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CONTEXT-APPROPRIATE IMPLEMENTATION OF BLENDED LEARNING IN HIGHER EDUCATION IN WESTERN BALKANS

Preliminary communication

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Abstract

This paper discusses the challenges of context-appropriate implementation of blended learning in contemporary higher education. The faculty analyzed is of economics and management. Having in consideration that the 21st century professors are facing a continuous challenge to co-create a learner-friendly class environment, and maximize the educational outcomes, special attention has been paid to the blend composed for contemporary teaching, learning and communication; accompanied by existing ICT disruptive technologies and E-learning platforms, combined with the traditional educational processes and vehicles. Crucial challenge in this context is designing the optimal mix of applicable disruptive technologies, having in mind constricted funding, high competitiveness in the higher education, specific student profile etc. The blended learning ‘mashup’ investigated from theoretical and practical point of view has been sustainably implemented in a Western Balkan’s higher education institution for several academic years. Some key findings and lessons learned in this context are presented further in the paper.

Keywords: blended learning, instructional technologies, educational management

1. INTRODUCTION

The immense ICT progress leads to inevitable changes in the socio-cultural and socio-technical environment, causing tectonic movements in the communication and collaboration tools and human behavioural patterns. It is of crucial importance to understand that these changes affect people's everyday behaviour, and their behaviour in working and learning environments. In information-rich, creative world with shifting mindsets, "we are active agents in value co-creating service systems" (Vargo, Maglio, & Akaka, 2008), being able to grow together, with appropriate socio-technical setup.

Higher Educational Institutions (HEIs) are perfect places where the last chance to equip young adults with what is needed in terms of knowledge, skills and competences for the real world, and it is at teachers' discretion. (European Commission, 2005) (European Commission, 2008) (European Commission, 2015a).

The objective of contemporary higher educational instructor, that is the focus of this research, is to provide up-to-date, modern, free of charge and accessible channels of instruction, communication and collaboration with the students. That inevitably leads to effective learning outcomes as well as improved cognitive skills, generic competences, personal capabilities, technical abilities, awareness, ICT and language skills, digital literacy, and in general, communication and transferable skills (European Commission, 2015a) (Rees, Forbes, & Kubler, 2006).

Contemporary mobile students enjoy the benefits of globalization and are completely capable to compare the instructional methodology applied in universities worldwide – to demand something similar from their home universities. Students nowadays have increased expectations regarding the instructional methodology used in the educational processes, since they extensively apply it in everyday lives, completely aware that it is not too difficult for the instructors to adopt it and apply it in the instructional processes. According to the motivational theory of expectancy (Vroom, 1964), student's learning motivation could be significantly decreased if professors and instructors keep to the traditional 'ex-cathedra' teaching only, and practice mainly conventional methods and forms of communication, teaching and assessment. Practice offers extremely positive effects when the instructors are flexible enough to understand the needs of the contemporary student and make efforts in terms of providing the student-friendly environment, though utilisation of E-platforms for communication/collaboration, and blend it with the instructional methods that are traditionally used in higher education.

In designing the research approach, the generic student profile has been defined, and major highlights in this context are the following: typical student of XXI century is a representative of Net-generation. The traits of the Y-generation are somewhat different than their teachers'. Their calling is to work collaboratively, creatively, innovatively, constantly challenging pedagogy, teacher-centred approach towards learner-centred one, their global touch

introduces norms as freedom of thought, movement, speech, action; they tend to customize, personalize, mix, integrate entertainment, play and work. Along with their predecessors (who continue lifelong learning practices) the X- and Y-generation are considered as a value co-creators. (Hobart, 2014)(Seppanen & Gualtieri, 2012)(Rendell, Michael, 2011)(Next, 2010) (Login et al., n.d.).

We are investigating a HEI in Western Balkans, in the field of economics and management. The instructional design in the country of interest adheres to ECTS principles and national regulations (European Commission, 2015b), attempting to incorporate lectures, examinations, projects, collaborative work, class participation, presentations, group and team work, as well as the appropriate personalized grading according to diverse groups ranging from 5 to 200 students.

