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## THE USABILITY EVALUATION OF UNICAMPUS – THE ROMANIAN MOOC

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### Summary

Society expects from the educational system to provide a new type of worker able to learn independently, online for their entire life – the new open lifelong learning student, but the traditional higher education is not equipped for this. Recently one possible solution was the development of MOOCs (Massive Open Online Courses). While in Europe the MOOCs development is still behind the North American ones, in Romania they are non-existent. Started in 2014 the development of Romanian MOOC – UniCampus – by the Politehnica University of Timisoara is now the final phase. This paper presents the usability evaluation performed over UniCampus with expert and students' evaluation. Based on this evaluation, UniCampus was further developed and enhanced and is now running more courses.

### Introduction

Since 2008 (Siemens & Downes, 2008), but predominately since 2011, MOOCs have become one of the major instruments of both innovation and disruption in instruction, especially in higher education. If anything, MOOCs have opened the eyes of many tutors and policy makers, encouraging them to start rethinking how courses are delivered to students.

Some universities professors are using MOOCs in a successful symbiosis with their traditional courses, embracing blended learning or the flipped classroom concept (Bruff, 2013). This has usually occurred when the course developers and tutors of the MOOCs were also the ones who had been teaching the traditional course (Ghadiri et al., 2013). This idea of giving students more opportunities to work collectively is certainly engaging and relates to the new methods of teaching STEM subjects and new approaches to engineering education (Holotescu et al., 2014; Vasiu & Andone, 2014).

### The Romanian MOOC

These ideas generated several new developments of online education in Europe, mainly funded by European Union and some implemented successfully (Jansen, 2016)

In Romania learning with ICT or online support have seen a strong development in recent years most universities having their courses on e-learning platforms mainly of Moodle or

other open source environments (Vasiu & Andone, 2014), but only after login in with an affiliate student or teacher account. In the same time the Internet penetration in Romania is now up to 65%, the mobile internet use doubled in the last year and its broadband speed situated Romania on top 1-3 in the last 2 years (InternetWorldStats, 2015). In this context access to open and flexible education in Romania as well as a common spread of use of OER is becoming a priority for Romanian education.

Since 2014, the Politehnica University Timișoara had the initiative to create and offer the first Romanian MOOC. The initiative received the name of UniCampus and is intended as an independent platform used by several Romanian universities. Based on previous experience the UNICAMPUS MOOC platform is developed internally by the university team, as a Moodle based LMS and we've argued our choice mentioning Moodle's integration of learning analytics and social media, as well as its familiarity in the Romanian Higher Education. Using an existing platform which already meets the access control and analytics requirements is one way to obtain an effective delivery system for MOOCs. As we have seen, social media is a powerful tool when working with MOOCs, and Moodle integrates most of these recommended tools. With the appropriate configurations and tweaks, and with a minimal integration with some of the most popular social networking platforms in use today, Moodle can successfully play this role. (Ternauciuc & Mihăescu, 2014)

### **The development of UniCampus**

The development phase was based on a research methodology combining the ADDIE model with the Socio-cognitive Engineering concept developed by Mike Sharples. The resulted model (Figure 1) was evaluated by experts and students and the results influenced the Implementation and Deployed System of UniCampus.

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[illegible]

As at this moment the UniCampus is offered only in the Romanian language, we briefly describe the structure. In the upper part of the screen there is a menu containing sections for Courses, About, Universities and Contact as seen in Figure 2 and in the upper right corner the Log in/ Register buttons.

