal social learning spaces such as “eddy spaces” which are small spaces for learning (Wilson, 2009; Souter et al., 2011). This can be further extended to virtual learning spaces, where they can also be categorized as structured and unstructured virtual learning spaces. Here, the structured virtual learning spaces refer to formal virtual learning environments such as massive open online courses (MOOCs) or learning management systems while unstructured ones refer to informal virtual learning environments such as social media and blogs (Dabbagh & Kitsantas, 2012).

With regards to drones and learning spaces, drones offer educational affordances in both physical and virtual learning spaces. From physical learning spaces, drones can be designed to be used for structured and unstructured learning environments. In structured learning spaces, drones could be used for outdoor lab experiments and fieldwork such as suggested by Jordan (2015). As for unstructured ones, drone features such as active tracking-based video shooting could be used in recording group discussions in indoor or outdoor learning spaces (Hosseinpour et al., 2016). With regards to structured and unstructured virtual spaces, video shots by drones could be shared in formal and informal spaces such MOOCs and social media.

### **Pedagogical aspect**

In terms of the pedagogical aspect, drones could be used with application of various learning theories and learning strategies. As drones offer interesting educational affordances that could be utilized in different learning contexts, appropriate teaching and learning strategies and theories have to be selected in order to maximize the potential of drones. Floreano & Wood (2015) explains that drones have three-levels of autonomy, which are sensory-motor autonomy, reactive autonomy, and cognitive autonomy. Here, depending on the learning aims, an educator would have to first understand the educational affordance of a drone type (e.g. small autonomous drone) according to the levels of autonomy. This would enable educators to design their pedagogy to suit the educational affordance of drones or utilize drones to suit their pedagogy.

## **A CASE STUDY OF DRONE-BASED LEARNING FOR 4IR HIGHER EDUCATION**

To illustrate how drone-based learning can be applied for 4IR higher education, a case study was conducted in a course applying drone-based learning is presented.

### **Overview of case study**

The case study was conducted in an educational technology course at Universiti Kebangsaan Malaysia in a period of five months, from February to June 2017. The course is a postgraduate course that provided exposure on instructional design as well as learning material and task development for blended learning. The course was conducted in blended learning format, where the course 50 percent of the course was conducted online while the remaining 50 percent was conducted in face-to-face format. The platform used for the virtual learning space was a MOOC on the openlearning.com platform. The MOOC was a self-paced MOOC opened to the public, in other words, anyone, not necessarily a student could enroll in the course. The total number of student enrolled for the course is nearly 400 students and the MOOC can be accessed at <https://www.openlearning.com/design-of-blended-learning/courses/>.



### Pedagogical-space-technological design applied in the case study

The pedagogical design applied in the case study was problem-based learning as discussed by Ryberg et al. (2010). They posit that problem-based learning is defined by three main aspects, which are: the problem, the work process, and the solution. The problem is related to any issues or problems that were intended to be solved while the work process involves processes that were carried out to solve the problem. The solution is the solution designed and developed based on the work process that was conducted. As discussed by Ryberg and colleagues (2010), defining the three aspects are important in problem-based learning – as to who defines the problem, who organizes and controls the work process, and who owns the solution – between both the educator and learner. In the case study, an overall task was given to learners, where the students were assigned to produce videos related to a given theme. The problem and the work process were own by learners in which learners were responsible to define their research problems, project management and teamwork processes. Meanwhile, the solution was co-owned between learners and educators. With regards to the problem, the educator provided a general rubric for video components, and a general task was given, which was to create a video on the theme of “awareness on the future learning”. The learners were empowered in finding their own topic and research problem that was related to the theme. As for the work process, learners were given total autonomy over management of their learning. Drones were introduced to learners as a potential learning tool and features that included active tracking-based video shooting and monitoring, gesture-based video shooting and monitoring, as well as controller-based video shooting and monitoring. For the solution, learners were required to produce a video that solved the problem identified with the use of drones. The space aspect in this study was the course MOOC as the virtual learning space and physical learning space that included computer labs and fieldwork sites involving drones. The technology aspect integrated were drones, specifically, small autonomous drones, where the drones allowed for active tracking-based video shooting, gesture-based video shooting, and controlled-based video shooting. The brand used of drone used was the DJI Spark that is a mini drone with a mechanical gimbal and camera allowing for intelligent flight control options.

### The learning process: The problem phase

In the problem phase, learners defined their own research problem of their tasks based on the research theme “awareness on the future of learning” (pedagogical aspect). Materials were gathered by using document analysis, in which documents relating to problems related to the community were collected from sources such as newspapers, journal articles, community-based websites and social media sites. Here, the aim was to elicit a real-world problem based on what is happening in the community. This was done via the online collaborative mind-mapping where learners conducted brainstorming over the internet in real-time by using online maps (Norman et al., 2017). The mind-maps produced were shared in the virtual learning space, which was the course MOOC (space aspect). An example of an online collaborative mind-map produced by a group of learners in depicted in Figure 2. In this phase, learners also familiarized themselves with drones, in terms of management, safety issues, flight control features, and video shooting techniques (technological aspect). This was important as most of the learners were not familiar with handling and management of drones.

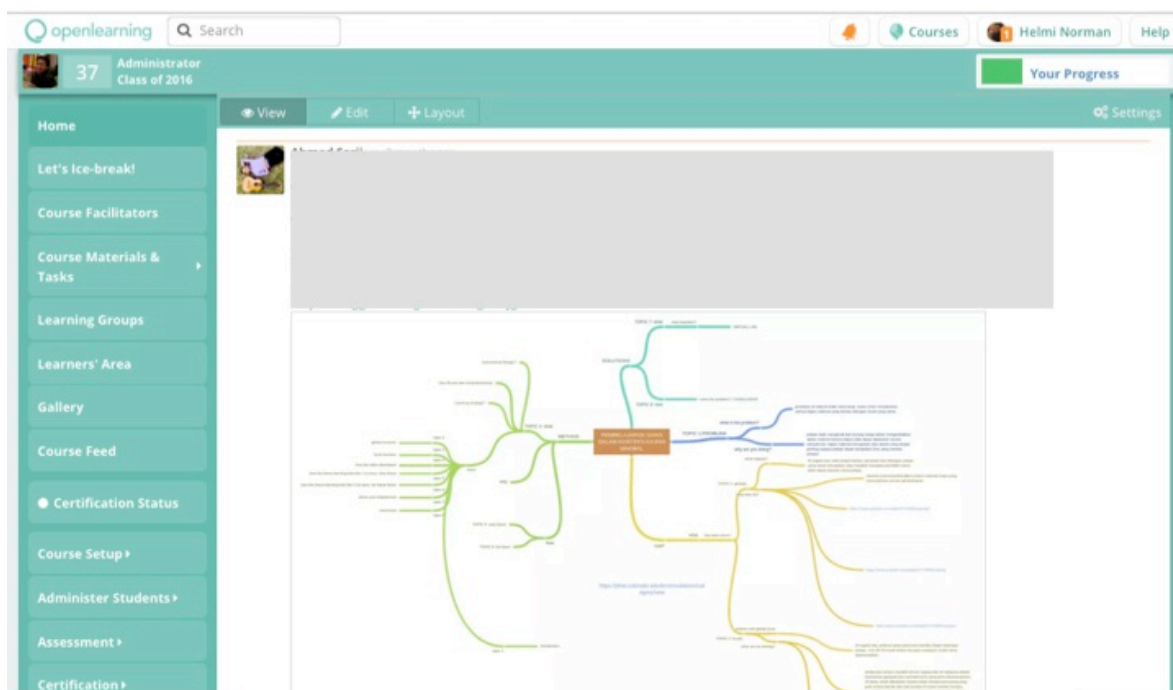


Figure 2. An example of a online collaborative mind-map created by a group of learners in the course MOOC



### THE LEARNING PROCESS: THE WORK PHASE

With regards to the work phase, learners used drones to create their learning products (technological aspect). Based on the research problems elicited in the previous phase, the learners develop solutions by producing learning products (pedagogical aspect). Based on the problems, learners used the educational affordances of drones which were active tracking-based video shooting, gesture-based video shooting, and controlled-based video shooting. The video shots were conducted in communities based on their research problems (space aspect). With active tracking-based video shooting, learners utilized the features in scenarios that required video shooting on moving objects or focus areas. This feature allowing continuous video shooting on a intended focus areas/object by tracking its' movements, as in Figure 3(a) and Figure 3(b). As the study used the DJI Spark drone, four types of video shots were available in the active tracking-based video shooting mode, which were: (i) ascend drones with camera pointing downwards; (ii) fly backwards and upwards with drones locked on an intended focus area; (iii) circle around an intended focus area; and (iv) flying upward with drones circling around an intended focus area (DJI, 2017). Meanwhile, gesture-based shooting was used for video-shooting without remote controls and controller-based video shooting was used for aerial shots that required high elevation levels.



Figure 3(a): A mobile phone connected to the drone remote for viewing and monitoring of the video shots captured by the drone

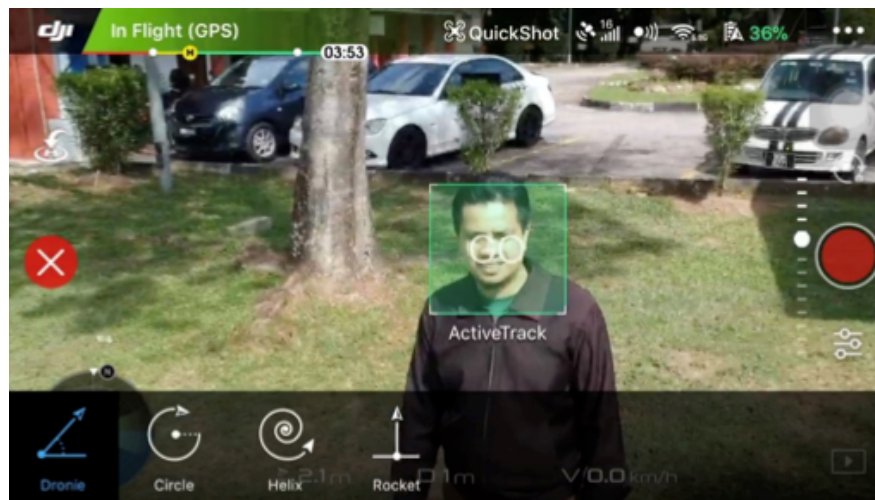


Figure 3(b): An example of active tracking-based video shooting conducted by a group of learners using drones and the different types of video shots afforded by the drone

### THE LEARNING PROCESS: THE SOLUTION PHASE

In the final phase, learners performed video-editing and shared their learning products (i.e. videos) on the course MOOC (space aspect), as shown in Figure 4. The videos were developed in solving research problems that were identified in the problem phase (pedagogical aspect). Learners then peer-reviewed their work and suggested feedback on refinements. These feedbacks were then implemented to enhance the learning products. In relation, we also accessed learning analytics in the course MOOC to assess learning pattern of learners across the five-month period (February to June 2017), illustrated in Figure 5. The analytics show that the interaction in the MOOC was high in the initial (February and March) and final





months (April and June). This was due to the fact that in the initial months, learners conducted online discussions regarding their learning problem design while in the final months, discussions were related to peer-reviewing their learning products that were solutions to problems elicited in the initial months.



Figure 4: Learning products (videos) produced by learners using drones shared on the course MOOC

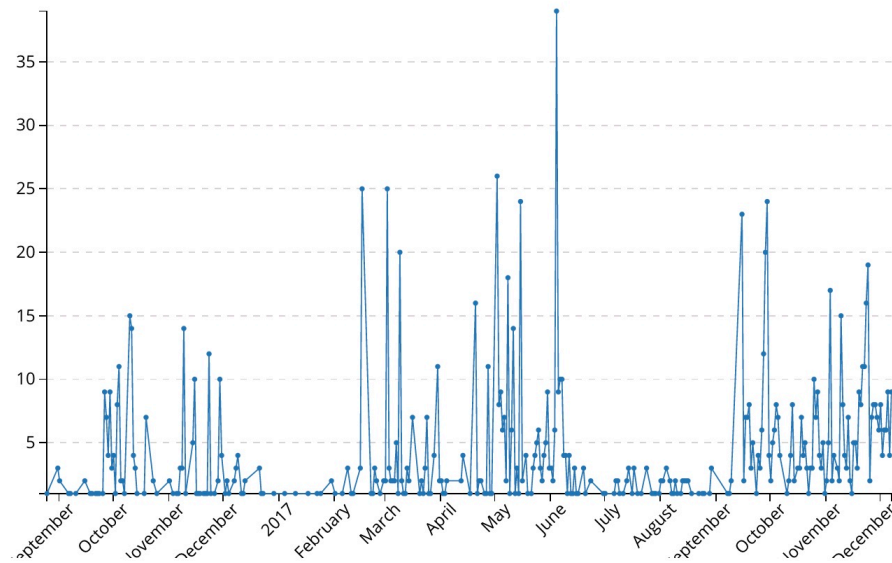


Figure 5: Learning analytics of learning participation in the course MOOC from February to June 2017

## CONCLUSION AND FUTURE DIRECTIONS

The study has proposed a framework for drone-based learning for higher education in the fourth industrial revolution, which consisted of three main aspects of pedagogy, space and technology. A case study was also discussed in applying the framework in learning situation, where small autonomous drones educational affordances were integrated with regards to the technological aspect, while problem-based learning, MOOCs and outdoor physical learning spaces were used in terms of the pedagogical and space aspects.



The limitations and future directions of the study are as follows. First, with regards to drones, the study used small autonomous drones for learning. Utilization of other types of drones, such as helicopter drones, RTF drones, delivery drones, photography drones and racing drones, could offer different educational affordances. Second, the study was conducted with participants who were postgraduates taking an educational technology course. Using undergraduates and applying it to a different field other than social science, for example engineering, could yield in different findings. Third, with regards to the pedagogical aspect, problem-based learning was integrated as the teaching and learning strategy. Application of other learning strategies such as heutagogy or challenge-based learning could be more suitable depending on the learning contexts and could yield in other interesting educational affordances of drones. Finally, MOOCs were used as virtual learning spaces for project discussion and management of learning products. It would be interesting to investigate how other learning environments such as mobile learning and ubiquitous learning environments combined with other 4IR technologies such as mobile augmented reality and interaction analysis tools such as social network analysis could be used in drone-based learning (Norman et al., 2015; Tesolin & Tsinakos, 2018). In sum, it is hoped that the study could be used for educators and researchers interested in the field of drone-based learning.

#### ACKNOWLEDGMENTS

This study was funded by the Ministry of Higher Education Malaysia and Universiti Kebangsaan Malaysia under the Fundamental Grant Research Scheme, no: FRGS/1/2016/SSI09/UKM/02/2.

#### REFERENCES

- Appelbaum, D., & Nehmer, R. A. (2017). Using Drones in Internal and External Audits: An Exploratory Framework. *Journal of Emerging Technologies in Accounting*, 14(1), 99-113.
- BBC (2017). Dubai test drone taxi service. Accessed on 6 December 2017 at <http://www.bbc.com/news/technology-41399406>
- Dabbagh, N., & Kitsantas, A. (2012). Personal Learning Environments, social media, and self-regulated learning: A natural formula for connecting formal and informal learning. *The Internet and higher education*, 15(1), 3-8.
- DJI (2017). Spark: Seize the moment. Accessed on 18 December 2017 at <https://www.dji.com/spark>
- Floreano, D., & Wood, R. J. (2015). Science, technology and the future of small autonomous drones. *Nature*, 521(7553), 460-466.
- Fung, F. M., & Watts, S. (2017). The Application of Drones in Chemical Education for Analytical Environmental Chemistry. In *Teaching and the Internet: The Application of Web Apps, Networking, and Online Tech for Chemistry Education* (pp. 155-169). American Chemical Society.
- Gernez, E., Harada, C. M., Bootsman, R., Chaczko, Z., Levine, G., & Keen, P. (2012, June). Protei open source sailing drones: A platform for education in ocean exploration and conservation. In *Information Technology Based Higher Education and Training (ITHET), 2012 International Conference on* (pp. 1-7). IEEE.
- Hosseinpoor, H. R., Samadzadegan, F., & Dadras Javan, F. (2016). Precise target geolocation and tracking based on uav video imagery. *International Archives of the Photogrammetry, Remote Sensing & Spatial Information Sciences*, 41.
- Jacques, S., Bissey, S., & Martin, A. (2016). Multidisciplinary Project Based Learning Within a Collaborative Framework: A Case Study on Urban Drone Conception. *International Journal of Emerging Technologies in Learning (iJET)*, 11(12), 36-44.
- Marron, M. B. (2013). Drones in journalism education. *Journalism & Mass Communication Educator* 68 (2), 2013
- Mirot, A., & Klein, J. (2014). Using the AR. Drone to Implement Model-Based Learning. *Journal of Applied Learning Technology*, 4(2).
- Nagi, J., Giusti, A., Di Caro, G. A., & Gambardella, L. M. (2014, March). Human control of UAVs using face pose estimates and hand gestures. In *Proceedings of the 2014 ACM/IEEE international conference on Human-robot interaction* (pp. 252-253). ACM.
- Nneji, V. C., Stimpson, A., Cummings, M. M., & Goodrich, K. H. (2017). Exploring Concepts of Operations for On-Demand Passenger Air Transportation. In *17th AIAA Aviation Technology, Integration, and Operations Conference* (p. 3085).
- Norman, H., Nordin, N., Din, R., Ally, M., & Dogan, H. (2015). Exploring the roles of social participation in mobile social media learning: A social network analysis. *The International Review of Research in Open and Distributed Learning*, 16(4).
- Norman, H., Nordin, N., Yunus, M., Sham, F.M., Zaidi, M.A.S., & Ally, M. (2017). Online Collaborative Mind-mapping in Multidisciplinary Research Teams for Eliciting Bottom 40 Transdisciplinary Community Issues. In *IABL 2017: 2nd World Conference on Blended Learning* (p. 103-107).
- Radcliffe, D. (2009) A pedagogy-space-technology (PST) framework for designing and evaluating learning places, in: D. Radcliffe, H. Wilson, D. Powell & B. Tibbetts (Eds) *Proceedings of the Next Generation Learning Spaces 2008 Colloquium* (Brisbane, Australia, University of Queensland).



- Ramadan, Z. B., Farah, M. F., & Mrad, M. (2017). An adapted TPB approach to consumers' acceptance of service-delivery drones. *Technology Analysis & Strategic Management*, 29(7), 817-828.
- Ryberg, T., Glud, L. N., Buus, L., & Georgsen, M. (2010, May). Identifying differences in understandings of PBL, theory and Interactional interdependencies. In *Networked Learning Conference 2010* (pp. 943-951).
- Sattar, F., Tamatea, L., & Nawaz, M. (2017). Droning the Pedagogy: Future Prospect of Teaching and Learning. *World Academy of Science, Engineering and Technology, International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering*, 11(6), 1622-1627.
- Schwab, K. (2017). *The fourth industrial revolution*. Crown Business.
- Souter, K., Riddle, M., Sellers, W., & Keppell, M. (2011). *Spaces for knowledge generation*. Final report.
- Tesolin, A., & Tsinakos, A. (2018). Opening Real Doors: Strategies for Using Mobile Augmented Reality to Create Inclusive Distance Education for Learners with Different-Abilities. In *Mobile and Ubiquitous Learning* (pp. 59-80). Springer, Singapore.
- Torres-Sánchez, J., López-Granados, F., Serrano, N., Arquero, O., & Peña, J. M. (2015). High-throughput 3-D monitoring of agricultural-tree plantations with unmanned aerial vehicle (UAV) technology. *PloS one*, 10(6), e0130479.
- Wilson (2009). The process of creating learning space, in: D. Radcliffe, H. Wilson, D. Powell & B. Tibbetts (Eds) *Proceedings of the Next Generation Learning Spaces 2008 Colloquium* (Brisbane, Australia, University of Queensland).
- World Economic Forum (2016). *The fourth industrial revolution: What it means and how to respond*. Accessed on 18 December 2017 at <https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/>
- Zapata García, D. F., Garzón Oviedo, M. A., Pereira Valente, J. R., & Barrientos, A. (2016). *QuadLab: a Project-Based Learning Toolkit for Automation and Robotics Engineering Education*.





# Reconfiguring Blended K-12 Professional Learning Through the *BOLT* Initiative

**Constance Blomgren**

Athabasca University

Alberta, Canada

connieb@athabascau.ca

## ABSTRACT

In this pedagogical reflective paper, as part of a larger qualitative and interpretive research study, the author explicates her experience of redesigning three graduate courses as part of a professional learning initiative for blended and online K-12 teachers. Athabasca University's *Blended and Online Learning and Teaching* (BOLT) initiative has evolved from its original inception and has grown to include a multi-authored blog and a virtual conference. For the teacher of teachers, this initiative has imparted many insights of what it means to meet the professional learning needs of practitioners who daily encounter the challenges and rewards of teaching K-12 students in an online or blended delivery format. Using the Community of Inquiry framework, these redesigned graduate courses offered various opportunities for two distinct learning assignments. Using self-reflective processes based upon small, student-generated artifacts produced during the online offerings, these graduate students created a *Pengagement* assignment, a portmanteau of engagement and pen. A second distinct assignment were blog posts that featured the teacher's lived experiences integrated with insights from current research articles and what it means to blend content and pedagogical knowledge with technology-enhanced teaching and learning. These curated posts form part of the BOLT Multi-authored blog, along with podcasts and videos of the implications of teaching with Open Educational Resources. The blog also hosts archived presentations from a virtual K-12 OER conference. Taken together the assignments and the components of the blog aim to support authentic professional learning during BOLT and upon graduation. The essential question encounters how the BOLT initiative aligns with the findings of an evidence-based research study that identified the needs of and opportunities for teacher professional development.

## Author Keywords

pedagogy of blended learning, blended learning in K-12, blended learning in teacher professional development

## BACKGROUND

Although a separate and independent country, Canada as a nation experiences a variety of strong and significant influences from the United States. These influences range from approximately 90 percent of all Canadians living within 160 kilometres of the shared and longest unguarded international border to English as the first language of the majority of Canadians (CBC news, 2009). Economic ties are also exceptionally strong and collectively these influences also permeate into the area of K-12 educational research and pursuits. Unlike the area of psychology where there has been a recent questioning of the American domination of psychological research (Arnett, 2008), no similarly robust questioning has evolved in Canadian educational studies. Recent changes towards professional learning communities (PLC), problem-based learning, and technology-enhanced learning, for example, are felt both below and above the international border and it is not uncommon for teacher conferences to have American keynote speakers. In a recent Canadian study, professional learning was identified as a key contributor toward enhancing teacher self-efficacy (Beauchamp, Klassen, Parsons, Durksen, & Taylor, 2015) and furthers the pursuit of understanding the learning needs of teachers.

Within the USA, professional development for K-12 teachers has been established by the Boston Consulting Group (BCG) to cost 18 billion dollars annually (2015, p. 13) and yet the effectiveness of this PD to address the ongoing changes brought by technology-enhanced learning and teaching appears inconsistent (p. 14). In 2014, the Gates Foundation hired the BCG and with data from over 1300 teachers, the results indicate a stark divide between practitioner-based perception of authentic professional learning experiences and those orchestrated by educational leaders. Through the survey instrument and its questions related to teacher professional development, teacher respondents identified that effective PD necessities: relevancy, interactivity, authenticity (i.e. delivered by someone who understands the teachers' contexts), is sustained over time, and enhances the professional nature of teaching



(p.4). This list indicates the demanding nature of what constitutes effective professional learning for in-service teachers who range from first-year novices to those close to retirement.

In one attempt to address these identified learning needs, Athabasca University's Centre for Distance Education (CDE) entered into a formal agreement with the Alberta Distance Learning Centre (ADLC) to produce the BOLT initiative and created an innovative, professional learning offering for in-service K-12 teachers. From the autumn of 2014 until the end of 2016, a curriculum redesign process occurred whereby 3 graduate level courses from the master's program in Education were selected and recrafted to fit current K-12 contexts. Each graduate course was divided into 3 modules of one credit each, with an early access period, three weeks of synchronous activity and a further week to complete assignments. Based on the Community of Inquiry (CoI) (Anderson, Liam, Garrison, and Archer, 2001) the pedagogy of technology-enhanced learning formed the essence of the nine modules. Offered to complement the intense periods of the K-12 school calendar, assignments were parsed to be manageably intense yet not overwhelming. Contextualized and personalized by the teacher through examining the lived experiences of pedagogical shifts, the assignments explored technology integration models, current research regarding blended approaches and the emergence of a digital pedagogy.

### **PENGAGEMENT**

Self-reflective practice has become essential to enhancing one's professional meta-cognition and reflecting-in-action (Schön, 1983, Moon, 2001) but within the complexity of a teaching day, many practitioners appreciate an opportunity to thoughtfully apply these skills as a means to integrate professional learning. Rather than having a participation mark, or a quantified measurement of discussion post activity, in the re-design process of the three graduate courses I created the *Pengagement* assignment - a mashup of CoI engagement determined through the cognitive, social and teaching presences; meta-cognition processes; artifact collection, examination and self-critique of the learning encountered in the module; and ending with a self-assessment of one's engagement within the BOLT modules. Over the duration of the module, students collect evidence of their interaction within the content (cognitive presence) or their engagement with the community of learners (social presence) or occurrences of instruction (teaching presence). From these artifacts, students then analyze what was occurring, determine its significance and use these meta-cognitive processes to inform their self-assessed mark. From my own lived experience of self-assessment by students, I included a proviso in the Pengagement assignment description whereby the instructor reserved the right to adjust the self-assessed mark, either lowering or raising it and within a rationale. Although rare, students have self-inflated their level of engagement or conversely underestimated their contributions and the proviso allows a second look at the self-assessed mark and reinforces the understanding that self-assessment requires structure and parameters.

The Pengagement rubric, which I provided at the beginning of each module, encouraged these teachers to see how the CoI could inform their understanding of a blended and digital pedagogy. The reaction to the Pengagement assignment, which originates in the concept of thinking through a pen, self-engagement and active participation, frequently produced insightful student gains even through the limited word count for the artifact exploration may have confined some explorations. The assignment intent was to use what these teachers had created through the module, not demand a new product but to drill down to find through self-reflective writing levels of inter-connections (Dewey as cited by Moon, 2001) that existed in the educational experience that is at the heart of the CoI model (Lipman, 1991). Schön (1983, 1987) and others have illustrated the significance of self-reflective practice as part expanding and deepening professional knowledge gained through experience. Experience becomes more meaningful, relevant and potent when it is thoughtfully examined, thereby changing an experience into *praxis* (Gadamer, Weinsheimer, Russell, 2004) and experience therefore, a teacher unto itself.

### **NON-DISPOSABLE ASSIGNMENTS**

Many teachers who are required to participate in professional development are curious about in-depth study, and in the 2015 BCG report, courses were the most strongly ranked by both teachers and administrators as having the highest satisfaction for a PD format (p. 5). However, many classroom teachers, whether face-to-face, blended or fully online, do not see a personal move into administration roles yet they would like to experience aspects of graduate school. Many teachers love to learn as well as to teach and in some top-performing countries such as Finland, K-12 teachers are required to have a graduate degree before entering the profession (Finnish National Agency for Education, n.d.). The BOLT modules are a potential bridge into graduate studies, and they provide the sustained professional learning of a course but they also challenge the systemic legacy culture of advanced degrees only for teachers who wish to transition into formal administrative roles, such as a school principal. With the BOLT modules' emphasis of a critically informed digital pedagogy for technology-enhanced teaching and learning, the



courses over time extend and deepen the complex skills required to amplify professional competencies through a thoughtfulness of pedagogical knowledge, as identified by Schulman (1986) and an identified need in the Gates report (BCG, 2015, p. 3).

However, the question arises regarding how does one continue to learn once the module, course or program ends? To address this concern, as well as the necessity to thoughtfully encounter theory and research through written compositions, a keystone assignment of graduate school, the BOLT multi-authored blog became part of making BOLT writing assignments relevant, and to avoid Wiley's (2013) "disposable assignments" (para 5) with their large investment of time by two individuals – the student and the instructor but with questionable value more broadly. Over the nine modules, five require students to create a blog post within the context of the curriculum of that specific module, and using a suggested format, akin to the expository expectations of a scholarly essay, these classroom teachers use creative commons images, quotes from current research and scholars, APA citations, and hyperlinks to supporting websites to produce an integration of theory and practice of a complex blog post reflective of the lived experience of a teacher-in-action teaching with technology. The blog author currently understands the teaching context, because the author, similar to the intended reader, *is* a classroom teacher, not an IT guru, an industry expert or an academic. In the *Teachers Know Best* report (BCG, 2015) skepticism of PD experts even extended to administrators who were perceived as not understanding a teacher's context due to a paucity of "classroom seat time" enroute to an administrative role (p. 7). For the 1300 teachers surveyed, ideal professional learning was delivered by another teacher who understood the teaching context (p. 4).

On the BOLT multi-authored blog which has cross-posts to the ADLC blog, the curated posts aim to avoid repetition of popular topics and have covered what it means to teaching code to the post-conference reflections from attending a BlendED teacher conference. These teacher-authors do not have the pressure of maintaining their own blog but yet benefit from the professional growth these posts exemplify as well as the status of digital publication, a kudo to their hard-wrought expertise. These theoretical connections and self-reflective moments woven throughout an informative yet engaging format provide evidence and insights for their own students, parent, colleagues and other stakeholders regarding the sophistication required to teach in this digital age. The long term success of this form of sharing professional knowledge is uncertain, but in the meantime, the BOLT blog provides one avenue of various teacher voices and thereby speaks to the diversity and range of what technology-enhanced teaching and learning entails. It is an authentic blend of how teachers are using digital tools as part of their repertoire, including their reservations, honest concerns and acknowledgement of their limitations and successes. More than a tweet and less than a typical graduate research essay, the BOLT blog models and encourages other teachers to also use a thoughtful pedagogy when teaching with technology.

## RECONFIGURING POST-GRADUATION

With the ongoing developments within K-12 Open Educational Resources (OER), the BOLT blog also houses the *Multiply K-12 OER* media project which holds 17 podcasts and three videos regarding what it means to teach and learn with OER. The BOLT blog also archives the *OpenCon18 K-12 Athabasca* virtual conference presentations. Offered as a free virtual event in early 2018, this satellite conference included a *remix* panel based from a similar offering from the recorded OpenCon17 Berlin conference which was supported in part through the Scholarly Publishing and Academic Resources Coalition (SPARC). The January satellite offering allowed for the contextual professional learning needs of Canadian teachers interested in K-12 OER which inevitably includes blended teaching approaches. As well, this innovative offering also tied into the larger OER global conversations experienced earlier in Berlin.

Although there were various reasons to pursue a virtual conference, a significant one was the need to support BOLT graduates with the knowledge of what the upcoming changes OER will require at all levels of K-12 education. Wiley's (2014) 5Rs of OER – retain, reuse, revise, remix and redistribute – are part of the culture of OER and advocates see teacher awareness and use as a means for "bottom-up" (Rennie and Reynolds, 2014, p. 17) or little OER (Weller, 2010) to percolate up to meet with "top-down" OER (Rennie and Reynolds, 2014, p. 17) or big OER (Weller, 2010). OER effectively implemented is a sophisticated form of collegial collaboration although different from a school-based collaborative community, both forms require elements of trust, sharing and ongoing



commitment to the broad goals of education. As indicated in the Gates survey results (BCG, 2014) collaborative communities are a professional characteristic highly valued due to their varied and substantial individual and collective benefits. The virtual conference archive allows visitors, including BOLT graduates and those within their professional networks to view or review these short presentations and partake of the ongoing professional learning opportunities that the BOLT initiative has established. The BOLT blog is about extending and reconfiguring graduate course assignments and learning to become a touchstone beyond graduation. Through the authentic teacher voice and experiences of blended K-12 teaching and learning the BOLT blog is more than a collection of posts, as it holds relevant media about what it means to teach with OER and holds potential to become an even stronger node in the connections that define the Canadian emerging K-12 OER and blended teacher community network.

## CONCLUSION

Despite BOLT's alignment with clearly identified teacher professional development needs the initiative has had minimal success with respect to robust enrollments. There are numerous rejoinders to the call for professional development by teachers, administrators, and other stakeholders, of which BOLT is one small response. There are plentiful demands for teachers' attention with ongoing and substantial curriculum changes, students' complex learning needs, the movement toward personalized learning, data analytics, and the list goes on and on. But yet, teachers do know best what they need and want:

Much of what systems consider professional development, teachers perceive as wasted time. But learning activities that directly support teacher practice, such as planning and *reflecting on instruction* [emphasis added], are valued much more positively by teachers, as they tap into their motivation to help students learn. (BCG, 2014, p. 11).

Additionally, the lack of time, is a substantial stress for all level of educators and this very lack influences the instruction provided (Alberta Teachers Association, 2011). A short half day workshop versus the time commitment of a course, even a parsed one-credit offering, works against professional learning responses such as BOLT. This is not an excuse but a reality and hence the need for a shift in the conception of a static noun phrase, professional development, to the progressive tense and its embedded sense of activity ongoing, of professional *learning*. Although the BOLT initiative is relevant, interactive and sustained over time, its success is not clear. Along with similar offerings, as the Gates Foundation's BCG survey showed, the disconnect between the perceived teacher needs and the meeting of these stated needs require a substantial shift in conceptualizing the roles and responsibilities to support the learning needs of teachers. It is time to redefine and reconfigure in-service teacher professional learning.

## REFERENCES

- Alberta Teachers Association, (2011). *The impact of digital technologies on teachers working in flexible working environments*. Retrieved from <https://www.teachers.ab.ca/SiteCollectionDocuments/ATA/Publications/Research/PD-86-21%20Impact%20of%20Digital%20Technologies.pdf>
- Anderson, T., Liam, R., Garrison, D. R., & Archer, W. (2001). Assessing teaching presence in a computer conferencing context.
- Arnett, J. J. (2008). The neglected 95%: why American psychology needs to become less American. *American Psychologist*, 63(7), 602.
- Beauchamp, L., Klassen, R., Parsons, J., Durksen, T., & Taylor, L. (2015). *Exploring the development of teacher efficacy through professional learning experiences*. Alberta Teachers' Association.
- Boston Consulting Group, (2015). Teachers know best: Teachers' views on professional development. *Bill and Melinda Gates Foundation*. [pdf file] Retrieved from <http://k12education.gatesfoundation.org/resource/teachers-know-best-teachers-views-on-professional-development/>
- CBC News (2009). By the numbers [Blog post] Retrieved from <http://www.cbc.ca/news/canada/by-the-numbers->



1.801937

- Dewey, J (1993) *How we think*. Boston, MA: D.C. Heath and Co.
- Gadamer, H.-G., Weinsheimer, J., & Marshall, D. G. (2004). *Truth and method*. London: Continuum.
- Finnish National Agency for Education, (n.d.). Teacher education. Retrieved from [http://www.oph.fi/english/education\\_system/teacher\\_education](http://www.oph.fi/english/education_system/teacher_education).
- Lipman, M. (1991). *Thinking in education*. New York: Cambridge University Press
- Moon, J. (2001). PDP working paper 4: Reflection in higher education learning. *Higher Education Academy*. Retrieved from [www.sussex.ac.uk/education/.../jenny-moon-workshop---reflection-in-higher-education](http://www.sussex.ac.uk/education/.../jenny-moon-workshop---reflection-in-higher-education)
- Rennie, F., & Reynolds, P. (2014). Two Models for Sharing Digital Open Educational Resources. *Journal of Perspectives in Applied Academic Practice*, 2(2).
- Schön, D. A. (1983). *The reflective practitioner: How professionals think in action*. New York: Basic Books.
- Schön, D. A. (1987). *Educating the reflective practitioner: Toward a new design for teaching and learning in the professions*. San Francisco, CA: Jossey-Bass.
- Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational researcher*, 15(2), 4-14.
- Weller, M. (2010). Big and Little OER. In *Open Ed 2010 Proceedings*. Barcelona: UOC, OU, BYU. Retrieved from <http://openaccess.uoc.edu/webapps/o2/bitstream/10609/4851/6/Weller.pdf>
- Wiley, D. (2013, October 21). What is open pedagogy? [Blog post] <https://opencontent.org/blog/archives/2975>
- Wiley, D. (2014, March 5). The access compromise and the 5<sup>th</sup> R. [blog post] <https://opencontent.org/blog/archives/3221>



# A Proposed Blended Educational Framework for Administration of Enterprises in Nowadays' Greek Financial Crisis

Thalia Vasiliadou, Evgenia Papadopoulou, Avgoustos Tsinakos,  
Advanced Educational Technologies and Mobile Applications Lab, Eastern Macedonia and Thrace  
Institute of Technology (AETMA lab), Kavala, 65404, Greece;  
tvasiliad@teiemt.gr (Th.V.); pvenia@gmail.com (E.P.); tsinakos@teiemt.gr (A.T.)

## ABSTRACT

Training on issues concerning the administration of enterprises is very wide spread in educational systems and is requested from most people who want to work for enterprises or to become entrepreneurs themselves. Many Greek universities, institutions and organizations that support life-long learning offer education on this subject field. Greek entrepreneurs nowadays need to face issues that they have not faced before and were not able to predict, due to the current Greek financial crisis. Many of them have studied to the above programs to get the background knowledge for their job; however the great difficulties that they seem to face and the continuous closing of the enterprises demonstrate that the knowledge they got is not applicable and effective to solve the current issues. In an attempt to solve this problem the creation of a blended learning course is proposed to train Greek entrepreneurs on how to practically face their issues. The program will consider the characteristics of human nature that resists to changing of thinking. It will focus on persuading entrepreneurs about the importance of applying the presented new effective strategies and on how to practice them. The proposed educational framework will combine the asynchronous and synchronous communication, so that entrepreneurs can access from their mobile devices. This will make it easier for them to study, considering the daily stressed program of the entrepreneurs. The synchronous meetings will assist interaction where current real problems of entrepreneurs will be presented and solutions based on the practices will be discussed so that the entrepreneurs will practice systematically the theory. On campus support will also be offered partially with the aim to assist entrepreneurs and future students all over the country.

## KEYWORDS

mobile learning, blended learning, entrepreneurs, Greek financial crisis, training, practical solutions

## INTRODUCTION

New financial problems of crucial importance occur nowadays in Greece for the first time and affect the enterprises' functioning (Beis, 2011). The Greek economy is currently in the seventh year of recession. The country's debts are high and the public revenues are not enough to pay for these debts (Misik, 2016, Kirtsos, 2013 & Koukakis, 2017). These issues created a feeling of insecurity and pessimism in the market place (Ravanos, 2017). People find it difficult to get a job in private enterprises or in public services (Salourou, 2017). Others get fired from their jobs, because the enterprise where they had been working is about to close (Belos, 2016). Others who work in banks or public institutions lose their jobs because many of these organizations close. Other employees had to face a remarkable decrease in their wages, which made it difficult for them to afford their personal financial obligations (Mihalaros, 2016). The rest of those who keep working, live with the continuous fear of getting fired in the near future.

Considering also the following data that afford the current Greek enterprising conditions, a number of relevant conclusions are drawn. These data were all selected from a recent research conducted by the FEIR, the Greek Foundation for Economic and Industrial Research, during Greece's last financial crisis (Giotopoulos, Stavraki, Tsakanikas, Valavanioti, 2017). The FEIR is an organization that was created in 1975, in Greece with the aim to do research on issues concerning Greek economy, to offer objective and reliable information to public concerning important financial issues, to make suggestions and to offer solutions on issues of great importance on crucial moments of Greek economy. The FEIR has done research for the Global Entrepreneurship Monitor (GEM) research program. The GEM program collects elements from developing and innovative countries and contributes to the international forum about entrepreneurship. According to the same





FEIR's research concerning entrepreneurship in Greece, the following findings were presented. About 400,000 people in Greece start working as entrepreneurs and 1,200,000 people will have become entrepreneurs by the end of the next 3 years. 4 out of 9 people, who are thinking of becoming entrepreneurs, finally do so. Also, although the Greek entrepreneurs are among the first who believe they have all the necessary knowledge to become a good entrepreneur, they are also among the first people in the list of GEM countries who are afraid of failure. Other elements of the research are that the number of enterprises that are functioning for a period of at least 3.5 years is increasing steadily and the 20% of people aged between 18 and 64 years work as entrepreneurs. Greece holds the third position in enterprising among the GEM countries. Moreover, almost the 36% of the entrepreneurs hold a degree of tertiary education. The 42.7% are only high school graduates and this number is bigger than the one in 2015. Last, the 3.8% of entrepreneurs have stopped or paused their businesses' functioning in 2016. This number seems to be far from the 1.9% percentage of the GEM countries, and happens mainly due to the bad administration of enterprises which causes small profits. The above numbers present a tendency to enterprising and a simultaneous need to assist the new businesses due to the failures that occur to them.

Based on the above current and real economic data, it can be considered that although Greece currently meets financial crisis that hits the businesses' functioning, the number of people who want to become entrepreneurs will increase even more, regarding that people lose their current jobs and it is not easy for them to find new ones at public services or enterprises, so they will be enforced to start their own businesses. Most of these people are also not aware of the fact that they have the opportunity to learn how to manage an enterprise in the current situation, whatever their location or age is and without the prerequisite of having graduated a university. Also, most entrepreneurs are afraid of expanding their enterprises, as they are not trained to manage larger companies. However, the Greek enterprises have the possibility to succeed. This can be achieved by training entrepreneurs to acquire the proper competencies, as today they are not suitably trained to face the above current situation which they were not able to predict (Barton & Look, 2008). Considering the elements of FEIR and the whole context created by the current Greek financial crisis for the Greek enterprises, people will be looking for solutions to their fears, as they unavoidably realize that they have to start a business on their own or alternatively acquire the knowledge and the skills that will make them competent enough to maintain their jobs in enterprises under the current new financial conditions (Krause, 1998 & Warnecke, 1993). The market seems to need a training program on these skills because of the conditions that will keep changing dynamically and more intensively for the next period. In an attempt to service this need, this paper presents a proposal for the creation of an innovative for the Greek educational system blended learning framework.

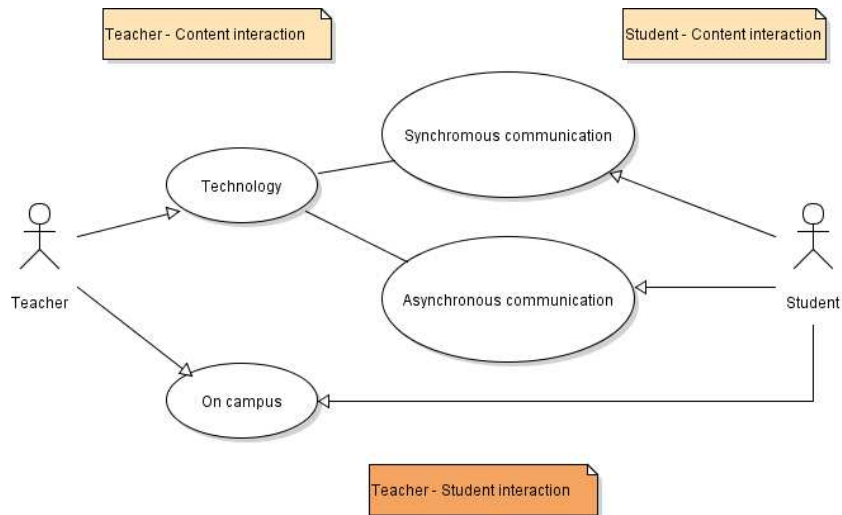
#### **DESCRIPTION OF THE PROPOSED BLENDED LEARNING FRAMEWORK - METHODOLOGY**

The proposal affords the creation of an educational program that aims to train students to be able to organize and manage a Greek enterprise under the current Greek financial crisis, through blended learning procedures and without the requirement for the students to move for studying. The students will be taught all the knowledge needed for someone to start up an enterprise. They will get trained on how to maintain and support their businesses and on all the entrepreneurship skills needed to manage and organize an enterprise effectively, on their own, under current Greek financial conditions that change dynamically and affect enterprises' functioning (Fox, 2000, Blanchard, 2008 & Mandino, 2002). They will practice to be innovative and become able to determine whether a product is innovative at the market. They will also get trained on marketing skills concerning how products can be sold throughout the country and abroad. They will acquire skills on how to manage the producing procedure, how an enterprise is organized and operated, how they can respond to competition and take risks, how the enterprise can be expanded through its sales and investments, how the entrepreneur can control and manage time, first materials, money, resources and maintain quality in products, by creating effective business plans. The students will learn to make the proper decision making in each occasion that arises and to react to sudden problems and failures or to predict them. Also, they will get skilled on how to inspire personnel, organize teamwork, set goals and visions for growth. The fact that they will be taught how to react to sudden problems and failures and practice many interesting authentic examples will certainly be of high and special importance. Considering also the fact that the nowadays' Greek financial crisis caused a major reduction of government funding to enterprises, one of the program's goals will be to support the government's policies by qualifying entrepreneurs to function independently from government support and to respond to current financial demands at the market.