The methodology applied in this context, that enables continuous adaptation to changing environment while facilitating open socio-technical system towards goals, is Petrevska Nechkoska's Tactical Management Information Systems and Adaptability method (Petrevska Nechkoska, Poels, & Manceski, 2016) based on Haeckel's Sense-and-Respond framework (Haeckel, 1999) accompanied with Mojsovska Salamovska's work on performance measurement in non-business organisations (Mojsovska Salamovska, 2015), based on Balanced Scorecard Model (Kaplan, 2010).

When observing the performance measurement in context of higher education of economics and management, the Balanced Score Card perspectives has been taken in consideration (Kaplan, 2010), as a contemporary model that takes in consideration four major perspectives in integrative manner, in order to achieve maximum organisational performance. The student perspective is observed as a customer perspective, and in the context of student-centred learning, this is a major perspective that needs to be seriously taken in consideration. Next, the processes perspective has been integrated with the financial (fiduciary) perspective, in terms of identifying effective and feasible solutions at minimum or no costs, due to financial limitations caused by fiduciary nature of state education; and last but not least, learning-and-growth perspective has benefited since the main objective of the project has been to address the learning and growth of all stakeholders, with primary focus on the students.

The main purpose of system design (red arrow in Fig.1) is to communicate/collaborate effectively according to student's profile and expectations. The adaptability engine of the Sense-Interpret-Decide-Act Loop has been providing continuous sensing on the successfulness of the project, allowing proper facilitator action.

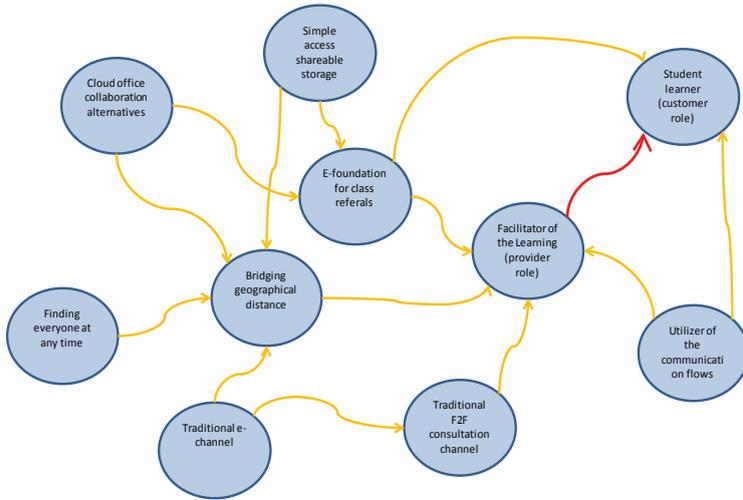


Figure 1 System design of Roles-and-Accountabilities for free Electronic/Traditional Mashup in Higher Education

Source: Authors' research

2. THE MASHUP OF E-PLATFORMS - A MODEL OF BLENDED LEARNING INFRASTRUCTURE

In the theory and practice, the terms *blended learning* and *hybrid learning* are often used interchangeably, and sometimes no clear distinction could be made between them. According to Bonk and Graham, the blended learning system is a combination of face-to face instruction and computer-mediated instruction. The Sloan Survey of Online Learning defines the blended learning as a “course that is a blend of the online and face-to-face course. (Means, B, Toyama, Y, Murphy R, Baki M, 2013, p. 5).

In the context of this research, one of the most acceptable definitions that reflects the research approach and the content is the following - blended learning is a pedagogical approach that combines the effectiveness and socialization opportunities of the classroom with the technology enhanced active learning possibilities of the online environment. It is a concept that fundamentally redesigns the traditional instructional models, and following key characteristics are emphasized: (Dziuban, C, Hartman J, Moskal P, 2004, page 3)

- a shift from lecture to student-centered-instruction, in which students become active and interactive learners;
- increasing the interaction between student-instructor, student-student, student-content and student-outside resources, and

- integrating the formative and summative assessment mechanisms for student and instructor.