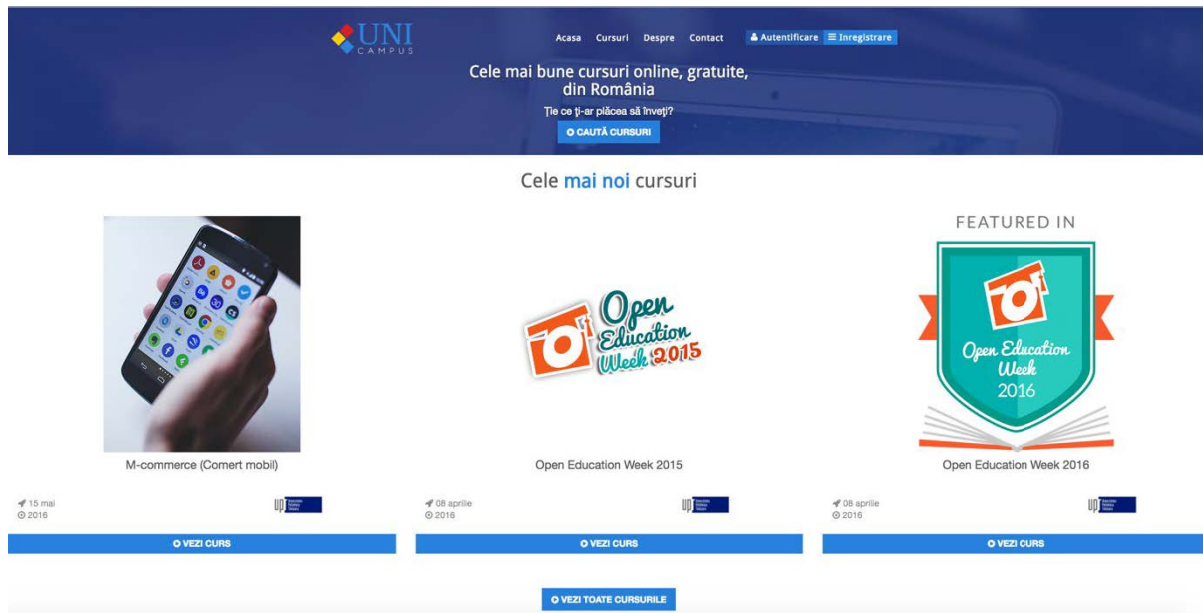


Figure 2. UniCampus online structure

A search through courses option is available and two slide shows can be seen in the middle of the screen, one for partner universities and one for courses. The courses have some important information displayed, such as the title, the university, the starting date and a representative thumbnail. As social media connections are considered important links to Facebook, Twitter, Google+, Pinterest, Flickr and LinkedIn were inserted in the platform. Accessing one of the courses either from the main page or from the courses list sends the user to the *Course Intro Page* where detailed information about the course are presented, like course title, university, tutors, course description, course requirements and course trailer. In this page, the user can see if the course has any fees or any credentials the number of weeks, the number of estimated hours/week and the type of credentials offered after finishing. After carefully analysing this information the student can enrol into the course or share this page on social media.

The platform was built on the Moodle 3.0 version, updated recently on Moodle 3.1. (Moodle, 2016). This version combines popularity with efficiency offering enhanced options for installing plugins, four new quiz question types (Select missing words, Drag and drop into text, Drag and drop onto image, Drag and drop markers), tagging and course editing improvements along with a number of other welcomed features (Figure 3).

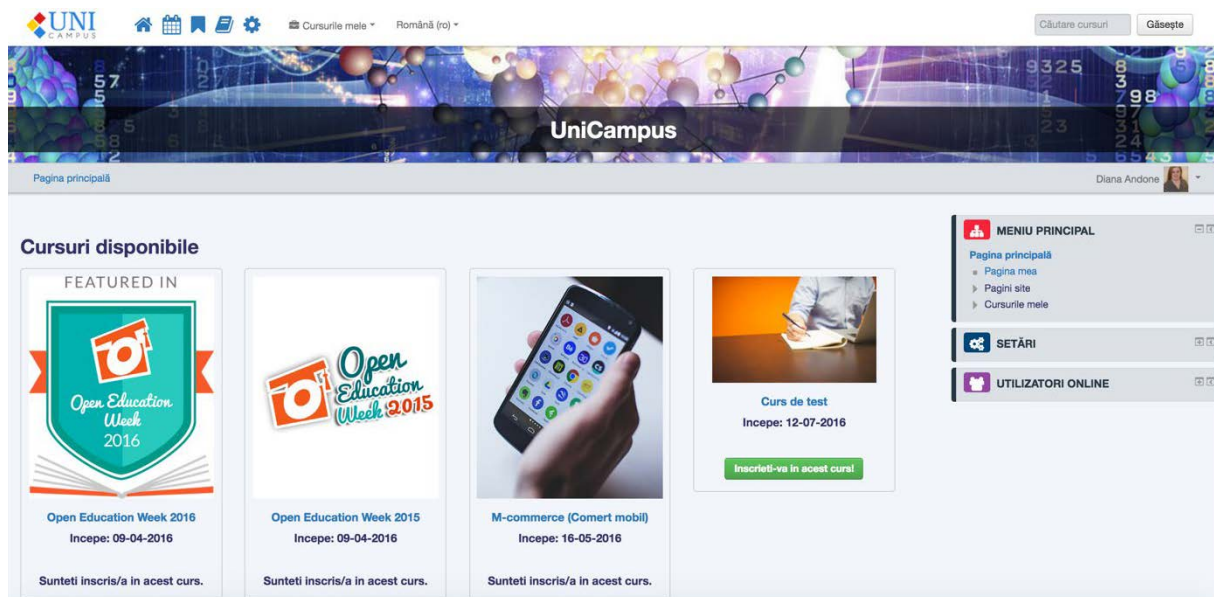


Figure 3. UniCampus Moodle structure

### Evaluation of the UniCampus

The UniCampus evaluation was on a pilot course based on educational resources presented during the Open Education Week 2015 event hosted by the Centre for e-Learning (CeL) of the Politehnica University of Timișoara (OEW, 2015). We will refer in this paper to this course as the OEW2015 Demo course.