The program will offer a low-cost short-lasting blended learning course that will train on the above skills. The course will be offered through an online educational platform, Moodle, where the syllabus and the exercises will be uploaded. The exercises will be interactive and give students immediate feedback on their every wrong or right answer. The online learning will be enhanced by synchronous communication meetings among the parties that will take place in agreed dates, through Skype, and in which realistic examples of good and bad practices will be presented. The synchronous communications will significantly support the students and focus on persuading them that using only their experience is not enough to make the proper decisions and they will get trained to apply effective integrated plans on real situations (Blanchard, 2008). Experiences will be exchanged in these synchronous communications and effective solutions will be examined for every situation, considering the particular characteristics of the entrepreneurs' personalities. These synchronous communications will be recorded and uploaded to the YouTube channel that will be created for the program's learning goals. These videos will be



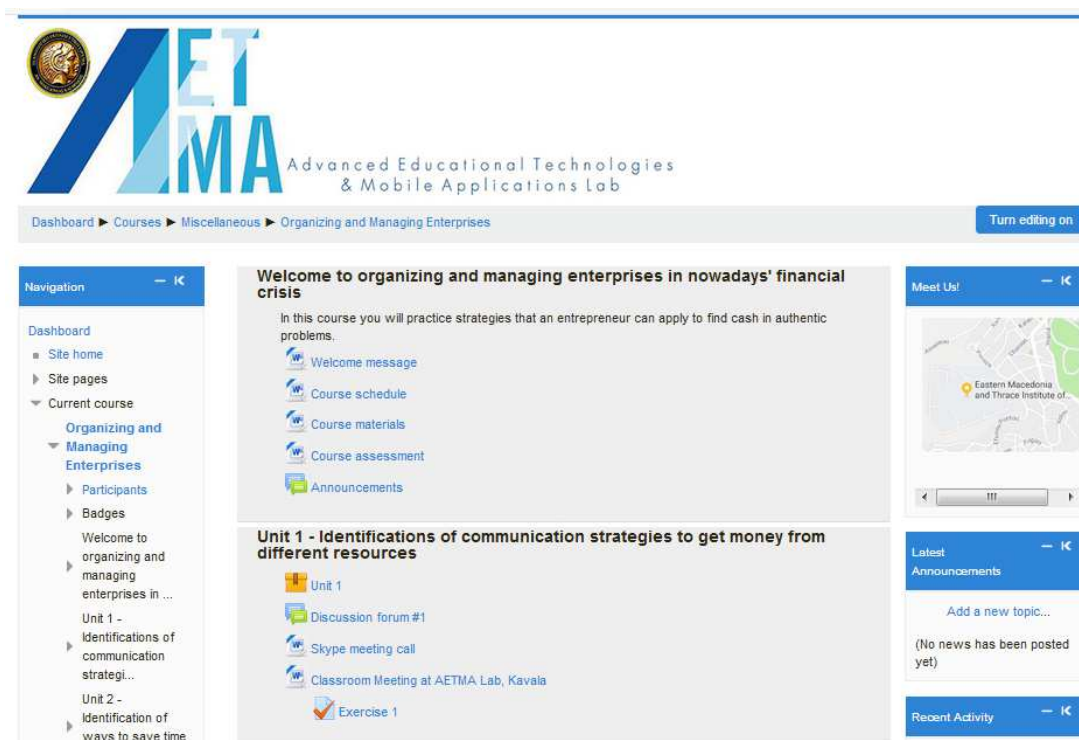
accessible by the students as a supplementary learning resource. Twitter will also be used to send immediate messages to students for any important announcements concerning the courses. Last, the students will be able to meet physically at scheduled classroom meetings in Kavala that will centrally administer the program; however their presence will not be required at any of these meetings. The students will be able to completely attend the program through their mobile devices as the program considers seriously the busy and stressful daily program of people who work for enterprises. Figure 1 presents the methodology of interaction among the parties:



**Figure 1. Teacher – Student interaction**

Figure 2 presents a screenshot of a sample of the course in Moodle:





**Figure 2. A screenshot of the sample course in Moodle**

The course will be offered in the Greek and the English language and there will be an effort to reach 10,000 students. It will last for three months. The tuition fees will be low. Students will receive certificates of successful performance or simply of attendance of the course if they fail the assessment exercises. The funding will be ensured by governmental support, tuition fees, by the private sector and European programmes which currently financially support Greek economy. Moreover, the program will offer consulting services to its students after they finish their studies, to associations whose members attended the program and to anyone interested individual, enterprise or organization. Last, a digital library will be available to anyone interested.

The new program will be supported by the “Advanced Educational Technologies and Mobile Applications Lab (AETMA Lab)” which is established and functions at the “Eastern Macedonia and Thrace Institute of Technology (EMATTECH)”, in Kavala, Greece. The Institute is public and trains its students on technological sciences and offers degrees. The program will be functioning according to the vision, mission and goals of the AETMA Lab. The AETMA Lab has its own department that creates and offers e-learning and blended learning courses through the Moodle platform, so it will have the responsibility and decision making for the new program’s organizing and functioning. The Lab hosts its own building and technological equipment to support its blended learning courses, so the new program’s courses will be hosted in the Lab’s server. The instructors and students will only need internet connection to access the material. The future students who live in Kavala will supplementary be able to attend scheduled classroom meetings with their instructors at the AETMA’s venue. Moreover, people who have completed the program successfully will be able to support voluntarily any new registered students locally, by answering their questions concerning the implementation of the program. This way, the Lab aims to create a community of skilled people who will support the promotion and effective implementation of the program and the training of entrepreneurs all over the country. Figure 3 presents analytically the structure of the proposed framework:



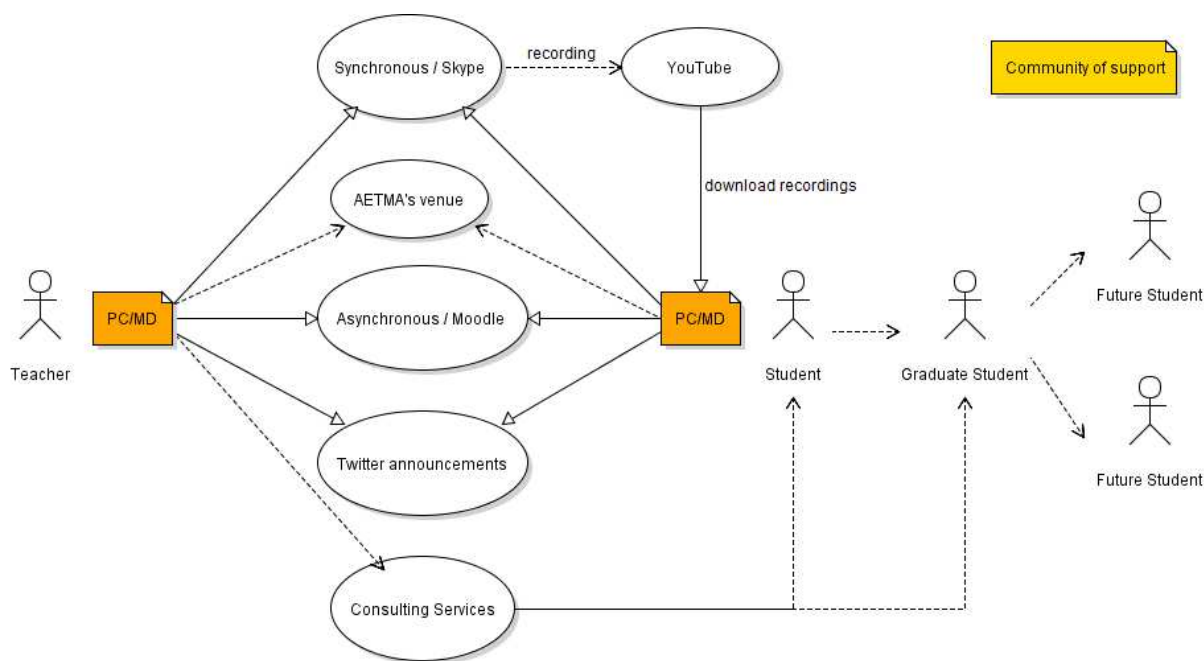


Figure 3. The structure of the framework

## PARTICIPANTS' PROFILE

### Description of the Staff

The technical personnel of the AETMA Lab have experience in the creation of blended learning courses, so they are already acquainted with e-learning technologies. Personnel for the secretariat services will be provided by the EMATTECH. The best teaching personnel will be employed to cover the needs of students as effectively as possible through blended learning techniques. Instructors for the e-learning courses will be Greek or foreign professors from the EMATTECH or all country's Institutes or universities' faculties who have degrees or certificates in teaching through e-learning or will be experts that work outside the EMATTECH so that they will connect instruction to the market. Currently, the instructors of EMATTECH's faculties have already been allotted to create e-learning courses on the Moodle platform to support the students' blended learning. At present, the instructors are in an effort to embrace the online constructed courses in the instructional processes, so they are acquainted with the blended learning techniques and able to support the proposed program.

### Description of the Students

The following issues should seriously be taken into account concerning our potential students' profile. The difficulties that nowadays people meet to find a new job will make a lot of them and especially young to want to start their own business. Considering that the Greek economy needs to be facilitated, most people need to become entrepreneurs or work in enterprises. Also, many Greek entrepreneurs are not usually formally trained. Some of them have acquired degrees and certificates on managing enterprises but their enterprises are also hit by the Greek financial crisis, so the knowledge they had gained is proved to be not practically effective. A big percentage and mainly the old entrepreneurs have acquired their managing skills only through their experience and through the directions they are given from parents in family enterprises. Considering these issues we conclude on the following categories for our students' profile: 1) Old existing entrepreneurs. These people must be decided and willing to make changes in the strategies that they apply for years in their enterprises and through their training to the new program to become able to make adjustments in order to face the current new market demands. 2) Those who think about creating their own enterprise. This category includes people, who cannot find a job in the public sector or got fired from public sector so they choose to make their own business. It needs to be considered that currently the Greek government does not hire new civil servants and dismisses many old, as due to the current financial conditions they can no longer be paid. There are also people who have been fired from their jobs in the private sector and need a new one, so they think about creating their own. This category includes a lot of Greek people who have high educational background and had been working in high level positions. Moreover, there are people in this category who have a



job but are afraid of losing it due to the uncertainty that the financial issues have created. These people are willing to learn how a new enterprise is set, in case they will need to create their own. Last, there may be people that have immigrated and have come to work and start a new enterprise in Greece. All these people need to get trained in order to acquire all the needed skills to set up an enterprise that will be adjusted to the new market demands. 3) Those who work in enterprises, public institutions or associations. These people need to get trained in order to get adjusted to the new market demands and assist the organizations where they work to more easily respond to these demands. This is a difficult task, considering the Greek personality's attribute for resistance to change, as people in this category consider that they already know everything needed about their jobs.

The future students will generally be men and women, irrelevant of their ages, must be graduates at least of secondary education and acquainted with the basics of computers and the use of internet. Last, among the students there will be those entrepreneurs that have already built their company somewhere and cannot move to Kavala to study or those that because of financial difficulties or family reasons cannot move to another place. The common attribute of all will be their willingness to change current views and get trained on new strategies that fit the current financial conditions. These attributes will be intensively practised during the synchronous communications and this is part of the competitive advantage of the program.

### **Potential Student Sensitivities**

There are issues that would be important to consider for the future students of the innovative proposed program. The teachers will have the responsibility to persuade them about how valuable our program would be for them in order to face the current demanding conditions that have been created due to the Greek financial crisis, considering that it will train them on practical effective applications. There will be offered little theoretical knowledge presented in the online platform but mainly practical knowledge that will be shared in synchronous communications with simple, understandable terms. Through this simplicity of knowledge and the convenience of the learning procedure, there will be an effort to make students more open to the new knowledge and persuade them about its effectiveness in order to adopt it. There are certainly a lot of Greek people that believe that they have all the necessary knowledge and that applying to our product would be waste of money and that teaching them on how to act would be a violation of their personality. The need for change in this attitude is something in which the new unit will focus. Another Greek characteristic is the fact that people want to spend little time on training and get fast the successful results and with the lowest cost required. All these are considered by the new program, so emphasis will be given to synchronous communication with students in order to minimize the unsolved problems and questions. Recognizing all these Greek sensitivities would be a necessary step before designing the program, so that to be considered effectively to its strategic planning and gain the competitive advantage.

## **CHALLENGES – EXPECTED RESULTS**

### **Outcomes**

The following outcomes are expected to be achieved through the creation of the new program. Learners, instructors, support staff and managers, all contribute to the outcomes' successful accomplishment. The expected outcomes are aligned with the mission of the AETMA Lab. Specifically, 1) The program will be short-lasting, in low cost that will train on practical and not theoretical knowledge. 2) The knowledge offered will be adjusted to the new Greek market conditions which demand direct and effective solutions to the problems that have arose. There will be created effective learning courses towards this goal. This will considerably assist people who want to immigrate in Greece. 3) The AETMA Lab and the Institute will become an attractive point for teachers and students, in order to work and get trained on the program, irrelevant of their age and ethnicity. 4) The AETMA Lab will cooperate with other Universities and offer certificates of higher education level, with the validity of these Universities. 5) The instructors will work towards the AETMA Lab's vision. 6) The personnel occupied will be experts in blended learning 7) The number of registered students will continuously increase and it will have reached 10,000 by the end of the next 5 years 8) The AETMA Lab will make people want to become entrepreneurs. This will assist the government's effort to promote entrepreneurship and reduction of unemployment. 9) The students will be satisfied from their training, regarding their personal learning goals and expectations. The knowledge will assist them with solving problems to their jobs. 10) The courseware will be of high quality and will be continuously upgraded and improved in accordance with the current market demands. The program will be supportive to any problems that the students face. 11) The managing and teaching personnel as well as the students will be proud of their coping with the Lab and the EMATTECH. The local governors and generally Greek people will be proud of the program's existence. 12) The AETMA Lab will promote student's access to knowledge. This will be achieved through: a)The program will be advertised following the marketing plan b)The tuition fees will be maintained low c)A digital library will be created that will be used by the students even after their completion of the program 13)The Lab will be reinforced financially. This way it will verify high quality of instruction, teaching personnel and technological equipment. The financial strength will assist its work towards the AETMA Lab's vision, mission and goals. It will be achieved through: a)The application of an effective marketing plan for registration of new students b)Ensuring revenues from European programs c)Ensuring revenues from institutions and enterprises whose





personnel are among the new program's students d)Ensuring revenues from social events e)Ensuring governmental funding. Government will on its side be supported by the program's functioning towards the goal for adjustment of Greek entrepreneurs to the new market conditions. 14)The program will have as a central point in the Institute of Kavala and can then make secondary supportive nodes for its functioning in surrounding cities of Kavala, like Thessaloniki, Alexandroupoli and Ioannina. There are a lot of enterprises functioning in the surrounding cities of Kavala which will need the support of the AETMA Lab's new program.

### **Current Competitors**

Based on our business analysis results, there are very few competitors that offer the same program with us at the Greek market. Among them, we distinguish our major existing Greek competitor: the "Business Administration" e-learning program of the "National and Kapodestrian University (NKU)" of Athens (<http://en.uoa.gr/>). Another competitor is the "Hellenic Open University (HOU)" (<http://www.eap.gr>). We should also note that there are a numerous Greek 'Managing Enterprises' faculties in Greek Tertiary Education and many seminars that are offered from other Greek educational institutions like the University of Ioannina or the Democritus University of Thrace. Most of these programs neither are offered through blended learning nor focus on practical applications of financial theory to nowadays financial reality. Instead, these programs focus on much general theoretical knowledge during traditional classroom meetings.

### **Where is the Overlap**

The proposed program and the above three major competitors will overlap. Firstly, except for theoretical issues on organizing and managing enterprises, the proposed program will concentrate on practical applications and effective solutions to crucial issues. This is something that the already existing competitors do not offer considering that people who have studied to them keep facing practical issues to their enterprises and they seem that they have not acquired the necessary skills to encounter these issues. Secondly, in contrast to competitors, the program will take in serious consideration the attribute of the Greek entrepreneur's sensitive personality characteristics that finds it difficult to approve new knowledge through studying and is looking for positive results the sooner the possible, with the least effort required. On the contrary, the proposed program will use simple terminology for easy understanding without theoretical and not applicable details that would disappoint the entrepreneur, in order to persuade him about the effectiveness of the new knowledge that will be offered. Third, the new program will offer certificates exclusively on organizing and managing enterprises, in contrast to our competitors that offer certificates and degrees on more general categories. It will also be offered through mobile learning, in contrast to some of competitors that require student's physical presence.

### **CONCLUSION**

The current Greek financial crisis has created a need for the people who work for enterprises to get trained on how to face uncertain conditions and unpredictable problems. Today in the Greek market, there are institutes, private and public organizations that offer education on managing and administering enterprises. Unfortunately, the existing Greek educational system offers a mass of theoretical knowledge. The recent elements collected by FEIR and the difficulties with disastrous results that the Greek enterprises face nowadays demonstrate that the knowledge that the above educational organizations offer is not adjusted to the current Greek market's demands. The Greek financial circumstances will keep changing intensively for the next period of time and will cause the same problems to all entrepreneurs. So, entrepreneurs and generally Greeks need immediate support considering the dynamic changes in Greek economy and the sense of uncertainty that these conditions create. The on campus training that many of the above current educational organizations offer is not a form of training that fits the stressed program of entrepreneurs who cannot easily find time to move to study. Instead, the proposed innovative for the Greek market program-course focuses on training entrepreneurs through mobile learning to become able to face the current Greek financial problems independently and will be designed considering the special characteristics of Greek entrepreneurs' personalities. The program concentrates to offering practical and effective knowledge and giving solutions to students' problems directly through the effective, easy to understand instruction of experts. Through the asynchronous communication students will practice through interactive exercises, receiving a lot of feedback. The obligatory synchronous will focus on practice of effective strategies and the optional supportive classroom meetings will complement the others. The AETMA Lab will fully support the organization of the program and there will be a plan of creating a community of successful graduates of the innovative program who will volunteer to support the promotion of the program in the areas of their living all over the country. As a result, it seems that it is the proper time for the AETMA Lab to work towards the new program's accomplishment and release it to the Greek market. Its success will be based on achieving the Lab's vision, meaning first, to reach excellence in education of Greeks and foreign students on Organizing and Managing Enterprises who want to start-up a business in nowadays' Greek financial reality, second, to continuously train and increase the occupied personnel and, of course, third to ensure funding in order to achieve all the above.





## REFERENCES

- Barton L. & Look, R. (2008). *Harvard business essentials – Crisis management*. Athens: Moderni Keri A.E.E.
- Beis, K. (2011). *The Greece that I loved, the Greek bankruptcy. Where are we? Where do we go? What perspectives do we have?* Athens: Livani A.V.E.
- Belos, E. (2016, June, 29). More than 244,000 Greek businesses have been closed since 2008. *Kathimerini*, Retrieved from <http://www.kathimerini.gr/865447/article/oikonomia/ellhnikh-oikonomia/perissoteres-apo-244000-ellhnikes-epixeirhseis-ekleisan-apo-to-2008>
- Blanchard, K. (2008). *Leadership at a higher level*. Athens: Klidarithmos with license from Pearson Education, Inc.
- Fox, J. (2000). *How to become CEO*. Athens: Kritiki AE
- Giotopoulos, I., Stavradi, S., Tsakanikas, A., Valavanioti, E. (2017). Annual Entrepreneurship report 2016-2017: Early stage entrepreneurship rates decrease, *Foundation for Economic & Industrial Research*. Retrieved from [http://iobe.gr/research\\_b\\_en.asp](http://iobe.gr/research_b_en.asp)
- Hellenic Open University Retrieved from [www.eap.gr](http://www.eap.gr)
- Kirtsos, G. (2013). *Get angry but dare!* Lake Mary: Progressive communications
- Koukakis, Th. (2017, July, 21). Why the International Monetary Fund makes Greek debt "extremely unsustainable". *CNN Greece*, Retrieved from <http://www.cnn.gr/oikonomia/story/90005/giati-to-dnt-vgazei-exairetika-mi-viosimo-to-elliniko-xreos>
- Krause, D. (1998). *The art of war for executives*. Athens: Kritiki A.E.
- Mandino, O. (2002). *The largest seller in the world*. Athens: Dioptra
- Mihalaros, S. (2016, August, 24). World champion Greece in wage cuts due to the crisis. *Protothema*, Retrieved from <http://www.protothema.gr/economy/article/605058/pagosmia-protathlitria-i-ellada-sti-meiosi-misthon-logo-tis-krisis/>
- Misik, R. (2016). *Capitalism breaks: Do we now become happier?* Athens: Metaihmio
- National Kapodestrian University Retrieved from <http://www.uoa.gr/>
- Planning and Management in DE. (2012). *MDDE 605 Study Guide*. Athabasca, AB: Master of Distance Education, Athabasca University
- Project Management. (2013). *MDDE 618 Study Guide*. Athabasca, AB: Master of Distance Education, Athabasca University
- Ravanos, A. (2017, December, 17). Melancholic Democracy. *Tovima*, Retrieved from <http://www.tovima.gr/politics/article/?aid=925530>
- Salourou, R. (2017, October, 17). No 1 out of 2 Greek young graduates find work. *Kathimerini*, Retrieved from <http://www.kathimerini.gr/879372/article/oikonomia/ellhnikh-oikonomia/den-vriskei-doyleia-1-stoys-2-ellhnes-neoys-ptyxiouxoys>
- University of Ioannina Retrieved from <http://www.uoi.gr/gr/>
- Warnecke H.-J. (1993). *The other management: New culture in business*. Athens: Fotosin AVEE - Ypsilon



## Create a Blended Learning Space with Whatsapp

Alice Gasparini  
University G. D'Annunzio  
Chieti and Pescara, Italy  
*alice.gasparini@unich.it*

### ABSTRACT

The paper explores how instant messaging platforms can be used as informal learning spaces where students can practice communication skills in a foreign language out of the classroom. The experiment focuses on Whatsapp, the most popular instant messaging platform in Italy, where the research will take place. Whatsapp will be used to implement an informal learning path, parallel to formal learning, using Task Based Learning. It draws upon the theories of Kukulska-Hulme (2005, 2017), G.Trentin (2015) and Danesi (1988) and refers to the BYOD approach.

Most of the students own a mobile tool: a smartphone or a tablet and use Whatsapp on a daily basis. The platform is multimodal for recording and sharing, photos, audio and video files, and offers a chat where students can write in the foreign language they are studying, which makes it the perfect environment for this research. The expected outcomes of the experiment aim at giving learners more opportunities to use the language outside formal learning settings and, therefore, communication skills and problem solving will be enhanced. In the specific case of a foreign language, there is a strong need to use the language out of the classroom and, consequently, to create opportunities in less formal contexts. Therefore, small tasks related to real life will be identified and carried out in a Task-Based Language Teaching perspective through the chosen platform.

The tasks will be linked to the syllabus and curriculum of the courses; the students will carry them out after the formal teaching hours. The targeted population of the study will consist of Italian mother-tongue students attending foreign language courses and not Italian speaking students who are learning Italian as 2<sup>nd</sup> language at University. This step will be followed by interviews and surveys to assess the effects of the intervention on their language learning process, participation and motivation.



## Author Keywords

Whatsapp, informal learning, task based learning, blended learning.

## INTRODUCTION

Mobile learning is defined “as learning or teaching by means of mobile devices such as tablets, laptops, smartphones, to which you can add consoles, or video game devices”. (Fratter, 2016). However, the difference between e-learning and mobile learning lies not only in the type of device chosen by the student, but in a greater immediacy of use and in greater flexibility compared to the computer, just think of the ease and speed with which you can access to the functions and applications of tablets and smartphones thanks to touchscreens. Learning is everywhere, *anytime and anywhere*, and thanks to that it often goes beyond the dimension and formal aspect of learning.

The possibility of using these devices anywhere and at any time makes them the ideal tools for informal learning as well as creators of greater learning opportunities, “another aspect of the ability of mobile learning to provide extra opportunities for learning is the way mobile devices can be used in dead-time, small bursts of otherwise unused time, such as waiting in lifts, cafes, buses or queues”. (Traxler & Wishart, 2011).

In Kukulska-Hulme words, “mobile technologies are uniquely suited to supporting language learning on an on-going basis, in a range of settings according to a person's ability and adapted their needs”. (Kukulska-Hulme, 2017)

Smartphones and tablets are more widespread than traditional computers and user trends make them the new frontier of distance learning. The February 2017 Audiweb data on the digital audience shows that in Italy the total digital audience in the reference month reached 30.7 million unique users (56% of the population aged 2 and over), of which 13 million on mobile devices such as smartphones and tablets. According the Global Digital Report 2018 by Hootsuite and Wearesocial Italy has 49 million of unique mobile users of which 30 million of active mobile social users<sup>1</sup>. Worldwide, according to the Ericsson Mobility Report of November 2016 there were 250 million subscriptions to mobile devices, such as smartphones, tablets and routers for internet connection; by 2022, an increase of up to 320 million is expected. Also based on these latest forecasts, mobile learning is, without a doubt, a very current topic and studied in the educational field. It is possible to find a wide bibliography on the use of SMS (Short Message Service) and on the impact of mobile learning on teaching; for example, the aforementioned Traxler and Wishart or the experiment carried out in the School of Languages and Linguistics of Griffith University in Australia, where the SMS has become a means of learning Italian for beginners.

In Italy we can name successful experiments which introduced and tested the use of mobile technology in schools: the project MouLE by CNR, Italian National Research Council, Institute for Educational Technologies. The research focused on investigating the impact of mobile technologies on educational contexts. It was awarded with the GOLD Award at the mLearn 2009, in recognition of Mobile Learning Excellence for the Education category. The scholars involved designed a special platform as learning environment, a very challenging project that proved how technology can enhance teaching and learning experience. Another mobile learning experiment is called O'Munacciedd<sup>2</sup>, a mobile didactic treasure hunt in which children explore the city.

<sup>1</sup><https://wearesocial.com/blog/2018/01/global-digital-report-2018>

<sup>2</sup>App available at <http://munaciedd.pa.itd.cnr.it/>



These challenging and interesting projects share a common element: a software or an application were designed especially for the experiment.

The project, instead, aims to use an already existing platform, known and popular among youth but not only: the instant messaging platform Whatsapp. It is an instant messaging platform, owned by Facebook, used by more than a billion people in 180 countries<sup>3</sup>. In Italy Whatsapp is the most downloaded application used to communicate. It offers a high range of multimodality: video, audio recording, photos, chat. “New models and teaching approaches which can fully exploit the potential of those technologies that most of us now habitually use in everyday life [...]. Deep reflection is thus required as to how technological, particularly communication, tools can be fruitfully used in this sense”. (Trentin 2015). Whatsapp is not designed to be a teaching or learning platform, it is a platform designed for communication, it can't be a learning environment in itself, as a matter of fact the research employs it not as a substitution of formal experience but it is complementary to it.

Formal and informal learning merge, traditional and innovation merge.

Using something already existing and known implies no extra costs, no extra time to spend on instructing people to use it. Creating a blended mobile learning experience is an answer to the strong resistance of the teachers toward mobile tools, like smartphones, and an answer the limitations of the tool. The smartphone will be used outside of the classroom, where, instead, the traditional, formal teaching of the foreign language is preserved. It is a compromise between tradition and technology, a first step toward a change, the teacher who tries to get closer to their students using their own way of communication. The teacher is still there, guides the students but the learning experience for the students is completely different.

Another strong point of the research project consists in the fact that the creation of a course of study that can merge formal and informal learning experiences refers to both hemispheres, such as the bimodal learning described by Marcel Danesi; the inputs offered by video, images, audio follow the general-particular, holistic-analytical axis by first activating the sensory component that subsequently stimulates the formal cognitive modalities. (Danesi, 1988).

A further reason for the choice of mobile devices and Whatsapp is strictly connected to the BYOD approach, bring your own device, or "an increasingly widespread orientation that consists in requiring users / learners to be equipped with personal tools of work and learning such as smartphones and tablets» (Fratter, 2016). Learners use their own devices for different purposes, such as personal, leisure and training reasons and this gives them the opportunity to better adapt them to their learning style.

## RESEARCH OBJECTIVES

The innovative interest of the research project, proposed both at a methodological, cognitive and interpretative level is to explore the teaching potential of a platform, which is not yet exploited in Italian teaching and to create, analyze and propose, at a theoretical level, a method of use. Whatsapp will be used to implement an informal learning path, parallel to formal learning, using Task Based Learning. In so doing the project tries to answer these questions:

- Is it possible using a communication platform as a learning and teaching environment?
- How can we do it? How can we integrate the two experiences: formal and informal?
- How can we assess the learning experience?

<sup>3</sup> <https://www.whatsapp.com/about/>



Task-Based Language Teaching (TBLT) is born within the communicative method and places at the centre of the didactic activity some tasks that the students have to do. With "task" specialized literature refers to an activity "in which the language in question is used with a communicative purpose to achieve an outcome and which presents the following aspects: the meaning is paramount, there is a connection with an activity in the real world, there is a communicative problem to solve, the completion of the task is a priority, the verification consists in the outcome of the task itself". (Diadori, P. et al. 2008).

Small tasks related to real life will be identified that can be carried out and implemented in a Task-Based Language Teaching perspective through the chosen platform. The tasks aim at giving learners more opportunities to use the foreign languages they study outside lessons and, therefore, communication skills and problem solving will be enhanced. In the specific case of a foreign language, there is a strong need to use the language out of the classroom and, consequently, to create opportunities in less formal contexts.

Besides TBLT is considered to very fruitful if associated to web 2.0 technologies "the best fit principles of TBLT, Web 2.0 technologies are ideal because they allow users to create digital content and communicate with other users. Using Web 2.0 functionalities students can engage in doing things with language and with other speakers rather than just listening, viewing, and reading about language and culture in text- books or on Web pages that others have created" (González-Lloret, 2017).

## RESEARCH METODOLOGY

The PHD project is in its very first stages having started a few months ago, in November 2017. I am currently deepening and broadening my knowledge of mobile learning and the important changes and challenges in didactics it is posing. I am also investigating and studying cases of mobile learning projects and experiences already tested in other countries and TBLT theories and its application to technology.

My first year will be dedicated to thorough bibliographic research to build a solid theoretical ground for the experiment. The second year will be devoted to the experiment with the students. It will take place in foreign languages courses (English, Spanish and Italian as L2) held in the University. The targeted population are Italian mother-tongue students and not Italophone students for the courses of Italian as second language.

The tasks will be create following the syllabus with the help of the teacher who is responsible for the course. Therefore they will be sequence according to the complexity of the syllabus.

The task will be carried out as follows: the teacher will create a class group chat and workgroup chats on WhatsApp, small groups in which the students can communicate with each other independently. The learners, after the teacher has sent the main input, will interact based on this; the teacher can check the interaction without intervening or will intervene only when he thinks it appropriate or if requested by the learners. In this way it will be possible to create a virtual working group where the teacher can observe progress without interfering. In retrospect, in the presidential or virtual class, the difficulties, the errors, the problems arisen will be highlighted.

At the beginning, two intermediate level groups will be chosen, B1/B2, to carry out the pilot project for the first experiment (over six-months). The intermediate groups will be chosen for the "pilot project" because they already have a good knowledge of Italian and can use the language to communicate fairly freely.

During the pilot project, during the lectures, an ongoing assessment of the experience will be made and this will give the possibility to make changes or changes based on the results obtained.





The pilot project is considered fundamental to start the subsequent experimentation in a more effective and efficient way. At the end of the pilot project, an experience assessment questionnaire will be submitted to the learners of the courses so that changes can be made both on the basis of the suggestions and on the basis of the teacher's observation of the experience. Subsequently, the experiment will be continued on the same groups and four more will be introduced, two groups of the lowest level, A2, and two groups of the highest level, C1. The projects will last two / three hours and will be put forward during the teaching units of the manuals. The teacher will also provide the creation of a table to be filled by the learners, who will guide them in selecting the most important information and that will help them in planning the final report.

Here we consider Willis's TBLT model: pre task, in which the teacher presents the instructions of the task and divides the class into groups or pairs; learners prepare for the task with the help of the teacher, at this stage the teacher must increase the awareness of the structures, urging the planning of the task that can be performed with greater fluency and accuracy.

This is followed by the task cycle phase, the real task, which is divided into three phases: task execution in pairs and groups, planning of the oral or written report and presentation of the report (Diadori et al., 2008). The third and last phase is called post-task, which is dedicated to the focus on form, that is the focusing and explanation of grammatical structures and lexical aspects not fully internalized by learners or only partially emerged during the previous phases. In the project, this last phase will be adapted each time by the teacher according to the task objective and based on the moment of the teaching unit in which the task takes place, a wider function of a mere focus on the forms will be reserved.

For each proposed task the teacher will employ a performance-based assessment: the consistency of the outcome and delivery, the communicative effectiveness of the students and other aspects that change according to the objective of the task will be evaluated such as linguistic competence or correctness. According to González-Lloret, (2016) "An example of authentic performance-based tests using chat or phone application, e.g. Whatsapp) [...]. the teacher could be part of the group to observe and grade the "conversation".

This ongoing assessment will be associated with an intermediate and final evaluation of the students through questionnaires in which they will ask to evaluate the experience of the use of Whatsapp associated with the presidential course and to give any suggestions to change the course. Given the questionnaires, analyzed and crossed data will be advanced theoretical models on the method of use of the peculiar form of mobile learning proposed.

The context and the use of mobile learning presented in this research project offers all learners, with consequent different cognitive styles, the possibility of feeling included and involved. The virtual mode has, in fact, another great advantage: the lowering of the affective filter hypothesized by Krashen (Krashen, S. D., 1981) of those in the classroom are struggling to express themselves. This mode balances the situations, which are very common in a class group, where the more introverted learners are "overtaken" by the more extroverted ones which gives the former the opportunity to express themselves in writing (usually introverts are more at ease in writing while for the extroverted characters it will be one more channel to give them the chance to free their communicative nature), to feel more involved and increase confidence in their own means and, therefore, increase the motivation and the pleasure of studying the foreign language. Pleasure and success in learning set the motivation in motion, essential for the success of the learning process, therefore the inclusion of Whatsapp in the language course will offer variety, novelty and new



challenges; these elements are listed by Balboni as "pleasant emotions linked to teaching" and reinforce the idea that learning a language is "unpredictably stimulating". (Balboni, 2002).

## CONCLUSION

In this proposal, what we want to verify and test is the effectiveness of the introduction of the Whatsapp platform. Distance learning is taking on an increasingly dynamic appearance and is more in keeping with learners' needs and rhythms. The BYOD concept and that of hybrid learning space make the use of teaching technologies more flexible. The course is shaped and transformed on the needs, on the times, on the ways and on the personalities of the learners, a further push to overcome the now primitive conception that the learner must adapt to the course and the proposed didactics. Some educational activities are carried out in the classroom, while others remotely, so that all students can find their personal expression. Some students are more prone to presidentiality, others are more inclined to online activities mediated by a screen.

The experimentation contained in the research project suggests this direction, the creation of a blended, hybrid and simplified learning space, combining both physical and digital space. It reinvents the use of technologies in a different, stimulating way, able to give them a new place to "take full advantage of the mobile and network potential both for collaborative study and for individual access to knowledge" (Trentin, 2015); the project re-qualifies a platform that is normally used in leisure time and as a means of communication, in education.

The experimentation of Whatsapp in the educational field can open new frontiers of e-learning, because it represents a new way of presenting blended courses to students, and can present itself as a simplification method for training institutions that want to include ICT in their offer, but that for various reasons can not or can not be equipped with platforms or virtual spaces.

## ACKNOWLEDGMENTS

Many thanks to my University, G.D'Annunzio, especially to Prof. Martinez and Prof. Consani, Dean of the Foreign Languages Department who gave the opportunity to be here. I would like also to thank Prof. Villarini, professor at University of Foreigners of Siena and tutor of the project. Great and loving thanks to my partner, Pietro, and my son, Maksim.

## REFERENCES

- Arrigo, M., Fulantelli, G., Gentile, M., Taibi D., (2017) Integrating Mobile Technologies in the Italian Educational Context. Arrigo, M., Fulantelli, G., Gentile, M., Taibi D., Integrating Mobile Technologies in the Italian Educational Context. in Chapelle, C., A., Sauro, S., (eds). The Handbook of Technology and Second Language Teaching and Learning. Wiley & Sons, Oxford, pp. 20-41.
- Audiweb, (2017). Total digital audience nel mese di febbraio 2017, online press release: <http://www.audiweb.it/news/total-digital-audience-a-febbraio-2017/>
- Balboni, P. E., (2002). Le sfide di Babele. Utet Università. Torino.
- Berger, P., Trexler, S., (2010). Choosing Web 2.0 Tools for Learning and Teaching in a Digital World.
- Calvani, A., Vivanet, G., (2016), Le tecnologie per apprendere nella scuola. Oltre il fallimento. In Pedagogia oggi. (2) 2016. Pensa Multimedia. Napoli, pp.155-178.
- Danesi, M., (1988). Neurolinguistica e glottodidattica. Liviana. Padova.
- Danesi, M., (2015). Il cervello in aula. Guerra. Perugia.



- Dewey, J., (1916). *Democracy and education*. Macmillan. London.
- Diadori, P., (eds) (2001). *Insegnare italiano a stranieri*. Le Monnier. Firenze.
- Diadori, P., Palermo, M., Troncarelli, D., (2008). *Manuale di nuove tecnologie per l'educazione linguistica*. Guerra. Perugia.
- Diadori, P., Palermo, M., Troncarelli, D., (2009). *Manuale di didattica dell'italiano L2*. Guerra. Perugia.
- Eletti, V., (eds). (2014). *Che cos'è l'e-learning*. Carocci. Roma.
- Ellis, R. (2003). *Task-based Language Learning and Teaching*. Oxford University Press. Oxford.
- Ericsson, 2016, *Mobility report November 2016*, online press release: <https://www.ericsson.com/assets/local/mobility-report/documents/2016/ericsson-mobility-report-november-2016.pdf>
- Fratte, I., (2004). *Tecnologie per l'insegnamento delle lingue*. Carrocci. Roma.
- Fratte, I., (2016). *Il Mobile Learning e le nuove frontiere per la didattica delle lingue*. in Troncarelli, D., La Grassa, M. *Orientarsi in rete. Didattica delle lingue e tecnologie digitali*. (p. 110,127). Becarelli, Siena.
- Fratte, I., Jafrancesco, E., (eds.) (2014). *Guida alla formazione del docente di lingue all'uso delle TIC. Le lingue straniere e l'italiano L2*. Aracne. Roma.
- González-Lloret, M., (2016). *A Practical Guide to Integrating Technology into Task-Based Language Teaching*. Georgetown University Press. Washington. D.C.
- González-Lloret, M., (2017). *Technology for Task-based Language Teaching*, Chapelle, C., A., Sauro, S., (eds). *The Handbook of Technology and Second Language Teaching and Learning*. pp. (234-247).
- Kennedy, C., Levy, M. (2008). *L'italiano al telefonino: Using SMS to support beginners' language learning*. in *ReCALL 20* (3). (p. 315-330).
- Krashen, S. D., (1981). *Second Language Acquisition and Second Language Learning*. Pergamon. Oxford.
- Kukulska-Hulme, A, Lee, H., Norris, L. (2017). *Mobile Learning Revolution: Implications for Language Pedagogy*. in Chapelle, C., A., Sauro, S., (eds). *The Handbook of Technology and Second Language Teaching and Learning*. pp. (217-233). Wiley & Sons. Oxford.
- Kukulska-Hulme, A, Traxler, J. (2005). *Mobile Learning: A Handbook for Educators and Trainers*. Routledge. Londra.
- Midoro, V. , (eds) (2015). *La scuola ai tempi del digitale. Istruzioni per costruire una scuola nuova*. FrancoAngeli. Milano.
- Pachler, N., Bachmair, B., Cook, J. (2010) *Mobile Learning: structures, agency practices*. Springer. New York.
- Pachler, N., Ranieri, M., Manca, S., Cook, J. (2012). *Editorial: Social Networking and Mobile Learning*. in *British Journal of Educational Technology*, 43 (5). (pp. 707-710).
- Ranieri, M., Pieri, M. (2014). *Mobile Learning. Dimensioni teoriche, modelli didattici, scenari applicativi*. Unicopli. Milano.
- Sharples, M., Taylor, J., Vavoula, G. (2007). *A theory of learning for the mobile age*. in Andrews, R., Haythornthwaite, C., (eds). *The Sage Handbook of Elearning Research*. (pp. 221-247). Sage. Londra.
- Traxler, J., (2007). *Defining, Discussing, and Evaluating Mobile Learning: The moving finger writes and having writ....* in *The International Review on Research in Open and Distance Learning (IRRODL)*. 8 (2).



- Traxler, J., (2009). Learning in a Mobile Age. in International Journal of Mobile and Blended Learning. 1 (1). (pp. 1-12).
- Traxler, J., Wishart, J. M., (2011), Making Mobile Learning work: Case. Studies of Practice. ESCalate. Bristol.
- Trentin, G. (2015). Always-on education e spazi ibridi di apprendimento. in Midoro, V. (eds). La scuola ai tempi del digitale. Istruzioni per costruire una scuola nuova. (pp. 43-59). FrancoAngeli. Milano.
- Troncarelli, D., La Grassa, M. (eds) (2016). Orientarsi in Rete. Becarelli. Siena.
- Unesco (2012). Exploring the Potential of Mobile Technologies to Support Teachers and Improve Practice. UNESCO. Paris.
- Unesco (2013). Policy Guidelines for Mobile Learning. Unesco. Paris.
- Unesco (2014). Mobile Learning and Policies. Key Issues to consider. Unesco. Paris.
- Villarini, A. (eds) (2010). L'apprendimento a distanza dell'italiano come lingua straniera. Modelli teorici e proposte didattiche. Le Monnier. Firenze.
- Willis, J. (1996). A Framework for Task-Based Learning. Longman. London.
- Winters, N. (2007). What is Mobile Learning?. in Sharples, M. (eds). Big issues in Mobile Learning. (pp. 7-11). University of Nottingham. Nottingham.



# Mindfulness in Online and Blended Education

**Agnieszka (Aga)  
Palalas**  
Athabasca University<sup>1</sup>

**Anastasia Mavraki**  
Athabasca University  
Student<sup>2</sup>

**Kokkoni Drampala**  
Primary School Teacher  
Athabasca University  
Student<sup>3</sup>

**Anna Krassa**  
eLearning Consultant  
Athabasca University  
Student<sup>4</sup>

## ABSTRACT

This paper reports the experience of three international graduate students in an online Master of Education program at Athabasca University. It also includes the voice of their instructor who guided them through the experience and supported in the critical inquiry, including the writing of this autoethnographic account, on how selected mindfulness-based teaching and learning strategies impacted students' experience and learning outcomes. The findings of our autoethnography consistently pointed to the positive effects of blending into an online program instructional strategies that combined the online asynchronous interaction with synchronous virtual meetings and chats as well as face-to-face encounters. They also demonstrated positive effects of incorporating mindfulness-based teaching and learning strategies in this environment. There is a growing body of scientific evidence on benefits of mindfulness practices on teaching and learning, cognitive and emotional performance, as well as general well-being of students and teachers. Mindfulness is often defined as "the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment." Some of the mindfulness-based teaching and learning strategies include mindful listening and speaking, storytelling, deep reflection, quieting the mind, centering, visualization, establishing personal versus collective space, explicit gratitude, and mindful feedback. This study addressed the gap in research on the integration of mindfulness-based teaching-learning strategies in the online and blended environment. In short, students reported that mindfulness strategies empowered them, made them become their better selves, and promoted successful self-directed learning and a rewarding learning experience.

## Author Keywords

Mindfulness, blended education, online education, autoethnography

## INTRODUCTION

This paper is based on the experience of three international graduate students in an online Master of Education program at Athabasca University, Canada. It also includes the voice of the instructor who guided us through the reported experience and supported us in the critical inquiry, including the writing of this autoethnographic account of how the introductions of mindfulness-based teaching and learning strategies impacted students' experience and outcomes in the graduate-level online program.

Based on our individual and collective observations and reflections, we set out to document and analyze our online learning experience before and after we were introduced to mindfulness-based strategies. We share herein our analytical account of selected aspects of the rich and challenging experience inherent in the online learning environment. We also highlight the advantage of blending into the online course synchronous and, whenever possible, face-to-face (f2f) interactions with other students and the instructor, which add extra depth and the indispensable human connection element to the experience.

It was the course described herein, enriched by mindfulness-based strategies, which transformed our perspective on teaching and learning; it impacted our practice and left us with a wealth of reflections and questions, with many of them addressed in this report. In bringing this autobiographical experience and thought into the present, and by combining voices of four researcher participants, we aim to re-experience the past and deepen our perspective on it. In the process of co-authoring the paper, we also rewrote the past experience and enhanced it with a new co-created understanding. We went beyond self-understanding and evolving our own practice of teaching and learning to sharing our data and insider meanings with fellow scholars.

I, the instructor, invited the three students to share their thoughts in a co-authored text and obtained the permission of each student to submit our collectively written autoethnography as a conference paper. I asked them to reflect on and write about their experiences during the course I facilitated and beyond. The resulting learners' story follows and contains the students' journal entries in their original form and language, with my minor corrections only where they were needed to clarify the

<sup>1</sup> Alberta, Canada, [agapalalas@athabascau.ca](mailto:agapalalas@athabascau.ca)

<sup>2</sup> Athens, Attiki, Greece, [anastasia.k.mavraki@gmail.com](mailto:anastasia.k.mavraki@gmail.com)

<sup>3</sup> Agiasma, Kavala, Greece, [koni\\_dramp@yahoo.gr](mailto:koni_dramp@yahoo.gr)

<sup>4</sup> Nea Moudania, Chalkidiki, Greece, [akrassa@gmail.com](mailto:akrassa@gmail.com)





meaning. I also marked explicitly the sections of this paper authored solely by the three students, without my written contributions, by adding the phrase “Student voice” to the respective headings.