The term ‘mashup’ in this context’ describes the approach that combines and integrates diverse digital and traditional communication/collaboration channels, platforms and tools to serve a single purpose – effective communication/collaboration with the user, that further maximizes the learning performance. This term has been derived from web-development terminology, and denotes “something created by combining elements from two or more sources as a web-service or application that integrates data and functionalities from various online sources” (Merriam-Webster, 2016). In this case, the relevant environment is the Higher Educational Institution, the Teacher is a provider (facilitator), and THE Student is a collaborator (customer).

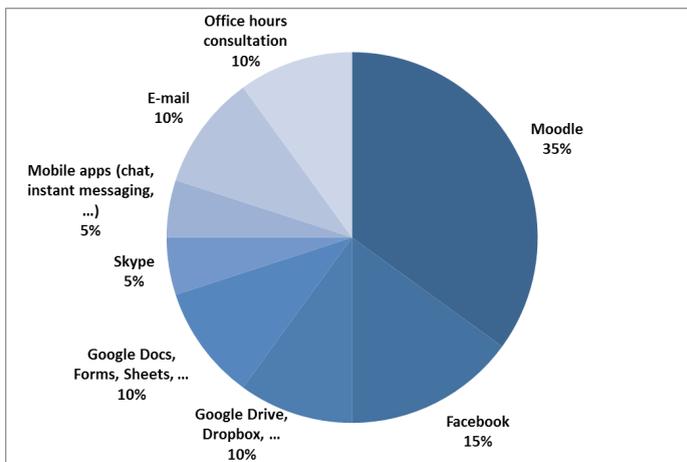


Figure 2 Mashup of E-platforms and traditional channels used in the project per each class/purpose

Source: Authors' research

The actual Mashup (Fig.2) consists of E-platforms and traditional channels: (1) Moodle as an E-learning platform, has been set up as a part of a master thesis project (Petrevska Nechkoska, 2012), mainly used for placement of materials and asynchronous, usually one directional teacher-students communication; as well as bi-directionally through student assignments, forums and other activities. The need for fast, immediate communication where confirmative response was expected (2) has been addressed by creating closed Facebook groups per course. The necessity for (3) storage space, (4) polls, collaborative writing and asynchronous remote project work has been satisfied by using the Google Drive, Sheets, Forms, Docs, and similar tools. Skype (5) served as a synchronous remote team communication and (6) free mobile apps for instant messaging have been used for urgent matters. All of these complemented the already used channels of E-mail correspondence (7) via

official/unofficial E-mail addresses and (8) teaching and contact hours, as well as the consultations person-to-person on-campus. Fig.2 illustrates the model of participation and communication/collaboration per channel according to the teachers who deployed this approach (time spent for each course, on the specific communication/collaboration channel). The timeline for the introduction of the mashup is described in Fig.3.