## CONTEXT PRESENTATION

### **Master of Education in Distance Education (MEd): Introduction to Mobile Learning (MDDE 623)**

The experience, reflections, and feedback reported herein originated from the Introduction to Mobile Learning course (MDDE 623) which is one of the electives offered in the MEd program at the Centre for Distance Education (CDE) at Athabasca University (AU), the online university of Canada. The program includes ten online courses (13 weeks each) and an e-portfolio which upon successful completion earn the student a master degree and “strong distance-education skills, knowledge and values” (“Program Overview”, n.d., para. 1).

MDDE 623 provides students with the opportunity to explore and experience firsthand the potential of m-learning as they experiment with mobile technology and existing m-learning designs. It is delivered as a cross-platform option, using Moodle, so that students can access it on their tethered computers and on mobile devices. The course comprises seven units, four assignments - two individual and two collaborative ones, seven discussion forums, and four required synchronous sessions which students are encouraged to attend in real time with an option to interact with the session recording instead, for those who cannot participate in the synchronous event. The latter requirement was added based on former students’ feedback which had consistently emphasized the value added of these online meetings of the community of learners.

The course was originally designed, regularly updated, and facilitated (nine times) by me, the instructor. I have cyclically refined it to reflect the current state of knowledge and research in mobile learning. During the last three iterations of the course, content and delivery modifications also included evidence-based mindfulness-informed activities and resources. The course teaching and learning strategies were updated to reflect students’ feedback and to incorporate selected mindfulness-based components to ensure an inspiring, as opposed to “expiring”, environment for students (these are discussed in more detail below). My co-authors studied in the course as part of their Greek Cohort MEd journey. They elaborate on the course below.

It was a teacher-supported course, combining asynchronous and synchronous delivery with inspiring teaching and learning approaches, which were seamlessly built into the course, and initially not identified as mindfulness-based elements until the instructor explicitly introduced the concept of mindfulness during the optional synchronous session and a discussion forum presenting the research and practice of mindfulness in education.

MDDE 623 was an extremely demanding but also very informative and transformative course on mobile learning. It was underpinned by the Community of Inquiry (CoI) framework (Garrison, Anderson, & Archer, 2001), a process-oriented theoretical model that can be applied to improve online learning and instruction starting with its design (Garrison et al., 2001; Garrison & Arbaugh, 2007); it is addressed in more detail below. The collaborative learning approach aimed to support students in their process of becoming self-directed learners. Therefore, as a major requirement, it included the consistent participation in discussion forums and engagement in group activities. As expected in a learning environment informed by social constructivism (Vygotsky, 1980), learners were encouraged to base their cognitive processes on collaboration, communication, and interaction, including co-creation and peer evaluation. The instructor actively guided us in the process and monitored individual progress of all students. Depending on students’ reflections and her observations, the instructor gauged the extent to which she would provide scaffoldings to support students on their learning path and their readiness to become increasingly autonomous as learners. The fact that we were moving through our program as a cohort greatly helped in this collaborative process.

### **Cohort Model**

The cohort model, defined by Yerkes (as cited in McDonald, Shroyer, Urbanski, & Vertin, 2002) as “a group of students who engage in a program of studies together” (para. 7), has been found to be very effective amongst adult learners who want to get involved in the learning process. Cohort-based learning is likely to be successful when groups of people have the same purpose, interact with and help each other, thus contributing to each other’s progress (McDonald et al., 2002). We experienced firsthand what Conrad (2005) observed in her longitudinal study of cohort-based online learning, namely that “learners’ perceptions of community and online learning shifted away from technical considerations and toward affective considerations” (p. 1) and that learners not only valued their community but also took responsibility and credit for building and maintaining that community. In addition, the design of the course and our instructor’s facilitation combined with her caring attitude positively impacted the sense of community.

The MDDE 623 instructor had taught most of the MEd courses to our and previous Greek cohorts at CDE and, from the very beginning of this Master’s journey. New and old members of the Greek Cohorts were connected in more than one way: they were brought together in a synchronous online session in order for peers to meet and support each other; students who were more advanced or had graduated from the program were assigned to the new cohort members to mentor them and peer-support them during the years of the Master’s; social networks were also established as additional communication channels. An icebreaker session alone would have not been enough to build relations between strangers (even if they are of the same cultural origin), hence the establishment of communication channels between cohort members was essential to the feeling of being connected to the community and the comfort of knowing where to go for help when the need arises.



Another factor that greatly strengthened our community of learners was the ability to meet face-to-face, for instance when we met in person at two conferences. Blending in f2f encounters positively impacted our connection and the reciprocally valued relationship, as earlier observed in the Conrad (2005) study.

### **Blended Learning**

While this autoethnographic study originally set out to provide an account of learning experience in an online course, its findings would consistently point to the positive effects of blending in instructional strategies that combined the online asynchronous interaction with synchronous virtual meetings and chats as well as face-to-face encounters. The frequency and the effect of these synchronous connections in the real and virtual worlds (through computers, mobile devices, and in person) suggested a need to redefine our MDDE 623 experience as a blended learning one.

Graham, Allen, and Ure (as cited in Graham, 2006) concluded that the most common definitions refer to blended learning as combining (a) instructional modalities, (b) instructional methods, and (c) online with face-to-face instruction. Today, synchronous interactions can be mediated through high-fidelity technologies (Graham, 2006) that promote richer and more engaging connection and interaction. In our MDDE 623 experience, computer interfaces facilitated human interaction “in the form of computer-supported collaboration, virtual communities, instant messaging, blogging, etc.” (Graham, 2006, p. 5). We employed, amongst other tools, Messenger instant messaging, Skype discussions, Adobe Connect sessions and the Remind mobile app<sup>5</sup>. In addition, phone calls and our f2f meetings strengthened even more the personal and professional links, interaction, and collaboration within the group. The combination of all these communication platforms, frequently accessed through mobile devices, resulted in the heightened levels of presence and engagement of the course participants.

The availability of mobile access added an extra dimension to this interaction. With mobile technologies taking the flexibility of learning to a whole new level, m-learning had become an integral part of blended education which was originally defined as “an educational platform that represents some combination of face-to-face and online learning” (Moskal, Dziuban, & Hartman, 2013, p. 15). Accordingly, for the purpose of this discussion we use the following definition of blended learning put forth by the International Association for Blended Learning (IABL, n.d.): “the educational approach, which integrates face-to-face classroom practices with online and mobile delivery methods” (para. 3). The intention is to offer learners a well-organized teacher-facilitated interactive learning environment of high quality content, and activities where experiences can be adopted to learners’ needs and preferences, unbound from time and location restrictions. Consistent with this definition, teachers are a significant element of a blended learning environment as facilitators of the learning process.

According to Kron and Sofos (2007), the form of teaching processes determine the level of e-learning under the frame of time and place. Thus, on the one hand, there are forms of teaching that might employ Information and Communication Technologies (ICTs) in a specific time and place, just enriching the f2f teaching in the classroom. On the other hand, there is the Internet-based setting where the time- and place-flexible instruction is realized by digital means, e.g., asynchronous communication via forums or recorded teleconferences. There is also the third scenario when online asynchronous instruction is combined with synchronous virtual teaching and communication platforms, and as a result, benefits from the advantages of both methods. We submit that the latter case can also be regarded as a blended learning or hybrid environment, which promotes higher levels of the cognitive, teaching, and especially the social presence, as per the CoI model (Vaughan, Cleveland-Innes, & Garrison, 2013).

### **WHY MINDFULNESS IN THE ONLINE COURSE?**

#### **Mindfulness – Brief Overview**

The word mindfulness, although used for centuries, has appeared increasingly more frequently not only in mass media but also in the scholarly publications and conversations. According to the notion mindfulness “began to gain traction among scientists, clinicians, and scholars as the Mind and Life Institute emerged in 1987” and since the early 2000s, “mindfulness saw an exponential growth trajectory that continues to this day” (Van Dam et al., 2018, p. 37). Most definitions of mindfulness draw from the one proposed by Jon Kabat-Zinn (1994), the founder of health-based mindfulness training, and refer to the significance of awareness and giving full attention to the here and now (including the surroundings, our feelings, emotions, and their impact on us), on purpose, in a non-judgmental way (i.e., by being open and accepting), or more specifically, mindfulness is “the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment” (Kabat-Zinn, 2003, p. 145). Kabat-Zinn (2003) has also identified seven attitudinal foundations of mindfulness practice, namely, non-judgmental, patience, beginner’s mind (not to let our past experience and knowledge affect present thought), trust, non-striving, acceptance, letting go (avoiding unreflective selection of state of mind). Mindfulness is a training - exercise for our minds in paying attention and developing healthy attitudes. It can be cultivated through mind-body practices, such as focus on breath, dance, art, meditation, prayer, yoga, Tai Chi, walking in nature and many other sensory experiences engaging our senses to take us off auto pilot and make us pause and experience the present moment with attention and gratitude, with one's mind present with one's body rather than in the future or past (Miller, 2013). According to the science of neuroplasticity, our repeated experiences shape our brains (Kays, Hurley, & Taber, 2012), thus regular sustained mindfulness training may reduce mind wandering and

<sup>5</sup> see <https://www.remind.com/>



build our ability to focus and keep our mind where we want it (Killingsworth & Gilbert, 2010; Morrison, Goolsarran, Rogers, & Jha, 2014; Palalas, 2018).

While mindfulness research has its critics and it has to ensure rigour and accuracy to avoid negative effects of “mindfulness hype” (Van Dam et al., 2018), the science supporting the positive impact of mindfulness practices is rather persuasive. As noted in my earlier publication (Palalas, 2018), including examples, some of the benefits of mindfulness practice include reduced anxiety and depression, lower stress, improved personal relationships, increased self-regulation, enhanced attention skills, ability to regulate attention and executive function. These improvements in mind-brain-body habits and attitudes have been noticed by education researchers and practitioners, and consequently tested in educational contexts.

### **Mindfulness in Education**

Thanks to the latest discoveries of neuroscience and other sciences related to the study of the mind-brain-body connection, there has been a growing body of evidence “that mindfulness practice can be transformative not only to our health and well-being but also to our educational system” (Palalas, 2018, p. 33). David and Sheth (as cited in Palalas, 2018), in their book on mindful teaching, compiled a list of ten key benefits of mindfulness for students: mindfulness promotes (1) readiness to learn, (2) academic performance, (3) attentions and concentration, (4) self-reflection and self-calming, (5) social and emotional learning, (6) pro-social behaviours and healthy relationships, (7) holistic well-being; it also (8) reduces anxiety before testing, (9) provides tools to reduce stress, and (10) improves participation by promoting impulse control (p. 9). David and Sheth (2009) further concluded that cultivating mindfulness through simple mental training techniques can enhance teaching and learning process and outcomes as well as promote a learning community “in which students flourish academically, emotionally, and socially” (p. 1). Some of the mindfulness-based teaching and learning strategies include mindful listening and speaking, storytelling, deep reflection, quieting the mind, centering, visualization, establishing personal versus collective space, explicit gratitude, mindful feedback, and many other techniques presented, for instance, in books by David and Sheth (2009), Barbezat and Bush (2014), and Hanh and Weare (2017).

Indeed, there is a growing body of scientific evidence of positive effects of mindfulness-based practices on teaching and learning, cognitive and emotional performance, as well as general well-being of students and teachers, especially in f2f educational settings (e.g., Miller, 2013; Mrazek et al., 2017; Rechtschaffen, 2014; Schonert-Reichl et al., 2015; Schwind et al., 2017; Zenner, Herrnleben-Kurz, & Walach, 2014). According to the meta-analysis conducted by Meiklejohn et al. (2012), f2f mindfulness programs in schools have been shown to improve working memory, attention, academic skills, social skills, self-regulation, emotional regulation and self-esteem, mood and anxiety, as well as lower stress and fatigue. Mindfulness was also consistently reported to increase empathy and compassion, for others and for oneself (Shapiro, 2013). Moreover, “mindfulness may mediate positive socio-emotional and cognitive changes stretching beyond the immediate school environments” (Powietrzynska, 2014, p. iv) and help develop good habits of mind that promote self-awareness, self-regulation, and resilience applicable in all aspects of life.

So far, little research on the integration of mindfulness-based teaching-learning strategies in the online environment has been reported. To address the need for investigation into the impact of such practices in the field of online learning, I first piloted selected mindfulness-based practices in Fall 2016 and Spring 2017 sessions of the MDDE 623 course (as part of my action research study) and then conducted the case study reported herein in the Fall 2017 semester. The study explored the perceived and observable impact of integrating modified mindfulness teaching-learning strategies, previously piloted in f2f educational contexts and in the MDDE 623 pilots – the impact on student learning experience in an online graduate level course. The mindfulness-informed strategies incorporated in MDDE623 Fall 2017 were refined to reflect the feedback from the pilots and further adapted to address the challenges inherent in online environments. A brief overview of the key mindfulness strategies added to the course is presented in the next sub-section.

### **Mindfulness Learning and Teaching Strategies in MDDE 623**

Due to the scope of this paper, only selected examples of activities are mentioned. Note that all explicit mindfulness-based strategies, such as the centering moment at the begging of the class, were entirely optional to all students. So was the discussion forum and the synchronous virtual session presenting research-based evidence on the benefits of mindfulness and the follow-up discussion.

#### ***Focusing Attention on Intention***

Siegel (2007) observed that intentions gear up our neural system to be ready “to receive, to sense, to focus, to behave in a certain manner” (p. 177). Intentions, while rooted in the now, have long-term effects and they promote clarity, motivation, and more purposeful engagement. When learners were asked to implicitly or explicitly set their intentions, e.g., during the check-ins in the Adobe Connect virtual sessions, they could uncover what motivates them, strategize their attention and applying purpose to their learning, which also furthers learners’ agency and ownership.

#### ***Self-regulation through Self-awareness and Reflection***

Siegel (2016) studies on mindfulness demonstrated that mindfulness training promotes the integration of the brain resulting in enhanced self-regulation and co-regulation of “emotions, thoughts, attention, behavior, and relationships” (p. 82). Self-awareness, self-monitoring, and other meta-cognitive strategies have been interwoven into the assignments and interactions in the course. I encouraged students to reflect on their learning through journaling and notes to themselves as well as through discussions in our virtual sessions. Students were also asked about their preferred methods of learning, communication, and resources, and any changes to their preferences they might have observed. We took time for those



who were willing to speak about their “aha” moments and other updates they wanted to share with their peers or privately with me. Documented and informal reflection on all aspects of their learning was encouraged, e.g., through replies to my comments in the feedback on their written assignments. In addition, I pointed students to some tools used to block sources of distraction and discussed with them any barriers to focused learning that they might have identified along with strategies that promote higher levels of engagement in their own learning process.

#### ***Meditation: A Three-minute Centering Practice and Mindful Breathing Exercise***

Meditation, especially, regular practice over-time, has been repeatedly proven to promote long-lasting positive changes in brain activity, including improved attentive and focus capacities (Davidson, 2012; Barbezat & Bush, 2014; Miller, 2013; Rechtschaffen, 2014) and other benefits already mentioned above. A shorter practice, at the beginning or during a learning event, also helps with bringing our attention to the present moment and “checking-in at the door” the distractions of our complex life that could negatively affect our interaction.

Pausing to take a breath, with full awareness of the breath, can help to slow down, notice, and redirect our energy (David & Sheth, 2009). It also helps to reflect inward and get ready for intentional learning. To promote students’ engagement, both cognitive and emotional, in our shared learning, our virtual sessions would start with a guided centering practice or mindful breathing practice, using pre-recorded audio that students could either ignore or interact with from their end. I shared with students a number of digital resources for self-practice outside our class. I also reminded students to take a break and engage in mindfulness moments (e.g., 30 seconds of silence).

#### ***Mindful Speaking and Listening***

Students were guided to apply mindful listening and speaking techniques during their group activities in our virtual sessions. Reminders and precise directions (available on the Internet) on why and how to use these techniques were given. I refined this approach overtime to suit our specific learning setting and the needs of the students.

#### ***Mindful Feedback***

I crafted my feedback on the students’ assignments prudently and considerately to encourage advancement, invite reflection and provide directions for improvements. The language and content of my comments was chosen to, at the same time, challenge “the current behavioral and cognitive state of the learner” (Hattie & Gan, 2016, p. 253) and provide cognitive and emotional support to individual students and groups (e.g., team evaluation rubric). Students were encouraged to interact with the feedback, reply to my comments, and revise their work based on the result of our conversation about that feedback. I invested time and effort in creating a supportive and safe environment where students were safe to make mistakes and learn from them.

#### ***Other Mindful Strategies***

With an intention of creating a safe environment of trust and support and a strong community of learners that together engage in a collective process of inquiry combined with individual self-discovery, it was essential to minimize stress, threat, and fear that can hinder information processing, patterning, and memory circuits (Willis, 2006). I ensured to consistently use and model mindful, respectful, and relational language to express messages of support, gratitude, and compassion, balanced out with constructive feedback and critique. To further promote a supportive professional and emotional climate, communication with students was offering clear guidance through deliberate and focused dialogue designed and executed to promote the cognitive, teaching, and social presences of our Community of Inquiry (Garrison et al., 2001). We used a variety of channels to stay connected, including the tools in the Moodle LMS, our Adobe Connect sessions, Skype, telephone, WhatsApp, email, the Remind mobile app, as well as f2f meetings if and when possible. More comprehensive description and research supporting these approaches are presented in Palalas (2018).

### **METHODOLOGY: COLLECTIVE AUTOETHNOGRAPHY**

As noted above, this is an autoethnographic study, qualitative research that combines characteristics from both autobiography and ethnography. Autoethnography allows authors to describe and analyze their personal experiences, extending the analysis, and building on the literature and theory (Bennett & Folley, 2014). Autoethnographies tend to focus on the original story using it to extrapolate wider social, political and cultural meanings (Ellis, 1997, 2004). While we followed the four key criteria for evaluating the quality of autoethnographic research, i.e., its substantive contribution, aesthetic merit, reflexivity, and impact (Ellis, 2004), we departed from the traditional approach and shared one collective account representing experiences as told and analysed by a team, and subsequently retold as one story. This autoethnography has been conducted and co-written by a team of four, one instructor and three students. We generated our individual data sets, then systematically debriefed, shared, and negotiated the meaning of our observations and interpretations (Chang, Ngunjiri, & Hernandez, 2016). We thus created a collective database which was analyzed and interpreted to reach collective conclusions. We participated in this joint analysis and writing process.

The study was conducted at a “distributed” site, the online course that blended in elements of synchronous and sporadic f2f encounters. Our collaborative process evolved organically. I initially invited all students to explore mindfulness (as an optional element of the course), to discover it with a “beginner’s mind” and to journal their experience. I provided some instruction on mindfulness in education and progressively identified the mindfulness-based strategies embedded in the course. My three co-authors expressed their growing interest in the topic and responded to my invitation to co-author a paper. They were encouraged to take an observer role and document their reflections through their journals. They reported similar patterns of activity in the course; they worked together on collaborative projects and developed a strong connection.





Some questions and discussion of mindfulness emerged during the course in the Mindfulness in Education forum and virtual Adobe Connect session but most of it occurred naturally as an extension of our conversation of the learner experience towards the end of the course and subsequently during our collaboration on the paper.

My co-authors, as insiders in the research setting, contributed their individual observations and journal entries, which formed the base for our conversation leading to the co-creation of the collective narrative that unfolded during the co-writing process. Hence, their collective story originated during the course and then was re-created retrospectively through conversations and the process of co-writing. They were self-reflexive. Writing about their experiences seemed to rise to consciousness many notions related to mindfulness-based approaches. It helped them better understand these concepts as well as organize their thoughts and feelings and make sense of them through the lens of mindfulness. This autoethnographic process provided a positive and empowering experience to my co-authors which was evident in the progression of the consecutive drafts of their narrative.

Although there were some differences in their learner profile, they created one collective voice based on the selection of themes and reflections that they had in common; their similarities outweighed their differences. They negotiated a narrative that presented they shared individual perspectives enriched by the depth and breadth of the negotiated narrative. Their story is presented in the next section.

## **OUR STORY (STUDENT VOICE)**

### **Who Are We?**

Our team consists of three Greek women aged 30-42 years old. We are married and we have one or two children, ages of 3, 9, 8, and 11. We all are employed and two of us are working from home. We live in three different cities in Greece and our family and work obligations have led us to this online master program. The reason we decided to choose this particular program was either for professional development in our current job or for pursuing a better one. We are employed in the field of education: one as a teacher in secondary and adult education, one as an e-learning consultant in a Corporate Academy, and one as a Primary School teacher posted in an administrative position.

Our attendance in this program started in September 2016 when all three of us were members of the Greek cohort, which meant that we would follow a joint program and attend the same courses. We first met when the coordinator of the program held a Skype teleconference to orient us to the program. Thus, we were given the opportunity to exchange emails and connect on Facebook. Beyond that, in the first term, we worked together on a collaborative assignment, so we gradually began to get to know each other better. Consequently, a year later, and after many collaborative assignments and hours of exchanging opinions, we became friends.

With the launch of the Fall 2017 term, we knew that, despite the overwhelming amount of work, we had the support of each other. Our communication in MDDE 623 was not limited to the combination of asynchronous and synchronous interactions within the course, but also included our informal exchanges through Skype, phone, and Google Docs. At times, we would work together and talk to each other for several hours a day. Finally, two of us met at a conference in Greece, and a bit later all three of us managed to meet in person in Thessaloniki. This blend of communication channels and interactivity has proven empowering and indispensable to our success in the online program and this study. In the resulting autoethnographic account, we report our own individual experiences and co-experiences combined with reflection and conversations on those experiences which shaped our co-understanding and “collaborative textual co-interpretations” (Lassiter, 2005, p. 104).

### **What Challenges We Discovered in Online Courses?**

The key challenges we have experienced in our distance education (DE) journey are shared below along with literature support that demonstrates that these are common issues in online learning.

#### *Social Presence and Present-Moment Awareness*

In DE, several problems arise that are under the umbrella of the lack of social presence. This issue derives mainly from the absence of students’ physical contact with their teachers and their classmates. First of all, a student may experience a feeling of isolation because he/she does not have a lot of opportunities for effective communication due to the different cultural backgrounds and the difficulty in bonding with other online students (Visser, Visser, Amirault, & Simonson, 2012). Online learning is an environment that, by nature, separates psychologically teachers from learners; namely, it creates transactional distance (Moore, 1993). This environment defines the behavioral patterns of the individuals since the lack of communication can affect teaching and learning. Apostolakis (2004) stresses that teachers are not able to inspire students due to the rare and impersonal communication. The author continues that students cannot develop competition as they cannot compare their progress with the progress of their classmates.

Consequently, online students often lack motivation (Galusha, 1998). The absence of interaction between students and instructors affects the latter as they cannot be sure if their students have comprehended the new knowledge (LaBay & Comm, 2003). Similarly, Vonderwell (2003) reported that the lack of social interaction in online learning resulted in student disappointment. As negative factors, students mentioned the lack of connection with their instructors, the fact that they did not know much about their personalities, as well as the delay of immediate feedback. Kalogiannakis and Touvlatis (2015) stressed that emotional experiences are the dynamics that had been neglected in distance education. Positive feelings derive





from interaction, peer-to-peer exchange, collaborative activities, as well as from the tutor's ability to recognize learners' emotional state. Gutierrez (2016) observed that the leverage point of social interaction in the f2f classroom is the way that students, colleagues, and instructors are approached, namely, "[h]ands are raised, questions asked and answered, presentations given" (para. 4). Whereas, in online learning instructors are able to have access only to what students "allow" to be displayed in public. Negative feelings of pressure and anxiety are rarely articulated, and cannot be easily perceived due to the lack of body language (Wilson et al., 2007). It appears that the social nature of humans creates the need for social presence in education. Its absence in online education leads to a gap that becomes a burden in the learning process.

In an online learning environment, we learners still want to benefit from the participation in discourse, collaborative activities, self-assessment, and decision making, where knowledge is acquired constructively and the responsibility for the learning processes is shared with the instructor. For that reason, criteria must be in place to ensure that the educational experience is fulfilling and rewarding. The framework of Community of Inquiry (CoI) that was employed in our course can address these needs. It has been shaped under a collaborative constructivist approach, and it addresses the new knowledge requirements of the 21st century (Vaughan, Cleveland-Innes, & Garrison, 2013). More specifically, CoI consists of three elements: teaching, social, and cognitive presences. In social presence, the feeling of belongingness and groupness prevails as learners form common rituals, norms, and language and, thus, feel that by participating in the discourse, they contribute to an open communication, to the cohesion of the group, and to the sustainability of its synthesis. Besides, "social presence must move beyond simply establishing socio-emotional presence and personal relationships" (Garrison & Arbaugh, 2007, p. 160). In cognitive presence, participants engage in critical discourse and construct new knowledge. They are well-informed of course expectations and get direct instructions. Through this process, they gain metacognitive skills.

Social and cognitive presence are highly depended on three categories of teaching presence, namely, design, facilitation and direction (Vaughan, Cleveland-Innes, & Garrison, 2013). More particularly, it is vital that the instructor plans in a way that open communication and trust is reinforced, critical reflection and discourse are facilitated, and "assessment is congruent with intended processes and outcomes" (Vaughan, Cleveland-Innes, & Garrison, 2013, p. 17). Of course, teaching presence does not only include the role of the tutor, but also the shared responsibility that participants and teacher undertake to successfully clarify, negotiate, and meet the requirements of the course. That is why through timely and descriptive feedback, students are required to proceed to peer-assessment and self-assessment.

#### *Time management*

One of the most important strengths of distance education is the flexibility that is provided to learners as they can "pursue coursework at any time that fits into their busy lives" (Kassop, 2003, para. 16). However, as we discovered, flexibility can be tricky. Time management demands high level of self-regulation, especially when there are several external factors that affect a learner's life, such as family or professional obligations and challenges. These factors are quite common for distant learners as the majority of them are older adult learners (Dabbagh, 2007). The challenge we experienced with insufficient time and constant stress resulting from that, was reflected in studies on time management amongst distant learners (Galusha, 1998; Vaughan, 2007). Online courses require more time to be spent on material than face-to-face courses. This is because students in online learning are responsible for comprehending critical issues, asking questions, managing participation and self-motivation, and completing assignments within specific time frames. Accordingly, "students who are not able to cope with the form of studying required within distance education are at risk of failing or noncompletion of courses" (Visser et al., 2012, p. 61). In fact, Galusha (1998) stresses that time management is "a critical success factor for the distant student" (p. 9). Therefore, it is very important for a distant learner to develop time-management skills in order to be able to benefit from the flexibility of distance education.

#### *Self-behaviours*

Distance education is sometimes the only way for people that aspire to further their studies. However, it is not a choice that should be taken lightheartedly. A distant learner, who aspires to succeed, must be able to acknowledge the need for independent, self-regulated learning, and foster a sense of responsibility towards this realization. Cheurprakobkit, Hale, and Olson (2002) mention that "students must [...] possess requisite "self-" behaviors (e.g., self-discipline, self-monitoring, self-initiative, and self-management)" (p. 257). In addition, LaBay and Comm (2003) recognize among others that a distant learner should be self-directed which is related to a high level of metacognitive skills. Finally, Dabbagh (2007) stresses that a successful distant learner should possess internal locus of control. Hence, all the aforementioned characteristics lead to the conclusion that distance learning is a difficult process and demands special skills. In our experience, adding elements of blended learning helped develop critical thinking through "a scaffolded acceptance of responsibility for constructing meaning and understanding" (Garrison & Kanuka, 2004, p. 98) and the essential skills of self-regulation. This, in the era of lifelong learning, points to the need of the incremental addition of blended learning elements to foster the development of future-ready skills.

Lynch and Dembo (2004) point that according to Moore's transactional distance (1993), the variable of interaction, structure, and autonomy are interrelated in DE programs. All the aforementioned challenges directly affect these factors. Thus, in order for online learners to become self-directed and self-motivated for a lifelong learning, these challenges must be addressed.



### Before We Were Introduced to Mindfulness

Being a DE learner is rather difficult and this was something each one of us experienced from the very beginning of the program. A variety of negative feelings were overwhelming us, reducing our learning margin. First of all, we were feeling disorientated due to the stress and demands of everyday lives. Balancing life challenges and studying was onerous.

*While I am generally a positive person, that period, I was facing several challenges at work. These were making me feel sadness, fear, and uncertainty. Although I am very familiar with distance education, being a student in such a demanding program was a 'mission impossible' at that time. The combination of work and studying stress, turned to panic attacks that forced me to withdraw from one of the two courses.*

Secondly, our problems did not let us study with a clear mind and that was making us feel exhausted as a result of the ineffective time management.

*The beginning of this term coincided with the start of the school year in Greece. This for me meant that I would have a very large workload in my job for at least two months. Simultaneously, my son had started going to daycare and I knew that several viruses lurked. Challenges were piling...frustration resulted.*

This domino effect was leading us to a lack of productivity as we could not take the time to absorb the information we were receiving in order to acquire knowledge and reach our learning goals. Also, the sense of isolation was causing disillusion and frustration as the social presence was limited. This fact made us believe that there was no teaching presence either, because we were not able to distinguish the meaning and the value of the guidance we were receiving; we were not in a state of mind to benefit from what was offered to us. These problematic situations were hindering our engagement in the CoI experience.

*I would like to know more about my teacher's personality. I cannot see her body language while she is talking to us through forums and, thus, I cannot fully understand where her guidance is leading to. I can only see the course of my progress as well as the achievement of the goals after I receive her feedback on my assignments.*

Hence, we could not enjoy a complete learning experience as we were not able to acquire metacognitive skills because our learning process was aggravated. Our learning journey was not guided by clear intention as our actions were automated and hasty with the only goal of moving on to the next assignment or activity.

When Dr. Aga first introduced us to mindfulness, we had already realized a need for a different approach that would help us control the amount of stress, put us in the driver seat in our learning journey, engage in the learning community, and bring in feelings of satisfaction and happiness.

*When Dr. Aga introduced us the notion of mindfulness, I had already spent a year in uncertainty, fear, and sadness, and all I was looking for was a way to feel happy again. My first reaction towards mindfulness, was "this is exactly what I am looking for!", and through a short 3 minute meditation I felt centred and a bit positive again. Positive not towards the challenge of the job, or the studies, but towards life... positive that I can be happy, less stressed, and more productive.*

### How Mindfulness-Based Teaching-Learning Strategies Helped Us in the Course?

During MDDE 623, several mindfulness strategies were applied by our instructor, Dr. Aga Palalas. When that was communicated to us, we tried to locate them and realized that they were put in crucial parts of the course. These significantly helped us deal with the biggest challenges of our DE learning. The following strategies stood out for us:

**Forum guidance** (ensuring a safe environment and support for a strong community of learners; trust in our skills balanced out with guidance; mindful language): During forum discussions, we were led to paths that helped us achieve our learning goals. We were not disorientated by constant interventions with replies to our every forum post. Dr. Aga was facilitating discussions leaving us enough space to express our thoughts, reflect on new learning, and interact with peers.

**Reflection:** Many times, in forums and during the group assignments, we had the chance for self-reflection and peer-to-peer reflection in order to realize the significance of our learning and our own preferences needs, and achievements.

**Empathy and compassion:** Elements that characterize Dr. Aga's teaching approach are active listening, time and respect for students, compassion, and a non-judgmental disposition. All these were particularly evident during live sessions.

*Until I participated in a live session with Dr. Aga, I was negative towards live sessions. She was initiating the sessions passing the microphone through each one of us, just to share the highlight of our week. And it didn't matter if that was relevant to the course, or our personal lives. She was just spending few minutes to hear each one of us, to listen to our concerns, our challenges, or our good news. And she always had a positive saying for everyone.*

**Enhancement of social presence:** Support for a healthy connection amongst the peers and strategies to collaborate within a group and the whole class made collaborative work more effective (e.g., mindful group feedback evolution form).

*The first time, before MDEE 623, I worked on a major assignment with two other colleagues, I had a mixed experience. One of my colleagues was collaborative and active, but the other didn't contribute at all, chewing the time available with vague excuses. Just before the deadline, she confessed that a health problem held her back. I felt really annoyed, but because of the health problem, we (the active members of the group) agreed to not escalate the issue. Consequently, we*



*shared the same grade. It's not about the grade, but the feeling of unfairness, the lack of recognition of the amount of contribution were really demotivating. In MDDE 623 group assignments were accompanied with a self and peer evaluation rubric. This rubric has a low mark affect, yet, it focuses on the important aspects of a team's collaboration. It allows to evaluate different aspects of contribution, and in a similar case, it was enough to establish the feeling of fairness, and improve the attitude of low contributors.*

**Self-direction and self-regulation supports:** Learning processes were supported by scaffolding that was gradually removed. For this purpose, Remind, a mobile app, was introduced to us as a tool to provide us with quick reminders regarding the course schedule. We were getting notifications in real time, and as the course progressed, Dr. Aga after checking with us if we were ready, started removing these scaffolds.

*I got a remind today, about our next meeting. I had forgotten that! Thank you, Dr. Aga!*

**Personalized learning:** Some tasks were based on our interests, so they were more individualized. We were encouraged to reflect on our individual interests, talk about our needs, and take time to consider what works for us. Assignments and resources were also organized in a scaffolded way that allowed students to develop their learning up to their ability level.

**Mindful feedback:** The analytic and comprehensive feedback, inviting students' input and rewrites, allowed us to learn from our mistakes and improve ourselves.

*Today, I got my mark for assignment #1. I got 92%! It is the first time Dr. Aga gives me a grade that high! And she wrote to me "great improvement". I am so happy about that! Of course, when I saw her comments I, once again, was like "how did I get this mark with so many mistakes?" but I know the answer! She always gives us so many details in the feedback. Fortunately, I did not make the same mistakes as the previous times. I have improved!*

Social presence and present-moment awareness challenges were encountered with reflection, enhancement of social presence, empathy, and compassion. Time-management challenges were managed effectively with the cultivation of present-moment awareness that increased the ability of concentration, an essential ingredient of effectiveness. Our self-behaviours were enhanced with discreet forum guidance, reflective discussions, fadeout scaffolding, constructive, personalized, and detailed feedback.

More comprehensive discussion of these and other mindfulness-based teaching and learning techniques will be presented in our future publication.

#### **How Mindfulness-Based Teaching-Learning Strategies Helped Us beyond the Course?**

The immediate, short effects of mindfulness may develop further through practicing, giving stronger and more permanent results.

*Bit by bit, I started consciously practising mindfulness for several months. Until the end of MDDE 623, where I realized that my level of concentration, and consequently my effectiveness, had been improved. I was able to control my mindset and go through a very demanding end-of-course period, without getting cluttered, or sick as I used to, from the weight of tasks.*

Having been introduced to mindfulness for almost a year now, we have some clear evidence of its effect towards the way we learn, think, and behave.

*I came out exhausted but deeply satisfied from myself, with higher confidence on my skills, and with a new methodological approach that can be used in all aspects of life to bring in more happiness; from the boring chores like washing the dishes, and the little habits of writing without minding word spell, to bigger job challenges, and crucial family issues. I am not considering mindfulness as a destination to reach, but as an intentional journey of growth.*

#### **CONCLUSIONS (STUDENT VOICE)**

Mindfulness makes learners become their better selves. The most important mindfulness strategies are for teachers to pay attention to learners' thoughts and needs without judging them - to accept them as they are, explore their unique characteristics, truly enjoy the moments spent with them, and also learn from them. This can assist learners in being present, have clear objectives, and explore on their own the processes that will lead them to the fulfillment of their learning goals. Therefore, they can be more focused and productive, fulfilling simultaneously social, teaching, and cognitive presence.

Accordingly, mindfulness strategies in the Greek cohort worked to foster successful self-directed learning and a rewarding learning experience that can last beyond the course. By empowering us as learners and people, these strategies promoted our autonomous ability "to manage his or her own learning process, by perceiving oneself as the source of one's own actions and decisions as a responsibility towards one's own lifelong learning" (Sze-Yeng & Hussian, 2010, p. 1913). Applying these teaching-learning strategies provides learners with the opportunity to have an active role in the teaching process and to trust themselves and their abilities. Students, who through such an experience, come to be more self-directed, consequently, become more motivated to learn (Bonk et al., 2015). They feel that they participate in the course planning, and, therefore, they become more engaged. The teacher's role here should be not that of the guardian of knowledge but rather a facilitator (Birzer, 2004) – the facilitator of the teaching, cognitive, and social presences...and not ignoring the



emotional well-being of the learner either. This can lead to positive learning experiences like our, which we documented in this paper.

Mindfulness provided us with a positive outlook of our own behaviour, of ourselves, and ultimately of our own group. This state of mind, combined with elements that were built into the course curriculum, contributed to a new level of awareness and resulted in constant improvements due to the observation of our actions and reactions before and after mindfulness strategies were introduced. Lessons of the past became a reminder of how we can become more productive, self-directed learners but, above all, less stressed, ready to enjoy the learning process, and proceed to meaningful learning. We blended formal with informal learning, and found our own learning strategies to create an individualized learning experience, that proved to be more effective to us.

Undoubtedly, there were some characteristics of online education that cultivated mindfulness and vice-versa. First and foremost, the fact that all students had a voice and no one could dominate a conversation combined with the anonymity created a culture of reflection since online discussion became more equitable and democratic (Bourne & Moore, 2003) and, thus, more mindful and reflective than f2f discussion (Bouhnik & Marcus, 2006). Second, mindfulness strategies helped us as learners take a full advantage of online learning characteristics, namely, experimentation, divergent thinking, and exploration of multiple perspectives which liberated us from rigid values and personal views (Anderson, 2003). Third, there was a state of heightened psychological commitment when peers publicly espoused each other's views in group activities and forums. According to Langer (as cited in Moore, 2013) the increased level of this factor is practically related to mindfulness which is identified as critical in an online learning environment.

The aforementioned experiences made us reflect that mindfulness strategies could gradually lead to an extension of students' role leading them to heutagogy, namely, the total control of their learning (Blaschke, 2012), with learners deciding on what they want to learn and what skills they want to acquire. Adult learners need this empowering perspective during the transitions in various aspects of their life so that they can engage in self-determined, real-life, meaningful tasks which can arouse new interests (Bonk et al., 2015). This can happen in the context of formal or informal learning, and it is essential in the context of lifelong learning - one of the 21st century educational goals is.

Moreover, mindfulness in online education can reduce transactional distance and replace verbal and non-verbal physical proximity because it cultivates personal and social skills. It can increase understanding, collaboration, and cover communicational and psychological gaps. Accordingly, students can draw on their instructors' experiences and go further.

Particularly,

- mindfulness helps the transformative nature of learning flourish at all levels; its inward-looking features encourage reflection;
- it fosters constructivist online learning environments encouraging curiosity (beginner's mind), discovery and meaningful hands-on learning;
- it liberates students from constant mind-wandering and restless striving which is habit-driven and derives from struggling to deal with various identities, needs, values, and life stories in distance education; thus, it leads to deep learning and full engagement.

Our collective story contributes to the understanding of the impact of mindfulness-based teaching-learning strategies in an online course enriched with elements of f2f peer interaction. Considering that there is very little research on mindfulness in online education, our study open doors to well-needed exploration of this approach. Further research into the notions and observations we presented is needed not only to validate them but also to elaborate on each of concepts in more depth.



## REFERENCES

- Anderson, T. (2003). *Modes of interaction in distance education: Recent developments and research questions*. Handbook of distance education, 129-144.
- Apostolakis, I. (2004). *Ex apostásews ekpaideysh noshleytikou proswpikou: teknikés kai leitoyrgikés proseggíseis* [Nurses' distance education: practical and functional approaches]. Proceedings of the 2nd Workshop in clinical nursing education. Greece. 61-90.
- Barbezat, D. P., & Bush, M. (2014). *Contemplative practices in higher education: Powerful methods to transform teaching and learning*. John Wiley & Sons.
- Bennett, L., & Folley, S. (2014). A tale of two doctoral students: social media tools and hybridised identities. *Research In Learning Technology*, 22. <http://dx.doi.org/10.3402/rlt.v22.23791>
- Birzer, M. L. (2004). Andragogy: Student centered classrooms in criminal justice programs. *Journal of Criminal Justice Education*, 15(2), 393-412.
- Blaschke, L. M. (2012). Heutagogy and lifelong learning: A review of heutagogical practice and self-determined learning. *The International Review of Research in Open and Distributed Learning*, 13(1), 56-71.
- Bonk, C. J., Lee, M. M., Kou, X., Xu, S., & Sheu, F. R. (2015). Understanding the self-directed online learning preferences, goals, achievements, and challenges of MIT OpenCourseWare subscribers. *Journal of Educational Technology & Society*, 18(2), 349.
- Bouhnik, D., & Marcus, T. (2006). Interaction in distance learning courses. *Journal of the Association for Information Science and Technology*, 57(3), 299-305.
- Bourne, J., & Moore, J. C. (Eds.). (2003). *Elements of quality online education: Practice and direction* (Vol. 4). Olin College-Sloan-C.
- Chang, H., Ngunjiri, F., & Hernandez, K. A. C. (2016). *Collaborative autoethnography*. Routledge.
- Churprakobkit, S., Hale, D. F., & Olson, J. N. (2002). Technicians' perceptions about Web-based courses: The University of Texas system experience. *The American Journal of Distance Education*, 16(4), 245-257.
- Conrad, D. (2005). Building and maintaining community in cohort-based online learning. *Journal of Distance Education*, 20(1), 1-20.
- Dabbagh, N. (2007). The online learner: Characteristics and pedagogical implications. *Contemporary Issues in Technology and Teacher Education*, 7(3), 217- 226.
- David, D. S., & Sheth, S. (2009). *Mindful teaching and teaching mindfulness: A guide for anyone who teaches anything*. Somerville, MA, USA: Wisdom Publications.
- Davidson, R. J. (2012). *The emotional life of your brain: How its unique patterns affect the way you think, feel, and live--and how you can change them*. Penguin.
- Garrison, D. R., Anderson, T., & Archer, W. (2001). Critical thinking, cognitive presence, and computer conferencing in distance education. *American Journal of Distance Education*, 15(1), 7-23.
- Garrison, D. R., & Arbaugh, J. B. (2007). Researching the community of inquiry framework: Review, issues, and future directions. *The Internet and Higher Education*, 10(3), 157-172.
- Ellis, C. (1997). Evocative autoethnography: Writing emotionally about our lives. In W. G. Tierney & Y. Lincoln (Eds.), *Representation and the text: Reframing the narrative voice* (pp. 115-139). New York: State University of New York Press.
- Ellis, C. (2004). *The ethnographic I: A methodological novel about autoethnography*. Walnut Creek, CA: AltaMira Press.
- Galusha, J. M. (1998). Barriers to learning in distance education. Retrieved from <https://files.eric.ed.gov/fulltext/ED416377.pdf>
- Garrison, D. R., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. *The internet and higher education*, 7(2), 95-105.
- Graham, C. R. (2006). Blended learning systems. *The handbook of blended learning*, 3-21.
- Gutierrez, C. (2016, August 16). *eLearning vs Classroom Training—How Different Are They?* Retrieved from <http://info.shiftelearning.com/blog/bid/354977/elearning-vs-classroom-training-how-different-are-they>
- Hanh, T. N., & Weare, K. (2017). *Happy Teachers Change the World: A Guide for Cultivating Mindfulness in Education*. Parallax Press.





- Hattie, J., & Gan, M. (2016). Instruction based on feedback. In R. E. Mayer & P. A. Alexander, (Eds.). *Handbook of research on learning and instruction*, 249-271. Taylor & Francis.
- IABL. (n.d.). About IABL. Retrieved 23 January 2018, from <http://iabl.teiemt.gr/about-us/>
- Kabat-Zinn, J. (1994). Wherever you go, there you are: Mindfulness meditation in everyday life. *London: Piatkus*.
- Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: past, present, and future. *Clinical psychology: Science and practice*, 10(2), 144-156.
- Kalogiannakis, M., & Touvlatzis, S. (2015). Emotions Experienced by Learners and their Development through Communication with the Tutor-Counsellor. *European Journal of Open, Distance and E-learning*, 18(2), 36-48.
- Kassop, M. (2003, May/June). Ten ways online education matches, or surpasses, face-to-face learning. *The Technology Source Archives*. Retrieved from [http://www.technologysource.org/article/ten\\_ways\\_online\\_education\\_matches\\_or\\_surpasses\\_facetoface\\_learning/](http://www.technologysource.org/article/ten_ways_online_education_matches_or_surpasses_facetoface_learning/)
- Kays, J. L., Hurley, R. A., & Taber, K. H. (2012). The dynamic brain: neuroplasticity and mental health. *The Journal of neuropsychiatry and clinical neurosciences*, 24(2), 118-124.
- Killingsworth, M. A., & Gilbert, D. T. (2010). A wandering mind is an unhappy mind. *Science*, 330(6006), 932-932.
- Kron, F. W., & Sofos, A. (2007). *Didaktiki ton Mésou. Néa Méssa sto pláisio Didaktikón kai Mathisiakón Diadikasión* [Teaching of the Media. New Media in the frame of Teaching and Learning Processes]. Athens: Gutenberg.
- LaBay, D. G., & Comm, C. L. (2003). A case study using gap analysis to assess distance learning versus traditional course delivery. *International Journal of Educational Management*, 17(7), 312-317.
- Lassiter, L. E. (2005). *The Chicago guide to collaborative ethnography*. University of Chicago Press.
- Lynch, R., & Dembo, M. (2004). The relationship between self-regulation and online learning in a blended learning context. *The International Review of Research in Open and Distributed Learning*, 5(2).
- McDonald, B. J., Shroyer, P., Urbanski, B., & Vertin, D. (2002). Meeting the graduate education needs of Minnesota extension educators. *Journal of Extension*, 40(4).
- Meiklejohn, J., Phillips, C., Freedman, M. L., Griffin, M. L., Biegel, G., Roach, A., ... & Isberg, R. (2012). Integrating mindfulness training into K-12 education: Fostering the resilience of teachers and students. *Mindfulness*, 3(4), 291-307.
- Miller, J. P. (2013). *The contemplative practitioner: Meditation in education and the workplace*. University of Toronto Press.
- Moore, M. G. (1993). Theory of transactional distance. *Theoretical principles of distance education*, 1, 22-38.
- Moore, M. G. (Ed.). (2013). *Handbook of distance education*. Routledge.
- Morrison, A. B., Goolsarran, M., Rogers, S. L., & Jha, A. P. (2014). Taming a wandering attention: short-form mindfulness training in student cohorts. *Frontiers in Human Neuroscience*, 7, 897.
- Moskal, P., Dziuban, C., & Hartman, J. (2013). Blended learning: A dangerous idea?. *The Internet and Higher Education*, 18, 15-23.
- Mrazek, M. D., Zedelius, C. M., Gross, M. E., Mrazek, A. J., Phillips, D. T., & Schooler, J. W. (2017). Mindfulness in Education. In J. C. Karremans, & E. K. Papies, (Eds.), *Mindfulness in social psychology*, pp. 139 – 152. Taylor & Francis.
- Palalas, A. (2018). Mindfulness in Mobile and Ubiquitous Learning: Harnessing the Power of Attention. In S. Yu, M. Ally, and A. Tsinakos (Eds.), *Mobile and Ubiquitous Learning: Perspectives on Rethinking and Reforming Education* (pp. 19-44). Springer, Singapore.
- Powietrzynska, M. (2014). *Promoting wellness through mindfulness-based activities*. (Doctoral dissertation). City University of New York. Retrieved from [https://academicworks.cuny.edu/cgi/viewcontent.cgi?article=1267&context=gc\\_etds](https://academicworks.cuny.edu/cgi/viewcontent.cgi?article=1267&context=gc_etds)
- Program Overview (n.d.). Master of Education in Distance Education. Retrieved from <http://www.athabasca.ca/programs/summary/master-of-education-in-distance-education/>
- Rechtschaffen, D. (2014). *The way of mindful education: Cultivating well-being in teachers and students*. WW Norton & Company.
- Shapiro, S. (2013). Does Mindfulness Make You More Compassionate? *Greater Good*, 27.



- Schonert-Reichl, K. A., Oberle, E., Lawlor, M. S., Abbott, D., Thomson, K., Oberlander, T. F., & Diamond, A. (2015). Enhancing cognitive and social-emotional development through a simple-to-administer mindfulness-based school program for elementary school children: A randomized controlled trial. *Developmental Psychology*, 51(1), 52.
- Schwind, J. K., McCay, E., Beanlands, H., Martin, L. S., Martin, J., & Binder, M. (2017). Mindfulness practice as a teaching-learning strategy in higher education: A qualitative exploratory pilot study. *Nurse education today*, 50, 92-96.
- Siegel, D. J. (2007). *The mindful brain: Reflection and attunement in the cultivation of well-being*. WW Norton & Company.
- Siegel, D. J. (2016). *Mind: A journey to the heart of being human*. WW Norton & Company.
- Sze-Yeng, F., & Hussian, R. (2010). Self-directed learning in a socioconstructivist learning environment. *Procedia Social and Behavioral Sciences*, 9, 1913-1917.
- Van Dam, N. T., van Vugt, M. K., Vago, D. R., Schmalzl, L., Saron, C. D., Olendzki, A., ... & Fox, K. C. (2018). Mind the hype: A critical evaluation and prescriptive agenda for research on mindfulness and meditation. *Perspectives on Psychological Science*, 13(1), 36-61.
- Vaughan, N. (2007). Perspectives on blended learning in higher education. *International Journal on ELearning*, 6(1), 81.
- Vaughan, N. D., Cleveland-Innes, M., & Garrison, D. R. (2013). *Teaching in blended learning environments: Creating and sustaining communities of inquiry*. Athabasca University Press.
- Visser, L., Visser, Y., Amirault, R., & Simonson, M. (2012). *Trends and issues in distance education: International perspectives*, Second Edition. IAP.
- Vonderwell, S. (2003). An examination of asynchronous communication experiences and perspectives of students in an online course: A case study. *Internet and Higher Education*, 6, 77-90.
- Vygotsky, L. S. (1980). *Mind in society: The development of higher psychological processes*. Harvard University Press.
- Willis, J. (2006). *Research-based strategies to ignite student learning: Insights from a neurologist and classroom teacher*. ASCD.
- Wilson, D., Varnhagen, S., Krupa, E., Kasprzak, S., Hunting, V., & Taylor, A. (2007). Instructors' adaptation to online graduate education in health promotion: A qualitative study. *International Journal of E-Learning & Distance Education*, 18(2), 1-15.
- Zenner, C., Herrnleben-Kurz, S., & Walach, H. (2014). Mindfulness-based interventions in schools—a systematic review and meta-analysis. *Frontiers in psychology*, 5, 603.



# Effective Use of Online Tools in Engineering Classes

**Yasemin Bayyurt**  
Boğaziçi University  
Istanbul, Turkey  
*bayyurty@boun.edu.tr*

**Feza Kerestecioğlu**  
Kadir Has University  
Istanbul, Turkey  
*kerestec@khas.edu.tr*

## ABSTRACT

In this paper, we present the results of the second phase of a study that we have been conducting since the 2016–2017 academic year at a private university in Turkey. This phase of the study was conducted in a compulsory sophomore-level core engineering course of the Electrical-Electronics Engineering undergraduate programme. The online components of the course included, among other activities, online videos prepared by the instructor as well as videos on the Internet with public access. In this paper, we report the findings on the usage of videos prepared by the instructor. These videos were prepared as narrated and animated slide shows so that the students could link online experiences to in-class lectures. Statistics related to accessing these videos, as well comparisons between current and previous students' performances, reveal insights about the motivation of students to use online tools and how these tools affect student performance.

## Author Keywords

Engineering education, blended learning, face-to-face instruction, online instruction

## INTRODUCTION

In today's world, technology has become part of people's everyday lives in all domains of life. As young people's digital literacy skills become more and more advanced, their learning habits and expectations change accordingly. Learner needs vary from discipline to discipline. Therefore, students' and instructors' expectations vary in different programs of study within the social sciences, sciences, and engineering. In traditional engineering classrooms, instructors deliver lectures during class hours, then, instructors ask students to complete assignments and homework outside of class time (e.g., at home or in the library). When students are exposed to course materials in different environments (i.e., face-to-face during class time and online outside of class time) they become more engaged with the course materials and course content (Debnath et al., 2014; Harris & Park, 2016; Kerestecioğlu & Bayyurt, 2017). Jones and Chew (2015) indicated that engineering education has evolved from traditional classroom learning to e-learning due to young people's intensive involvement with technology. Hence, we can say that a blended learning approach gives learners many chances to learn the course content via a combination of different pedagogical approaches.

According to Debnath et al. (2014), online learning provides learners with an online learning environment, motivation, mode of communication, ability to carry out tasks, efficacy, and achievement. A number of studies have focused on various aspects of blended learning in engineering programs all over the world, sharing similar methodologies and results ranging from students' and lecturers' perceptions of blended learning classrooms (e.g., Canino, 2015; Harris & Park, 2016; Hotle & Garrow, 2016; Liyanapathirana, & Mirza, 2016; Mason et al., 2013) to developing and implementing a blended learning course (e.g., Jones & Chew, 2015; Kerestecioğlu & Bayyurt, 2017; Perez-Marin & Pascual Nieto, 2012; Silva & Barroca, 2015; Singh, 2013). Since students are the central agents in blended learning environments, their opinions are necessary to reveal the extent to which a blended learning approach influences academic performance in the course. Therefore, it is necessary to focus on not only the effectiveness of blended course designs but also students' opinions about the course content and its online/face-to-face implementation.

In this paper, we report the results of the implementation of an innovative blended learning approach to an engineering course at a university in Turkey. In the light of the findings, we discuss to what extent this innovative blended learning approach may affect students' end-of-the-year success. In addition, we also examine who benefits more from the learning materials presented in face-to-face and online environments (i.e., high or low achieving students).

## METHODOLOGY

This section first presents relevant information on the course in which an innovative blended teaching approach was adopted as well as the curriculum to which the course belongs. The online tools blended into the course are described subsequently.

### Course Description:

Typical Electrical and Computer Engineering curricula have common courses. Some of those are taught in other branches of engineering, too, such as calculus, physics, and core engineering courses. Other courses, however, are common exclusively among electrical engineering and computer engineering courses. The course in which data collection was performed (i.e., EE 205 Digital Design) can be considered as one of those. This course introduces students to Boolean algebra and logic circuits. Such a course is an indispensable block in the curricula of both electrical and computer engineering programmes. At Kadir Has University, Istanbul, it is a compulsory course in the second-year curricula of the Electrical-Electronics Engineering and Computer Engineering Undergraduate Programmes, offered in two sections for students in these programmes.



EE 205 does not have any prerequisites. It starts with an introduction to the number systems and leads students to the realm of binary numbers. Following the preliminaries, the material is presented in three parts, namely, Boolean algebra, combinational logic circuits, and sequential circuits. Detailed information about the course, including its learning outcomes and its contribution to the outcomes of both undergraduate programmes can be found in the university's online course catalogue (<http://bologna.khas.edu.tr/ders/50002971/program/50000566>).

One of the authors has been teaching this course for more than 10 years. Originally, the teaching method was very traditional. That is, the lectures were given using a PowerPoint slide show. The students were assigned about 4–5 homework assignments during the term. There was hardly any use of online or audio-visual material in or out of the classroom. After observing a degradation of student motivation and performance over several years, three years ago the homework was replaced by classwork. That is, after the course material was presented and some examples were solved, the students were asked to work in pairs to solve an exercise similar to the examples solved in the same hour. This peer-to-peer teaching approach resulted in some improvement in student performance and motivation. Nevertheless, the instructor was still searching for methods to extend student activity outside the classroom. In another course during the 2016–2017 academic year, he tried engaging students in using course videos and forum discussions for the first time. Preliminary results of this pilot application were presented by Kerestecioğlu & Bayyurt (2017).

#### Online Tools:

A blended teaching method similar to that used in the other course during the previous term was adopted in the EE 205 Digital Design course. Besides the lectures, asynchronous interactive online tools were used. These included videos, discussions forums, and online homework. All these aspects of the blended course were implemented via Blackboard Learn<sup>®</sup>, a teaching support platform widely used in Kadir Has University.

The online videos can be considered in two groups. The first one consisted of course videos. The course videos were not recordings of lectures; they were movies obtained from the animated PowerPoint shows, which were narrated by the instructor. The videos were made accessible to students after completing each chapter of the course in the class. The students also had access to handouts of the PowerPoint presentations before the lectures. Nevertheless, the rationale for providing these narrated PowerPoint movies was to help students prepare for exams and catch up if they missed a lecture. They could also use the course videos to refresh their memories, even pick-up any part of these videos to use them as so-to-say an *audio-visual handout*. Eight videos between 20–45 minutes were prepared, which can be viewed on YouTube via these links:

- <https://www.youtube.com/watch?v=8y8e4VVMXiw> (Binary Systems — Part I)
- <https://www.youtube.com/watch?v=S5mHsIvGwZ4> (Binary Systems — Part II)
- <https://www.youtube.com/watch?v=UjsJ7tFo6IA> (Boolean Algebra)
- <https://www.youtube.com/watch?v=-I2LhSwGgVE> (Simplification of Functions)
- [https://www.youtube.com/watch?v=lRuyL1\\_JzKw](https://www.youtube.com/watch?v=lRuyL1_JzKw) (Combinational Logic)
- <https://www.youtube.com/watch?v=K06q7EIT3i0> (Design with MSI Components)
- <https://www.youtube.com/watch?v=GujqOx-u-A8> (Sequential Logic)
- <https://www.youtube.com/watch?v=oJuPsZ5AhT4> (Analysis and Design of Sequential Circuits)

The students were required to complete an assignment after watching each video and submit it online via Blackboard. The submissions were accepted through the SafeAssign tool in Blackboard to avoid plagiarism. The assignments included only one task. In this task, the students are expected to write a textbook question on their own and solve it.

The second group of videos consisted of publicly accessible short videos on YouTube. The aim of these videos was to show students examples, applications, and recent technological advances related to subjects presented in class. Students were required to write reflections about these videos, and to discuss and present opinions about a question raised by the instructor in an online discussion forum. The instructor replied to all contributions shared in the forum to correct any misunderstandings about the facts and ideas presented in the videos and explain ambiguities that might arise from the students' points of view. The short videos used in this activity can be accessed via the following links:

- <https://www.youtube.com/watch?v=U6xJfP7-HCc> (Base 12 – Numberphile)
- <https://www.youtube.com/watch?v=3pbH9IhXwOg> (Redundancy Theorem (Boolean Algebra Trick))
- <https://www.youtube.com/watch?v=U5V1sxAKu5I> (Bell Labs Innovations Song)
- <https://www.youtube.com/watch?v=sYO6vm9PTsI> (7-4 Hamming code (Errors Aren't Forever [part 2/2]))
- <https://www.youtube.com/watch?v=UTVEVvfGOIw> (Moore's Law is Ending - Here's 7 Technologies ... )

Each of these two video-watching activities constituted 5% of students' overall course grade. Course results related to the usage of videos in the first group (i.e., instructor-created) are presented below. The results related to other aspects of the blended teaching method will be presented in a future publication.



## RESULTS AND DISCUSSION

The activities described above were blended in a course offered during fall semester of the 2017–2018 academic year. There were 55 Electrical-Electronics Engineering students registered in the course. Only four of them were repeating the course; the others were taking it for the first time.

The native language of all students was Turkish and they were speaking English as a foreign language. The medium of instruction in the Faculty of Engineering and Natural Sciences at Kadir Has University, and hence the language in the course, is English.

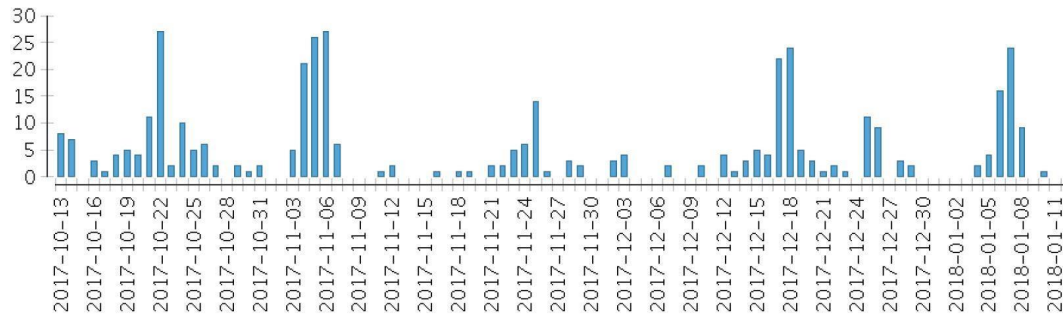
Table 1 displays access statistics for the course videos. Actual access frequencies might be higher than those given in Table 1, however, because some students subscribed to the instructor's YouTube channel. Therefore, they may have accessed the videos directly through YouTube as soon as they were uploaded without visiting the Blackboard Learn® system.

Videos	Number of students accessing the videos	Number of times video was accessed	Number of homework assignments submitted
Binary Systems	52	393	21
Boolean Algebra	50	316	27
Simplification of Functions	48	213	33
Combinational Logic	44	172	*
Design with MSI Components	44	161	27
Sequential Logic	41	130	14
Analysis and Design of Sequential Circuits	31	68	*

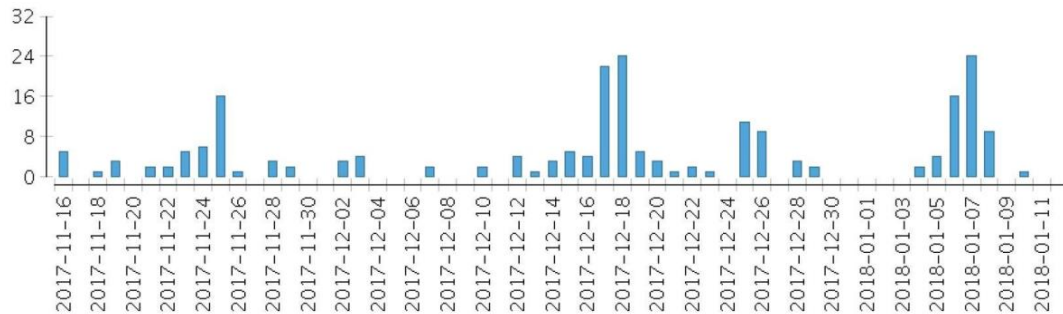
\*No homework assigned for video

**Table 1. Course video access via Blackboard**

The videos in Table 1 are listed in the order in which they were posted during the term, starting with the first and ending with the last. Table 1 illustrates how the number of times the videos were accessed during the term decreased as the term progressed. We observed the same phenomenon also in another course taught during spring semester of the 2016–2017 academic year in which the course videos were piloted (Kerestecioğlu & Bayyurt, 2017). At first glance, such access frequencies suggest a diminishing interest in watching the videos towards the end of the term. Nevertheless, it should be kept in mind that earlier videos were available for a longer period. Hence, these values may indicate that the earlier videos were accessed repeatedly during the term. Daily access statistics for two of the videos are presented to support this latter interpretation (see Figure 1). This chart illustrates how students watched the videos repeatedly during the term—the longer the videos were available, the more times they were played.



**a) Video 1 (Binary Systems)**



**b) Video 3 (Simplification of Functions)**

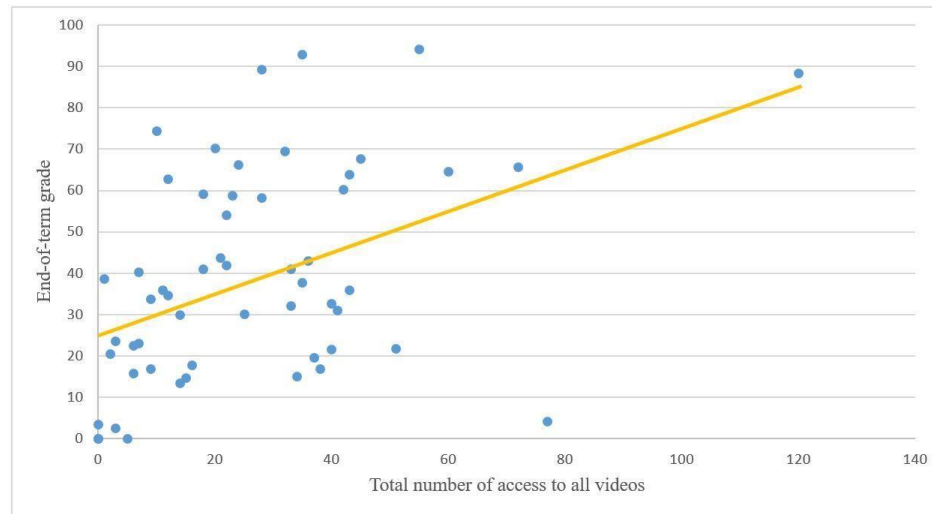
**Figure 1. Daily access statistics**





Figure 1 revealed another interesting fact. We observed six peak dates for accessing Video 1. Two of them, which were prior to posting Video 3 (i.e., October 22nd, 2017 and November 6th, 2017), were the deadlines for the first two assignments. Also, the latter was the day before the first midterm exam. The other four peak dates (November 25th, 2017, December 18th, 2017, December 25th, 2017, and January 7th, 2018) matched the peak dates for accessing Video 3. The first three dates were the homework assignment deadlines while the second and last of these dates were the days before the second midterm and final exams. Therefore, we concluded that both videos were re-visited by students not only to prepare their homework assignments but also to review course subjects before exams. Similar observations were made about statistics for other course videos but cannot be displayed in this paper due to space limitations.

Figure 2 illustrates the relationship between accessing the videos and students' course performance. It displays a scatter plot of the total number of times all videos were accessed by a student in relation to that student's final score out of 100 at the end of the course. Quantitative analyses indicated a positive correlation between these two variables ( $r = .44$ ).



**Figure 2. Relation of students' performances to number of video accesses**

Lastly, students' performance was compared to that of students who had taken the same course the previous year, which did not include any online components (see Table 2). Although the average grades of these two years were about the same, the number of AA's (highest letter grade) as well as FF's (fail grade) increased considerably with the application of online tools in the course. In parallel, there was a clear difference between the standard deviations of the grades of these years. This can be interpreted as indicating that high-achieving students benefited more from online tools whereas low-achieving students found it more difficult to cope with online learning methods.

	Number of students	Number of AA's	Number of FF's	Class average	Class std. dev.
2017 Fall	55	4 (7.3%)	17 (31%)	42/100	24.2
2016 Fall	35	1 (2.9%)	6 (17%)	43/100	16.6

**Table 2. Students' performance of last two years**

In sum, the implementation of a blended learning approach in engineering courses enable high achievers to get better in their understanding of the course content. The high achievers' end-of-the-year course grades are a good indication of how much they made progress in this respect. However, low achievers still do not show much interest in course activities whether these activities are presented online or face-to-face. The end-of-year success of low achievers does not seem to change in this respect.

## CONCLUSION

This case study reported the implementation of an innovative blended learning approach in an engineering course at a private university in Istanbul, Turkey. The paper focused on to what extent student achievement was influenced by the implementation of this pedagogical approach. Similar to other studies, findings suggest that a blended learning approach helps students to better understand course content. However, when examined closely, high achieving students seemed to benefit more than did low achieving students. Therefore, there was considerable difference in end-of-term success between high and low-achieving students.

Further studies should be carried out to increase the generalizability of the results of this study. In addition, similar innovative teaching and learning approaches should be adopted in other courses as well to reach more students and foster equal learning opportunities. As blended learning is becoming more widespread throughout the world, future research and



practice should involve developing an understanding at the institutional level of how blended learning can impact students' success in their study programs and finding ways to implement blended learning successfully.

#### ACKNOWLEDGEMENT

We would like to thank all second-year electrical engineering students for taking part in the study and giving us consent to use the data we collected in this respect.

#### REFERENCES

- Canino, J.V. (2015). Comparing student performance in thermodynamics using the flipped classroom and think-pair-share pedagogies. In *Proceedings of ASEE Annual Conference*, Seattle, WA, USA; 14-17 June 2015.
- Debnath, B.C., Rahman, M.M. & Hossain, M.J. (2014). Blended learning approach for engineering education — An improvement phase of traditional learning. *International Journal of Computer Science and Network Security (IJCSNS)*, 14(11), 85–90.
- Harris, J. & Park, C. (2016). A case study on blended learning in engineering education. *Proceedings of the Canadian Engineering Education Association (CEEAA) Conference* Halifax, Canada, 19-22 June 2016, 1–5.
- Hotle, S. & Garrow, L.A. (2016). Effects of the traditional and flipped classrooms on undergraduate student opinions and success. *ASCE's Journal of Professional Issues in Engineering Education and Practice*, 142(1), 11.
- Jones L.J.N., & Chew E. (2015) Blended Learning in Engineering Education: Curriculum Redesign and Development. In Tang S., Logonnathan L. (eds) *Taylor's 7th Teaching and Learning Conference 2014 Proceedings* (pp. 441-448), Springer, Singapore.
- Kerestecioglu F. & Bayyurt, Y. (2017). Blending on-line tools in engineering courses. *Proceedings of Second World Conference on Blended Learning (IBL'17)*, Toronto, Canada, 35–40.
- Liyanapathirana, S., & Mirza, O. (2016). Blended learning in engineering education: students and lecturers' perceptions and achieving learning outcomes. *Proceedings of International Conference on Engineering Education and Research*, Sydney, Australia; 21-24 November 2016.
- Mason, G., Shuman, T. R., & Cook, K. E. (2013). Comparing the effectiveness of an inverted classroom to a traditional classroom in an upper-division engineering course. *IEEE Transactions on Education*, 56(4), 430–435.
- Pérez-Marín, D. & Pascual-Nieto, I. (2012). A Case Study on the Use of Blended Learning to Encourage Computer Science Students to Study. *Journal of Science Education and Technology*, 21(1), 74–82.
- Silva, L. & Barroca, L. (2015). Towards a blended learning approach to teach a theoretical computer science module. In *7th International Conference on Computer Supported Education (CSEDU 2015)*, Lisbon, Portugal; 23-25 May 2015.
- Singh, H. (2003). Building effective blended learning programs. *Educational Technology*, 43(6), 51–54.



# Investigating the Reasons for Low Level of Interaction in a Blended Course

Ayşegül Sallı

Eastern Mediterranean University  
Famagusta, Northern Cyprus  
*aysegul.salli@emu.edu.tr*

Ülker Vancı Osam

Eastern Mediterranean University  
Famagusta, Northern Cyprus  
*ulker.osam@emu.edu.tr*

## ABSTRACT

Blended learning has become widespread in the field of teacher education in part due to the opportunities for interaction offered by the online component. This study discusses how and why the expectation for more interaction was not met in a blended course. The research context is a 4-year teacher education program in Northern Cyprus where preservice teachers of English learn how to teach English. One of the final year courses, ELTE406 Teaching Practice, was redesigned into a blended form by integrating a blog tool into the face-to-face course. The purpose of the redesign was to create an opportunity for preservice teachers to share their teaching practice experiences with one another and provide feedback in an effort to overcome limited in-class contact hours that inhibited interaction and sharing among the preservice teachers. The preservice teachers' blog entries and interactions (i.e., blog artefacts) and semi-structured interviews conducted upon the completion of the course were analysed qualitatively. The findings revealed a number of reasons for hindered interaction among preservice teachers. These findings were grouped in five broad categories: (a) attitudes towards the online medium, (b) devaluing peer feedback, (c) perceived inadequacy of written self-expression, (d) group dynamics, and (e) challenges of blogging. Some implications and practical solutions are offered for more efficient blended instruction.

## Author Keywords

Blended learning; preservice teachers; practicum; interaction

## INTRODUCTION

Emergence of various Web 2.0 tools in education has led to changes in teaching methodologies. Whittaker (2013) defined blended learning for English language practitioners as a “term most commonly used to refer to any combination of face-to-face teaching with online technology” (p.12). Traditional in-class teaching has been complemented with various synchronous and asynchronous communication technologies to enable learners to access knowledge in virtual environments and communicate with each other without any limitations. As Osguthorpe and Graham (2003) pointed out, blended instruction combined online and face-to-face learning to bring the benefits of both mediums together.

Many research studies have been carried out to determine the effects of communication technologies on teaching and learning. While some studies reported significant benefits of utilizing online components to face-to-face instruction (Garrison & Anderson, 2003; Garrison & Kanuka, 2004; Garrison & Vaughan, 2008; Singh, 2003; Sitzmann, Kraiger, Stewart, & Wisher, 2006), other research results indicated no difference (Spooner, Jordan, Algozzine, & Spooner, 1999). Findings of research on blended learning suggested that integrating technological tools in instruction encouraged learners to become more active and lead to deeper learning (Bonk, Kim, & Zeng, 2006). Also, blended courses were reported to be more flexible than face-to-face teaching alone (Graham, 2006), which also resulted in better learner outcomes (Zhao, Lei, Yan, & Tan, 2005).

Blogs are one of the most common Web 2.0 tools that have been integrated in education at all levels to enhance teaching and learning processes. Many features of blogs enable users to add different media such as videos, pictures, and podcasts. Furthermore, blogs are used as a part of face-to-face instruction to encourage learners to communicate with a wider range of individuals for a more global experience (Steinweg, Davis, & Thomson, 2005). It is also reported that blogs are used as supplementary tools to compensate the limiting effects of in-class discussions and sustain continuous communication among and between them (Wang & Hsua, 2008). In teacher education, blogs are used as channels of communication to announce new information, post assignments, and facilitate out-of-class discussions, and provide students with the opportunity to share critical reflections with other bloggers (Oravec, 2003; Richardson, 2004; Roberts, 2003). Blogs have the potential to serve as a social platform to establish interaction among preservice teachers by exchanging ideas with their peers in an online social environment through reflective practices. As mentioned by Romiszowski and Mason (2004), the utilization of blogs in instruction seems to encourage active participation of learners in discussions and increase interaction among them, which may result in extended and more authentic opportunities for knowledge generation and teacher learning.

## RESEARCH QUESTION

The following research question was asked to achieve the aim of the study:

1. What are the reasons for low level of interaction among the preservice teachers in the blog component of ELTE406 Teaching Practice course?



## METHODOLOGY

### Problem and Context

In teacher education, learning from each other's experiences is important for preservice language teachers during their internship period. The unique experience of learning how to teach can be best realized by encouraging preservice teachers to critically reflect on their teaching experiences and share these with others. After years of formal classroom instruction about how to teach, preservice teachers are placed in real classrooms to practice teaching in their final year. In the research context (i.e., the English Language Teaching Program in the Foreign Languages Department at Eastern Mediterranean University, Northern Cyprus) the ELTE406 Teaching Practice course was offered face-to-face and had only three contact hours weekly. However, the course was highly practical and demanding in nature, and weekly contact hours were not sufficient for ample interaction, and sharing. The course required the preservice teachers to carry out classroom observations, and teaching practice lessons in schools. They needed to share their lesson plans with their course instructors before lesson execution, which would be observed and assessed by both the course instructor and the class teacher, reflect on their lesson, and discuss the lesson with the observers afterwards. Considering the amount of work and the number of preservice teachers the course instructor had to manage, the first author of the paper decided to redesign ELTE406 Teaching Practice course into a blended format by adding a class blog and moving reflective activities there to facilitate more interaction.

### Participants

Fifteen preservice teachers (who were enrolled in ELTE406 Teaching practice course) participated in this action research study. They were identified by convenience sampling. The participants' age ranged between 22 and 26. Out of 15 participants, 10 were Turkish, 4 were Turkish Cypriot, and 1 was Russian. None of the participants had previous blogging experience. In this paper, the participants will be mentioned as P1, P2, and so on.

### Research Procedures

First, the course instructor (i.e., the first author) held a training session with the preservice teachers on how to use blogs. Then, they posted their lesson plans on the blog before conducting their teaching practice lessons to receive feedback from their peers and the course instructor. The course instructor video-recorded their teaching practice lessons during the lesson execution. Then, she shared 10-15 minutes of segments of videos on the blog for the preservice teachers to watch the lesson and leave constructive feedback. The preservice teachers were also required to post their reflections on their lessons on the class blog.

### Data Collection Instruments and Procedures

This paper reports a part of a larger study that investigated the contribution of preservice teachers' blogging interactions to their reflection. It aims to report reasons for the unexpected low level of interaction among the preservice teachers on a blog tool during the course delivery. For this purpose, the preservice teachers' feedback posts to one another and the final reports that they posted were copied from the blog and pasted into Word documents. Also, semi-structured interviews were conducted in a private environment and were recorded with a voice-recorder. Each interview lasted from thirty to forty minutes and was transcribed for data analysis.

### Analysis

Qualitative measures were applied to analyze the data that involved the blog artifacts and interview transcripts. Content analysis was carried out. Coding schemes were not pre-determined for the data analysis. Instead, the data were read and re-read for emerging themes. A second coder, who had completed his PhD dissertation, followed the same steps to perform the analysis. The second coder only analyzed 25% of the data comprised of randomly selected blog artifacts and one interview transcript. After coding the data separately, two coders shared their findings and found almost 89% match between their analyses.

## RESULTS

### Preservice Teachers' Blogging Interactions

Analysis of the preservice teachers' blogging interactions with their peers revealed that only a small number of preservice teachers was active throughout the semester. Most of the participants were somewhat active, while few participants interacted neither with their peers nor with the course instructor. They only posted the required tasks without leaving any comments on their peers' blog entries or video-recorded teaching practice lessons. In order to gather some insights from the preservice teachers regarding their interactions at different levels, their blog communications and reflections on blogging interactions were investigated during the interviews. Due to word limits, only results related to reasons that hindered participants' interactions will be discussed.

### Factors that Inhibited Blogging Interactions

The findings revealed some potential reasons hindered interaction among the preservice teachers. These reasons were grouped in five categories as follows: (a) attitudes towards the online medium, (b) devaluing peer feedback, (c) perceived inadequacy of written self-expression, (d) group dynamics, and (e) challenges of blogging. Each category is described in detail in the following sections.



### 1. Attitudes towards Blogs

The findings revealed that some of the preservice teachers were not enthusiastic to interact with their peers and the course instructor through the blog due to their attitudes towards the online tool. They admitted logging into the blog only to post their tasks. Also, they stated that they felt reluctant to leave any comments even when they watched their peers' video recorded lessons. The excerpt taken from one of the interview sessions clearly demonstrates the view of P8.

Researcher: As you know, we had the blogs in order to better communicate with each other. Do you think we achieved this goal?

P8: In my opinion, this wasn't achieved because we didn't use the blogs to communicate with each other. We just used it to post our tasks.

Researcher: OK. What sort of communication did you have with your friends?

P8: I didn't use it to communicate with them. I checked my friends' work before posting my tasks. I also read the feedback and comments written to them to have some ideas.

Researcher: Can you please be more specific?

P8: For example, before writing up my lesson plan, I checked my friends' lesson plans to see how they made it or whether I missed anything.

P8 considered the blog as a tool to post the tasks and a place to have ideas by viewing others' work before perming the assigned task. It seems that P8 was not interested in communicating with others. This attitude towards the use of blogs appeared as a factor that hindered communication among the preservice teachers.

Likewise, another participant explained the reasons for not engaging in any blogging interaction with others. P14 attributed this to her perception of the blog tool and other commitments.

P14: Honestly, I did not think of blogs as a place where we can communicate with each other. To me, it was a place where I can reflect on my experiences. Now, thinking back, I wish I had spent more time, but we had other projects and assignments and blog was not our priority. So, I just posted my tasks but did not leave any comments to my friends.

R: Do you mean you did not do anything other than posting your tasks?

P14: Nooo! I liked the videos of other friends. Even I watched them with my friend. When we watched them to see what we could do better in our teaching practices. Also, we realized that we also had the same problems to work on. That was good.

The excerpt above clearly indicates that P14 viewed the blog tool as a site to submit her assignments. She reported viewing her peers' teaching practice videos and reflecting on their performances with her peer(s). She was not involved in any interaction with her peers on the blog.

### 2. Devaluing Peer Feedback

Another issue emerged was the participants' opinions about the quality of their peers' feedback. It seems that some of the participants did not consider their peers' feedback genuine. So, they avoided replying to their comments. For instance, P9 stated that she did not consider online feedback sincere and that she valued face-to-face feedback more. Data analysis revealed that the participant did not show interest in exchanging feedback with her peers because she devalued their feedback:

P9: While reading the comments, you feel like the friends who wrote the comments have 40 years of teaching experience and you are just a new teacher who has no teaching experience. They give you feedback as if they have years of teaching experience. Don't you react to it?

R: Did you not like the feedback you received from your peers? Is that what you mean?





P9: I did mostly but I did not like their style. I did not consider their feedback seriously. Your feedback was enough for me. The value of their feedback compared to yours was like grain of sand in the sea.

P9 seemed to devalue her peers' feedback due to their inexperience, which led her to discontinue her interactions with her peers. P5 also mentioned this issue:

P5: I expected responses from you, not from them, because other students, they were in the same situation.

The perceived quality of peer feedback appeared as important reasons that prevented some of the participants from being involving in blogging interaction.

### 3. Perceived Inadequacy of Written Self-Expression

Preservice teachers' perceived ability of written self-expression emerged as another reason for limited blog interaction. Data analysis revealed that some of the preservice teachers were reluctant write feedback posts to their peers. They avoided leaving feedback for their peers due to their fear of making language mistakes in English:

Researcher: Considering your blogging activities, were you an active or a passive blogger?

P12: I think I am in the passive users group.

Researcher: OK. In your opinion, what were the reasons that prevented you from interacting with your friends or making comments on their blog posts?

P12: What influenced my interaction with my friends could be my lack of language practice. I mean thinking fast in English and writing fast is not like what I do in mother tongue and this affected me. For example, if writing a blog entry or leaving a comment took one hour of your time, it would take me two hours for me. I mean, it is not about not being able to write but it takes a long time for me to write on the blog, because I have to think and write accurately.

As the findings indicate, some of the participants may have had some anxiety because the instructor and other preservice teachers would read their blog entries and comments. Communicating in an online medium using a foreign language may have affected their self-confidence as they had to write in English. Therefore, they seemed to avoid writing comments to their peers as they did not want to make language mistakes. P12 reported that writing in a foreign language involved more careful thinking on word choice and it took more time for her to compose a blog entry. Thus, instead of writing comments, she was content with reading others' blog entries.

### 4. Group Dynamics

Group dynamics emerged from the data analysis as another inhibiting factor. To illustrate, one of the preservice teachers said she read the feedback she received but she did not respond to it because she considered the feedback insincere as it came from a peer with whom she did not have good relations.

Researcher: So, you said you received feedback from some of your peers. Did you respond to their feedback? Or did you write feedback to them?

P9: I did not write to some of my friends because I did not like their style. Also, to be honest, I did not want to write feedback to them.

Researcher: Why?

P9: It may be something personal... Umm, personal feelings.

P9 did not respond to some of her peers because of her personal attitudes. Furthermore, some other participants mentioned paying more attention to the blog entries of the peers with whom they had better relations. For example, P12 said she chose to watch the videos of the peers she was friends with.

P12: Actually, I watched my friends' teaching practice ideas and read some of my friends' lesson plans to have some ideas for my own teaching. To be honest, I liked what we shared in blogs but I only write feedback to my peers that I was good friends with. I did not know whether to write feedback to others because I did not want



to offend them. They could say ‘who are you to criticize me’. So, I just watched the videos and read the comments written.

Not being sure whether to write feedback to peers with whom she was not so close, P12 chose to refrain from actively contributing to blog interaction through commenting and providing feedback. Preservice teachers like P12 might have faced this challenging situation that resulted in avoidance of interaction in order not to hurt their peers’ feelings.

### **5. Challenges of Blogging**

The participants mentioned a number of blogging challenges that potentially hindered their blogging activities and interactions with peers. The findings revealed a number of issues, which were clustered into three categories. Each category is explained below.

#### *Lack of previous blogging experience*

Preservice teachers stated that they did not have enough time to experiment with the blogs. Hence, learning how to use the blogs and blogging efficiently at the same time was challenging. One of the participants shared her reflections about these challenges in the interview.

P5: For me, it was a difficult experience because it was the first time for me. If we had used it from the first year, it would be fine. We are in our last semester and we were introduced to blogs. It was difficult for me. Also, learning computer technologies takes a long time for me.

#### *Lack of enough time to explore blogs*

Some of the preservice teachers complained that they were given limited time to learn to use blogs and fulfill the course expectations in one semester. Due to deadlines and other course-related commitments, they felt frustrated. The preservice teachers also mentioned that having a number of blog tasks to complete in a short period of time was stressful. P15’s explanation is illustrative:

P15: To be honest, I did not think that the blogs would be useful for us but when I watched the lesson of my friends whom I have spent four years of education together. I felt proud. At the beginning, I had difficulty with using the blogs and I did not want to do the tasks. However, later I had time problem. We had other assignments and projects. I really had to devote good time to write feedback or my reflections on the blog. I think most of my friends could not write feedback on my videos because of lack of time.

#### *Preference of face-to-face communication*

A number of participants clearly stated their preference of face-to-face contact. For example, P5 stated her opinion about the whole blogging experience in her final report. In her view, online communication was not sincere.

P5: Personally, I don’t really like all these blogs and commenting online because it is proved by reality and by students themselves that people are lazy to come to blog and leave sensitive and meaningful comments. For me, personally, it would be more effective if the same feedback would be done in the classroom.

### **DISCUSSION AND CONCLUSION**

Notwithstanding the fact that the participants who were actively engaged in blogging interactions acknowledged the benefits, other participants remained inactive throughout the semester. Similar results were reported in previous studies concerning students’ participation and interaction rates. To illustrate, in Guzdial and Turns’s (2000) and Lipponen Rahikainen, Lallimo, and Hakkarainen’s (2003) studies, it was reported that despite the density of interaction and participation, some participants remained inactive while others were active. The participants who were reluctant to engage in blogging interaction in the present study articulated a number of factors that hindered interaction. These factors emerged as attitudes towards the online tool, time constraints, perceived quality of peer feedback, perceived inadequacy of written self-expression, and group dynamics. Each of these factors is discussed below in light of the related literature.

Regarding the preservice teachers’ attitudes towards the blog tool, the absence of previous blogging experience and lack of familiarity with blogs appeared as an important factor. Since none of them had previous blogging experience it was challenging for them to use the blog efficiently. Furthermore, some participants reported hesitating to interact with their peers in the blog due to the difficulties of learning and using the blog tool at the same time within a short period of time. In other words, the feeling of frustration seemed to be an issue that negatively affected preservice teachers. Consistent with Kistow’s (2009) suggestions, more tutor support and more workshops need to be held before launching blended learning instruction to reach more positive results. As Osguthorpe and Graham (2003) suggested, course instructors ought to be aware of their students’ previous experience of technological tools, degree of familiarity, and amount of training needed before initiating blended instruction.



Time constraint emerged as another reason that hindered interaction. The participants were required to view their peers' video-recorded teaching practice lessons and write comments. Also, they were expected to provide timely responses to the feedback they received from their peers and the course instructor. It seems that time constraints led to frustration and thus, they seemed to have refrained from contributing to the blog interactions. Considering time as an aspect, these results seem to be in line with another study in which Luehmann (2008) reported 'time' as a factor (along with effort and confidence at personal and professional levels) for efficient use of blogging. Therefore, providing sufficient time for the participants to complete the blog tasks and engage in interaction with their peers should be ensured by scheduling different blog activities at different times.

Perceived quality of peer feedback was revealed as another factor that potentially inhibited online participation and interaction. Some of the participants admitted that they did not value their peers' feedback as they believed that their peers were neither superior nor more knowledgeable than themselves. Furthermore, some of the participants reported not learning from their peers' feedback as the feedback was rather surface-level. In other words, they found feedback coming from their peers unbeneficial as it lacked depth and value. This finding was also reported in Kwon (2014) and Vonderwell (2003): preservice teachers indicated that they valued the course instructor's feedback much more as it helped them to improve their lesson plans and future teaching practices. Similar findings were also found by Kwon (2014) who reported that students valued teacher feedback and considered it positive and reliable due to the expertise of the course instructor. Likewise, some other studies (Deng & Yuen, 2013; Kerawalla, Minocha, Kirkup, & Conole, 2008) also confirm that users' perceived academic value of the blogs influenced the level of their participation.

Perceived inadequacy of written self-expression in blogs appeared to be yet another factor that prevented active participation and interaction. Writing in an online environment was perceived as a discomfoting experience for some the preservice teachers who avoided engaging written interaction with their peers, perhaps because they may have had difficulty in expressing their opinions in written form. Previous studies confirm that students' low language proficiency proved to be a factor that caused avoidance (Storch, 2005) due to the fear of making mistakes or offending their peers with their critical feedback.

Finally, group dynamics was another factor that inhibited blogging interaction. A close investigation of interaction among the preservice teachers and the interview results revealed that the participants who were close friends in and out of class tended to view each other's blog posts and send feedback to one another. Apparently, friendship proved to be a motivating factor for those who interacted with each other the most. Focusing on trust-building activities and implementing methodologies that foster sharing and scaffolding bonds among preservice teachers in face-to-face meetings would potentially increase the sense of friendship. Moreover, assigning specific roles to participants and designing tasks that aim to bring them together in blogs would help to generate friendship among participants (Çuhadar & Kuzu, 2006).

## IMPLICATIONS

The findings point to several issues to address and some problems to deal with. First, providing ample training prior to launching blended instruction appeared to be a vital issue. In order to ensure that all preservice teachers are clear about how to use the blog tool effectively before its implementation, necessary training should be provided and ample support should be given throughout the semester (Kistow, 2009). Furthermore, preservice teachers should be informed about the benefits of blended instruction so that they can develop and maintain a positive attitude towards the online medium (Deng & Yuen, 2013). Merits of online sharing and learning from others' experience should be deep-seated in their cognition. Not having previous blogging experiences appeared as a barrier for some of the participants. This can be eliminated by integrating blogs into other courses offered in the first years of their higher education so that preservice teachers may feel more comfortable with posting blog tasks and interacting with others via an online platform. Acceptance and practice of blended learning instruction by faculty members will equip teacher candidates with important technological knowledge required for future professional development.