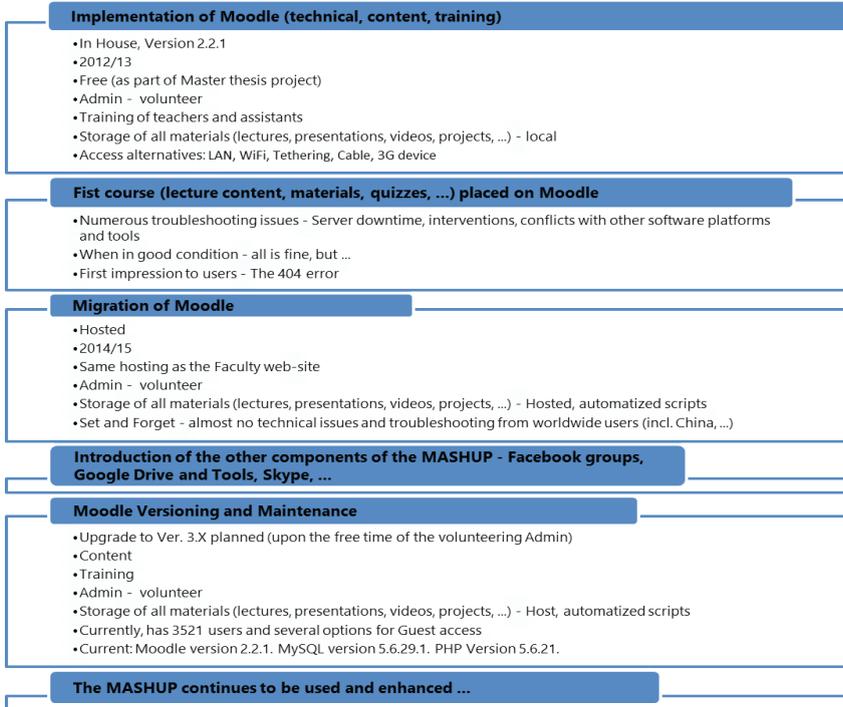


Figure 3 Timeline for mashup introduction

Source: Authors' research

The actual implementation of E-platforms has a significant impact on improving the academic and administrative processes at universities. It reduces the activities related to typing, printing, publishing of materials; keeping course archives etc. It minimizes the use of paper and/or saving space for keeping the records and assignments. From managerial point of view, it has a positive impact on rationalization of number of working hours and/or employees (such as junior teaching assistants, administrative staff etc) and overall organisational performance of educational institutions.

2. KEY BENEFITS AND CHALLENGES FOR STAKEHOLDERS OF APPLYING THE ELECTRONIC/TRADITIONAL MASHUP

The specific approach described in this project, has been deployed by professors/lecturers at the Faculty of Economics in Prilep, at University of “ St. Kliment Ohridski”, Bitola.

Introduction of E-platforms, individually, or as a blend/mashup, brings benefits and challenges for the students, and the instructors. The starting point in designing the *optimal mix/blend* of E-platforms and traditional channels aimed for students is their availability, and the frequency of usage by the students and teachers (instructors).

Why emphasizing the “optimal mix/blend”? Insisting on use of single platform, such as Moodle (Benta, Bologa, & Dzitac, 2014) (Kwok, 2014)(Beatty & Ulasewicz, 2005) (Wang, Li, & Gu, 2004), is more convenient for the instructors – it requires managing a single site. But, having in consideration that it is linked with accounts creation, registration of users and other technical activities, it steel requires a lot of coordination until all the students in the groups(200+) get their Moodle user-accounts and a necessary training on how to use this platform.

However, the educational and communication effectiveness is being significantly increased if this platform is accompanied by another one, ex. Google Docs, Google Classroom, or a combination of several platforms. This is extremely useful in terms of working on group assignments, enables creation of documents and forms for research support, and it is a perfect tool for data gathering and analysis, which saves the students from a lot of workload, enabling to pay greater attention to the analysis and interpretation of information, stimulating creative and critical thinking, instead of performing time-consuming routines related to the research processes.

The combination of Moodle and Facebook, for instance, rapidly increases the effectiveness of communication (Reuben, 2008), because vast majority of students have Facebook profiles, which enables to create closed groups for the courses, even without getting connected via this network privately, in order to protect students’ and instructors’ privacy. So, Facebook has been successful for sharing links and useful and short information. But for further communication, uploading the attachments, keeping the course archives, Moodle would be an extremely good solution.

One of the greatest benefits from the mashup of platforms is that it enables achieving the educational objectives by emphasizing the creative stages of the research, and also, incorporating the research projects in the student’s assessment. Students are capable to complete quality research projects and present their results in their examinations, something that could not be achieved in a traditional classroom in a single semester.

The main **benefits** of utilization of electronic/traditional Mashup in context of blended learning are the following:

- Easy access at no costs via various vehicles, even smart phones
- Course privacy can be significantly increased, by adjusting privacy settings of the group. Various content could be shared/exchanged, aimed for the specific course or a group of students, which leads to higher quality communication between the instructor and the group
- Increased effectiveness of team work in a virtual environment
- Maximizing student's engagement, participation and interaction (generating virtual discussions, pools)
- Enabling remote students (learners) to actively participate in the educational processes, being virtually included, even assessed and graded
- Instant communication and getting feedback, real-time student \leftrightarrow instructor communication, effective and easy delivery of information and additional course content;
- Opportunities for students to actively participate in adjustment/customization of the course with suggestions, content,...
- Valorisation of extracurricular activities of students and additional workload
- Easy course evaluation, getting valuable feedback for next course instances
- Increased overall student satisfaction

The main **challenges** in mashup application in educational practice in the context of this research project are categorized as (1) technological/organizational and (2) mindset shift.