Furthermore, preservice teachers should be provided with a secure and private online environment so that they feel comfortable sharing their experiences with others and writing feedback to their peers. Preservice teachers could also be given additional guidelines and prompts regarding blogging conventions (e.g., how to write a blog entry in different genres), or different ways of responding to a peer or received feedback. Initially, some blogging activities could be allocated in class hours so that the course instructor would provide an instant response to preservice teachers as an example. The role of the instructor in an online medium should be well outlined and planned before launching the blended learning instruction in order for more efficient management of online interaction. In an online environment, the role of the instructor appears to be crucial in triggering participants' ideas to share with their peers and further ensure that interaction evolves among them.



## REFERENCES

- Bonk, C. J., Malinkowski, S., Angeli, C., & East, J. (1998). Web-based case conferencing for perspective teacher education: Electronic discourse from the field. *The Journal of Educational Computing Research*, 19(3), 269-306.
- Çuhadar, C., & Kuzu, A. (2006). *Öğretim ve sosyal etkileşim amaçlı blog kullanımına yönelik öğrenci görüşleri*. 6. Uluslararası Eğitim Teknolojileri Konferansı, Gazimağusa, KKTC.
- Deng, Y., & Yuen, A. H. K. (2013). Blogs in pre-service teacher education: Exploring the participation issue. *Technology, Pedagogy and Education*, (22)3, 339-356. doi:10.1080/1475939X.2013.802990
- Ferdig, R. E. & Trammell, K. D. (2004). Content delivery in the 'blogosphere'. *Technological Horizons in Education Journal*, 31(7), 12-15.
- Garrison, D. R., & Anderson, T. (2003). *E-learning in the 21<sup>st</sup> century: A framework for research and practice*. London: Routledge/Palmer.
- Garrison, D. R., & Vaughan, N., D. (2008). *Blended learning in higher education*. San Francisco: Wiley Imprint.
- Garrison, D. R., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. *The Internet and Higher Education*, 7(2), 95-105.
- Guzdial, M., & Turns, J. (2000). Effective discussion through a computer-mediated anchored forum. *Journal of the Learning Sciences*, 9(4), 437-470.
- Kerawalla, L., Minocha, S., Kirkup, G., & Conole, G. (2008). Characterizing the different blogging behaviours of students on an online distance learning course. *Learning, Media and Technology*, 33, 21-33.
- Kistow, B. (2009). E-learning at the Arthur Lokjack Graduate School of Business: A survey of faculty members. *International Journal of Education and Development Using ICT*, 5(4). Retrieved January, 29, 2015 from <http://ijedict.dec.uwi.edu/viewarticle.php?id=845>
- Kwon, C. (2014). Student perspectives on group work and use of L1: Academic writing in a university EFL course in Thailand. *University of Hawai'i Second Language Studies Papers*, 33(1), 85-124.
- Lipponen, L., Rahikainen, M., Lallimo, J., & Hakkarainen, K., (2003). Patterns of participation and discourse in elementary students' computer-supported collaborative learning. *Learning and Instruction*, 13, 487-509.
- Luehmann, A. L. (2008). Using blogging in support of teacher professional identity development: A case study. *Journal of the Learning Sciences*, (17)3, 287-337. doi: 10.1080/10508400802192706
- Oravec, J. A. (2003). Blending by blogging: Weblogs in blended learning initiatives. *Journal of Educational Media*, 28(2/3), 225-233.
- Osguthorpe, R. T., & Graham, C. R. (2003). Blended learning environments: Definitions and directions. *Quarterly Review of Distance Education*, 4(3), 227-233.
- Richardson, W. (2004, January/February). Blogging and RSS—The “what’s it” and “how to” of powerful new Web tools for educators. *Multimedia and Internet@Schools*, 11(1), 10-13.
- Roberts, S. (2003). Campus communications & the wisdom of blogging. *Syllabus*, 17(1), 22-25.
- Singh, H. (2003). Building effective blended learning programs. *Educational Technology*, 43(6), 51-54.
- Sitzmann, T., Kraiger, K., Stewart, D., & Wisher, R. (2006). The comparative effectiveness of web-based and classroom instruction: A meta-analysis. *Personnel Psychology*, (59), 623-664.
- Spooner, F., Jordan, L., Algozzine, B., & Spooner, M. (1999). Student ratings of instruction in distance learning and on-campus classes. *Journal of Educational Research*, 92(3), 32-40.
- Steinweg, S. B., Davis, M. L., & Thomson, W. S. (2005). A comparison of traditional and online instruction in an introduction to special education course. *Teacher Education and Special Education*, 28(1), 62-73.
- Storch, N. (2005). Collaborative writing: Product, process, and students' reflections. *Journal of Second Language Writing*, 14(3), 153-173.
- Wang, S., & Hsua, H. (2008). Reflections on using blogs to expand in-class discussion. *TechTrends*. 52(3), 81-85.
- Whittaker, C. (2013). Introduction. In B. Tomlinson & C. Whittaker (Eds.), *Blended learning in English language teaching: Course design and implementation*. London: British Council (pp. 11-23)
- Zhao, Y., Lei, J., Yan, B., & Tan, S. (2005). What makes the difference? A practical analysis of research on the effectiveness of distance education. *Teacher College Record*, 107, 1836-1884.



# Assessing the Value of Virtual Worlds for Distance Education Students through Collaborative Role-playing Activities - An Explanatory Case Study

**Sofia Nteliopoulou**  
Mathemagenesis IKE  
eLearning  
Service & Content Providers  
Thermi, Thessaloniki, Greece  
*s.deliopoulou@gmail.com*

**Vasileios Kratidis**  
Mathemagenesis IKE  
eLearning  
Service & Content Providers  
Thermi, Thessaloniki, Greece  
*b.kratid@gmail.com*

**Avgoustos Tsinakos**  
Eastern Macedonia and Thrace  
Institute of Technology  
(EMATTECH)  
Agios Loukas, Kavala, Greece  
*tsinakos@teiemt.gr*

## ABSTRACT

Virtual worlds (VWs) seem to have great potential in education. Current educational uses of VWs seem to exploit them more as group interaction platforms in terms of their potential to support collaborative e-learning in both online and blended learning programs. There is also a need for systematic research efforts that will lead to guidelines and principles for designing and evaluating effective learning activities in VWs. This paper presents preliminary empirical results from a sequential explanatory case study with graduate students from a distance education program. A collaborative role-playing learning activity was designed in Second Life (SL) following Salmon's five-stage model (2004) for computer-mediated conferencing. Graduate students collaborated in-world acting as educational counselors in order to achieve the educational goals of the role-playing scenario. The study presents the process of project implementation and preliminary quantitative findings related to issues may affect the student's familiarization, collaboration and learning in the three-dimensional (3D) environment.

## Author Keywords

Second Life; Virtual Worlds; Role-playing; Collaborative Learning; Blended Learning; Online Learning; Instructional Design

## INTRODUCTION

The pedagogical value of Virtual Worlds (VWs) is being extensively embraced in the recent research literature (Jarmon, Traphagan, Mayrath & Trivedi, 2009; Minocha & Roberts, 2008; Nteliopoulou & Tsinakos, 2011). Although three-dimensional (3D) Virtual Worlds are relatively new, they have already been used as pedagogical media (Dickey, 2003), often towards more personalized learning tailored to the individual learner's needs (de Freitas & Yapp, 2005; West-Burnham, 2005) and greater learner autonomy (Field, 2007). This kind of environment has been also widely applied for conducting virtual meetings and discussions (Chow, Andrews & Trueman, 2007; De Lucia, Francese, Passero & Tortora, 2009). The main reason is that VWs are particularly suitable for communicating because they enhance the users' perception of presence, awareness, communication and their sense of belonging to a community, facts that are of great importance in the field of Distance Education (De Lucia et al., 2009).

This paper reports on the progress of a project that has been implemented in the virtual world of SL and seeks evidence on how 3D worlds can be effectively used to support collaborative learning techniques in Distance Education in both online and blended learning programs. Although there is a steep learning curve in SL especially for adult learners, we found that a virtual world can enable collaboration through the use of suitably structured tasks.

## PROJECT IMPLEMENTATION

In-world tasks were structured according to the Salmon's five-stage model (2004) for computer-mediated conferencing. The model comprises a framework of five stages, each stage building on the previous, to enable increasing student interaction through structured activities and decreasing levels of tutors' or facilitators' support ('scaffolding'). Salmon (2004) reports that students can benefit from increasing skill and comfort in working, networking and learning online through the use of this framework. Salmon, Nie and Edirisingha (2010) have also tested the model's applicability to teaching and learning in Second Life. They found (2010) that the basic structure of the model appears to hold good, but the potential at each stage may be slightly different. The in-world tasks as they were designed for each stage are described below.

### Registration and Orientation: Stage 1, Access and Motivation

Online resources for the project such as project information, links and instructions for Second Life, schedule for individual and group tasks, were emailed to the participants. During the first week, students create their own accounts in SL by choosing their avatars and undertake 1 to 2 hours Orientation using the Orientation building that has been created on Athabasca Island in SL for this purpose. Through this orientation they acquire basic interaction skills such as moving, communicating and personalising their avatars. Other orientation tasks involve users' familiarization with the basic SL tools such as using the mini map, creating and sharing notecards, taking snapshots, interacting with the objects etc. The





above tasks are conducted asynchronously and students are unable to meet in-world mentors. The purpose of Stage 1 is for students to familiarize themselves with the environment.

### **Second Life Presentation: Stage 2, Socialization**

The first synchronous session is an in-world conference conducted by the researcher and it aims to inform students about SL and its possible applications in education as well as to give them a detailed description about the in-world learning activities that will follow. Students are directed to the AU amphitheatre in SL where the presentation takes place. A facilitator is always on the welcome point so as to help students, if any problems arise. This is the first time students meet in Second Life. At the end of the presentation students are encouraged to form groups. This gives them the opportunity to practise the skills they have learned during the Orientation session and also prepares them for Stage 3.

### **Choose Group Identity and Roles: Stage 3, Information Exchange**

In the previous stage, students were divided into small groups. Their task in the second synchronous session is to meet with their group members in SL and to choose their group's identity for the role-playing activity. They can choose between the Blue and the Orange team. According to this choice each team will visit different places and access different resources in the virtual world. Students are also encouraged to decide their role in the team. The available roles for the activity are Group Leader, Group Recorder and Investigators/Note Keepers.

### **Role-playing: Stage 4, Knowledge Construction**

After having decided their group's identity, students' task is to study the role-playing scenario. The role-playing scenario requires students to act as educational counselors coming to advise the University's Dean about a proposed educational change regarding the introduction of Mobile Learning in the University. The group task is to observe some of the University Professors, see what their thoughts and concerns on the issue are and then report to the Dean their suggestions on what should be done. At this stage, each group visits the virtual world separately. According to their team color educational counselors visit two out of four Professors in their offices (Figure 1) and interact with them through notecards as well as other resources that may provide them with additional information. The Blue team visits two Professors that are proponents of M-Learning while the Orange team visits the other two that are against the integration of M-Learning in the University.



**Figure 1. Visiting professors' offices during the role-playing activity.**

After that the group returns to the meeting room (Figure 2), discusses their findings and answers a couple of questions that have been given to the group in the form of a notecard based on what they have observed. The idea behind this activity is to facilitate the development of collaboration and team work skills.



**Figure 2. The meeting room where the group discussions take place.**



### Submission of the Report: Stage 5, Development

During the third synchronous session the three groups meet all together. In the meeting space each group's answers from the previous session have been uploaded in three separate boards. This enables the Blue teams to access the observations of the Orange teams and respectively. They are also able to ask questions to one another and discuss any issue relevant to the scenario or the strategy they followed. The idea behind this activity is to promote critical thinking and dialogue between teams and help them decide about the most important learning artifacts that should be included in the group's final report. After that each team re-gathers separately, re-assigns roles to the team members and based on all the available information, they start preparing their report with their suggestions to the Dean. This activity is completed when the group leader presents their team's suggestions to the Dean.

### METHODOLOGY

This research was carried out as a sequential explanatory case study as the combination of quantitative and qualitative approaches offers a deeper understanding of the research questions of this study. The sequential explanatory strategy is characterized by the collection and analysis of quantitative data in the first phase of the research followed by the collection and analysis of qualitative data in the second phase that builds on the results of the initial quantitative results (Creswell, 2009). The following section summarizes the most important quantitative findings of this research that were gathered through an online survey that was designed to evaluate users' experience in SL during the in-world activities.

### Research Questions

This study was designed to investigate the following research questions:

1. What are the design specifications for a suitable evaluation framework for 3D virtual collaborative learning environments?
2. How can 3D virtual worlds (efficiently or inefficiently) support collaborative learning techniques for distance education students?

### Bounded the Study

The Master of Education in Distance Education (MEd) program of Athabasca University (AU) has been selected as it is considered a "typical case" of a program delivered at a distance. A typical case highlights what is normal on average. Graduate students who were enrolled in MEd program when the data collection took place were identified as potential study participants.

### Sample

As far as the demographic characteristics of the sample ( $n=9$ ) starting from the gender distribution it was observed that the ratio of male and female participants was 44.4% and 55.6% respectively. As far as the average age of the participants this was 50.6 years old with standard deviation equal to 8.6 years old. The youngest person was 39 years old and the oldest 61 years old. All the participants attended a distance education program, which was the Master of Education. Regarding any previous experience of the participants in virtual worlds (Second Life, Open Simulator, Croquet Project, Active Worlds, Quest Atlantis) only one replied that he had in the past. His experience was linked with gaming and educational reasons. Moreover, he used to spend less than one-hour time per week in the virtual world.

### Instrumentation

A demographic questionnaire was developed to obtain data on gender, age, and previous experience with virtual worlds as described above. The online survey was divided in three parts. The familiarization survey, the collaboration survey and the learning survey. The goal of the familiarization survey is to uncover usability problems of the most important parts of the user interface, concerning the basic functionalities of the SL environment while the goal of the collaboration survey is to uncover usability problems in terms of communication and the collaborative functionalities of the environment. Finally, the learning survey has been designed to evaluate students' learning in the VW, to collect further requirements and additional functionality of the virtual environment and to determine the appropriation of different kinds of learning scenarios. A Likert 5-point scale ranging from "Strongly disagree" to "Strongly agree", was used to measure students' attitudes towards these issues.

### Results

The results of the study are divided into three sections to present the students' level of comfort during the phases of familiarization (Table 1), collaboration (Table 2) and learning (Table 3) for the in-world activities that took place in SL. Table 4 shows which SL features according to the participants' opinion boosted interaction and facilitated collaboration during the activities.

According to Table 1, the participants appear to have a low level of familiarization to virtual worlds regarding issues of moving or teleporting from one virtual area to another and orientating inside the virtual environment. A mediocrity level of familiarization appears in issues of moving their avatar and learning how to use the functions of the environment with ease. They also believe in a medium level that both the 3D and 2D user interface were not difficult; that it was quite clear when they had to choose right or left click on the objects of the environment and that overall their first impression of the environment was positive. Moreover, a high level of familiarization was associated with interface issues of finding the feature "change view" useful and the avatar's animation, the graphics and the virtual areas of the environment satisfactory. Also a high level of familiarization is associated with the ease to interact with 3D objects, to modify the avatar's appearance



and to distinguish 2D from 3D windows. Finally, most of the participants believe that the system's speed was quite good on their computers.

Statement	N	Mean	Std. Deviation
I had no problem to move or teleport from one virtual area to another.	9	2.0	1.0
I did not lose my orientation inside the virtual environment.	9	2.3	1.3
It was not difficult to move my avatar.	9	2.7	1.2
Learning to use the functions of the environment was easy.	9	2.8	1.0
3D user interface was not difficult (e.g 3D avatars, worlds, textures, forms, objects and places/scenes).	9	2.9	1.1
I was not sure when to right-click or left-click on the objects of the environment.	9	3.2	0.8
My first impression of the environment was positive.	9	3.3	0.9
2D user interface was not difficult (e.g pictures, words, pages, windows on the flat screen).	9	3.4	1.3
I found the feature "change view" useful inside the environment.	9	3.6	0.5
The animation of the avatar was satisfactory.	9	3.6	1.0
It was easy to learn how to interact with 3D objects (e.g touching objects, sitting on a chair).	9	3.8	1.2
I found the graphics of the environment satisfactory.	9	3.9	0.9
Virtual areas (spaces, buildings) of the environment were satisfactory.	9	3.9	0.6
The avatar's appearance modification tool was satisfactory.	9	3.9	0.9
I could easily distinguish 2D from 3D windows.	9	4.0	0.7
The system was fast enough on my computer.	9	4.2	1.1

**Table 1. Familiarization Issues.**

As far as the collaboration through the virtual worlds, various results have been brought to our attention. According to Table 2, the participants appear to believe that collaboration via gestures with their team members in the VW was difficult. On the other hand, collaboration was roughly good since they found the representation of the other user through an avatar mediocre. They believed that at a medium level they could collaborate more effectively in a 2D environment and they found the feature of being able to see other users interact with objects, somehow useful. They also agreed they did not encounter any major technical problem inside the environment and they found it somehow useful to see the way their partner interacted with the environment. They considered the representation of the user's field of view/vision through the avatar's head movement roughly good. Most of the participants also stated that collaboration would be better supported, if they were able to contact their partners through VoIP or other communication. Finally, the participants agreed that the system helped them to collaborate effectively with their partners and the system's feedback mechanisms were adequately fast on their computers.



Statement	N	Mean	Std. Deviation
I found avatars gestures useful for the collaboration.	9	2.1	0.8
The representation of the other user though an avatar helped me to collaborate effectively.	9	2.9	0.9
I consider I could collaborate more effectively with my partner in a 2D environment.	9	3.1	0.9
I found the feature of being able to see other users interact with objects useful.	9	3.3	1.1
I did not encounter any technical problem inside the environment.	9	3.4	1.4
I found useful to see the way my partner interacts with the environment.	9	3.4	1.1
I found useful the representation of the user's field of view/vision through the avatar's head movement.	9	3.4	1.2
I would prefer to contact my partner though VoIP or other communication tools.	9	3.6	1.1
System features helped me to collaborate effectively with my partners.	9	3.9	0.9
The system's feedback mechanisms were fast on my computer.	9	4.0	1.0

**Table 2. Collaboration Issues**

In regard to the evaluation of their learning (Table 3) the participants appear to believe that it would be slightly easy to organize and run a course through SL. In addition, they have found the avatar's facial expressions somehow useful and they believe that at a medium level they could easily attend an entire course through SL. However, they consider the users' ability to create and share 3D objects with others useful and they believe that it would not cause any disturbance in the educational procedure, if avatars were less anthropoid. They have found the feature of editing their avatar's appearance mediocrily useful for their learning.

Moreover, the participants believe that the existence of suitable objects relevant to the learning scenario that is executed could support user's immersion while the SL environment supported the educational scenario effectively. The existence of a forum inside second life would be useful and users' ability to record video inside SL would be also useful. Furthermore, they liked the "bubble chat" and the "save text" features of the chat tool as well as the possibility to distinguish the role (facilitators, instructors, students) of each avatar.

Additionally, the participants consider the users' ability to create and share simulations useful and they believe that SL could provide tools for assessment such as tests, quizzes etc. They are also in favor of the possibility to be able to use and share audio video files inside SL and they consider the existence of SL educational agents (e.g. Andreas, Robert, Mary, Kathrin, Sunny Davros) useful. Finally, they strongly believe that voting and decision making tools would be helpful as well as a map of the AU island inside Second Life.



Statement	N	Mean	Std. Deviation
I think it would be easy to organize and run a course through Second Life.	9	1.8	1.1
I found avatars' facial expressions useful.	9	2.6	1.0
I believe that I could easily attend a course through Second Life.	9	2.8	1.5
I think that if avatars were less anthropoid (not people but animals, vehicles, robots) they would not cause any disturbance in the educational procedure.	9	2.9	1.6
I found the feature of editing my avatar's appearance useful.	9	3.2	0.8
I consider users' ability to create and share 3D objects would be useful.	9	3.4	1.5
I found the "bubble chat" feature overhead the avatar useful.	9	3.6	1.1
I think that the existence of suitable objects relevant to the learning scenario that is executed could support user's immersion.	9	3.8	1.2
I consider that Second Life environment supported the educational scenario effectively.	9	3.9	1.1
I think that the existence of a forum inside Second Life would be useful.	9	3.9	1.5
I consider users' ability to record video inside Second Life would be useful.	9	4.0	1.0
I would like to be able to distinguish the role of each avatar (students, researcher, facilitator) through its appearance.	9	4.1	0.8
I find the "save text" feature of the chat tool useful.	9	4.1	0.8
I consider users' ability to create and share simulations would be useful.	9	4.2	1.0
I believe that Second Life could provide tools for assessment such as tests, quizzes etc.	9	4.3	1.0
I would like to be able to use and share audio and video files inside Second Life.	9	4.3	0.7
I found useful that the "SL educational agents" (e.g Andreas, Robert, Mary, Kathrin) provided information relevant to the educational scenario that is executed.	9	4.4	0.7
I found that the existence of "SL agents" (e.g Sunny Davros) useful.	9	4.4	0.7
I consider that voting and decision making tools would be useful.	9	4.6	0.9
I think that a map of the AU island inside Second Life would be helpful.	9	4.6	0.5

**Table 3. Learning Issues**

Table 4 shows which SL features according to the participants' opinion enhance interaction and collaboration during the in-world activities (Table 4). All the participants stated that features like the chat and the speak tool were definitely valuable for their interaction and collaboration in the virtual world. Moreover, 88.9% of the participants believe that features like "search", "share" and "notecards" also facilitated the collaboration process. A 66.7% of the participants also believe that navigation tools and camera controls were useful while 44.4% of them believe that features like gestures and mini map could further support the interaction process. The rest of the features like the snapshot tool, world map and teleport are supported by a small percentage of the respondents.





SL Feature	Yes		No		Uncertain	
	N	%	N	%	N	%
Navigation tools	6	66.7%	2	22.2%	1	11.1%
Camera Controls	6	66.7%	2	22.2%	1	11.1%
Search tool	8	88.9%	1	11.1%	0	0.0%
Gestures	4	44.4%	2	22.2%	3	33.3%
Chat tool	9	100.0%	0	0.0%	0	0.0%
Speak tool	9	100.0%	0	0.0%	0	0.0%
Notecards	8	88.9%	1	11.1%	0	0.0%
Teleport	2	22.2%	4	44.4%	3	33.3%
Share tool	8	88.9%	0	0.0%	1	11.1%
Mini map	4	44.4%	1	11.1%	4	44.4%
World map	1	11.1%	1	11.1%	7	77.8%
Snapshot tool	1	11.1%	2	22.2%	6	66.7%

**Table 4. SL Features that Enhance Interaction and Collaboration**

#### DISCUSSION AND FUTURE WORK

This study extends the research on the effect of employing 3D virtual worlds in e-learning. The researchers focused on implementing a role-play activity among e-learners to further explore issues that may affect users' familiarization, collaboration and learning in the virtual world. The first quantitative results revealed that although there is a steep learning curve in SL with most of the students having difficulties in navigating or manipulating their avatars, the virtual environment successfully supports synchronous communication and encourages e-learners to interact with each other in order to complete the learning task.

Most of the participants agreed that SL features helped them to collaborate effectively with their partners during the activity and that the existence of avatars provided them with the visual experience of a more real face-to-face interaction. However, the majority of them were unable to express nonverbal behaviors such as gestures, head movement or facial expressions, a fact that may affect e-learners' perceptions of the quality of interaction. This poses the need to those who are planning to use VWs for instruction to provide adequate training to students. Discussions, videos, hands-on lab sessions in SL will ensure that students know how to navigate in the system and how to control their avatars and it will further improve student engagement and learning.

There are also some limitations in this study. First, due to the convenience sample strategy and the small sample size, a replication of this experiment is encouraged. Second, this investigation utilizes the collaborative technique of role-playing and therefore participants' responses and reflections are confined only to this technique. It is possible, that participants' perceptions might have been different if other collaborative techniques had been introduced. Third, this research was based on the virtual world of SL, just one of many virtual worlds that are currently available, so that we cannot generalize our results to other virtual worlds.

Future studies may extend to other collaborative techniques inside SL or may investigate the functionality of other VWs as collaborative learning environments. It would also be interesting to replicate the experiment with a different age group of distant learners so as to examine how age may affect learners' perception on the pre-discussed issues.



## REFERENCES

- Chow, A., Andrews, S., & Trueman, R. (2007). A "Second Life": Can this online, virtual reality world be used to increase the overall quality of learning and instruction in graduate distance learning programs? In M. Simonson et al. (Eds.), *Proceedings of Association for Educational Communications and Technology 2007*, Volume 2 (pp. 86-94). Anaheim, CA: AECT.
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches*. Los Angeles: Sage.
- de Freitas, S., Dickinson, C., Yapp, C. (2005) Personalizing learning: Is there a shared vision? in S. de Freitas & C. Yapp (eds) *Personalizing Learning in the 21st Century*. Stafford. Network Educational Press: 109-112.
- De Lucia, A., Francese, R., Passero, I., & Tortora, G. (2009). Development and evaluation of a virtual campus on second life: The case of SecondDMI. *Computers & Education*, 52(1), 220-233. doi:10.1016/j.compedu.2008.08.001
- Dickey, M. D. (2003). Teaching in 3D: Pedagogical affordances and constraints of 3D virtual worlds for synchronous distance learning. *Distance Education*, 24(1), 105-121. doi:10.1080/01587910303047
- Field, J. (2007). Looking outwards, not inwards. *ELT Journal*, 61(1), 30-38. doi:10.1093/elt/ccl042
- Jarmon, L., Traphagan, T., Mayrath, M., & Trivedi, A. (2009). Virtual world teaching, experiential learning, and assessment: An interdisciplinary communication course in second life. *Computers & Education*, 53(1), 169-182. doi:10.1016/j.compedu.2009.01.010
- Minocha, S., & Roberts, D. (2008). Laying the groundwork for socialisation and knowledge construction within 3D virtual worlds. *ALT-J: Research in Learning Technology*, 16(3), 181-196.
- Nteliopoulou, S., & Tsinakos, A. (2011). The Path from First to Second Life. In T. Bastiaens & M. Ebner (Eds.), *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2011* (pp. 3807-3814). Chesapeake, VA: AACE.
- Salmon, G., Nie, M., & Edirisingha, P. (2010). Developing a five-stage model of learning in second life. *Educational Research*, 52(2), 169-182. doi:10.1080/00131881.2010.482744
- Salmon, G. (2004). *E-moderating: The key to teaching and learning online*. New York: Routledge.
- West-Burnham, J. (2005). "Understanding Personalization", In J. West-Burnham & M. Coates (Eds.), *Personalizing learning*, Stafford UK: Network Educational Press.



# Integrating Blended Learning Tools into University Courses: A Survey of Student Perceptions

Erkan Arkin

Eastern Mediterranean University

North Cyprus

*erkan.arkin@emu.edu.tr*

## ABSTRACT

This paper presents the process of a blended learning (BL) approach to course delivery and evaluation of this approach from the perspective of students in a survey-based study at two undergraduate courses at a foreign language teacher education program in the Turkish context. BL is argued to help improve learning by supplementing the traditional classroom method with online activities and sources, as well as adding to the flexibility of learning as students can access material anywhere and anytime suitable. In the study, as part of the BL format, a virtual learning environment (VLE) was used to complement the traditional classroom teaching. The BL tools and activities that were used were lecture videos (i.e. screencast lecture notes with voice-over) and PPT lecture notes uploaded to the VLE (in this case, Edmodo), online assignments posted on Edmodo, and online feedback to assignments. Evaluation of the BL approach and the tools used in the process was done via a questionnaire and a set of open-ended questions distributed to students at the end of the course teaching period. The results indicated that most of the participating students found the BL approach useful for studying course content, using both lecture notes and videos for reviewing course material and revising for the exam. It was also found that efforts of the course instructor for integrating BL tools into classroom instruction can be a good model for the student teachers to experience and reflect on the potential of BL in their own teaching in the future.

## Author Keywords

Blended learning, university lectures, teacher education, student perceptions

## INTRODUCTION

Over the past few decades, with new advances in technology and especially after the arrival of the Internet, practices of and opportunities for teaching and learning have extended outside the classroom. The choice and decision of how to blend the technology into instructional practices, however, i.e. finding a balance between what is done in class and what is assigned for outside class hours on computers and online has been a long disputed issue, for it would require a rethinking of the pedagogy (McCarthy, 2016, p. 2). Still, the implementation of blended learning (BL), the combination of traditional face to face and technology-mediated instruction, is gaining popularity in higher education around the world (Graham, Woodfield, & Harrison, 2012).

Similar discussions are also taking place in the university context in which this study took place. Although there is institutional support and encouragement for technology integration into classroom instruction practices, it does not usually go beyond discussion of the infrastructure and technical skills that are needed to use technology. While this has been the case, there are attempts at the individual level by some instructors exploring different blended learning approaches into course delivery. In such cases, perceptions and reactions of the course participants are important for evaluation and revision of course design and delivery, as well as revising the mode and extent of blended learning, since such approaches are novel and careful evaluation of these are necessary in offering insight for any possible institutional adoption. This paper reports on the findings from a study in which the efforts of an individual course instructor using both in-class and online teaching strategies were evaluated by the course participants.

## BLENDED LEARNING

The most common and the mostly accepted definitions of blended learning (BL) are given as “a combination of traditional learning with web based online approaches”, “a combination of technologies” and “a combination of methodologies” (Sharma, 2010). A broader interpretation of the term considers BL as a combination of the face-to-face part of a course and an ‘appropriate use of technology’ (Sharma & Barrett, 2007, p.7). Similarly, Dudeney and Hockly (2007) define blended learning as a mixture of online and face to face course delivery. Hockly (2011) argues that an important reason for an increasing trend of BL approaches to higher education is learners’ expectations for technology to be integrated into their classes since it would provide more flexibility in accessing course material online outside the class hours. A newly emerging model of BL in course delivery is known as the flipped classroom, in which instructors share pre-recorded lectures online before the class so that they can free up class time for more engaging follow-up activities (Saxena, 2013). The online platforms for BL are known as learning management systems (LMSs) or virtual learning environments (VLEs). One example is Edmodo which is a free resource for teachers to create an online learning platform. It gives students virtual access to course content, tests and assignments.



## PREVIOUS RESEARCH

There has been numerous research across different educational contexts on the perceptions of students about the use of BL in higher education. These studies have investigated perceptions of university students from different disciplinary areas. On the positive side of the results, similar findings have been obtained in regards to the advantages of BL approaches to course delivery. These are flexibility to review materials at one's own pace, more practice time, collaboration and social learning (Davies, Dean, & Ball, 2013; Jamaludin & Osman, 2014; Lai & Gu, 2011; Nesbitt, 2013; Sagarra & Zapata, 2008).

Some studies also draw attention to possible drawbacks. In their study, Chen, Wang, Kinshuk, and Chen (2014) found that the use of BL by the course instructor actually caused disadvantage for some students; those who did not view material posted online felt significantly more behind than those who did, so that during class, when they were required to participate in discussions they could not. The study argues there may be need for more incentives to encourage self-directed study outside the classroom so that students can effectively switch over to the new BL model.

In the context of language teacher education, Moloney and O'Keeffe (2016) evaluated the process of transition from a face to face course delivery to a BL mode through the use of a VLE. The findings showed that while there were challenges in the process, the students responded very positively to the innovations of their course instructors, and the instructors reported feeling more confident and proficient in their skills for BL instruction. In one of the studies in the Turkish higher education context, Adnan (2017) found that the student teachers taking a course in BL mode were particularly satisfied with the design, format and structure of instructional materials, together with technology usage and multimedia resources, as the BL format provided students opportunity for flexible access to course materials at their own will and pace.

## RESEARCH QUESTIONS

To achieve the aim of the study, the following research questions were asked:

1. What are the students' perceptions of their learning experiences in a blended learning environment?
2. What are the students' evaluation of the delivery of course content in the BL mode?

## METHODOLOGY

### Context and participants

The study took place in two undergraduate courses at the foreign language teacher education program of a state university in North Cyprus. As most of the disciplinary programs are offered in English-medium, students have to pass an in-house English proficiency test with a minimum score that is equivalent to IELTS-6, in order to start their English-medium disciplinary studies. The courses in the foreign language teacher education program are also offered in English-medium. Students attend this four-year undergraduate degree program to obtain their qualification as an English as a foreign language (EFL) teacher. In the first year of their study, students take English language improvement courses such as advanced reading and writing, and oral communication skills. From the second year onwards, student start taking theory, methodology and pedagogy courses. The courses in which the course instructor integrated BL are a second year and a fourth year course, details of which are given below.

### BL tools: Rationale and procedure

The decision to use Edmodo was after a professional development workshop the course instructor attended in the fall semester of 2016 academic year. The workshop was on classroom technologies, a four-day intensive hands-on training given by Russell Stannard, an online technologies expert and teacher trainer. In the workshop sessions the participants explored the potential of integrating Edmodo as a BL platform for supplementing course work, giving the teacher opportunity to share digital resources with their students, as well as keeping all assignments and coursework online, and so on. The two tools specifically explored in this course was screencast software to create voiceover lecture notes and use them for flipped classroom, and the online assignment system where students submit their work online on Edmodo and the teacher can check the assignments, give individual feedback to each student online and assign grades, which are saved and can be tracked online on Edmodo's gradebook.

The reason for deciding to integrate these tools into the lectures was the need to create more time in the classroom for discussion of course material and further follow-up activities, as the weekly teaching hours for the both courses are limited (Research Methods- two hours a week; English for Specific Purposes- three hours a week). Leaving presentation and revision of some of the course content online on Edmodo would help reduce lecturing/revision of course content in the classroom. Similarly, by setting all assignments online, discussing details, answering questions regarding the requirements of the assignments and providing feedback online would allow the instructor extra time for more productive follow-up work and discussions.

For the screen cast video lectures, the *SnagIt* screen capture software was used. *SnagIt* records everything that is projected on the computer's screen, MS Word page, PPT slide, figures, tables, and all, including the voice of the user. Using the lecture notes, usually in the form of PPT slides (sometimes MS Word pages, Excel and SPSS sheets as well), the instructor recorded his voice while going over the notes and explaining them, just as the way he would normally do lecturing in the classroom using the same notes. The lecture videos were then uploaded on the Edmodo class, together with the lecture notes used for the screencast videos, for students to view before class or review after class, and before the exams.



For the assignments, the *assignment* tool in Edmodo was used where the instructor shared a template (e.g. an analysis and summary template). The students were asked to download the template, fill it in according to the requirements of the assignment, and submit it by clicking on the *turn in* button on the assignment page where they are asked to upload the document and click done. The instructor viewed the assignments online, gave feedback (Edmodo allows the teacher to give written feedback to each individual student on the assignment submission page) and assigned a grade for each assignment. Edmodo also provides an online gradebook, where students' grades are saved automatically. Below are the details of the two courses in which these BL tools were integrated.

#### **Research methods course**

This is a second-year course in the undergraduate program, *Research Methods in English Language Teaching (ELT)*. The course is designed to introduce and familiarize students with the basic types of research design in ELT and second/foreign language studies. To this aim, the characteristics of various design types are explained, together with the logic underlying design selection, the steps that are typical of each type of research design, and the purposes of such designs. On successful completion of the course, students are expected to have developed knowledge and understanding of major research paradigms, research procedures for data collection and analysis. They are also expected to have developed skills in review of published research studies, and analysis, summary and presentation of published research reports. The BL format used in this course included the following material shared with students on Edmodo:

- Lecture videos: *Descriptive Research and Statistical Tools; Quasi Experimental Research Design*
- Lecture Notes: *Descriptive Research, Quasi Experimental Research, Case Study research, Action Research*
- Five assignments (to be submitted online): Analysis and summary of *ELT Journal* articles- *Survey, Exploratory, Quasi Experimental, Case Study, Classroom Action research* study reports
- Feedback to assignments (given online on Edmodo to each student)
- Screencast feedback on the Midterm Exam questions

#### **English for specific purposes course**

This is a fourth-year course in the undergraduate program, *Teaching English for Specific Purposes (ESP)*. The aim of the course is to introduce prospective English language teachers to an overview of the origins and development of ESP. It also aims to provide the course participants with the principles and techniques for designing an ESP course, with particular focus on practical applications of the course design which includes a syllabus, materials, methodology, assessment and evaluation. The BL format used in this course included the following material shared with students on Edmodo:

- Lecture videos: *History and Origins of ESP; Needs Analysis; Investigating Specialist Discourse*
- Lecture Notes: *History and Origins of ESP; Needs Analysis; Investigating Specialist Discourse; Developing the Curriculum*
- Four assignments (to be submitted online): Analysis and summary of ESP case studies- *Needs Analysis; Investigating Specialist Discourse; Developing the Curriculum; Reflecting on Issues in Course Design*
- Feedback to assignments (given online on Edmodo to each student)

#### **Research design**

This study was conducted using a survey-based research design, in which the purpose was to obtain feedback from students on their perceptions of the BL tools and evaluation of the BL approach to revise and improve the course delivery format and approach. At the end of the course the students were given a printed copy of a course evaluation survey. They were also sent a set of open-ended follow-up questions on their Edmodo class and were asked to respond to the questions after they responded to the survey.

#### **RESULTS AND DISCUSSION**

All the students taking the two courses (thirty eight in total; 24 in research methods and 14 in ESP) responded to the course evaluation survey. The response rate for the open-ended questions was 40% in total (9 students from the research methods, and 6 students from the ESP course).

In the survey, the course instructor asked students:

- (1) how often they watched the video lectures (i.e. screencast lecture notes with voice over) and reviewed lecture notes;
- (2) how they used video lectures as an aid to learning of course content;
- (3) which one they used for review for the midterm exam, video lectures, lecture notes, or both;
- (4) which they preferred for review, video lectures or lecture notes;
- (5) if they were they happy with the online assignments and feedback given on Edmodo;
- (6) whether they would like other course instructors to use video lectures and Edmodo as part of their course delivery.

Quantitative findings from responses to the above questions, together with qualitative data from the responses to the related open-ended questions, are presented below in figures 1 to 6. Results in the figures are given as percentages.





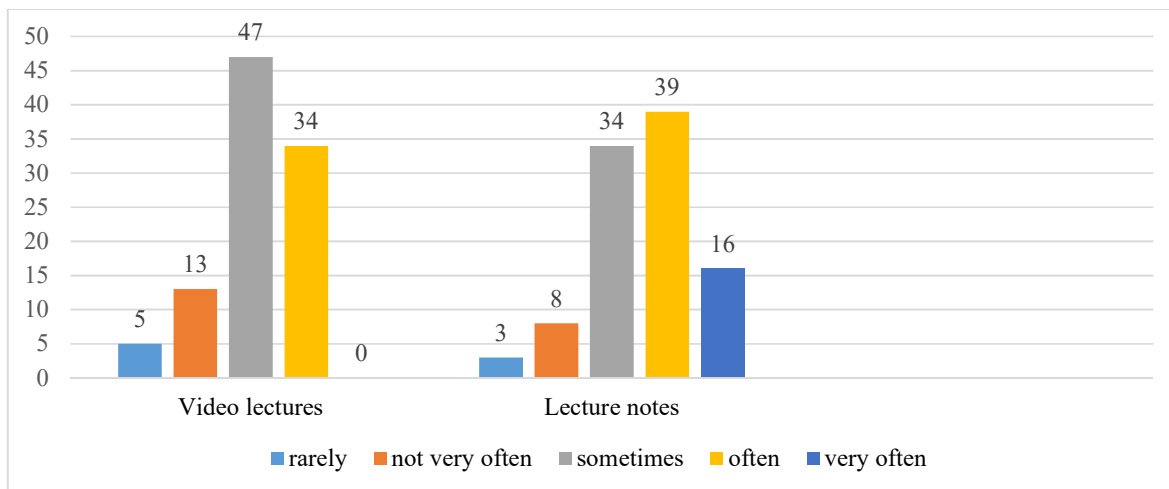


Figure 1. 'How often do you watch the video lectures on Edmodo?' 'How often do you review the lecture notes on Edmodo?'

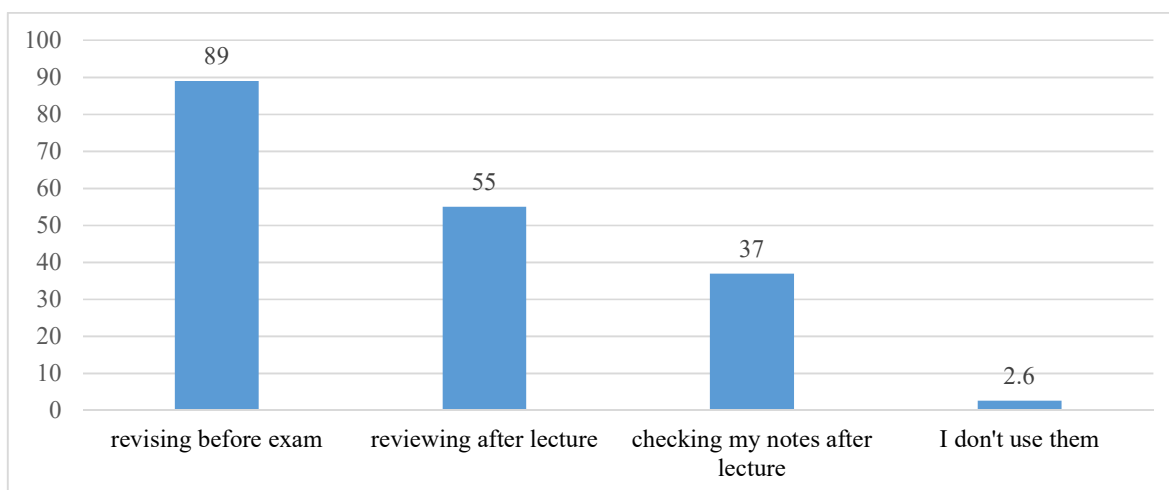


Figure 2. 'How do you use the video lectures as an aid to learning of course content?'

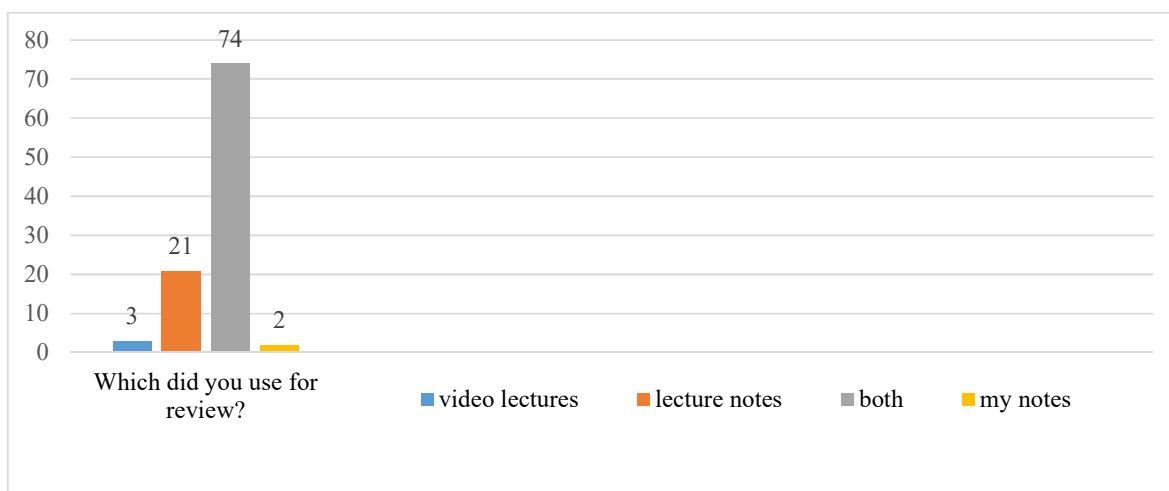


Figure 3. 'Which one did you use for review for the midterm exam?'



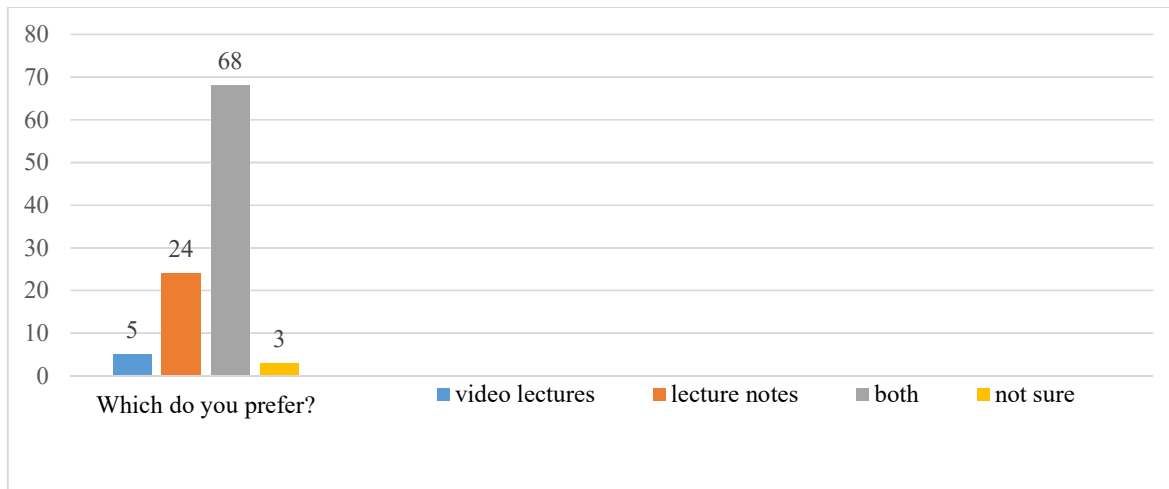


Figure 4. 'Which do you prefer for review, video lectures or lecture notes only, or both?'

In the open-ended evaluation questions, the students were asked whether they preferred video lectures, lecture notes, or both, and whether they found video lectures useful. They were asked to give their reasons as well. Some typical responses were as follows, highlighting the benefit of both reviewing lecture notes and viewing lecture videos out of class time and at any time that is convenient, as well as the advantage of pausing and taking notes while listening to the lecture videos, which may not be possible while listening to the lecture live in the classroom.

- *I prefer both, video lectures and lecture notes. And I think the video recorded lectures were useful, because it gave me the opportunity to listen and see the content at the same time, and also to pause it and take notes whenever I want.*
- *Video lectures are better because I can listen and watch carefully at the same time and take notes whenever I want and it's like that you are in your class so you try to learn better and better.*
- *I personally found both video lectures and lecture notes useful because I prefer to study on my own pace and desired time so it's very practical in terms of studying at home.*
- *I found the video lectures and lecture notes combined together useful because I'm a person who learns visually and by reading by herself; after viewing visually, see the thing with the video is I can stop the video anytime, read the notes, take notes and make sure I understand. But in a classroom sometimes I don't have that opportunity because we don't have time to stop the teacher.*

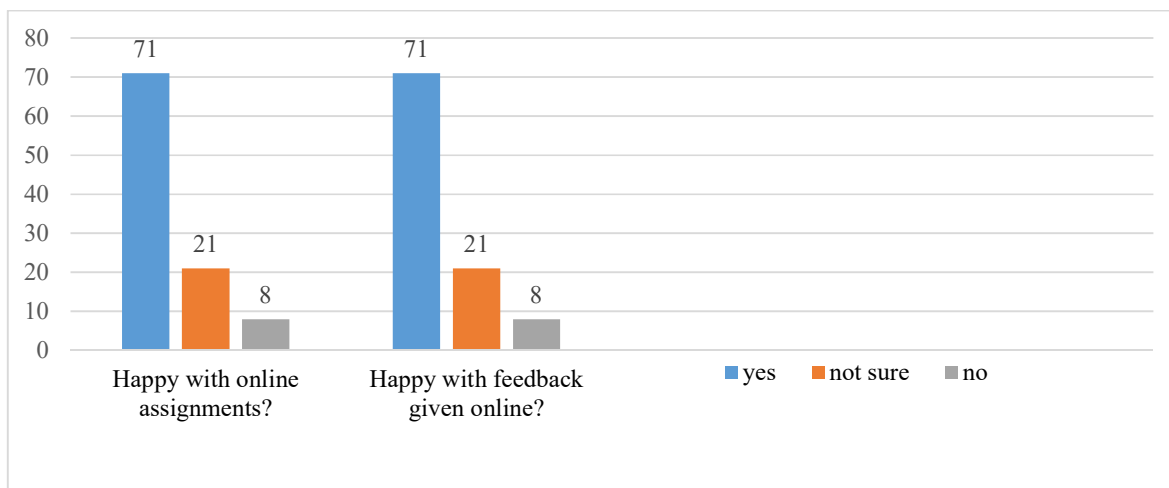


Figure 5. 'Are you happy with the decision that all the assignments are to be submitted and graded online on Edmodo?' 'Are you happy with the feedback you got on your assignments online on Edmodo?'



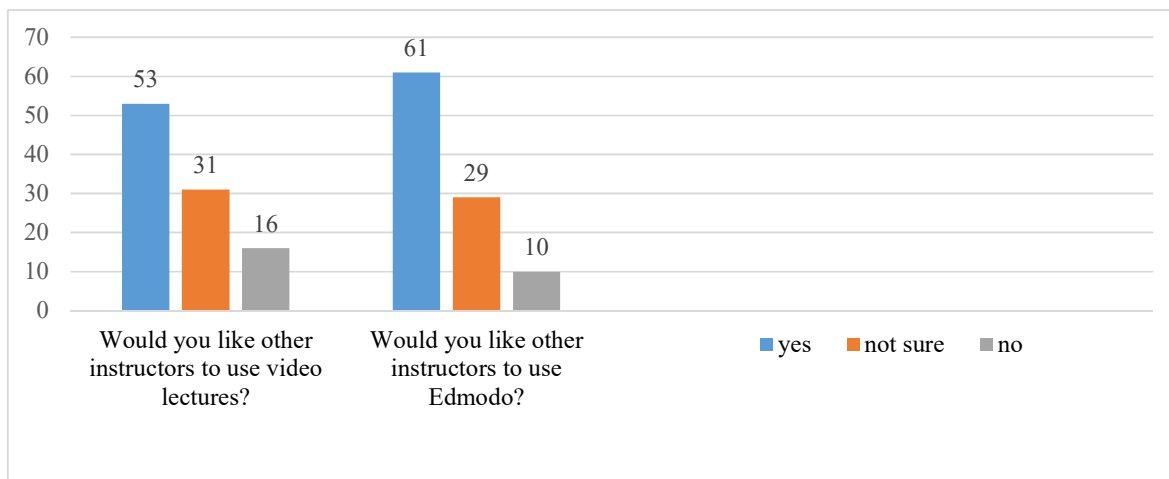
Looking at the responses in figure 5, overall it seems the system was well-received by students. Some typical student responses to the open-ended question are given below. Respondents were mostly happy with the system as it was practical in terms of submitting assignments online, without having to print them, and they got online feedback from their instructor, which they found convenient and useful.

- *I found the system useful because the internet has become a part of our lives and submitting assignments online is easier because it saves time (we don't have to go and print it out) and also when we become teachers we'll probably be using the internet more than we do today, so it's better getting used to it already.*
- *Submitting my assignments online was easier for me since going to a photocopy place, printing out an assignment and delivering it to the teacher is very time consuming considering how advanced the technology is today.*
- *I liked the assignment system, it was very easy to follow and very practical, I used to get notification reminding me of deadline if I hadn't turn in the assignment which I found really helpful.*
- *It was useful because the students should submit their assignments on time. So it gives the students a chance to take their own responsibilities and submit their assignments online in Edmodo. Also the teacher checks our assignments and gives us feedback.*
- *I found the assignments to be submitted online part very useful in a way that it is effective and helps keep the teacher and students in contact with one another and keeps a close eye on their work. It also helps the teacher observe their work instantly which is great for the teacher and the students and gives feedback right away which also is an advantage for us.*
- *I also like the idea to not to be attached to the classroom or the teacher's office hours only. I had the chance to check my assignments, see the direction and submit my works any time without waiting for the class time or looking for the teacher everywhere. Sometimes we even come to university just to submit homework but thanks to Edmodo this process got much more practical.*

Of a few negative comments, some students complained that they had difficulty to keeping with the number of assignments and deadlines. One student complained that feedback was given late on some assignments.

- *Sometimes it is hard to follow assignments on Edmodo, for example deadlines.*
- *The feedback was very late for some assignments.*

The final question in the survey, and in the open-ended questions, was whether the students would like other course instructors to use video lectures as part of their course delivery, and Edmodo as an online platform to supplement traditional classroom instruction. The responses are presented in figure 6.



**Figure 6. ‘Would you like other instructors to use video lectures as part of their course?’ ‘Would you like other instructors to use Edmodo as part of their course?’**

Qualitative analysis of the responses to the open-ended question showed that Edmodo provided an online repository for supplementary materials for the students which they found useful, as well as providing a platform for further contact and communication between the instructor and the students, while sharing the lecture notes and videos helped some for better understanding and revision of course content. These seem to be the reasons for those who wanted other instructors to use these resources as part of their course. What is more striking, however, is that some students would like their instructors to keep up to date with the technology and integrate technology tools to make their courses more interesting and attractive, while others said there is too much content in the courses and it is not possible to cover everything in the classroom. One



student also highlighted the importance of providing an environment with the help of technology to help students become more autonomous choosing when and what to study.

- *Yes, the technology can be used not to getting print-outs but submitting the assignments online instead, just like we did. Because it saves time and also teachers can share the materials they used in the classroom so that the learners can revise the lesson easier.*
- *Yes, because it enables learning to be more long lasting. If you miss something during the class, you can revise it at home, for example. And you can listen the video lectures many times to understand the subject better. The assignments also contribute to learning. It gives a better contact opportunity between teacher and student. You can ask your questions by this way.*
- *Yes, definitely. I find it very encouraging for learner autonomy and I personally prefer being autonomous when learning and studying which is why I'd find it more useful if the other instructors also used this way of teaching.*
- *Yes, it would be really nice if the teachers gave us extra instructional materials like summaries, power point presentations, and links for extra information. The reason I would like that is that a lot of the time I forget what the teachers said (which is totally on me), so having the website can be something I would use to check that I cover everything mentioned.*
- *Yes, because some lectures in the program have lots of content and it's not possible to learn efficiently. The way you do, with summaries and homework, is useful.*
- *Yes because the lectures in our department have a lot of information in the content so it is useful if they share some of these information online.*
- *Yes, because it provides many advantages and the teachers need to keep up to date in order to integrate technology into courses effectively.*
- *Yes, because it can be interesting and attractive through the online course. Maybe they can give us some research about the topics, they can use some voice records, videos or pictures to make the lesson interesting and attractive.*
- *Definitely yes! Why not? Because of being in this new generation, I think we need to put aside of old style and start to learn new style of learning and teaching.*

One particular type of feedback from students in their evaluation of the course instructor's attempts to integrate BL tools into classroom instruction was their reflection on the potential of such tools in their own instruction when they become teachers. The responses were as follows:

- *When we become teachers we'll probably be using the internet more than we do today, so it's better getting used to it already. Because I believe that knowing educational platforms like Edmodo as students will help us when we become teachers.*
- *Edmodo is a very useful platform to share materials info etc. And it supports course delivery and contact between teacher and student. When I become a teacher I want to use it, as well.*
- *I can say that having learnt about all of these technology integrations, tools and platforms, I believe that I can support my teaching career with these knowledge and skills now because it is out of all the traditional ways of teaching and it opens a new window to teaching a language in different ways.*

The comments indicate the importance of modelling technology integration by teacher trainers in teacher education programs, as student teachers learn not only from theories and lecture discussions, but from actual practices of their instructors.

## CONCLUSION

The findings of this study have shown how students responded to a BL approach in two undergraduate courses over one semester. In general, students responded quite positively to their instructor's efforts with 68% of students responding that BL helped them learn course content, using both lecture notes and videos for reviewing course content and revising for the exam. Also, 71% of students responded that they found online assignments and feedback useful, arguing that submission of assignments online was more practical, and getting feedback was more convenient, compared to the traditional method. It seems BL integration into course delivery also helped students become more autonomous and responsible in studying course material at their own time and pace, and meeting the deadlines for the course work (i.e. assignments). The results are in line with findings from previous research. An important finding was that by implementing a BL approach, more resources can be shared with students online, including material for presentation and revision of course content, so that there is more time in the classroom for further discussion and more coverage of course material, as there may not be enough time to cover everything in the classroom time. Further, efforts of the course instructor for integrating BL tools into classroom instruction can be a good model for the student teachers, who will be teachers in the future, to observe, experience and reflect on the potential of BL in their own teaching.

One of the two other points from the results of the study that are worth taking into consideration was the challenge for some students adapting to the BL mode of course delivery, e.g. dealing with the requirements of online assignments such as meeting the submission deadlines. Course instructors need to consider providing students with training and technical



support before and during the BL mode, and should also consider the amount of time their students might need to complete online tasks and assignments. The second point is concerned with students' expectations to receive timely feedback on their assignments, which may be a challenge for the course instructor managing the online platform in addition to face to face classroom instruction. This issue is an important one for course instructors to consider planning for BL approaches to course delivery, as it might require extra time and responsibility on behalf of instructors. Finally, as is also highlighted in previous research (Adnan, 2017), instructors' efforts should also be supported by institutions through a comprehensive professional development scheme, not only on technology, but also on how to integrate technology into teaching practices. In the context of teacher education, this is especially important since teacher educators are the models for student teachers, not only by what they teach in their courses but also by how they deliver course content. Thus, an effective blending of technology into instructional practices may provide an example for student teachers to adopt when they start their teaching practice.

Admittedly, much more research is necessary before any conclusions and generalisations are made in regards to learner perceptions of their BL experiences and their evaluation of course delivery in the BL mode. This paper has shown responses from students over one semester in a specific discipline, but more work must be done to test the effectiveness of BL approaches in other educational contexts, including teacher education.

## REFERENCES

- Adnan, M. (2017). Perceptions of senior-year ELT students for flipped classroom: a materials development course. *Computer Assisted Language Learning*, 30, 204-222. <https://doi.org/10.1080/09588221.2017.1301958>
- Chen, Y., Wang, Y., Kinshuk, & Chen, N. (2014). Is FLIP enough? Or should we use the FLIPPED model instead? *Computers & Education*, 79, 16-27. <https://doi.org/10.1016/j.compedu.2014.07.004>
- Davies, R. S., Dean, D. L., & Ball, N. (2013). Flipping the classroom and instructional technology integration in a college-level information systems spreadsheet course. *Educational Technology Research and Development (ETR&D)*, 61(4), 563-580. <https://doi.org/10.1007/s11423-013-9305-6>
- Dudeney, G., & Hockly, N. (2007). *How to Teach English with Technology*. Harlow: Pearson Education Limited.
- Graham, C. R., Woodfield, W., & Harrison, J. B. (2012). A framework for institutional adoption and implementation of blended learning in higher education. *Internet and Higher Education*, 18, 4-14. <https://doi.org/10.1016/j.iheduc.2012.09.003>
- Hockly, N. (2011). Five things you always wanted to know about blended learning (but were afraid to ask). *English Teaching Professional*, 75, 58.
- Jamaludin, R., & Osman, S. Z. M. (2014). The use of a flipped classroom to enhance engagement and promote active learning. *Journal of Education and Practice*, 5 (2), 124-131.
- Lai, C., & Gu, M. (2011). Self-regulated out-of-class language learning with technology. *Computer Assisted Language Learning*, 24 (4), 317-335. <https://doi.org/10.1080/09588221.2011.568417>
- McCarthy, M. (Ed.). (2016). *The Cambridge Guide to Blended Learning for Language Teaching*. Cambridge: Cambridge University Press.
- Moloney, D., & O'Keeffe, A. (2016). A case study in language teacher education. In M. McCarthy (Ed.), *The Cambridge Guide to Blended Learning for Language Teaching* (pp.176-199). Cambridge: Cambridge University Press.
- Nesbitt, D. (2013). Student evaluation of CALL tools during the design process. *Computer Assisted Language Learning*, 26 (4), 371-387. <https://doi.org/10.1080/09588221.2012.680471>
- Sagarra, N., & Zapata, G. C. (2008). Blending classroom instruction with online homework: A study of student perceptions of computer-assisted L2 learning. *ReCALL* 20 (2), 208-224. <https://doi.org/10.1017/S0958344008000621>
- Saxena, S. (2013). How to best use the class time when flipping your classroom. *EdTech Review*. Retrieved from <http://edtechreview.in/trends-insights/insights/726-how-to-best-use-the-class-timewhen-flipping-your-classroom>
- Sharma, P. (2010). Blended learning. *ELT Journal*, 64 (4), 456-458. <https://doi.org/10.1093/elt/ccq043>
- Sharma, P., & Barrett, B. (2007). *Blended Learning: Using Technology in and Beyond the Language Classroom*. Oxford: Macmillan.





# The Needs Analysis of Developing an Information Literacy Education Model Based on School Culture Shaped by Hidden Curriculum

Lee Lee Chua, Saedah Siraj,  
Nabeel Abdallah Abedalaziz

Faculty of Education, University of Malaya  
Kuala Lumpur, Malaysia  
saedah@um.edu.my

Helmi Norman

Faculty of Education  
Universiti Kebangsaan Malaysia  
helmi.norman@ukm.edu.my

## ABSTRACT

The purpose of this study was to explore teachers' perceptions on the need to develop an Information Literacy Education Model based on school culture shaped by hidden curriculum. It was performed in two stages. First, a focus group discussion with school principals, library and media teachers and school administrators was conducted. As a result, three themes were identified from the qualitative data, they were school culture that values: (i) information technology and student-centered teaching and learning, (ii) independent learning and autonomy support, and (iii) character development. These themes were then used for survey item development. Second, the validity and reliability of the survey instrument were further ascertained with a pilot study before a quantitative survey involving 386 secondary school teachers was carried out. The findings of this needs analysis study justified the need to develop a more comprehensive information literacy education model based on school culture shaped by hidden curriculum. The results also showed that teachers were generally agreed (mode=4.00 for all items) that all aspects of the school culture mentioned in the survey were important to support information literacy education.

**Keywords:** information literacy, hidden curriculum, school culture

## INTRODUCTION

One of the new challenges faced by educators today is actually created by the rapid progression in information and communication technology which has drastic changed the learning environment from limited information resources to an abundance of information resources. In this very environment of information over-abundance, how to equip students with abilities necessary to use information effectively becomes the main issue among the educators. Our younger generations who are born into this information age may be technology savvy, they may know the tools better, but we as educators have to teach them how to use the tools wisely, we need to help them to effectively use all the technology tools available to them to locate, access, navigate, evaluate, analyze and create new knowledge; to share, collaborate and communicate with others with the information they have. In other words, we need to help them to become information literate.

Many information literacy (IL) initiatives and programs, such as the formulation of guidelines, standards, teaching strategies, and the development of IL models, can be found in developed countries such as the United States, the United Kingdom, Australia, and New Zealand (Kay & Ahmadpour, 2015; Virkus, 2003). The literature on this topic in the developing countries such as Malaysia is very limited (Saidatul Akmar Ismail, 2014; Tan, 2014). Obviously, this is the gap needs to be filled.

The Information Age requires schools to train students to become information literate lifelong learners. This idea should be recognized and shared by all the stakeholders in the school settings and it should be promoted and embedded as part of the school culture. We must allow this idea to be in the forefront of our thoughts as we examine ways to enhance students' IL skills. What are the characteristics of school culture that have positive effect on IL education? Perhaps the suggestions by Brown (2015) on how school can direct the school culture through hidden curriculum will provide us some ideas, "As educators make it a priority to examine their school culture through the hidden curriculum, changes can be made that promote a positive school environment in which young adolescents have a desire to be present and learn" (Brown, 2015, p. 9). Similarly, if our intention is to promote IL education, cultivating the school culture through hidden curriculum to create a positive school environment that is conducive to teaching and learning of IL will be a sound approach.

## THE PURPOSE AND RESEARCH QUESTIONS OF THE STUDY

The purpose of this study was to explore teachers' perceptions of the need to develop an Information Literacy Education Model based on school culture shaped by hidden curriculum.

There are two stages in this study. The research question for this stage was:

- 1) From the hidden curriculum perspective, what are the characteristics of school culture that have positive effects on students' information literacy skills acquisition?

For the second stage, the research questions were:

- 2) What are teachers' perceptions of their students' information literacy competence?



- 3) What are teachers' perceptions of the problems of implementing information literacy education in schools?
- 4) What are teachers' perceptions of the need to develop an information literacy education model?
- 5) What are teachers' perceptions of the aspects of school culture shaped by hidden curriculum that support information literacy education?

## LITERATURE REVIEW

### A. Information Literacy

The term "information literacy" (IL) was first used by Paul Zurkowski. The term refers to the ability and skills to use a large number of information tools and resources, to search for and evaluate information, and to effectively solve a given problem, particularly in a workplace context (Zurkowski, 1974). Since then, information literacy has been of great interest to librarians and information professionals (Kay & Ahmadpour, 2015; Pinto, Cordon, & Diaz, 2010; Wen, 2008). Substantial efforts have been made, and a huge amount of literature on the topic has been produced, to analyze the concept of information literacy (Julien, McKechnie, & Hart, 2005; Kay & Ahmadpour, 2015; Pinto et al., 2010; Virkus, 2003).

By examining key terms related to information literacy used from 1977 to 2007 in a wide range of databases, Pinto et al. (2010) successfully illustrated thirty years of information literacy evolution. According to the authors, the concept of information literacy evolved over time depends on the perspectives and the context in which it was developed. Initially, information literacy was viewed as an approach in workplace problem solving. Later, librarians and academics associated information literacy with bibliographic instruction programs in the form of short orientations on how to use library and information resources. With rapid technological change and the proliferation of information resources in the 1980s and 1990s, information literacy expanded beyond library resources to include 'information and communication technology literacy,' 'digital literacy,' 'computer literacy,' 'information and communication technology skills,' 'technological literacy,' and 'media literacy' (Pinto et al., 2010).

### B. Hidden Curriculum and School Culture

The hidden curriculum consists of the rules and regulations of the school, its physical and psychological environment, and hidden messages that are communicated during the interaction between teachers and students, or between students and their peers. The implicit influences of this type of curriculum are mostly on the students' values, attitudes, beliefs, and norms, and can be positive or negative. The hidden curriculum is described as "hidden" because it is usually unacknowledged or unexamined by students and teachers; students normally learn the lessons or messages unconsciously (Martin, 1976; Ponyatovska, 2011; Portelli, 1993; Shaw, 2006). According to Peterson and Deal (1998), school culture covers the "norms, values, beliefs, traditions, and rituals that has built up over time as people work together, solve problems, and confront challenges. This set of informal expectations and values shapes how people think, feel, and act in schools" (Peterson & Deal, 1998, p. 28). This is very similar with the concept of hidden curriculum which emphasizes on the nonacademic aspect of schooling. Furthermore, like the hidden curriculum, the impact of school culture on student learning and development is pervasive and implicit. It can be positive or negative depending on how the school leader as well as the school community work on it.

Some researchers associated the concept of hidden curriculum to the concept of school culture. For example, Longstreet and Shane (1993) says, "[the hidden curriculum] refers to the kinds of learning [that] children derive from the very nature and organizational design of the public school, as well as from the behaviors and attitudes of teachers and administrators" (Longstreet & Shane, 1993, p. 46). This idea informs us that the influence of school culture on student learning can be one form of hidden curriculum. Students learned the unspoken rules and expectations within the school based on how the stakeholders in the school settings reinforce, nurture, or transform the norms, beliefs and values of the school. Educators need to understand the importance and the influence of the hidden curriculum in their own classes because effective education can only take place when the hidden curriculum is intentionally designed rather than unintentionally accepted (Shaw, 2006). One way to harness the hidden curriculum is to make it explicit and visible, "once revealed, the hidden curriculum becomes negotiable and visible to all participants including teachers, students and society in general. Exposure, in turn, allows for remediation, change, defense, and improvement ..." (Anderson, 2001, p. 30).

## THE STUDY

There were two stages in this study. First, a focus group discussion was conducted to gather the themes describing the dimensions of school culture from hidden curriculum perspective intended for information literacy skills acquisition. These themes were then used for survey item development. Second, a quantitative survey involving 386 secondary school teachers was carried out to understand the need to develop the information literacy model.

### Stage 1: Identifying the Dimensions of School Culture Shaped by Hidden Curriculum



**Methods.** The purpose of this stage is to identify the dimensions of school culture shaped by hidden curriculum intended for information literacy skills acquisition. The researchers grounded their guiding questions for the focus group based on the literature review on information literacy, hidden curriculum and school culture. Since the school leadership's role is as a catalyst in creating desired school culture for every individual school, the researchers intended to have in-depth understanding of the school's principal and administrative teachers' views on this matter. So, this was a purposive sampling. The researchers invited three school principals, two library and media teachers and two school administrators from four different secondary schools to participate in this focus group discussion.

**Data Analysis.** The transcribed data were analyzed using the Atlas. Ti software. This software facilitated the task of coding the data. When all the data had been examined, units containing the codes were identified and arranged in the same category. Trustworthiness of the data was ensured through member checking where four participants were invited to check on the quality and accuracy of data interpretation.

**Findings.** As response to research question 1, three categories of theme describing the dimensions of school culture from hidden curriculum perspective intended for information literacy skills acquisition were identified from the qualitative data (see Table 1). They were school culture that values: (i) information technology and student-centered teaching and learning, (ii) independent learning and autonomy support, and (iii) character development.

Table 1

*Categories and Themes of School Culture Shaped by Hidden Curriculum Perspective Intended for Information Literacy Skills Acquisition*

Category	Themes	Subthemes
1) School culture that values information and communication technologies (ICT) and student-centered teaching and learning	Information and communication technologies Student-centered teaching and learning	<ul style="list-style-type: none"> <li>• e-learning platform</li> <li>• Computer aided instruction</li> <li>• Interaction and inspiration</li> <li>• Multivariate evaluation</li> <li>• Experiencing information</li> <li>• Opportunity to perform</li> <li>• Higher order thinking</li> <li>• Critical thinking.</li> <li>• Extracurricular activities</li> </ul>
2) School culture that values independent learning and autonomy support	Independent Learning Autonomy support	<ul style="list-style-type: none"> <li>• Autonomy supportive climate and practices</li> </ul>
3) School culture that values character development	Character development	<ul style="list-style-type: none"> <li>• Role Model</li> <li>• Moral Education (fairness, respect, responsibility and kindness)</li> </ul>

## Stage 2: Teachers' Survey

**Methods.** In order to understand the teachers' views on whether there is a need to develop an information literacy education model, and dimensions of school culture shaped by hidden curriculum that could be used to support the current information literacy education efforts, the researchers utilized a self-administered survey research method at this stage. For the purpose of this study, non-probability purposive sampling is used to select participants for this stage.

**Instrument development and validation.** The researchers designed and developed a "Needs for Information Literacy Education Model (NILEM)" survey questionnaire. The items were created based on the research questions, literature review and the data of each theme generated from focus group discussion. For the instrument



validation, a series of instrument validation process were conducted, such as face validity, content validity, pilot study and reliability testing, exploratory factor analysis as well as confirmatory factor analysis.

**Data Collection and Analysis.** The data for this study were obtained by surveying teachers from six secondary schools in Malaysia. Verbal permission to administer the questionnaire was obtained from the principal of each school. Out of 500 survey questionnaires distributed, 397 responses were collected, resulting in an 79.4% response rate. After deleted 11 responses with missing values, the number of complete responses that can be used for data analysis were 386. Data collected were analyzed using the Statistical Package for the Social Sciences (SPSS) version 22 software.

**Findings.** According to the “Information Literacy Standard for Students Learning”, for a student to be information literate, he needs the competence to access information efficiently and effectively; evaluate information critically and competently and use information accurately and creatively, and also practice ethical behavior in regard to information and information technology (Librarians & Communications, 1998). Therefore, a few key competencies were highlighted in section B of the NILEM questionnaire, such as “information need”, “search” “critical thinking”, “inferences”, “social etiquette and responsibility”, “information technology skills” and “independent problem solving”. For research question 2, the results of teachers’ perceptions on their students’ mentioned competencies were presented in Table 2.

Table 2

*Item, Mean, Mode and Standard Deviation for Teachers’ Perceptions on their students’ information literacy competence (Section B)*

Items	Mean	Mode	Std. Deviation
1) Identifying information need.	3.168	4.0	1.0091
2) Establishing information search.	3.544	4.0	0.8941
3) Use information for critical thinking.	2.469	2.0	0.9004
4) Find the interconnection between information to make proper inferences and conclusions.	2.541	2.0	0.8913
5) Use IT in the learning process.	3.622	4.0	0.9128
6) Use IT to present learning outcomes.	3.438	4.0	0.9272
7) Pay attention to the social etiquette and responsibility when using IT	2.539	2.0	0.8972

The overall findings for Section B indicated that although students possess the competence in using information technology tools, most teachers still perceived their students as lacking of required information literacy competence. For example, most of them claimed their that students are not able to use information for critical thinking (mode=2), making proper inferences and conclusions from information (mode=2), more importantly, students are lacking awareness of social etiquette and responsibility when using information technology to communicate with others (mode=2). The lack of information literacy competence of students needed to be addressed as information literacy is the prerequisite skills to success in this information age. Thus, the proposal of developing an information literacy education model to support current information literacy education should be considered.

However, prior to considering a new approach of information literacy education, it is also essential to understand the problems of current information literacy education implementation. Table 3 demonstrates the answer for research question 3.

Table 3

*Item Mean, Mode and Standard Deviation for Teachers’ Perceptions of the Problems of Implementing Information Literacy Education in Schools (Section C)*

Items	Mean	Mode	Std. Deviation
1) School leaders are lacking awareness of IL education.	3.070	3.0	0.9413
2) Insufficient time for teaching IL.	3.510	4.0	0.9541
3) As IL is not an examination subject.	3.518	4.0	0.9808



4) Teachers are lacking interdisciplinary cooperation awareness.	3.469	4.0	0.9033
5) IL is an area of concern of the IT Department or the School Resource Center only.	3.111	4.0	1.0016
6) Teachers are more used to teacher-centered teaching approach.	3.425	4.0	0.9007

In short, the overall findings of Section C revealed several key issues in information literacy education implementation. Problems in implementing information literacy education in schools are: lack of information literacy education consciousness of the school leaders (mode=3), insufficient time (mode=4), information literacy is not an examination subject (mode=4), teachers are lacking interdisciplinary cooperation awareness (mode=4), the perception of information literacy concern party is limited to information technology department and school resource center (mode=4), and teachers are more used to the traditional teacher-centered teaching approach (mode=4). Therefore, a whole school approach of information literacy education model which emphasized on creating a school information literacy culture through hidden curriculum was proposed and the research question 4 attempted to explore teachers' perceptions on the need to develop such model.

Table 4

*Item Mean, Mode and Standard Deviation for Teachers' Perceptions of the Need to Develop an Information Literacy Education Model (Section D)*

Items	Mean	Mode	Std. Deviation
1) Our students need to have IL education.	3.922	4.0	0.6755
2) Schools need to have a more comprehensive IL education model.	3.990	4.0	0.6605
3) It is feasible to have IL education model based on school culture shaped by hidden curriculum.	3.902	4.0	0.6330

As presents in Table 4, the overall results indicate that most teachers agreed that their students need to have information literacy education, and that their schools need to have a more comprehensive information literacy education model to enhance students' information literacy skills. The results also confirm that most teachers perceived it is feasible to develop a more comprehensive information literacy education model based on school culture shaped by hidden curriculum to enhance students' information literacy skills (mode=4 for all items). However, prior to develop the model, we need to identify the aspects of school culture shaped by hidden curriculum that have positive effects on students' information literacy skills acquisition. The answer for research question 5 is presented in Table 5.

Table 5

*Item Mean, Mode and Standard Deviation for Teachers' Perceptions of the Aspects of School Culture Shaped by Hidden Curriculum that support Information Literacy Education (Section E)*

Items	Mean	Mode	Std. Deviation
<b>Environment:</b>			
1) The school has enough IT equipment to support computer-aided teaching.	3.500	4.0	0.9994
2) The school establishes an Information Literacy Education committee or group responsible for planning strategies and activities.	3.560	4.0	0.8815
3) The school attaches great importance to the teaching of ICT and regards this as one of the compulsory subjects.	3.575	4.0	0.7916
4) Teachers are willing to integrate IL and use student-centered teaching approach.	3.552	4.0	0.7516
5) Teachers focus on cultivating student's higher order and critical thinking skills.	3.858	4.0	0.6325
6) Teachers utilize the IT and help students to become active participants.	3.790	4.0	0.6325
7) Teachers are willing to help students construct collaborative learning.	3.860	4.0	0.7107
8) Teachers using multi-variate assessments.	3.674	4.0	0.7114





**Activities:**

9) The school's website offers columns to provide all sorts of activities for students to participate in.	3.793	4.0	0.7269
10) Provides opportunities for talented students to participate in school website construction and maintenance.	3.870	4.0	0.6675
11) Provides students with information learning experiences through extra-curricular activities.	3.870	4.0	0.6517
12) Invites experts or scholars to share about the latest developments in IT with teachers and students to enhance their information awareness.	3.759	4.0	0.7396
13) Links the formal curriculum activities with social practice activities, organized outdoor information learning activities.	3.881	4.0	0.6616

**Teacher's Role**

14) Teacher as role model	4.145	4.0	0.6404
15) Teachers' expectations	4.142	4.0	0.6140
16) Teachers' motivations	4.181	4.0	0.6186

For the "Environment" dimension, it can be concluded a school information literacy culture can be created from the physical environment that has sufficient facilities for teaching and learning of information technology and computer (mode=4). In addition, it is better for a school to have Information Literacy Education committee or group responsible for planning strategies and activities to promote information literacy (mode=4). Another aspect is to promote information technology and computer as a compulsory subject (mode=4). Furthermore, a school information literacy culture also can be provided by teachers who recognize the importance of information literacy education (mode=4), who are willing to create an efficient use of information technology in the teaching-learning environment (mode=4), who are willing to use student-centered teaching approaches and multivariate assessments (mode=4), and who want to emphasize higher order thinking teaching to enhance students' critical thinking skills and strengthen their information literacy competence (mode=4).

Next, majority of the teachers also agreed that school activities related to information technology learning can enhance students' information literacy skills implicitly (mode=4). These activities can carry out through activities in the school's website and extra-curricular activities (mode=4), inviting experts or scholars to share about their knowledge of latest development in information world (mode=4), and links the formal curriculum activities with social practice activities (mode=4).

Finally, for the "Teacher's Roles" dimension, teachers as role models (mode=4), the expectations of teachers towards their students (mode=4), and the motivations of teachers (mode=4), always create some kind of implicit psychological influence on student beliefs, values, and attitudes. As such, teacher's roles are perceived as being essential for the development of students' information literacy competence.

**CONCLUSIONS**

As the digital natives who live in a world where technology is omnipresent, there is no doubt that most of the students today are technology savvy, because for most of them technology has become part of their life. However, technology savvy does not ensure that the students are able to use technology critically and responsibly. This was evident through the findings that indicated that most of the teachers were not satisfied with the level of their students' higher order thinking skills. This result is aligned with the findings by Chang, Lian, Zhang, and Wang (2016) which highlighted that computer operation as an information skill may not necessarily benefit overall information literacy and traditional literacy. They suggested that the improvement of information literacy competency cannot be simply dependent on digital media operation literacy, but also other aspects.

The findings for the research questions 2 to 4 have clearly justified the need to undertake a whole school approach model to support current information literacy education. To address this shortcoming, the researchers proposed a school culture approach and this school information literacy culture needs to be created through the hidden curriculum so that it can reflect what students have actually experienced or learned in enhancing their information literacy skills. As a whole, this needs analysis study justified the need to develop a more comprehensive information literacy education model based on school culture approach.



## REFERENCES

- Anderson, T. (2001). The hidden curriculum in distance education an updated view. *Change: the magazine of higher learning*, 33(6), 28-35.
- Brown, P. (2015). Intertwining School Culture and Hidden Curriculum: A Positive Influence on Young Adolescents. *North Carolina Association for Middle Level Education Journal*, 29(1).
- Chang, C.-P., Lian, Y.-H., Zhang, D.-D., & Wang, S.-C. (2016). The Influence of Students Information Literacy Competency on Creativity under the Regulation of Classroom Climate. *Creative Education*, 7(11), 1551.
- Julien, H., McKechnie, L. E. F., & Hart, S. (2005). A Content Analysis of Affective Issues in Library and Information Science Systems Work. *Library and Information Science Research*, 27(4), 453-466. doi:10.1016/j.lisr.2005.08.004
- Kay, R. H., & Ahmadpour, K. (2015). Negotiating the Digital Maze of Information Literacy: A Review of Literature. *Journal of Educational Informatics*, 1, 1-25.
- Librarians, A. A. o. S., & Communications, A. f. E. (1998). *Information Power: building partnerships for learning*: American Library Association.
- Longstreet, W. S., & Shane, H. G. (1993). *Curriculum for a new millennium* Boston, MA: Allyn and Bacon.
- Martin, J. R. (1976). What should we do with a hidden curriculum when we find one? *Curriculum Inquiry*, 6(2), 135-151.
- Peterson, K. D., & Deal, T. E. (1998). How leaders influence the culture of schools. *Educational leadership*, 56, 28-31.
- Pinto, M., Cordon, J. A., & Diaz, R. G. (2010). Thirty years of information literacy (1977-2007): A terminological, conceptual and statistical analysis. *Journal of Librarianship and Information Science*.
- Ponyatovska, L. (2011). *Principals' perspectives on the influence of the hidden curriculum on children's school development*. Paper presented at the International Forum Journal.
- Portelli, J. P. (1993). Exposing the hidden curriculum. *Journal of Curriculum Studies*, 25(4), 343-358.
- Saidatul Akmar Ismail. (2014). *Factors affecting the implementation of information literacy education in Malaysian primary schools*. (Doctor of Philosophy), Victoria University of Wellington.
- Shaw, P. (2006). The hidden curriculum of seminary education. *Journal of Asian Mission*, 8(1-2), 23-51.
- Tan, S. M. (2014). *School Librarians' Readiness for Information Literacy Implementation in Secondary Schools*. (Doctor of Philosophy), University of Malaya, Kuala Lumpur, Malaysia.
- Virkus, S. (2003). Information literacy in Europe: a literature. *Inf. Res*, 8(4), 1-56.
- Wen, J. R., & Shih, W. L. (2008). Exploring the information literacy competence standards for elementary and high school teachers. *Computers & Education*, 50(3), 787-806. doi:10.1016/j.compedu.2006.08.011
- Zurkowski, P. (1974). *The Information Service Environment: Relationships and Priorities* Retrieved from <http://files.eric.ed.gov/fulltext/ED100391.pdf>



# Instructional Design for Blended Language Learning: Methodological Considerations and Course Applications Guiding the Effective Design of Blended Language Courses

**Daria Mizza**

Johns Hopkins University – SAIS  
Washington, DC, USA  
*Dmizzal@jhu.edu*

## **ABSTRACT**

The purpose of this article is to guide readers through the crucial steps of the instructional design (ID) process, enabling them to design and organize a successful blended language course. This article is composed of two main sections: a methodological one, focusing on the importance of the ID process, and an applied one, devoted to the description of examples. Methodologically, we recommend teachers and course designers follow two main steps. The first involves the needs analysis, composed of a learner analysis and a context analysis, in which educators set the learning outcomes, plan the learning activities and the assessment elements needed to achieve outcomes. The second requires the application of a research-based framework that consists of the underpinnings of learning theories and research findings regarded as central to blended learning and language learning, such as the importance of fostering learning autonomy while creating opportunities for interaction and negotiation of meaning. In the applied section, it is recommended that teachers operationalize each of the steps in their own teaching contexts, with the help of an example illustrating the sequencing of activities that foster autonomy, promote collaboration, create opportunities for interaction and negotiation of meaning, and find opportunities for reflection. The paper concludes by specifying whether a research-based framework informs the design of such examples.

## **Author Keywords**

Blended language learning, instructional design, needs analysis, research-based framework



## INTRODUCTION

From published information on blended language courses in the US<sup>1</sup> and Europe<sup>2</sup>, it emerges that external factors related to administration (e.g. scheduling conflicts), logistics (e.g. classroom space), human resources (e.g. teaching personnel) have often generated the need for course design or redesign in a blended format.

Different combinations of F2F (face-to-face) and remote components may be at the core of the design or redesign of these courses. Many institutions seem to prefer the option that consists in a reduction of weekly F2F instruction (whether in the number of days or in the amount of time per day) with the integration of remote components that include learning resources, as well as learning activities and tasks (Scida & Sauri, 2006), mediated by technological tools. A fewer number of institutions combine F2F meetings and small - group tutoring sessions, with the remainder of the contact hours occurring virtually.

Whatever pattern an institution or language program may go for, or whether this design or redesign is part of the whole program, some courses or just course sections, teachers and program directors face the challenge of how to effectively design the new learning environment. More than just a logistical benefit - providing temporal and geographical flexibility, a structured plan for pedagogical enhancement must serve as a catalyst for an effective design. Such a plan aims at creating a learning experience that results in improved pedagogy that is beneficial for teachers and learners, by combining the inherent advantages of F2F and online environments and integrating them seamlessly (Mizza & Rubio, forthcoming).

Language teachers and course designers play a crucial role in the implementation of such a plan, requiring their involvement in a process of instructional design (ID). In the following sections we will delve into the crucial stages of ID, with the aim of providing relevant recommendations for instructional sequencing in a blended language course (See also Blake, 2011; Kraemer, 2008; Goertler, 2012).

## INSTRUCTIONAL DESIGN FOR BLENDED LANGUAGE LEARNING: METHODOLOGICAL CONSIDERATIONS

The term instructional design (ID), whose definition is quite vague in the literature, refers to the “process involved in the systematic planning of instruction” (Smith & Ragan, 2005, p. 8), “in order to facilitate learning most effectively” (Ravi, 2016). The term also refers to the consideration of critical factors in the creation of instructional environments conducive to learning, currently identified as “student-centered”, where students can participate in rich and meaningful learning experiences (Baturay, 2005).

Essential in the ID concept is the role of:

- ✓ Pedagogical principles related to theories about how we learn<sup>3</sup>;
- ✓ Skilled professionals, teachers or instructional designers who, guided by learning theory, are able to apply the subject matter, or collaborate with the subject matter experts, in order to apply it.

Professionals may adopt several design models, providing a framework for the application of the principles of ID. Although the description and application of one or more design models is beyond the scope of this article, interested readers may find it useful to delve into the commonly accepted models such as the

<sup>1</sup> In the US, it has been considered the information related to the blended language course design or redesign of the University of North Carolina at Chapel Hill (<http://romlcourses.unc.edu/Spanish/spanhybrid/>), Texas Tech University (<http://www.depts.ttu.edu/education/graduate/blpl/>), Portland State University ([http://www.thencat.org/PCR/R3/PoSU/PoSU\\_Overview.htm](http://www.thencat.org/PCR/R3/PoSU/PoSU_Overview.htm)), the University of Vermont (<http://www.uvm.edu/ctl/?Page=resources-teaching/hybrid-courses/span002/index.php>), and the DC campus of the School of Advanced International Studies of the Johns Hopkins University (<https://www.sais-jhu.edu/atoz/language-studies-program#languages-offered>).

<sup>2</sup> In Europe, it has been considered the information related to the National University of Ireland in Galway (<https://www.nuigalway.ie/courses/adult-and-continuing-education-courses/italianonline.html/>) and the University of Nottingham in the UK (<https://www.tandfonline.com/doi/abs/10.1080/09571736.2017.1280526>).

<sup>3</sup> Research on student learning has witnessed a paradigm shift from behavioristic, cognitive, to social constructivist orientation, where collaborative learning is a central aspect.



ADDIE Model (Analyze, Design, Develop, Implement, and Evaluate), the Assure Model (Analyze learners, State standards & objectives, Select strategies, technology, media & materials, Utilize technology, media & materials, Require learner participation, Evaluate & revise), the Backward Design (Understanding By Design), the Dick and Carey Model, the Gerlach-Ely Model, the Kemp Design Model, The Kirkpatrick Model, and the SAM Model (Successive Approximation Model).

Regardless of the model adopted when starting the ID process for creating a blended language course, educators face the dilemma of having to engage students in effective learning in a combined environment. Thus, teachers simultaneously need to conduct a needs analysis that considers learners' needs and contextual constraints (e.g. time available and number of students), define the course objectives and learning outcomes, and consider relevant SLA principles, in addition to components based on research findings related to distance education and blended learning (BL). This implies considering two distinct aspects of the instructional (re)design intervention: *planning* and *design*. While *planning* involves laying out constraints in terms of a mixture of logistical and pedagogical factors, including time, location, number of students, learning outcomes, and content, *design* focuses on what can be achieved within those constraints that will motivate and engage students (Masterman, 2013). The distinction between *planning* and *design* is particularly useful in language instruction, as it makes educators aware of what resources and constraints a blended course may be built on before turning to sound SLA pedagogical principles and practices that allow for the sequencing of F2F and online components beneficial to learners.

The ID steps presented in this paper are intended to provide teachers and course designers with specific guidance to set-up the learning plan, with situational factors related to logistics and pedagogy, and organize the learning design, through the identification of the desired results of a blended language course.

### Step 1. The Learning Plan: Needs Analysis

Through the needs analysis, educators designing or re-designing a blended course can analyze the characteristics of their potential learners, by conducting an analysis of them ("learner analysis") and explore the context in which learners will eventually develop their new language skills, through a context analysis ("context analysis").

The learner analysis may be accomplished by using several different approaches to needs analysis that have so far attempted to meet the requirements of FL learners. Teachers may find it useful to adopt the following suggestions, based partly on a comprehensive concept of needs proposed by Dudley-Evans and St. John (1998, p. 125) in the field of English for Specific Purposes (ESP), and partly on the description that Dick and Carey (1978, 1996) used to identify learner characteristics in the field of education. Readers may gather the following comprehensive information: the dominant learning style and learning preferences of each learner, the kinds of instructional experiences learners may have had previously, providing an understanding of their ability to cope with new and different approaches to instruction, learner motivation to learn the target language and reasons for attending the course, learner language background and languages previously learned, learner current language competencies and skills, and learner future academic/professional perspectives.