One of the issues for getting the functional e-learning platform was migrating from in-house Moodle maintenance towards hosting. The conflicts among the various free, licensed, open-source applications throughout the first year of implementation have generated significant downtime of the application server that needed to be frequently restarted. User access attempts resulted with frequent '404 error' which proved problematic for future growth and reference of the e-learning platform. The hosted option accomplished 'set-and-forget' because the engagement in technical troubleshooting has reduced to 5%.

Another important challenge when administering platforms for 250+ new users per academic year in different courses is how to acquire, generate and communicate user-accounts and manage access privileges. Initially, it started with automatic generation of user accounts for all newly enrolled students receiving official faculty e-mail address; and individual enrolment according subject lists. This proved inefficient, because the students didn't quite use the faculty e-mails and had hard time adjusting so, even though professors urged them. This activity resulted with many Moodle dormant accounts that have been duplicated with private emails afterwards. Following years the process was more needs-based and the user-accounts were generated with any active E-mail account (Fig.4).

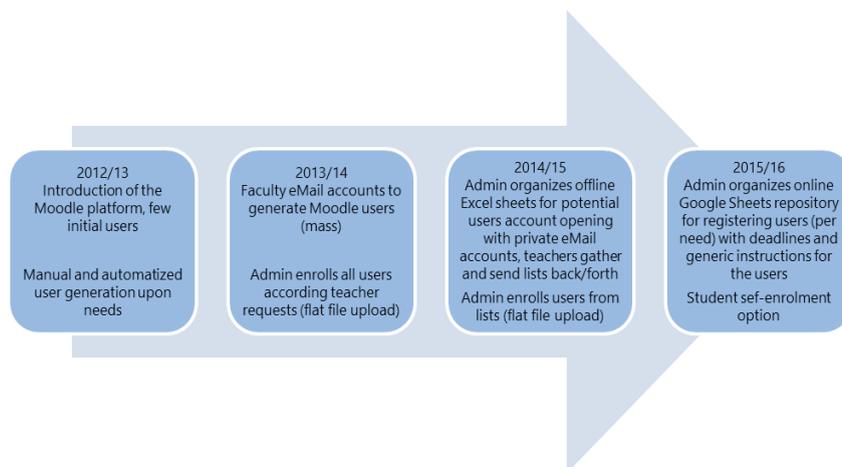


Figure 4 Moodle user-accounts troubleshooting timeline

Source: Authors' research

The hardest obstacle to cross appeared to be the mindset shift, and to motivate and convince the professorial staff to utilize the potential of the electronic platforms. At the time the pilot project was implemented, at the first cycle of studies (undergraduate), 6 out of 80 courses officially utilized some of electronic platforms mentioned. Second cycle recorded no use of single platforms and/or mashup, and the third cycle studies (PhD) had 4 subjects using e-platforms (out of 7 possible). For a comparison, the international PhD studies at the third cycle recorded 9 out of 12 possible subjects (i.e. their respective lecturers) using the electronic platforms. The increase of use was recorded mainly at the 3rd cycle of university studies (57%), especially the international double-degree doctoral program, with international lecturers employed (75%), being already familiar with the integrative usage of remote communication and collaboration platforms. Students, as representatives of the Net-generation, had very swift-shift towards use of e-platforms. Communication via Facebook, on the other hand, was a significant challenge, both for students and teachers, due to the difficulties in private/professional networking.