By conducting the context analysis, educators may identify the characteristics of settings where BL could take place and where learners can develop and use their new language skills. It is recommended that one establish a realistic minimum level and define language goals, based on descriptors such as CEFR Levels<sup>4</sup> or ACTFL Proficiency Guidelines<sup>5</sup>, and based on these descriptors, set achievable course objectives and learning outcomes while planning the learning activities and the assessment elements to reach them. For practitioners working in the American Educational System, it is recommended that one consider also the National FL Standards<sup>6</sup> based on the content and the pedagogical approach found most appropriate for adult FL learning and the goals of the program.

<sup>4</sup> The Common European Framework of Reference for Languages (CEFR) is an international standard that describes language proficiency in 40 languages. For a detailed description of the CEFR Levels, visit: <https://www.coe.int/en/web/common-european-framework-reference-languages/level-descriptions>.

<sup>5</sup> For a detailed description of the American Council for the Teaching of Foreign Languages (ACTFL) Proficiency Guidelines, visit: <https://www.actfl.org/publications/guidelines-and-manuals/actfl-proficiency-guidelines-2012>.

<sup>6</sup> To download the two-page summary of the World-Readiness Standards for Learning Languages, visit <https://www.actfl.org/publications/all/world-readiness-standards-learning-languages>.





## Step 2. The Learning Design: Research-based Framework

A framework based on aspects relevant to BL and distance education and principles necessary for language learning is at the core of an effective blended language learning (BLL) design.

The two aspects described below are the underpinnings of learning theories and research findings considered central to BL and distance education, both of which are recommended when taking into consideration when starting the design process of a course.

### - *Promoting Collaboration in Communities of Practice*

Learning that benefits from collaboration and assistance of instructors and peers<sup>7</sup> through the means of the target language is especially important for distance learners in the online component of a blended course, as they are often exposed to isolation and lack of communication without available support from peers and educators. Research has shown that such a lack of support may create frustration and affect a student's confidence in learning (Brown, 1996; Williams & Sharma, 1988).

As Kilpatrick, Jones, and Barrett (2003) underline, there has been a shift in the emphasis from “learning by the individual” to “learning as part of a community,” that involves a minimum of four to five active people.<sup>8</sup> Such a shift is particularly evident in the online components of a blended course, where students and teachers need to establish some forms of community through the learning process and achieve a successful level of social interaction within it (Dabbagh, 2003; Pifarré, 2007).<sup>9</sup>

Thus, the concepts of a “virtual learning community” (Palloff & Pratt, 1999) and “the community of practice” (Wenger et al., 2002) are central in a research-based framework that supports a blended language course.

### - *Providing Space for Reflection*

According to researchers (Day, 1993; Freeman, 1982), reflection should also be a collective endeavor involving dialogue with others. A research-based framework may include reflection of an individual (such as monologues) and social nature (social conversations), providing learners with an opportunity to reflect on his/her learning, both individually, through the use of reflection to build understanding, and collaboratively, by sharing learning experiences or engaging in collaborative and reflective learning activities, for example when students exchange their online learning journals.

For most learning tasks that involve reading and writing, reflection allows for planning and preparation time, giving learners the opportunity to think about the content and the form of their utterance, thereby reducing stress, anxiety and the risk of an early breakdown of an activity (Brandl, 2008).

The two SLA principles described below are also relevant for distance education and BL. It is recommended that one takes them into consideration when designing a blended language course.

### - *Fostering Autonomous Learning*

Contrary to what the term might evoke in popular usage in a blended course, learner autonomy does not necessarily involve solitary contact with learning resources and tasks. In several published examples of blended language courses mentioned at the beginning of this article, the online component preparing learners for the F2F class often includes interactive and social activities based on group brainstorming and collaborative scaffolding, in addition to individual access to grammar explanations, which are often

<sup>7</sup> Collaboration in learning, together with the support from more knowledgeable people in the co-construction of knowledge stems from a social constructivist approach to learning, which holds that meaningful learning occurs in the process of negotiation among the participants through dialogues, collaboration, and interaction (Vygotsky, 1978; Jonassen et al., 1999; Swan, 2005).

<sup>8</sup> In his online matrix, Watkins (2005) classified group sizes into three categories: a small group (one to seven people), a medium group (eight to fifteen people), and a large group (more than sixteen people), that would be difficult to control as feedback can not be given appropriately by the facilitator.

<sup>9</sup> Such engagement in the collaboration of knowledge construction, however, may posit additional challenges in the blended type of environments, compared to the F2F one with constant presence of instructor as facilitator. Sharing the information with their peers or learning from other sources, for example, may posit problems to those students with a studying habit emphasizing rote learning over a student-centered approach and believe they learn better when the information is facilitated exclusively by educators (Wang, 2004).



proposed on video tutorials, pronunciation practice, and cultural content. The importance of social interaction for fostering autonomous learning is confirmed and reflected in the work of several researchers who regard the synergy between social collaboration (Vygotsky, 1962; Little, 1996) and autonomy as fundamental in higher-education language learning (Orsini-Jones, Brick, Pibworth, 2013), based on the innate predisposition towards autonomous behavior (Little, 1996). Furthermore, due to the strong social dimension in learning acknowledged since Vygotsky (1978), other researchers (Bax, 2011; White, 2013) claim that learner's use of interaction in communities of practices, among other features, determines a great deal of autonomy in language development.

- *Opportunities for Interaction and Negotiation of Meaning*

Integral to communicative language learning, interaction is a significant factor in language development (Ellis, 1994; Swain, 1995; van Lier, 1996).<sup>10</sup> According to interactionist-cognitive theories of learning<sup>11</sup>, interaction especially conversational interaction has a facilitating effect in language learning. Such a facilitating effect is best summed up in the Interaction Hypothesis (Long, 1996), in which interaction is treated as a source of acquisition and viewed as exposing learners to input. When trying to “negotiate meaning” (Pica, Young, & Doughty, 1987; Pica, 1994), as speakers clarify their intended meaning and have an opportunity to reword what they are trying to say, interaction and feedback represent opportunities given by peers and/or instructors to modify their own output. Modifying their own output includes producing more comprehensible, coherent, and grammatically improved discourse by focusing the learner's attention on the ways they are expressing themselves and on specific linguistic forms. Therefore, it is important for learners to have opportunities to use stretches of discourse in contexts where there is a press on their linguistic resources and where they must focus not only on *what* they wish to say, but also on *how* they are saying for the benefit of their listeners.

## INSTRUCTIONAL DESIGN FOR BLENDED LANGUAGE LEARNING: COURSE APPLICATIONS

Once step # 1 and step # 2 are completed, what remains to be defined is the pedagogical emphasis of each component of both components of the blended sequence: offline/F2F and online/remote. In order to define it, we will posit two questions whose answer will be explored below:

- a. Which portions of a language course can benefit from being moved to the online/remote environment?
- b. How does this move alter the pedagogical emphasis of the offline/F2F component?

### Lessons Learned from Existing Language Course Design

Some general implications may be based on published information on blended language courses mentioned at the beginning of the chapter. Especially in the case of courses experiencing a decrease in contact time, university-wide technological constraints related to large multi-section programs and/or issues of instructor workload have led to the deliberate decisions to restructure the existing courses by eliminating or drastically reducing F2F teacher-led and teacher-fronted instruction and instead focusing on communicative and collaborative tasks (Neumeier, 2005). By moving input-based activities and more mechanical practices, mostly related to vocabulary, grammar familiarization, and cultural content, from the offline/F2F to the online/remote component of the course students are prepared, for real-life tasks requiring the use of grammar and vocabulary in meaningful and live in-class communication. Most references to such practices are based on electronic textbooks (eTB), such as *Centro*, *WileyPLUS*, *MySpanishLab*, *iLrn* that are accessible through the electronic platforms of commercial textbook publishers (Rossomondo,

<sup>10</sup> Interaction is also regarded as central to distance education (Holmerg, 1986). As distance learning in the 20<sup>th</sup> century was largely dominated by self-study with occasional F2F instruction, interaction in online environments had been problematic until recently.

<sup>11</sup> Theoretical orientations have led to different approaches to investigating the role of interaction in learning. While socio-cultural researchers investigated how learners' participation in interaction changes from one time to another as a result of collaborative scaffolding at the zone of proximal development, or assists understanding of specific language features and their internalization; interactionist-cognitive theories have explored how learner involvement in the form-focused episodes arising in fluency-and-accuracy contexts leads to learning, and investigated the effects of corrective feedback on learning (Ellis, 2014, pp. 266, 267).



2014).

Often, however, when the online session relies only on commercial textbooks with eTB, learners are left to cope with a collection of fragmented material and tasks presented offline and online, with scarce, if any, opportunities for autonomous learning, collaboration, interaction, and negotiation of meaning. Furthermore, if teacher guidance and monitoring are missing, learners do not have the appropriate support to work autonomously, and therefore do not get adequate preparation for the communicative tasks that are often the focus of the F2F component.

Thus, a research-based framework does not inform the design of such courses.

### **Example of a Blended Sequence Design in a Persian Language Course**

The example below illustrates a unit that is part of a blended course for learning Persian (Farsi) at the ACTFL advanced level, offered in the Language Studies Program of the School of Advanced International Studies (DC Campus) of the Johns Hopkins University (USA). The unit has a participative design in which the blended sequence fosters autonomy, promotes collaboration, creates opportunities for interaction and negotiation of meaning, and finds opportunities for reflection.

The sequencing of activities and tasks in this unit follows the guidelines suggested by Brandl (2008, pp. 179-181), who proposes four different lesson phases (non communicative learning, input, assimilation, and application and extension) grounded on SLA research and communicative language teaching principles, mainly related to the importance of proceeding from structured input to communicative output (VanPatten, 1995) and from lower to higher-level tasks (Walz, 1998).

For each phase of the unit described below, we will be able to answer the questions posited at the beginning of this applied section (*a.* Which portions of a language course can benefit from being moved to the online/remote environment? and *b.* How does this move alter the pedagogical emphasis of each component?).

#### *Phase 1: Preparation to Input or Main Text of the Unit*

- Recommended instructional environment: Online.
- Sequence in the chapter: Precede the presentation of the input or main text of the unit.
- Purpose: Mainly awareness-raising or discovery-learning: guiding learners in their understanding of how language works and in the development of learning skills and strategies.
- Type of tasks included: Activities that prepare learners for the comprehension of the oral or written input. Generally, preparation activities are conducted autonomously and may also include “non-communicative” learning tasks, in order to introduce students to the topic of the input, activate background knowledge, and make them explore the new vocabulary and grammar structures.
- Role of teacher: May implement a scaffolding plan to guide learners to access input through the above- mentioned activities.
- *Example:* An activity involving an autonomous type of learning fostered through a socially-mediated activity on a collaborative wiki page ([www.wikispaces.com](http://www.wikispaces.com)), for example, may require students to devise a brief title in Farsi for each of the images provided, encouraging them to make predictions about the title and the main idea of the ensuing reading passage.

#### *Phase 2: Exposure to Language in Context*

- Recommended instructional environment: Online, as students may benefit from a prolonged and repeated input exposure.
- Sequence in the chapter: During and immediately after input exposure.
- Type of tasks included: Presentation of the new content that introduces new vocabulary and/or grammar structures through textual resources, audio or video-based language situations, communicative language acts and input-based processing activities.
- Purpose: Lead learners towards the comprehension of the target language input and expose learners to model structures of language in context, while keeping meaning in focus.
- Role of student: Teacher-centered learning tasks.
- Role of teacher: Monitors student comprehension.
- *Example:* A suitable example of activity for this phase may be an activity requiring students to



skim the text to get a general overview (e.g. by reading the title and the introduction, as well as noticing the picture) and to find the specific keywords that will be required in more communicative type of tasks.

### *Phase 3: Controlled and Guided Practice*

- Recommended instructional environment: F2F.
- Sequence in the chapter: After input exposure.
- Type of tasks included: Controlled and guided practice.
- Purpose: Allow students to incrementally build skills with the teacher's help, attending to both meaning and form of the new linguistic features.
- Role of student: Student-centered learning tasks in pairs or groups.
- Role of teacher: Controls and guides the student language.
- Role of correction: Enhanced role of feedback and error correction.
- *Example:* A task composed of an initial and follow-up activity may be designed for students to focus on isolated aspects that will be required to perform the following communicative task.
  - o Initial activity (in pairs): The initial activity deals with receptive skills (listening), in which learners are required to focus on specific linguistic features within a narrow communicative context, in small chunks, by answering yes/no or providing one-word answer.
  - o Following activity (in small groups): Controlled and guided by the instructor, the same task may move to longer discourse answers, predictable but increasingly more communicative, allowing student language production to move from a list to longer discourse answers through the application of small batches of new vocabulary within a narrow communicative context.
- Role of the teacher: Enhanced role of teacher's feedback and error correction.

### *Phase 4: Output Interaction and Negotiation of Meaning*

- Recommended environment: F2F.
- Purpose: Use much, if not all, the lesson's target vocabulary, grammar, and content (Ballman, 1998), as well as the integration of multiple skills (Brandl, 2008).
- Activity type: Focus on communication and requiring students to interact and take on responsibility for their participation, such as through role-plays, writing emails, or whole class discussions and debate.
- Role of student: Student-centered learning tasks.
- Role of teacher: Does not control or guide the student language.
- Role of correction: Feedback and error correction play a reduced role, as the assessment of learning is demonstrated through students' achievement of communicative goals.

As suggested by Long's (1996) interaction hypothesis that focuses on speaking, this is the stage in which increased learner/learner oral interaction encourages negotiation of meaning and pushes learners to produce oral output.

- *Example:* A discussion/debate in which students in small groups draw up arguments supporting their stance with the use of the target vocabulary of the unit constitutes a suitable example for this phase. This is a student-centered activity where most learner/learner interaction occurs. Students are required to take on the responsibility for their participation through the use of an open-ended, creative, and spontaneous language that is not controlled or guided by the teacher.

### *Phase 5: Autonomous and Collaborative Homework*

Finally, opportunities for students to become more autonomous and more engaged in the target language may be given through homework to be completed online. This constitutes the online "follow-up" phase after the F2F class, in which open-ended and creative communicative extension activities require the application of multiple skills, the activation of interaction, and the negotiation of meaning in digital applications, such as synchronous and asynchronous web-based technologies (e.g. discussion boards, blogs, wikis). The latter have also been claimed to encourage negotiation of meaning.

- *Example:* In an online discussion board, students may be required to post their comment, as well



as reacting and responding to the comment of two or more classmates.

The design of the blended sequence described above provides learners with guidance in developing autonomous learning skills, communicating through interaction and collaboration with opportunities for output and negotiation of meaning, as well as giving reflective opportunities for attending to meaning and form.

A rich source of input is provided in the initial phases. Tackling material that is new or slightly beyond the learner's knowledge, together with the additional complexity represented by the BL environment, may be challenging though. Thus, the teacher may implement a scaffolding plan to support access to input by introducing learners to the topic and activating background knowledge, and to facilitate the completion of complex tasks, by promoting interaction and collaboration.

### SUMMARY

It has been stressed in the course of this article, the importance of the ID process that teachers and/or course designers engage in for improving the pedagogical effectiveness of their blended language course. With this aim in mind, we have retraced the main steps of the ID process, from the needs analysis/assessment for exploring the complexity of learners' needs and the contextual characteristics of the setting where the BLL will take place, to the definition of a research-based framework that allows fostering autonomous learning; promoting collaboration in communities of practice; creating opportunities for interaction and negotiation of meaning, and providing space for reflection.

This paper has provided the description of a blended instructional sequence of offline/F2F and online/remote components grounded on SLA research findings and equipped with an assistive and participatory design. This provides opportunities for accessing input while developing both autonomous and collaborative learning skills within a learning community of practice, producing output and negotiating meaning, and allowing for further reflection on meaning and forms.

We can conclude that the provision of such opportunities is particularly challenging in the online/remote component of the blend, which justifies the design of a blended sequence of activities that provide guidance and support to learners, both to develop autonomous learning skills and foster interactive collaborative ones as a preparation to or follow-up of the communicative tasks, mainly proposed on the offline/F2F component.

### REFERENCES

- American Council for the Teaching of Foreign Languages (ACTFL). (n.d.). World Readiness Standards for Learning Languages. Retrieved from <https://www.actfl.org/publications/all/world-readiness-standards-learning-languages>.
- Ballman, T. L. (1998). From teacher-centered to learner-centered: Guidelines for sequencing and presenting the elements of a foreign language class. In J. Harper, 116 M. Lively, & M. Williams (Eds.), *The coming of age of the profession: Issues and emerging ideas for the teaching of foreign languages* (pp. 97–111). Boston, MA: Heinle & Heinle.
- Baturay, M. H., & Daloğlu, A. (2010). E-portfolio assessment in an online English language course. *Computer Assisted Language Learning*, 23(5), 413-428.
- Bax, S. (2011). Normalisation revisited: The effective use of technology in language education.





*International Journal of Computer-Assisted Language Learning and Teaching (IJCALLT)*, 1(2), 1-15.

- Beauvois, M. (1998). E-talk: Computer-assisted classroom discussion. In J. Swaffter, S. Romano, P. Markley & K. Arens (Eds.), *Language learning online: Theory and practice in the ESL and L2 computer classroom*. Austin, TX: Labyrinth.
- Beetham, H., & Sharpe, R. (2013). *Rethinking pedagogy for a digital age*. Hoboken: Taylor and Francis.
- Blake, R. J. (2011). Current trends in online language learning. *Annual Review of Applied Linguistics*, 31, 19-35.
- Bower, J., & Kawaguchi, S. (2011). Negotiation of meaning and corrective feedback in japanese/english eTandem, *Language Learning & Technology*, February 2011, 15(1), 41-71.
- Brandl, K. (2008). *Communicative language teaching in action*. Upper Saddle River, N.J: Pearson Prentice Hall.
- Brown, A. L., & Campione, J. C. (1996). *Psychological theory and the design of innovative learning environments: On procedures, principles, and systems*. (pp. 289-325). Hillsdale, N.J: Lawrence Erlbaum Associates, Inc.
- Christopher Day. (1993). Reflection: A necessary but not sufficient condition for professional development. *British Educational Research Journal*, 19(1), 83-93.
- Council of Europe. (n.d.). The CEFR levels. Retrieved from <https://www.coe.int/en/web/common-european-framework-reference-languages/level-descriptions>
- Dabbagh, N. (2003, Mar). Scaffolding: An important teacher competency in online learning. *TechTrends*, 47, 39-44.
- Dick, W., & Carey, L. (1978). *The systematic design of instruction*. Glenview, IL: Scott, Foresman.
- Dick, W., & Carey, L. (1996). *The systematic design of instruction* (4. ed. ed.). New York, NY: Longman.
- Dudley-Evans, T., & St John, M. J. (1998). *Developments in English for specific purposes: A multi-disciplinary approach*. Cambridge, UK: Cambridge University Press.
- Ellis, R. (1994). *The study of second language acquisition*. Oxford: Oxford University Press.
- Ellis, S., Carette, B., Anseel, F., & Lievens, F. (2014). Systematic reflection. *Current Directions in Psychological Science*, 23(1), 67-72.



- Finholt, T., & Sproull, L. S. (1990). Electronic groups at work. *Organization Science*, 1(1), 41-64.
- Freeman, D. (1982). Observing teachers: Three approaches to in service training and development. *TESOL Quarterly*, 16(1), 28.
- Goertler, S., Bollen, M., & Gaff, J., Jr. (2012). Students' readiness for and attitudes toward hybrid FL instruction. *CALICO Journal*, 29(2), 297.
- Guerin, E. et al. (2005). A post-graduate program in "e-learning design and management: The University of Florence experience. Paper presented at the EDEN Conference, Helsinki, 20–23 June, 2005.
- Helen, Beetham, & Rhona Sharpe. (2007). *Rethinking pedagogy for a digital age*. Taylor and Francis.
- Holmberg, B. (1986). *Growth and structure of distance education*. London, UK: Croom Helm.
- Hughes, N., Lo, L., & Xu, S. (2017). Blended Chinese language learning design: an integrative review and synthesis of the literature. *The Language Learning Journal*, 1-19.
- Jonassen, D. H., 1947, Peck, K. L., & Wilson, B. G. (1999). *Learning with technology: A constructivist perspective*. Upper Saddle River, NJ: Prentice Hall.
- Kilpatrick, S., Barrett, M., & Jones, T. (2003). Defining learning communities. Discussion Paper D1/2003. CRLRA Discussion Paper Series. Retrieved from <http://publications.aare.edu.au/03pap/jon03441.pdf>.
- Kraemer, A. (2008). Happily ever after: Integrating language and literature through technology? *Unterrichtspraxis/Teaching German*, 41(1), 61.
- Van Lier, L. (1996). *Interaction in the language curriculum*. Florence: Routledge Ltd.
- Little, D. (1996). Freedom to learn and compulsion to interact: promoting learner autonomy through the use of information systems and information technologies. *Taking control: Autonomy in language learning*, 1, 203-218.
- Lo, L., Xu, S., (2017). Blended Chinese Language Learning Design: an integrative review and synthesis of the literature. University of Nottingham. Retrieved from <https://www.tandfonline.com/doi/abs/10.1080/09571736.2017.1280526>
- Long, M. H. (1996). The role of the linguistic environment in second language acquisition. *Handbook of second language acquisition*, 2(2), 413-468.
- Masterman, L. (2013). The challenge of teachers' design practice. In H. Beetham, & R. Sharpe (Eds.),



- Rethinking pedagogy for a digital age: Designing and delivering e-learning* (pp. 234-259). London, UK: Routledge.
- Mizza, D., & Rubio, F. (Forthcoming). *Developing Effective Blended Foreign Language Courses. A Research-based Guide from Planning to Evaluation in Higher Education Contexts*. Cambridge, UK: Cambridge University Press.
- Neumeier, P. (2005). A closer look at blended learning - parameters for designing a blended learning environment for language teaching and learning. *ReCALL*, 17(2), 163-178.
- Palloff, R. M., & Pratt, K. (1999). *Building learning communities in cyberspace*. San Francisco, CA: Jossey-Bass.
- Pellettieri, J. (2000). *Negotiation in cyberspace: The role of chatting in the development of grammatical competence*. Cambridge, UK: Cambridge University Press.
- Orsini-Jones, M., Brick, B., & Pibworth, L. (2013). Practising language interaction via social networking sites: The expert student's perspective on personalized language learning. In B. Zou, M. Xing, C. Xiang, Y. Wang, & M. Sun (Eds.), *Computer-Assisted Foreign Language Teaching and Learning: Technological Advances* (pp. 40-53). Hershey, PA: IGI Global.
- Pica, T. (1994). Research on negotiation: What does it reveal about second-language learning conditions, processes, and outcomes? *Language Learning*, 44(3), 493-527.
- Pica, T., Young, R., & Doughty, C. (1987). The impact of interaction on comprehension. *TESOL Quarterly*, 21(4), 758.
- Pifarré, M. (2007). Scaffolding through the network: Analysing the promotion of improved online scaffolds among university students. *Studies in Higher Education*, 32(3), 389-408.
- Ravi, V. (2016). *Educational Technology*. Ashok Yakkaldevi.
- Rossomondo, A. (2014). Integrating foundational language and content study through new approaches to hybrid learning and teaching. In F. Rubio and J. Thoms (eds.), *Hybrid Language Teaching and Learning: Exploring Theoretical, Pedagogical and Curricular Issues* (pp. 219-238). Boston, MA: Heinle.



- Sauro, S. (2009). Computer-mediated corrective feedback and the development of second language grammar. *Language Learning & Technology*, 13(1), 96–120. Retrieved from <http://llt.msu.edu/vol13num1/sauro.pdf>
- Scida, E. E., & Saury, R. E. (2006). Hybrid courses and their impact on student and classroom performance: A case study at the University of Virginia. *CALICO Journal*, 23(3), 517.
- Smith, P. L., & Ragan, T. J. (2005). *Instructional design*. Hoboken, N.J.: J. Wiley & Sons.
- Swain, M. (2000). The Output Hypothesis and beyond: Mediating Acquisition through Collaborative Dialogue. In J. P. Lantolf (Ed.), *Sociocultural Theory and Second Language Learning* (pp. 97-114). Oxford, UK: Oxford University Press.
- Swain, M. (1995). Three functions of output in second language learning. In G. Cook, & B. Seidlhofer (Eds.), *Principle and practice in applied linguistics* (pp. 125-144). New York, NY: Oxford University Press.
- Swan, M. (2005). Legislation by hypothesis: The case of task-based instruction. *Applied Linguistics*, 26(3), 376-401.
- Swender, E., Conrad, D., & Vicars, R. (2012). *ACTFL proficiency guidelines 2012*. Alexandria, VA: American Council for the Teaching of Foreign Languages.
- Van Patten, B., & Sanz, C. (1995). From input to output: Processing instruction and communicative tasks. *Second Language Acquisition Theory and Pedagogy*, 169-185.
- Vygotsky, L. S. (1962). *Thought and language*. Cambridge, MA: MIT Press.
- Vygotsky, L. S., & Cole, M. (1978). *Mind in society*. Cambridge, MA: Harvard University Press.
- Walther, J. B. (1995). Relational aspects of computer-mediated communication: Experimental observations over time. *Organization Science*, 6(2), 186-203.
- Walz, J. (1998). Meeting standards for foreign language learning with world wide web activities. *Foreign Language Annals*, 31(1), 103-114.
- Wang, M. (2004). Correlational analysis of student visibility and performance in online learning. *Journal of Asynchronous Learning Networks*, 8(4), 71-82.
- Warschauer, M. (1997). Computer-mediated collaborative learning: Theory and practice. *The Modern Language Journal*, 81(4), 470-481.



- Watkins, C. (2005). *Classrooms as learning communities*. London, UK: Routledge.
- Wenger, E., McDermott, R. A., & Snyder, W. (2002). *Cultivating communities of practice: A guide to managing knowledge*. Boston, MA: Harvard Business Review Press.
- White, C. (2014). The distance learning of foreign languages: A research agenda. *Language Teaching*, 47(4), 538-553.
- Williams, S., & Sharma, P. (1988). Language acquisition by distance education: An Australian survey. *Distance Education*, 9(1), 127-146.

### WEBSITES

- National University of Ireland in Galway. (n.d.). Italian Online (Diploma) {Beginners}.
- Retrieved from [www.nuigalway.ie/courses/adult-and-continuing-education-courses/italianonline.html/](http://www.nuigalway.ie/courses/adult-and-continuing-education-courses/italianonline.html/)
- Portland State University. (n.d.). Program in Course Redesign. Retrieved from [www.thencat.org/PCR/R3/PoSU/PoSU\\_Overview.htm](http://www.thencat.org/PCR/R3/PoSU/PoSU_Overview.htm)
- School of Advanced International Studies - DC Campus - of the Johns Hopkins University. (n.d.)
- Languages Offered.
- Retrieved from <https://www.sais-jhu.edu/atoz/language-studies-program#languages-offered>
- Texas Tech University. (n.d.). Blended Learning/ Personalized Learning. Retrieved from [www.depts.ttu.edu/education/graduate/blpl/](http://www.depts.ttu.edu/education/graduate/blpl/)
- University of North Carolina at Chapel Hill. (n.d.). Spanish Hybrid courses. Retrieved from <http://romlcourses.unc.edu/Spanish/spanhybrid/>
- University of Vermont. (n.d.). Center for Teaching and Learning.
- Retrieved from [www.uvm.edu/ctl/?Page=resources-teaching/hybrid-courses/span002/index.php](http://www.uvm.edu/ctl/?Page=resources-teaching/hybrid-courses/span002/index.php)





# Reflecting MOOC-Blend Experience in “Teaching Writing in an ESL Context”

**Melor Md Yunus**

Faculty of Education  
Universiti Kebangsaan Malaysia  
*melor@ukm.edu.my*

**Harwati Hashim**

Faculty of Education  
Universiti Kebangsaan Malaysia  
*harwati@ukm.edu.my*

**Helmi Norman**

Faculty of Education  
Universiti Kebangsaan Malaysia  
*helmi.norman@ukm.edu.my*

## ABSTRACT

Massive Open Online Courses (MOOCs) have demonstrated a high potential platform in delivering quality and cost-effective course materials to large numbers of students. Thus, MOOCs, has become widespread among everyone around the world. At many institutions in Malaysia, MOOCs are also integrated in blended learning. In line with this current movement of blended learning, the researchers have also integrated the use of MOOC for one of the courses offered for undergraduates at the Faculty of Education, Universiti Kebangsaan Malaysia (UKM). Teaching Writing in an ESL Context is a compulsory course that need to be enrolled by students of Teaching English as Second Language (TESL) programme. This paper aims to describe the integration of MOOC into the teaching of the course as a blended learning approach and reflects MOOC-blend experience among the students and the researchers. Qualitative research design was employed and data were collected based on students' reflections. Thirty students who enrolled the course were involved in this study and their reflections were analysed. It was found that MOOC was accepted as emerging technology for learning. The experience with this MOOC-blend in this paper could lead to reflection about the achieved results, lessons learned and future steps in the implementation of MOOCs.

## Author Keywords

Massive Open Online Course (MOOCs), blended learning, Teaching Writing, English as Second Language (ESL), technology and ESL, higher learning institutions.

## INTRODUCTION

Massive Open Online Courses (MOOCs) are the most popular technological trend in the present education systems (Thamarana & Narayana, 2016). In the Malaysia Education Blueprint 2015-2025 (Higher Education), the Ministry of Higher Education Malaysia (MOHE) has aspired to increase the number of student enrolment, enhance the quality of teaching and learning, as well as globalize Malaysian higher education institutions. Therefore, MOOCs are introduced to be integrated into the learning at the higher education institutions. The Ministry of Higher Education (MOHE) fully supports the implementation of MOOCs in the aspect of education in Malaysia and there is an increasing number of institutions which have started to develop the Malaysia MOOCs. At the Faculty of Education, Universiti Kebangsaan Malaysia (UKM), more than 20 MOOCs which offer various courses have been produced. One of the MOOCs produced by the researchers is Teaching Writing in an ESL Context. For the purpose of teaching and learning, the researchers have integrated the use of MOOC into teaching the course which is enrolled by year 3 students of Teaching English as Second Language (TESL) programme. Thus, this paper describes the integration of MOOC into the teaching of the course as a blended learning approach and reflects the students and researchers' experience in blending the MOOC with face-to-face instructions. In this paper, the reflections of the students from the previous semester who had undergone the course for one semester were reported to describe the MOOC-blend experience.

## LITERATURE REVIEW

### BLENDED LEARNING AND MASSIVE OPEN ONLINE COURSES (MOOCs)

The definition of blended learning has evolved over time. Blended learning can be interpreted in many ways and take various forms. In most studies, blended learning has been associated with a blend of face-to-face delivery with online delivery in variable percentages. Nevertheless, the new types of 'blends' reported by Bonk et al. (2015) is referring to a number of courses blend either commercial or tailor-made MOOCs with both face-to-face. MOOCs are some of the most popular and innovative approaches in language education especially to provide great opportunities (Thamarana & Narayana, 2016).



MOOCs (Massive Open Online Courses) refer to a new model of online education delivering content and proposing activities to meet learning goals for a large number of people with a shared interest, with no initial limits of access, attendance and credits offered at the end (Martin-Monje et al., 2013). Massive Open Online Courses (MOOCs) are (re)shaping, (re)configuring, and (re)defining the landscape of teaching and learning across the globe (Mabuan & Ebron, 2018) and thus making higher education accessible to everyone with an internet connection (Uchidiuno et al., 2017). Siemens (2012) states, massive open online course participants are very much connected to their teachers and other peers online, thus making it an interactive platform for the learners and the teachers.

The emergence of massive open online courses (MOOCs) has great impact on the educational field, particularly in the distance education field (Norazah et al., 2015). The MOOC movement in educational landscape was picked up by various institutions and they started establishing MOOC platforms in collaboration with various field experts. Although MOOCs are commonly designed and delivered as independent courses, several studies have already explored MOOC integration into university classes (Caulfield et al., 2013; Firmin et al., 2014; Griffiths et al., 2014), indicating the possibility of utilizing MOOC elements in delivering course content as a form of blended learning approach with the aim of enhancing student learning experiences. Yunus et al. (2017) stated that MOOC could be among the main platforms for students of all groups to develop their writing skills. Therefore, Massive Open Online Courses (MOOCs) have also emerged as one of the trending learning environments for online learning (McClure, 2016). Undeniably, the effect of applying modern technology such as MOOC in pedagogy has introduced an innovative contribution to education (Yuan & Cetis, 2013). In this paper, 'MOOC-blend' is defined as the blend of face-to-face instructions with customised MOOC into the teaching of the course.

## METHODOLOGY

Qualitative research design was employed in this study. Thirty year 3 TESL students were involved as the participants in this study. These students were enrolled to the 'Teaching of Writing in an ESL Context' on MOOC. The duration of the students' experience using MOOC for the purpose of this course is one semester. Data were collected based on the students' reflection in MOOC at the end of the course. The reflections were then analysed and reported as in the following section.

## FINDINGS AND DISCUSSION

### MOOC-BLEND EXPERIENCE IN "TEACHING WRITING IN AN ESL CONTEXT"

Teaching Writing in an ESL Context aims to acquaint learners with writing techniques necessary for effective teaching of writing in English. By the end of the course, learners should be able to:

- a. Understand the theories and approaches required for effective teaching of writing
- b. Teach students to write grammatically correct English
- c. Utilize appropriate writing techniques essential for the teaching of ESL writing

For the teaching of this course, the researchers have integrated the use of MOOC to support the blended learning approach. Face-to-face instructions are conducted every week but the meetings are basically for the students to discuss further with the guidance of the lecturers as well as for the presentation of tasks which are assigned in classroom. In MOOC, this module consists of eight units which covers the theory of writing in first language and second language that assist learners to understand what is involved in the writing process and the teaching process.

Learners are also introduced to writing approaches and writing strategies and skills and mechanics of writing. In the end, learners will be able to identify strategies to teach writing for different level students and assessing writing skills and therein design lesson plan and find out resources for varieties of materials to be used in writing. The following figure shows the screenshot of the MOOC interface of the course.





**Figure 1. Screenshot of the MOOC.**

Figure 1 displays the screenshot of the MOOC for this course. Students are required to access the MOOC every week before the face-to-face instructions with the lecturers. To date, around 104 students are enrolled on the MOOC. The topics covered on the MOOC, are:

- Topic 1 - Theory of Writing in L1 & L2
- Topic 2 - Spoken vs. Written Language
- Topic 3 - Types of Writing & Skills
- Topic 4 - Process vs. Product
- Topic 5 - Teaching Writing for Beginners & Intermediates
- Topic 6 - Assessment in Writing
- Topic 7 - Resources and Materials for Teaching Writing
- Topic 8 - Planning for Teaching Writing

About the Course	Learning Activities	
Facilitator	Topic 1 - Theory of Writing in L1 & L2	Completed: 0/2 ✓
Modules & Tasks	Topic 2 - Spoken vs. Written Language	Completed: 0/2 ✓
First Impression	Topic 3 - Types of Writing & Skills	Completed: 0/2 ✓
Final Reflection	Topic 4 - Process vs. Product	Completed: 0/2 ✓
● Certification Status	Topic 5 - Teaching Writing for Beginners & Intermediates	Completed: 0/2 ✓
Administer Students	Topic 6 - Assessment in Writing	Completed: 0/2 ✓
	Topic 7 - Resources and Materials for Teaching Writing	Completed: 0/2 ✓
	Topic 8 - Planning for Teaching Writing	Completed: 0/2 ✓

**Figure 2. Screenshot of the topics.**



Figure 2 displays the interface of the topics prepared in the MOOC for the course. In total, there are 8 topics covered for the whole semester. Students are required to go through one topic weekly and later meet in the face-to-face instructions for task-based learning. In the beginning of the MOOC, the students were asked on their first impression of the course. The screenshot of the section is as presented in Figure 3.

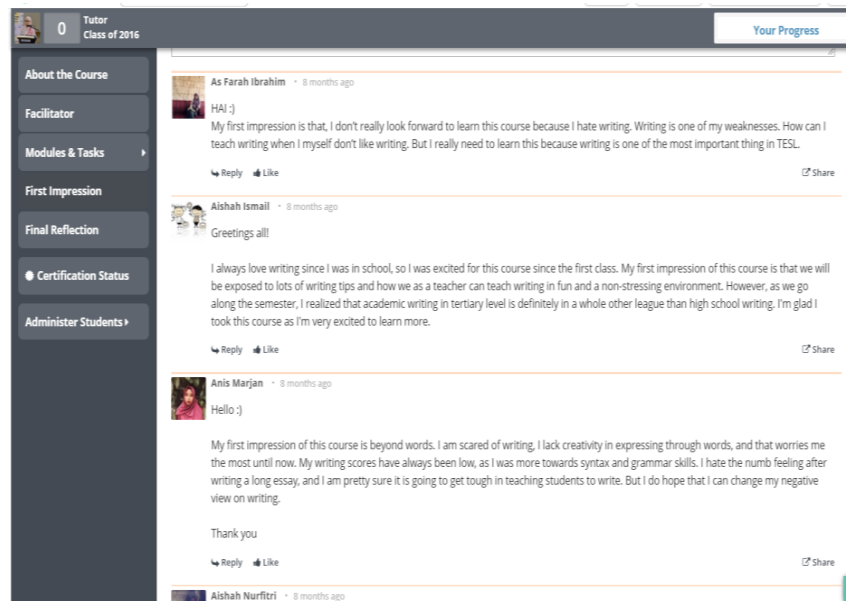


Figure 3. Screenshot of students' responses for their first impression of the course.

Based on Figure 3, we can see that students responded variously on when being asked about their first impression of the course. Many of the responses given by the students were quite negative. Some of the responses are as follow:

*"My first impression is that, I **don't really look forward to learn** this course because I hate writing. Writing is one of my weaknesses. How can I teach writing when I myself don't like writing. But I really need to learn this because writing is one of the most important thing in TESL."*

*"To be honest, I was freaking out at first when I knew that I had to learn how to actually professionally teach writing to students. I know that this course is going to be interesting but **tough and challenging** at the same time. I had this mindset that I will not excel in this course because I am not that good in writing. Writing is really not my best friend. I still struggle to write and by taking this course, I really can feel the burden and stress. However, I know this course will guide and help me to be an excellent English teacher who is capable to write and inspire students to write. Hopefully, this course will help me to be a better English teacher."*

*"To be honest, I was very **stressed out** on the first day of lecture. Writing is not simple, what more teaching of writing. I was afraid that I would not be able to learn the topics effectively. I was even more anxious when we were introduced to the assignments that we needed to complete by the end of semester. However, my anxiety and worries decreased a lot as the weeks went by because my classmates and I had two wonderful lecturers. We were not left alone to finish all assignments and tasks. Both lecturers constantly helped us by giving us guidelines and advice. Without me realizing it, I was actually enjoying the class."*



From some of the responses given by the students above, it was shown that the students were not fond of taking the course. For them, learning to teach writing was challenging as they themselves were not confident with their writing skills. However, after undertaking the course for one semester, with the integration of MOOC, it was found that the students' perceptions had changed. The responses were obtained at the end of the semester where students were required to write a reflection about the course. Figure 4 shows the screenshot of the section.

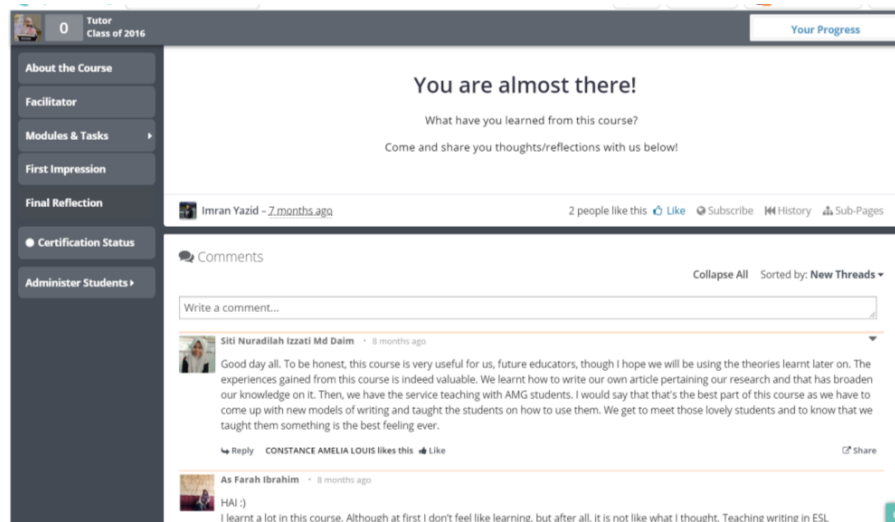


Figure 4. Screenshot of students' responses for their thoughts/reflections.

From the students' responses, it was found that the integration of MOOC was helpful for in this course. One of the students responded,

*"I learnt a lot in this course. Although at first, I don't feel like learning, but after all, it is not like what I thought. Teaching writing in ESL classroom need a lot of techniques so that the students will not feel bored. In this course I learnt that teaching writing must first know the purpose of writing, how to write, how to organised ideas and so on. Other than that, I also learnt that teacher need to **use the technology to boost students' interest in writing**. Therefore, **while completing the task in MOOC I have use a lot of applications and learnt how to use many of it**. After using them, I can think of ways to boost students' interest and made them writing. After all, this course helps me a lot no matter towards my writing and my teaching in the future."*

The student found that the use of technology in this course had somehow spark her interest in using technology for teaching writing with her students in the future. Apart from that, another student also mentioned that the use of MOOC for this course is very useful. The student commented:

*"I had so much fun throughout this course. At first, I thought this was going to be just one of another course to be completed. I was wrong. In this subject, I had the opportunity to again teach in real world situation, by involving myself in service learning. I had detected my weaknesses in teaching, so by doing this, I can improve myself for my future endeavour. Next, I had dived deeper into the sea of writing process, and I had come to understand that teaching writing is not easily, as the teacher will have to be extra prepared. Last but not least, I am **impressed by the extensive usage of technology in the class. The Open Learning, or MOOC is a welcome change to the usual iFolio. It is much snappier, less prone to errors and I can use various websites linked to it.**"*



Another positive reflection on the students' experience of MOOC-blend approach for the course is reflected in the following response given by another student:

*"Through this course, I have learned that teaching writing is much more than just knowing how to write, and as someone who has no skill in writing, I am proud of my self-achievement in developing interest in writing at the end of this course. **For MOOC, all the materials and tasks really helped me in understanding further regarding the topics of this course, and thank you for the favour of giving us chances in completing them at our own pace.**"*

From the students' responses, it was clearly shown that the integration of MOOC into the teaching of the course was beneficial for them. Even though they study the course on MOOC independently, at the same time, they can collaborate with their peers from different locations. Students could also reflect on their own motivation for enhancing their knowledge about the topics covered on the MOOC and on the collaboration with their peers. However, despite of the benefits, the researchers found a slight drawback of the integration of MOOC. As the lecturers deal with a huge audience, in consequence, the lecturers would not able to provide active feedbacks for the students' responses on the MOOC. This in the future might affect the students' motivation and, in the end, affect the sustainability of the usage.

## CONCLUSION

To conclude, MOOCs are a new initiative in the development of the huge possibilities of new technology which could be integrated with face-to-face instructions for blended learning approach. MOOCs are really interesting especially because a lot of users can be enrolled. Nevertheless, it is necessary to consider their advantages and disadvantages. In this paper, it is discovered that MOOC was accepted as emerging technology for learning where positive results were obtained. The experience with this MOOC-blend in this paper could lead to reflection about the achieved results, lessons learned and future steps in the implementation of MOOCs.

## REFERENCES

- Caulfield, M., Collier, A., & Halawa, S. (2013). Rethinking Online Community in MOOCs Used for Blended Learning. Retrieved from <http://www.educause.edu/ero/article/rethinking-online-community-moocsused-blendedlearning>.
- Firmin, R., Schiorring, E., Whitmer, J., Willett, T., Collins, E., & Sujitparapitaya. (2014). Case study: Using MOOCs for conventional college coursework. *Distance Education*, 35(2), 178-201.
- Griffiths, R., Chingos, M., Mulhern, C., & Spies, R. (2014). Interactive Online Learning on Campus: Testing MOOCs and Other Platforms in Hybrid Formats in the University System of Maryland. Retrieved from [http://www.sr.ithaka.org/wpcontent/mig/reports/S-R\\_Interactive\\_Online\\_Learning\\_Campus\\_20140710.pdf](http://www.sr.ithaka.org/wpcontent/mig/reports/S-R_Interactive_Online_Learning_Campus_20140710.pdf)
- Mabuan, R. A., & Ebron Jr, G. P. (2018). MOOCs & More: Integrating F2F & Virtual Classes via Blended Learning Approach. Senior Editor: Paul Robertson, 220.
- Malaysia Education Blueprint 2015-2025
- Martin-Monje, E. Bárcena, E. and Ventura, P. at ECLL. (2013) – The European Conference on Language Learning.
- McClure, M. W. (2016). Investing in MOOCs: "Frenemy" Risk and Information Quality. In *Globalisation and Higher Education Reforms* (pp. 77-94). Springer International Publishing.
- Nordin, N., Norman, H., & Embi, M. A. (2015). Technology acceptance of massive open online courses in Malaysia. *Malaysian Journal of Distance Education*, 17(2), 1-16.
- Siemens, G. (2012). Connectivism Learning Theory. Retrieved from: [http://p2pfoundation.net/Connectivist\\_Learning\\_Theory\\_-\\_Siemens](http://p2pfoundation.net/Connectivist_Learning_Theory_-_Siemens)
- Thamarana, S., & Narayana, T. (2016). A Glimpse of Massive Open Online Courses (MOOCs) for English Language Learning (ELL). *Researchgate.Net*, (August). <https://doi.org/10.13140/RG.2.1.2567.9602>
- Uchidiuno, J., Koedinger, K., Hammer, J., Yarzebinski, E., & Ogan, A. (2017). How Do English Language Learners Interact with Different Content Types in MOOC Videos?. *International Journal of Artificial Intelligence in Education*, 1-20.
- Yuan, L., Powell, S., & Cetis, J. (2013). MOOCs and Open Education: Implications for Higher Education. Cetis White Paper. Available at: <https://www.oerknowledgecloud.org/sites/oerknowledgecloud.org/files/MOOCs-and-Open-Education.pdf>.
- Yunus, M. M., Hashim, H., Ahmad, A. R., Sulaiman, N. A., Fadzila, A. S., Nurfitri, A., ... & Hasmirah, N. (2018). MOOC as a Platform for Developing Writing Skills: Effectiveness and Challenges. *Advanced Science Letters*, 24(1), 199-201.





Abstract geometric shapes in shades of gray, including triangles and polygons, located in the top-left corner of the page.

# **Keynote Presentations**

Abstract geometric shapes in shades of blue and gray, including triangles and polygons, located in the bottom-right corner of the page.



## Agnes Kukulska-Hulme

Institute of Educational Technology  
The Open University, UK  
[agnes.kukulska-hulme@open.ac.uk](mailto:agnes.kukulska-hulme@open.ac.uk)

### BIOGRAPHY

Agnes Kukulska-Hulme is Professor of Learning Technology and Communication in the Institute of Educational Technology at The Open University, UK, and Past-President of the International Association for Mobile Learning. Her research spans a number of inter-related fields including technology-supported learning, applied linguistics and language learning. Her research in mobile learning began in 2001. Recent projects have included the MASELTOV project on personalized technologies for informal learning and social inclusion, the British Council sponsored research on Mobile Pedagogy for English Language Teaching, and the SALSA project on language learning in the next generation of smart cities. She has also led course teams in the development of online teaching materials and conducted evaluations of online and technology-enhanced learning. Professor Kukulska-Hulme's publications include 130 articles, papers and books. She has published widely on mobile learning and is the co-editor of three leading books in this field, the latest of which is *Mobile Learning: The Next Generation*. She has produced commissioned reports for UNESCO, the British Council, the Commonwealth of Learning, Cambridge University Press, and the International Research Foundation for English Language Education. She is a graduate of Instytut Lingwistyki Stosowanej, Uniwersytet Warszawski (1980).

## Mobile Technologies and Social Media for Assistance and Collaboration

### ABSTRACT

Mobile learning, supported by smartphones, tablets and other portable or wearable devices, broadens the scope and reach of education to include a rich variety of contexts, people and learning challenges. Mobile learning can be solitary or social. It is particularly valuable as a means to a personalized approach addressing the specific requirements of an individual or group. Increased mobility of populations across the globe leads to new requirements in response to local encounters and the demands of cross-cultural communication. Within a growing ecology of learning materials and resources for language learning, mobile technologies and social media can provide assistance to help with various aspects of learning. Furthermore, collaboration between learners can be a form of mutual assistance, with multiple additional benefits arising from collaboration such as development of work-relevant skills, sustained engagement with learning, and a learning experience that is enriched by multiple viewpoints and resources. This talk will focus on the dual concepts of 'assistance' and 'collaboration', examining their inter-dependence and considering a range of illustrative examples of mobile learning in action.





## Joe Ganci

eLearningJoe, LLC  
Ashburn, Virginia, USA  
*joe@elearningjoe.com*

### BIOGRAPHY

Joe Ganci is an eLearning consultant with a long track record. Joe's design approaches and his innovative use of tools, such as Adobe Captivate, Articulate Storyline, Trivantis Lectora, Adobe Presenter, Articulate Studio, Harbinger Raptivity, and many others, has caused many to improve how they are designing and developing their eLearning and to implement new and better methods. Joe's personal and hands-on style to training and consulting has his services constantly in demand and he is privileged to have visited with many clients all over the world. He has been involved in every aspect of learning development since 1983. Joe holds a degree in Computer Science and is a published author, having written several books, research papers and many articles about eLearning. He is widely considered a guru for his expertise in eLearning development and teaches classes and seminars at commercial companies, government facilities, leading universities and at many industry conferences, where he has often served as keynote speaker. He is on a mission to improve the quality of eLearning with practical approaches that work.

## Trends and Predictions in Blended Learning

### ABSTRACT

Where is the world of learning heading? Blended learning is not new, but it is ever-changing! New technologies that we can bring to bear to helping people learn are being introduced almost daily. Too often, though, we are ignoring the great possibilities that those new developments bring because we think they're too difficult, too costly, or unnecessary.

Choosing the right blend of learning approaches is paramount! How else can you be sure that your learners are properly prepared to put into practice the new skills you need them to acquire? Each learner audience and each topic list deserves to be addressed uniquely. Know what questions to ask, including technology needs, and the answers will help lead to the correct combination of learning approaches, including those that have been used before and those that may be new to your organization.

When does it make sense to train people in a classroom or meeting room? When should eLearning be used? What about synchronous online training? Augmented reality? Virtual reality? NFC chips (which can cost as little as US 0.10\$)? What will work best for your audience and topic to learn? What technology support do you need to make it all work?





## Agnieszka Biernacka

Institute of Applied Linguistics  
University of Warsaw, Poland  
[a.biernacka@uw.edu.pl](mailto:a.biernacka@uw.edu.pl)

### BIOGRAPHY

Dr. Agnieszka Biernacka is a court interpreting researcher, legal translator and court interpreter trainer, and conference interpreter trainer. Her professional experience as conference interpreter is 16 years and 14 years as court and legal interpreter. Dr Agnieszka Biernacka is an Assistant Professor at the Institute of Applied Linguistics and Head of the Interdisciplinary Postgraduate Studies in Translation and Interpreting. She has been involved in a number of national and international projects concerning legal translator and court interpreter training, as well as blended learning in conference interpreting. She obtained a scholarship at Institut Supérieur de Traducteurs et Interprètes (HEB- ISTI) in Brussels (2007) and at Universitat Autònoma de Barcelona (2017). She holds an MA degree in Iberian and Latin American Studies, MA degree in American Studies and PhD degree in Humanities (all of them: University of Warsaw). She is a member of professional organizations: Polish Association of Hispanists (PSH) and Spanish Applied Linguistics Association (AESLA). She has written 13 papers on court interpreting and legal translation and published a monography on court interpreters (2014, UW).

## Virtual Classes as a Tool for Enhancing Interpreting Competences

### ABSTRACT

Virtual Classes (VCs) make use of the idea deployed in videoconference interpreting (VCI) and remote interpreting (RI) (Moser-Mercer, 2003, 2005), where the interpreters and their clients are situated in different places and communicate via special devices and infrastructure. VCI and RI are successfully deployed in healthcare, legal, and other institutional settings (Braun 2012, 2013; Napier 2012; Locatis et al., 2010, 2011), even though both modes impose certain constraints on communication situations (Braun, 2015; Mouzourakis, 2006).

Virtual Classes in consecutive interpreting form part of a blended learning model. The VCs which have been organized at the Institute of Applied Linguistics (ILS) for five years now, were originally designed to meet the requirements of the training within the EMCI (European Masters in Conference Interpreting) program, but soon they appeared to be a useful tool enhancing the interpreting competences of MA students. Today, both of these groups actively participate in the classes, where videoconferencing is used for simulations of interpreting.

At the Institute, the VCs are organized bilaterally (BVCs) and multilaterally (MVCs) with partner universities and sponsor institutions, at least three times during semester. As regards partner universities, these are members of the consortium EMCI, while EU institutions, i.e. the Directorate-General for Interpretation (DG SCIC) and the European Parliament, offer e-learning training in both consecutive and simultaneous interpreting at all levels, through their pedagogical assistance units.

As regards language pairs covered by the VCs provided at the Institute, Polish is obligatory as A language of the students participating in the classes. Hence, two scenarios are possible: either the speeches are provided in Polish and interpreted into the students' B/C languages: English, French, German and Spanish, or, the interpretation is provided from these languages into Polish, depending on an individual VC. VCs are associated with special challenges (both organizational and technical) on the part of the trainers whose responsibilities before, during and after a VC include: preparation both in the immediate run-up (sound tests, time constraints) and ahead of time (liaison, indicating students' levels, ensuring a feasible timetable of the VC), as well as providing a general and individual debriefing to make the students feel involved and motivated.

The VCs cannot replace face-to-face training. On the contrary, while face-to-face classes, firstly, allow trainers to follow the progression of students and take their individual needs into account, and secondly, enable students to interact with peers who are welcome to give feedback on their colleagues' performances, VCs provide special opportunities: an extra occasion for the students to practice interpreting, direct contact with the professional world, chance to practice stress management skills, getting feedback from the interpreters accredited with EU institutions and trainers of interpreting from partner universities, allowing students to network and feel part of a large interpreting community, as well as are a good occasion to compare their own skills with those of their colleagues representing other language sections.



The image features a white background with decorative geometric elements. In the top-left corner, there is a large, light gray, multi-faceted geometric shape. In the bottom-right corner, there is a cluster of smaller, three-dimensional geometric shapes in shades of blue and gray.

# **Invited Speaker**



## Lech Mankiewicz

Centre for Theoretical Physics of the  
Polish Academy of Sciences (CFT PAN)  
Poland

[lech@cft.edu.pl](mailto:lech@cft.edu.pl)

### BIOGRAPHY

Lech Mankiewicz is a Polish astronomer and physicist, populariser of natural sciences. In 2011, he was awarded a "Włodzimierz Zonna" medal by the Polish Astronomical Society for his unique contribution to the dissemination of astronomical knowledge and enabling students and teachers of Polish schools to conduct their own regular astronomical observations as part of the "Hands-On Universe" program. Known for his uncompromising and interdisciplinary approach to the popularization of astronomy and other fields of science. Since 2001 associated with the Center for Theoretical Physics PAS in Warsaw, and since 2007 is the director of this institution. Previously, he worked for several years at the Astronomical Center Nicolaus Copernicus of the Polish Academy of Sciences. Polish coordinator of the EU-HOU program (Hands-On Universe, Europe), active at Khan Academy. Students taking part in the International Asteroid Search Campaigns (IASC - Charleston H21) research program proposed that the main belt asteroid (279377) 2010 CH1 be named Lechmankiewicz. Since 2011, he has represented in Poland the well-known educational platform of Khan Academy.

## Khan Academy in the Context of Blended Learning

### ABSTRACT

In his talk during the World Economy Forum in Davos in January 2018, Jack Ma challenged the school as we know it by saying that schools of today fail their students. Khan Academy and blended learning were both born not so long time ago from a desire to modify learning processes using opportunities created by the advent of new technologies. Some years later, do these one-time revolutionary ideas keep pace with the fast-changing world? Do we understand the world of tomorrow well enough to be able to change our public education system in such a way that it will support students, instead of alienating them? The presentation addresses these questions to stimulate discussion and reflection amongst blended learning researchers and practitioners.





Abstract geometric shapes in the top-left corner, consisting of several overlapping triangles in shades of gray and white, creating a 3D effect.

# **Practitioner Presentations**

## Abstracts

Abstract geometric shapes in the bottom-right corner, featuring a cluster of triangles in shades of blue and gray, also creating a 3D effect.

# Curriculum Development Using Project Management Skills

**Philip Cowcill**  
Ontario, Canada  
*phil@pjrules.com*

## ABSTRACT

Curriculum development is something that is done by teachers in K-12, higher education as well as in many corporate environments. Often making individual lessons is very manageable and doesn't require much in the way of planning. However, if you're looking at a significant amount of new online content, then planning the development of the content is imperative if you want to be efficient. Have you ever looked at curriculum development in the same way as software is developed? By using some of the practices found in Project Management for software, you can develop a very efficient plan for developing your curriculum.

Most people are familiar with the ADDIE model. The name stems from Analysis, Design, Development, Implementation and Evaluation. It was designed over a 100 years ago and has a proven track record. When the US Navy commissioned building nuclear submarines, they trimmed two years off their project using the ADDIE methodology. While it is a proven methodology, there are gaps with the development process the structure. It doesn't suggest that there can be iterations in the development cycle.

Another very popular Project Management methodology is Agile. This is much better suited for software and curriculum development. It breaks projects into small sections called Sprints. Agile also works very well with teams. Each day there would be a team meeting where each member is required to answer three questions. This is how the project can be tracked and bottle neck issues can be addressed before it becomes a big problem. The downside to Agile is that it tends to lack the initial research at the start of the project.

In this presentation, we start off by looking at the strength and weaknesses of both ADDIE and Agile project management methodologies. Then there will be a demonstration on how ADDIE and Agile can be combined to make an efficient development plan that uses the strengths of both methodologies.

## Keywords

project management, ADDIE, agile, curriculum development, teams, online



# How AR and VR Can Impact Blended Learning – Looking Past the Hype

**Philip Cowcill**  
Ontario, Canada  
*phil@pjrules.com*

## **ABSTRACT**

To see what trends are going to impact learning, look at game industry. Game developers tend to be at the forefront of new trends. Once a trend catches on and is being widely used by the population, educational institutions start to look at how this trend can be adapted to education and training.

With that in mind, we can see that consumers are starting to adapt to two new emerging technologies – Augmented Reality (AR) and Virtual Reality (VR). While the technology has been available for a while, it's now getting into the hands of consumers on a mass scale. This indicates that AR/VR will be the next big thing in education and training. While there is a lot of excitement around these new technologies, there is also a lot of hype. If these technologies are not used correctly, they will be anti-productive. Institutions shouldn't use technology for the sake of technology thinking it will help better engage the learner. You can look at past introductions of technologies like Second Life to see that they have not lived up to the hype.

Both Google and Apple have invested significant resources into their Augmented Reality tool kits making it easier for developers to create AR apps. These investments mean the AR technology in today's mobile phones is very solid and dependable. Other companies have emerged to help you build your own AR apps without any great exposes.

In this session we will explore both AR and VR technologies. We'll look at the advantages and disadvantages of these technologies. We will discuss how they can best be implemented. If you're on a limited budget, you can still implement AR within your class and online papers. Using one of many free services, you can now create triggers in online and paper-based material that allow students to get additional information on their phones. A sample on how to do this will be demonstrated in this session.

## **Keywords**

Augmented Reality, Virtual Reality, AR, VR, mobile



# The Business English Blend

**Karen Eini**  
Ruppin Academic Center  
Israel  
*karene@ruppin.ac.il*

**Tal Levy**  
Ruppin Academic Center  
Israel  
*tallevy@ruppin.ac.il*

## ABSTRACT

Designing authentic, relevant tasks, a supportive learning environment and engaging opportunities that maximize student-talk for large classes during 90 minute CEFR-aligned Business Communication lessons are just some of the challenges in developing fast-paced English for specific purposes (ESP) courses. Motivating college students, providing feedback and assessing their proficiency is no less important.

Almost a decade ago, Collopy and Arnold (2009) recognized that the increasing curricular demands and the desire to provide meaningful, engaging instruction have pressed educators to review and revise their programs. Indeed, while planning this dynamic communication course, we endeavored to implement sound pedagogical methodologies that would support our learning objectives.

Fortunately, the advancement in communication and network technologies have facilitated innovative instructional delivery and learning solutions, such as hybrid instruction or (BL), blended learning. Lim and Morris (2009) state the use of blended instruction is growing rapidly because instructors believe diverse delivery methods may significantly enhance learning outcomes as well as increase student satisfaction from the learning experience.

Blended learning (BL) has been defined in various ways by different authors. Garrison and Kanuka (2004) define blended learning as “the thoughtful integration of classroom face-to-face learning experiences with online learning experiences. Gülbahar and Madran (2009), Rovai and Jordan (2004), Thorne (2003), and Yildirim (2007) define blended learning as “a mixture of online learning or web-based training with face-to-face communication and more traditional methods of learning and teaching” (cited in Aguilar, 2012, p. 168). However, almost all definitions shared the core concept of BL which is mixing two components: face-to-face teaching and online education, which is what will be described in this presentation.

During our talk we discuss our student-centered design approach in the ESP blended courses in the School of Business Administration at Ruppin Academic College. We demonstrate how the combination of SWOT analysis, carefully blended activities using dynamic technology, diverse communication models, and Pecha Kucha presentations turned daunting two-credit course preparation and implementation into a rewarding teaching and learning experience. In addition to our reflections and insights, we share the process, tools, activities and samples of evaluations that served to help our students identify and build upon their personal competencies while developing their interpersonal and presentation skills in English.

## Keywords

Business English, student-centred, blended learning, blended language learning

## REFERENCES

- Aguilar, J. A. M. (2012). Blended learning and the language teacher: A literature review. *Colombian Applied Linguistics Journal*, 14(2), 163-180.
- Collopy, R., & Arnold, J. M. (2009). To Blend or Not to Blend: Online and Blended Learning Environments in Undergraduate Teacher Education. *Issues in Teacher Education*, 18(2), 85-101.
- Garrison, D. R., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. *The Internet and Higher Education*, 7(2), 95-105.
- Lim, D. H., & Morris, M. L. (2009). Learner and Instructional Factors Influencing Learning Outcomes within a Blended Learning Environment. *Educational Technology & Society*, 12(4), 282-293.



# Tell the Tale of TEL: How to Support a Language Team in the Blended Learning Arena

**Tal Levy**  
Ruppin Academic Center  
Israel  
*tallevy@ruppin.ac.il*

**Karen Eini**  
Ruppin Academic Center  
Israel  
*karene@ruppin.ac.il*

## ABSTRACT

This presentation describes an ongoing professional development project implemented in the English for specific & academic purposes (ESAP) department at Ruppin Academic College (RAC). Our college provides a wide range of academic degrees in various programs in the fields of engineering, marine sciences, nursing, social work, business administration, accountancy and more. While instruction of language for academic purposes is topic specific, standards are maintained throughout. In order to ensure high standards at all levels of instruction of ESAP, Self-reflection surveys, professional training, ongoing support and course audits have been key elements in the process of empowering and enabling a team of over 20 ESAP teachers to implement a range of e-learning technologies in their courses. This led to a digitally literate staff with the skills required to develop and deliver pedagogically sound, blended learning modules of instruction.

More than ten years ago, RAC began to integrate MOODLE into the Virtual Learning Environment. Research has shown that inadequate, inappropriate professional development is a significant barrier to successful technology integration in schools (Kopcha, 2010). In addition, Koehler and Mishra (2008) identify content knowledge, pedagogical knowledge, technological knowledge, and combinations of these as necessary for effective teaching with technology. Based on these principles, we developed a model that ensures successful implementation of the above and the delivery of various blended courses maintaining high academic standards which are supported by

- a. Professional development workshops covering pedagogical theory and training
- b. Ongoing sharing, case studies and follow up support
- c. Identification of milestones in the use of Moodle for blended/online learning course.
- d. The existence of a vibrant virtual staff room which serves as a meeting point for all teachers.

Our team is perceived as pioneers in blended learning both by faculty in our institution as well as by others. Our systematic approach to enhancing digital knowledge and skills among our staff has enabled us to enter the realm of fully blown blended and online courses. This presentation outlines how we motivate, empower, guide and support the ESAP staff with the essential skills to be active players in the ever-changing educational landscape.

## Keywords

professional development, digital literacy, blended learning, high academic standards

## REFERENCES

- Gefen, D., Straub, D. W., & Boudreau, M. C. (2000). Structural equation modeling and regression: Guidelines for research practice. *Communications of the AIS*, 4(7), 1-78.
- Hirschheim, R. (2005). The internet-based education bandwagon: Look before you leap. *Communications of the ACM*, 48(7), 97-101.
- Koehler, M. J., & Mishra, P. (2008). Introducing TPCK. In *Handbook of Technological Pedagogical Content Knowledge TPCK for Educators* (pp. 3-29). Routledge. Retrieved from <http://punya.educ.msu.edu/2008/05/28/tpack-handbook-chapter-1/>
- Kopcha, T. (2010). A systems-based approach to technology integration using mentoring and communities of practice. *Educational Technology Research and Development*, 58(2), 175-doi:190. 10.1007/s11423-008-9095-4
- Simon, H. A. (1957). *Models of man: Social and rational*. New York: John Wiley and Sons, Inc.



# A Blend of Pecha Kucha and Business English

**Karen Eini**

Ruppin Academic Center  
Israel  
*karene@ruppin.ac.il*

**Tal Levy**

Ruppin Academic Center  
Israel  
*tallevy@ruppin.ac.il*

## ABSTRACT

As part of the Blended Business English Communication course in Ruppin Academic Center our students are required to choose a relevant topic, interpret the content they find, and organize it in the form of an oral presentation. This process not only enables our students to organize knowledge, but also improves their public speaking skills. As we view the skill of presenting ideas in a systematic way and speaking effectively to an audience necessary for our students in their academic and professional lives, oral presentation has been one of the main components of our Business English Courses.

A common way to present content is through the use of Microsoft Office PowerPoint. However, PowerPoint has become a crutch rather than a catalyst for our students. A number of issues tend to hinder the quality of students' presentations, such as not concentrating on main points, reading from wordy slides, and overrunning the allocated time (Murugaiah, 2016). To avoid the dreaded "death by PowerPoint" we chose to use a Pecha Kucha (PK) style of presentation, which is a creative use of PowerPoint software (Klentszin, Paladino, Johnston, & Devine, 2010; Robinson, 2015).

Pecha-Kucha is a short visual presentation comprised of 20 slides where each slide is timed to automatically advance every 20 seconds. Presenters rely primarily on images to guide the presentation and need to be creative to communicate their point precisely. The time and visual constraints in the PK presentation style can be considered a benefit rather than a drawback in the language classroom. In addition to the fact that PKs provide EFL students with an opportunity to be creative and make visual presentations on topics they are passionate about; the format has impact on language production. While students consider the message that they want to convey visually in the 20 second time frame, they also focus on the main ideas, relevant vocabulary and pronunciation required to produce natural speech to keep up with the tempo of the presentation style (Ryan, 2012).

In this practitioner presentation we demonstrate how we implemented a student-centered design approach to Pecha Kucha presentations in our blended business English course. We share the exciting process of a carefully managed combination of face to face and online lessons. We discuss how blended instruction provided via technology such as Moodle, google docs and google slides, facilitated guided language teaching, constructive feedback. We present how this process empowered our students to be able to design and deliver, dynamic engaging pecha kucha presentations in the Business English classroom.

## Keywords

presentations, Business English, communication, Pecha Kucha





# The Pustulka Project: Developing Online Testing Software for English for Specific Purposes

**Aleksandra Łuczak**  
Kozminski University  
Poland  
*aluczak@alk.edu.pl*

## ABSTRACT

This is a presentation of PUSTULKA – a web-based testing software for foreign languages. It was originally developed to cater for the needs of ESP teachers. Pustulka emerged as there was no freely available software that would be ideal, mostly because they did not provide a sufficient variety of exercises (i.e. cloze/gapped texts) or let teachers create databases whose content they could use at any institution they teach.

With Pustulka we went even further, and the hidden agenda of the Project was to form a community of teachers that goes beyond the territory of one institution. Within the community teachers would contribute content and share their exercises with the other contributors so that they all benefit from the growing database of exercises, simplifying their own and one another's work and could use the content anywhere they run their courses. Pustulka was created by a two-person team composed of a programmer and an ESP teacher. Pustulka uses MySQL database, is hosted on Linux server (Debian), and has been written in .NET Core 2.0. It works in all browsers and on all devices. Students do not need to create accounts but do the tests on: [pustulka.luczak.edu.pl](http://pustulka.luczak.edu.pl).

Pustulka is a flexible software with which teachers can create various types of exercises that comprise cloze texts, multiple choice, drop down list, check box exercises, matching as well as short and long answers. A unique feature of Pustulka is that it saves all students' answers automatically and eliminates the risk of losing their work when the internet or equipment fail. Pustulka works on a website, so it does not require teachers to download it, to invest in a server or a web domain and is not confined to the premises of one university.

## Keywords

online foreign language testing, web-based language testing, English for Specific Purposes, ESP, legal English



# Going Hand in Hand: Blended Learning and University Students?

**Anna Ayliffe**

School of Languages, Abdullah Gul University  
Kayseri, Turkey  
*grebenkova.anna@gmail.com*

## ABSTRACT

The Language Preparatory School at Abdullah University adopted a blended approach to learning when it opened in 2013. Positioning itself as a third-generation institution. In line with Hockly's (2018) interpretation of blended learning, AGU promotes the use of up-to-date technology and autonomy among its students. The use of Schoology as a Learning Management System (LMS) allows the instructors to change their approach to teaching. This presentation will focus on the case of teaching listening, and here the use of an LMS provides a number of opportunities:

- The flipped classroom approach with a pre-lesson quiz.
- Extensive listening assignments are set online so that students could complete them in their own time by the deadline. The assignments are accompanied by clear instructions and an assessment rubric.
- The material for each lesson is copied onto the students' course page. In addition to the handout that they get in class, students have access to the audio, transcript and keys. In the same way test practice material is also made available online, allowing students continue with their study autonomously.

Despite successfully integrating Schoology into our programme, we are still facing challenges trying to develop students' independent studies. The pre-lesson quizzes are often disregarded. There were attempts to follow the flipped class mode more closely and publish listening tasks and video lectures in the same mode - i.e., to be done before class with a view on consolidating knowledge in class, but the practice proved even more troublesome. However, probably the biggest problem we are facing is that the lesson and test practice materials copied onto the course page for self-study are also overlooked. Analytically, we are able to track student progress/interaction and it is often noticed that the vast majority of online material remained untouched.

As my practice at AGU Prep school has shown, an LMS is a valuable tool in a blended learning approach. It can facilitate the teaching process and as Thornbury (2016) says it allows "the users to set their own learning paths and goals" (p. 31). However, it appears that only if students have enough face-to-face instruction and the right level of motivation, the blended learning approach can make its advantages work and facilitate the learning process.

## Keywords

LMS, listening, autonomous study, flipped classroom

## REFERENCES

- Hockly, N. (2018). Blended Learning. *ELT Journal Volume 72*(1).  
Thornbury, S. (2016). Educational technology: Assessing its fitness for purpose. In M. McCarthy (Ed.) (pp. 25-35).



# Gamification in Education: How Story Can Change the Meaning

**Daniel Pazura**

Westhill Consulting, Poland

*daniel.pazura@westhill.pl*

## ABSTRACT

For most people learning is not a pleasant. In the majority of cases, it is a tedious process that requires a lot of time, commitment and focus to get knowledge. What happens after? At least twice as much effort or even more is needed to consolidate and practise the acquired knowledge. Even students, who study their course of studies of their dream, face the crises resulting from having to go through less thrilling parts of the program. An additional problem for everyone, regardless of their true willingness to get involved in the learning process, may be the issue of having to focus their attention for a long time. This may not be easy considering that one-way activity quickly becomes boring. Equally important is active memorizing, combining facts and drawing conclusions to achieve maximum benefits in the future.

The process of education can be the answer to these needs. A solution that allows you to organize actions according to company's goals. Motivating to improve their competences on an everyday basis in the form of attractive challenges. Individual development adapted to the level of difficulty with the ability to monitor your competences. Intuitive for the user, factual for the superior and comfortable for the trainers. The whole covered by a fictional story, one of the most interesting attributes of gamification. It's time to enter the world of a hero who is experiencing adventures, struggling with difficulties, and the side effect will be your personal development. Because there is a difference in the message "I have to read 100 pages of the book" and in "The pursuit of the legendary Road 66 at the side of beautiful Emma and the fight for every gallon of gasoline" For these reasons we created Development Highway – Route 66.

## Keywords

gamification, storytelling, blended learning, engagement, game mechanic



# Drawing on Social Networks Online and Offline: An Introduction to Surveying Techniques

Alisa Masiejczyk  
University of Warsaw  
Warsaw, Poland  
*a.masiejczyk@uw.edu.pl*

## ABSTRACT

Online surveys have become commonplace, even ubiquitous – they appear daily on popular press websites, where they pick up quick reader feedback and other measures of opinion on articles and new stories; we are also asked to rate usability, reliability, and the like, for online experiences as well as actual consumer products received. Marketers (and later, taste makers) have been gleaning the newest social preferences and opinions, sometimes in unexpected contexts, for years: social media sites collect personality data via mini-surveys, such as ‘which famous painting do you resemble’, ‘what are your mood colors’, to ‘what spirit animal do you have’. Should one want to collect opinions, survey-making tools are also easily accessed, as are hosting sites for such test instruments. In all of this information exchange, not to say chaos, it seems one’s greatest challenge may be to direct people’s attention to the tests. To do so, one may draw upon another online resource: one’s social media circles.

A number of second-year Academic Writing students at ILS did exactly that, in order to create surveys, collect data sets for analysis, and subsequently write essays in English. When asked to survey people (namely family, peers, and acquaintances) on topics of their own choosing, many students elected to access their online contacts for help in completing surveys. Concerning the data collection process (quantity and relative ease of collection, in particular) certain advantages and disadvantages emerged in the student projects, in part resulting from particulars of the online environment. Those who used electronic surveys reasoned that they would save time, above all. However, some students preferred to speak to survey informants individually, knowing they would reach fewer people. In both cases, “social networks” were engaged to provide data, though the choice of online or offline survey style had clear effects on the data types received.

The result, overall, has been a greater awareness of how data collection looks (for planning future projects), and what opportunities and/or caveats may be identified in the collection/analysis of such data. Techniques for formalizing discussion of such data are also a key takeaway of the project. This type of project and feedback process augments a practical introduction to research design and questioning techniques. The presentation discusses selected details about the students’ use of online versus personal surveying techniques, and includes reflective feedback from the student researchers on their projects, whose initial experiences were largely positive.

## Keywords

survey tools, classroom practices, EFL writing, academic writing, questionnaires, online networks



# Telecollaboration in Language Teacher Preservice Education – A Bottom-Up Perspective

Elżbieta Gajek  
University of Warsaw  
Warsaw, Poland  
*e.gajek@uw.edu.pl*

## ABSTRACT (PRACTITIONER PRESENTATION)

The paper presents the results of a telecollaborative project between BA students of University of Warsaw and students of University of Valladolid within European Erasmus + EVALUATE project. The aim of the EVALUATE project is to justify the effectiveness of telecollaborative activities for professional development of future language teachers. The experience confirms that initial intercultural competence is essential for undertaking such project. The experience confirms the need for blending professional preparation of language teachers so that they realize that the teaching methods and pedagogical approaches which are introduced in their pre-service courses are very similar or even the same irrespectively where they get their qualifications. Such blended learning activities are complementary to national teacher training programmes and to Erasmus+ students exchanges.

## Keywords

telecollaboration, teacher training, teaching English, intercultural competences

## REFERENCES

- Gajek, E. (2010). Jawne i ukryte cele współpracy międzynarodowej w programie studiów humanistycznych. In L. Banachowski *Postępy e-edukacji* (pp.113-120). Warszawa: Wydawnictwo Polsko-Japońskiej Szkoły Technik Komputerowych.
- Gajek, E. (2012). Inter kulturowe Q&Qanie polsko-chiński". *EduAkcja. Magazyn edukacji elektronicznej* 2(4), 69-79.
- Gajek, E. (2013). Wirtualna wizyta w Pekini" *Języki obce w szkole* nr 4,113-118.
- Gajek, E. (2014). The effects of Polish-Chinese language tandem work at tertiary level. *US-China Educational Review*, 4(3), 203-208.
- Gajek, E. (2015). Projekty międzynarodowe online w akademickim kształceniu językowym. In M. Srebro, E. Typek, L. Zielińska *Przyszłość nauczania języków obcych na uczelniach wyższych*, Kraków: Fundacja Uniwersytetu Ekonomicznego w Krakowie, 147-157
- Gajek, E. (2017). Students' reflections on communication in Polish-Chinese tandems. In A. Duszak, A. Jabłoński, A. Leńko-Szymańska (eds.). *East-Asian and Central-European Encounters in Discourse Analysis and Translation* (pp. 163-182). Warszawa: ILS.
- Lewis, T. and O'Dowd, R. (Eds.). (2016) *Online Intercultural Exchange: Policy, Pedagogy, Practice*. London: Routledge.
- Ware, P. and O'Dowd, R. (2008). Peer feedback on language form in telecollaboration. *Language Learning & Technology*, 12(1), 43–63.



# The Effects of Blended Learning in India

**Kawar Deep Bedi**

Instructional Designer Consultant

New Delhi, India

*kawardeep@hotmail.com*

## ABSTRACT

In this Practitioner Presentation, various contemporary technologies and approaches utilised to deliver effective, engaging blended learning programs, which provided prodigious results will be elucidated. As an Instructional Designer with substantial experience in storyboarding, content development and course development, there is an array of challenges that still transpire because of the process being extremely dynamic. Delivering an impeccable course that augments productivity is an arduous task. Usually, organisations have different requirements, so adhering to a specific approach or method perpetually can result in the training program being futile. This is why it is indispensable to consider a blended learning environment during instructional designing rather than only a Web Based Training (WBT) or Instructor Led Training (ILT) environment.

A learning program should be comprehensive and should accommodate the needs of different types of learners. One of the most challenging projects as an Instructional designer in India was to develop training programs for Business Process Outsourcing companies (BPO). Training programs that encompass various soft skills (people skills), communication skills, and technical skills required to perform everyday tasks in customer and technical support were required. The underlying purpose of fabricating these training modules was to ameliorate the productivity in these employees and eliminate any egregious, inadvertent mistakes that can impact the business or impede its progress. Topics in soft skills such as conflict resolution, empathy, probing, decision making, building rapport, time-management, active-listening, and team-building were included. Topics in written and oral communication skills, and technical skills that were pertinent to the process were included also. Robust training programs implemented in a blended learning structure that included instructor led training in a classroom, hands on practical training, e-learning courses, short videos for micro learning, simulations and screen capture videos were developed to fulfil expectations. Software authoring tools such as Articulate Storyline, Captivate, Camtasia were used to develop interactive e-learning courses which included branching scenarios, games, and supplementary material. Animation software such as Pow-Toon and Video-Scribe were used to create succinct, concise cartoons which were very engaging and easily accessible through a mobile phone. The classroom training curriculum consisted of a constructivist approach, which encourages learners to find answers on their own and derive palatable, viable conclusions from the information they have obtained. Experiments, group discussions, activities, and role-playing were pivotal elements of the classroom training program which were recorded to watch later on in an e-learning course with an assessment.

Merrill's first principles of instruction theory were applied to practice hypothetical situations in a classroom followed by a branching scenario course which focused on integrating what was learned. It was imperative to keep in mind of the Cognitive Theory and Behaviourism Theory in blended learning. Providing short videos that briefly delineate specific content and providing recognitions of achievement with an accolade or reward concluded in favourable results. Majority of the adept Instructional Designers with extensive experience in any industry, who have practiced blended learning, would agree that multiple techniques and approaches in a blended learning environment are conducive to providing significant results with the learner's retention and assimilation of the content.

## Keywords

experiment, approaches, India, authoring tools, behaviourism, cognitive





A cluster of large, light gray, three-dimensional geometric shapes, primarily triangles and quadrilaterals, arranged in a star-like pattern in the top-left corner.

# **Panel Discussions**

A cluster of smaller, three-dimensional geometric shapes in the bottom-right corner. Some are light gray, while others are a vibrant blue, creating a dynamic contrast.

# Blended Language Learning

## Chair:

**Agnieszka Palalas**

Athabasca University, Canada

*agapalalas@athabascau.ca*

## **ABSTRACT**

Blended language learning (BLL), a subarea of blended learning (BL), is an emerging area of practice and research. BLL has quickly become of paramount importance in language teaching around the world in the 21st century (Grgurović, 2011; Shelley, Murphy, & White, 2013; Viberg & Berg, in press; Palalas, in press). BLL was originally defined as combining face-to-face and online learning instruction, with the aim to facilitate students' language learning: "in ELT 'blended learning' is the term most commonly used to refer to any combination of face-to-face teaching with computer technology (online and offline activities/materials)" (Tomlinson & Whittaker, 2013, p. 12). According to the International Association of Blended Learning (IABL, 2015), blended learning is defined as "an educational approach, which integrates face-to-face classroom practices with online and mobile delivery methods." Mobile learning has indeed become an increasingly common component of the blended learning ecosystem, often indispensable to the success of the blended learning process and outcomes. Blended learning literature also refers to blending various pedagogical approaches (Hwa, Wee & Len, 2012; Nissen & Tea, 2012). Palalas (2015) proposed that BL is a purposeful blend of the following elements of the learning ecosystem: location and time (contexts); delivery method; pedagogical approaches; technologies; materials and artifacts; roles of learners and teachers; formal and informal learning. In this panel, BLL experts from diverse international contexts revisit the definition of BLL and share case studies supporting their perspective.

## **Keywords**

blended language learning, BLL definition, BLL pedagogy, BLL technology, BLL practice

## **REFERENCES**

- Grgurović, M. (2011). Blended Learning in an ESL class: A case study. *CALICO Journal*, 29(1), 100-117.
- Hwa, S. P., Wee, P. S., & Len, L. H. (2012). The effects of blended learning approach through an interactive multimedia e-book on students' achievement in learning Chinese as a second language at tertiary level. *IJCALLT*, 2(1), 35-50.
- IABL (2015). The International Association for Blended Learning: IABL Definition of Blended Learning. Retrieved from <http://iabl.teiemt.gr/about-us/>
- Nissen, E., & Tea, E. (2012). Going blended: New challenges for second generation L2 tutors. *Computer Assisted Language Learning*, 25(2), 145-163.
- Palalas, A. (in press). Blended language learning: International perspectives on innovative practices.
- Shelley, M., Murphy, L., & White, C. J. (2013). Language teacher development in a narrative frame: The transition from classroom to distance and blended settings. *System*, (41), 560-574.
- Viberg & Berg (in press). Blended Language Learning: A Thematic Overview of the Most Highly Cited Research. In A. Palalas (Ed.), *Blended language learning: International perspectives on innovative practices*.
- Whittaker, C., & Tomlinson, B. (2013). *Blended learning in English language teaching: course design and implementation*. London: British Council.



# Using Technology in Blended Learning

**Chair:**

**Joe Ganci**

eLearningJoe, LLC, USA

*joe@elearningjoe.com*

**ABSTRACT**

Bring your questions for our panel of experts! We will be asking our experts when technology makes sense and when it does not. Furthermore, incorporating certain technological solutions promotes learning and interaction in some settings and not others. In other words, technology can help people learn but it can also distract learners from engaging with the material and with others in an effective way. Come learn and ask about:

1. When it makes sense to introduce eLearning, online training, video and other media into a blended learning course.
2. When and how to introduce eLearning: what are its advantages and disadvantages?
3. What works best in a classroom, in one-on-one mentoring and synchronous online and in asynchronous eLearning.
4. Anything else you care to ask.

**Keywords**

learning, eLearning, video, classroom, training, synchronous, asynchronous



# Pedagogy Shift in Blended Learning - Trends and Challenges

## Chair:

**Avgoustos Tsinakos**

Eastern Macedonia and Thrace Institute of Technology, Greece

[tsinakos@teiemt.gr](mailto:tsinakos@teiemt.gr)

## **ABSTRACT**

Topics to be discussed:

- New trends in technology-enhanced learning
- Pedagogy challenges when employing blended learning in the classroom
- Guidelines for successful blended learning sessions (do and don't)
- Best practices of blended learning classes

## **Keywords**

pedagogy, blended learning, technology-enhanced learning





# Posters



# The Secret is in the Blend - Promoting Digital Literacy Through the Use of a Global Project

**Tal Levy**  
Ruppin Academic Center  
Israel  
*tallevy@ruppin.ac.il*

**Karen Eini**  
Ruppin Academic Center  
Israel  
*karene@ruppin.ac.il*

## ABSTRACT

In our college preparation courses, in EAP (English for Academic Purposes), many students lack computer literacy. These students often come from homes in which there are no computers and therefore need knowledge of digital tools, blended learning experience as well as English skills. We ensure that they gain access to all via a unique program we have developed for this matter in cooperation with our (EAP) department.

Among the most effective digital materials, we use is the 100 People Project. This project focuses on ten global issues, which affect the lives of all global citizens: food, water, transportation, energy, health, shelter, education, economy, waste, and war. "Having digital literacy requires more than just the ability to use software or to operate a digital device; it includes a large variety of complex skills such as cognitive, motoric, sociological, and emotional that are necessary for the effective use of digital environments (Eshet-Alkali & Amichai-Hamburger, 2004, p. 421). We have developed a semester-long teaching program based on these focal issues, and require students to choose one issue, research and present it. Technology, in general, today, is acknowledged as a key element to learners' autonomy and mobile devices are not less important in this respect. As Peacock writes, "...teachers now adapt...empowering students by giving them access to a wide range of web-based tools that allow them to publish work and engage with live audiences in real contexts."

We have found that the focus on relevant global issues is extremely motivating. Our students gain proficiency in digital skills as well as the English language. Moreover, they receive an opportunity to study in a blended learning environment, an experience which will serve them throughout their academic journey. The learning experience becomes more meaningful, as students are empowered in this learner-centered approach as they focus on their particular areas of interest and select their own reading materials in English.

In our poster presentation, we illustrate the process of this student-centered project. We demonstrate how the students develop skills to learn autonomously via blended learning assignments, as well as the profound process students, undergo. We will show samples of students' projects as well as their reflections on the entire process.

## Keywords

blended learning, learner autonomy, digital literacy, language proficiency, global issues

## REFERENCES

- Eshet-Alkali, Y. & Amichai-Hamburger, Y. (2004). Experiments in Digital Literacy. *Cyber Psychology & Behavior*, 7(4), 421-429.
- Peacock, M. (2013). Forward. In G. Motteram (Ed.), *Innovations in learning technologies for English language teaching*. British Council, p. 2. Retrieved from [http://www.teachingenglish.org.uk/sites/teacheng/files/C607%20Information%20and%20Communication\\_WEB%20ONLY\\_FINAL.pdf](http://www.teachingenglish.org.uk/sites/teacheng/files/C607%20Information%20and%20Communication_WEB%20ONLY_FINAL.pdf)
- Warschauer, M. (2007). The paradoxical future of digital learning. *Learning Inquiry*, 1, 41-49.





# Adult Literacy Mobile Learning Solution in a Blended Learning Context

**Przemyslaw Pawluk**  
George Brown College  
Toronto, Canada  
*ppawluk@georgebrown.ca*

**Agnieszka Palalas**  
Athabasca University  
Athabasca, Canada  
*agapalalas@athabascau.ca*

**Norine Wark**  
Athabasca University  
Athabasca, Canada  
*norinewark@gmail.com*

## ABSTRACT

Recognizing the risks of pervasive low adult literacy levels amongst Canadians and globally, our research project aims to design a mobile learning solution to support literacy training for adult learners in a blended learning context. This mobile solution will equip such learners with language and digital literacy skills needed to thrive in their communities and workplaces. After providing a short background on the current state of adult literacy in Canada, this poster introduces the SSHRC-funded Design-Based Research project that our team of mobile learning, adult literacy, and mobile technology experts is currently engaged in to produce this mobile learning solution. Part of this solution includes the development of an app prototype, *PowerUP Literacy*. The poster summarizes findings from initial rounds of study incorporating literature reviews, interviews with global literacy and mobile learning experts, and focus group discussions with adult literacy learners and experts. New findings from the latest round of data gathered from adult literacy learners and experts who tested the first PowerUP Literacy app prototype include mobile end-user and mobile learning profiles, the most and least appreciated features of the app, future app options that might enhance app features or extend learning opportunities, and any logistical or technical issues that need to be addressed. Salient findings from this new round of study are juxtaposed in this poster presentation with previous findings from earlier rounds of study to offer the most current cumulative report on the project to date. The poster also provides a succinct review on the definitions for mobile literacy design principles derived from research activities undertaken thus far. This includes the identification of three pedagogical design themes, principles, and key concepts. Relevant findings from the latest round of study are also considered within the context of these design themes, principles, and concepts. The final section of the poster summarizes project findings to date and discusses plans for further research. Literacy experts at various types of post-secondary institutions are now completing a final review of the first PowerUP Literacy app prototype, which will yield further recommendations for developing a mobile literacy solution that meets the needs of mobile adult literacy learners within their unique situational learning contexts. Future rounds of study with larger groups of literacy learners and experts will review the second PowerUP Literacy app prototype, and enable the project to draw significant conclusions about mobile adult literacy learners, their instructors, and this mobile literacy solution.

## Keywords

blended learning, adult literacy, mobile learning, Design-Based Research

## REFERENCES



## SPONSORS & PARTNERS



personel&zarządzanie



ISBN 978-618-82543-3-6



9 786188 254336