As a formal indicator for the perceived quality of teaching and course organization, that could be linked with blended learning implementation, it should be emphasized that the professors that implemented not only a single E-platform, but the integrated Mashup at their courses (2 out of 3 lecturers, with total of 5 out of 6 undergraduate classes using e-platforms in integrative manner), received significantly higher evaluation scores from the students, compared to the institutional average at a Faculty level, in the official University student assessment (targeted at professors, academic programs, quality of teaching and learning, etc) (Faculty of Economics Prilep Macedonia, 2015). (150-200). Also, these teachers had highest number of students on their elective courses (Fig.5).

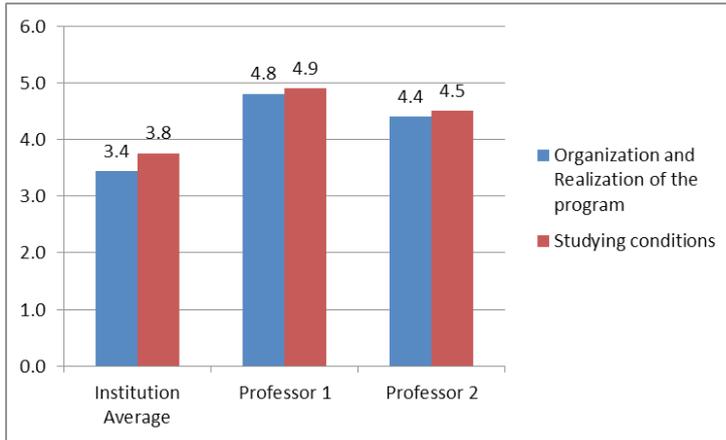


Figure 5 Self-evaluation grades from students at institutional level
 Source: Authors' research

The feedback gathered from the students through course self-evaluation conducted as a course follow-up by professors, using a method of anonymous on-line survey, has been remarkable. "Reachable, accessible, purposeful, fruitful, up-to-date, motivational, 'cool', collaborative, supportive, open, funny..." – were only several of the attributes expressed by the students. This was a kind of verification, but also a future communication line that students maintained; motivational gatherings or just keeping in touch with lecturers who made the effort to talk and walk in their shoes.

The future brings challenges for sustaining and multiplying the use of these ideas in various other contexts. The principles of this electronic/traditional Mashup can be further expanded for use in other spheres, such as lifelong learning systems, primary and secondary education, adult learning etc.

3. CONCLUSIONS

The benefits of blended learning implementation in higher education of economics and management exceed the obstacles and/or impediments for implementation. In this project, special attention has been paid to the usage of E-platforms that are offered free of charge, in order to emphasise that the financial limitations, often overestimated by managerial structures as major obstacles in terms of feasibility of certain projects, are not necessarily the main obstacle for implementation. In this case, the mashup of electronic platforms could be easily applied at no cost, and maximum effectiveness and satisfaction could be achieved for all participants. It is the human factor that is crucial in this context, and the standpoint in measuring performance in education. We are continuing the research in the next academic years, promoting the mashup for further uptake, especially from the side of the lecturers. The students have

almost no problems with the mashup configuration because it provides them 24/7 access to information, bi-directional communication channels along with the traditional means. Future research would be challenged with the reasons for lack of proactivity on the lecturer's side to combine ICT technologies with traditional approaches both in the instructional design and in the communication channels, in Western Balkans context. Another issue of great interest is the comparison of the developed/developing countries systems that cultivate a culture of progress in socio-technical terms, and determining which parts of the system design of roles-and-accountabilities for electronic/traditional mashup in higher education need to be improved, in order to ensure that the systems would accomplish their purpose.

The performance of contemporary education must be assessed by implementation of comprehensive methods and models that incorporate all relevant perspectives, and emphasizes the student's perspective above all. Blended learning is an excellent concept that enables to achieve maximum effectiveness at minimum costs, which is a classical generic definition of performance. This problematic should be incorporated in upper-level strategic documents in higher education, and it should capture the attention of upper university managerial levels. Successful uptake of blended learning model on organizational level requires significant organizational commitment, top-down initiative, decision and management. Otherwise, it would remain a matter of intrinsic motivation of academic staff.

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