Fin the first course page, the user is able to see: information about the course (guideline, structure, syllabus, grading system, tutors), the pre-course questionnaire, the different weeks of the course, each in a separate section, the course wiki, bibliography and links, discussion forum (with separate topics for each week), glossary, document sharing, FAQ/Help section, student handbook, to-do list, virtual programming lab, meet up tools (virtual study room and video conference), the final exam and the post-course questionnaire. In the right side of the screen one can have quick access to the to-do list tool, the course completion status, the course calendar, social sharing options, upcoming events and the badges that one has earned. The *SocialShare* plugin allows the presence of a Social Share block, which has the possibility of Facebook like and share buttons, Twitter button, Google+ share button and StumbleUpon share button. This is possible, of course, if the creator of the course allows the content to be public and to be shared on other websites. The *Virtual Programming Lab* module is an activity module that manages programming assignments. It enables the possibility of editing program source codes in the browsers and students could run interactively programs in the browser. One could run tests to review the programs. The module also allows different searches for plagiarism between site files and can put restrictions into pasting external text. For the meet-up tools we have installed and customized the *Video conference* plugin and *WizIQ: A Virtual Classroom* plugin.

## Experts evaluation

The UniCampus evaluation comprises two phase, one is the evaluation of several experts in the fields of education, education technologies and e-Learning, the other is students' evaluation. Both evaluations were performed using questionnaire, the Microsoft usability test and a desirability test (Andone et al., 2009).

The expert's evaluation over the UniCampus demo platform and the OEW 2015 Demo Course (Figure 4) was a very positive one, offering a strong argument for its validity.

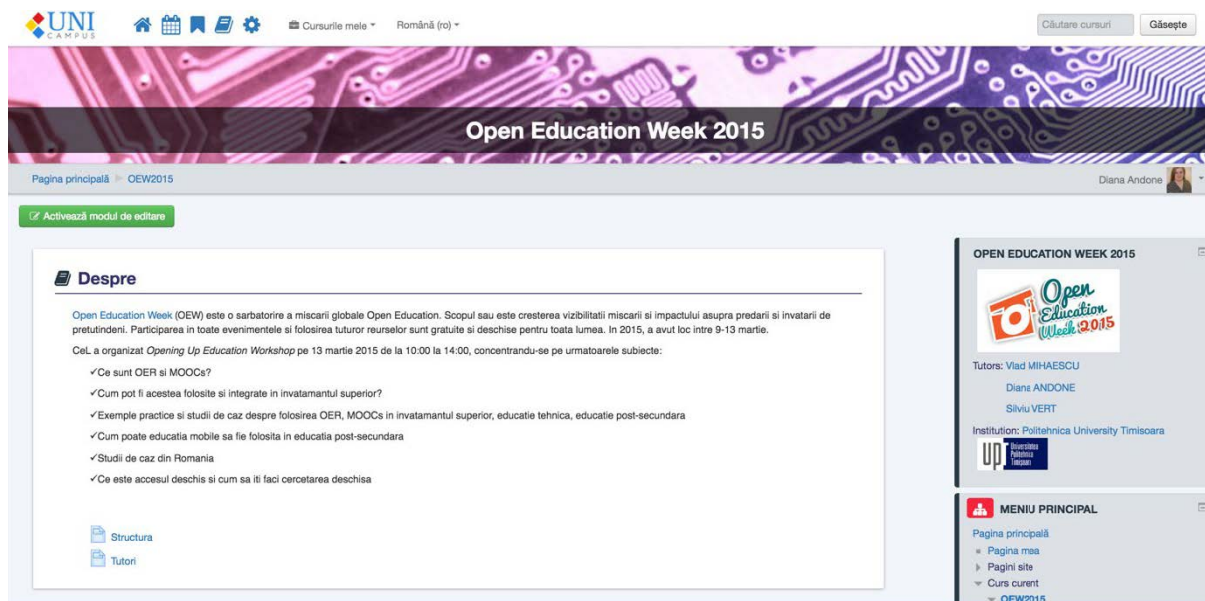


Figure 4. UniCampus OEW 2015 Demo Course

There were, however, several observations into details that the experts considered should be modified for creating a more efficient platform in terms of usability and learnability.

A first observation was a visual one, as some star shaped items integrated from the Moodle theme used, were present in the bottom of each page without having any use or sense. Therefore, these items had to be removed. As it turns out, those visual items were related to marketing aspects of the site, which were later eliminated.

Another annoying aspect was the *About* section description, which was visible in all the week section pages. This section should only be visible in the main course page. Again, this was a particularity default by Moodle, which was solved by modifying coding lines. The experts believe that the forum section should not appear only as a separate section, but should have a chapter dedicated section implemented in each week/chapter of the course and also a quick access module integrated in the right hand side menu of the screen.

The calendar and upcoming events modules are not deemed as extremely important so they should appear in the bottom of the right side menu. The experts agreed on the fact that all modules should have a more compact form and the user should choose which module to fully see. Since this is a demo version, several sections of the course were only present by name,



without any content or explanation. This was considered wrong by the experts, because even if they understood what everything stood for, when evaluating with students, they could probably have difficulties into understanding. Therefore, proper explanations or sketch pieces of content were introduced in every section or tool.

Regarding the content pages of the course, the experts noticed that the video was visible in a small frame, with a large portion of unused space being visible on the screen (Figure 5). As the content, especially the video one, is the most important in a MOOC course, the experts encouraged to fill the most of the screen possible with the content frame.

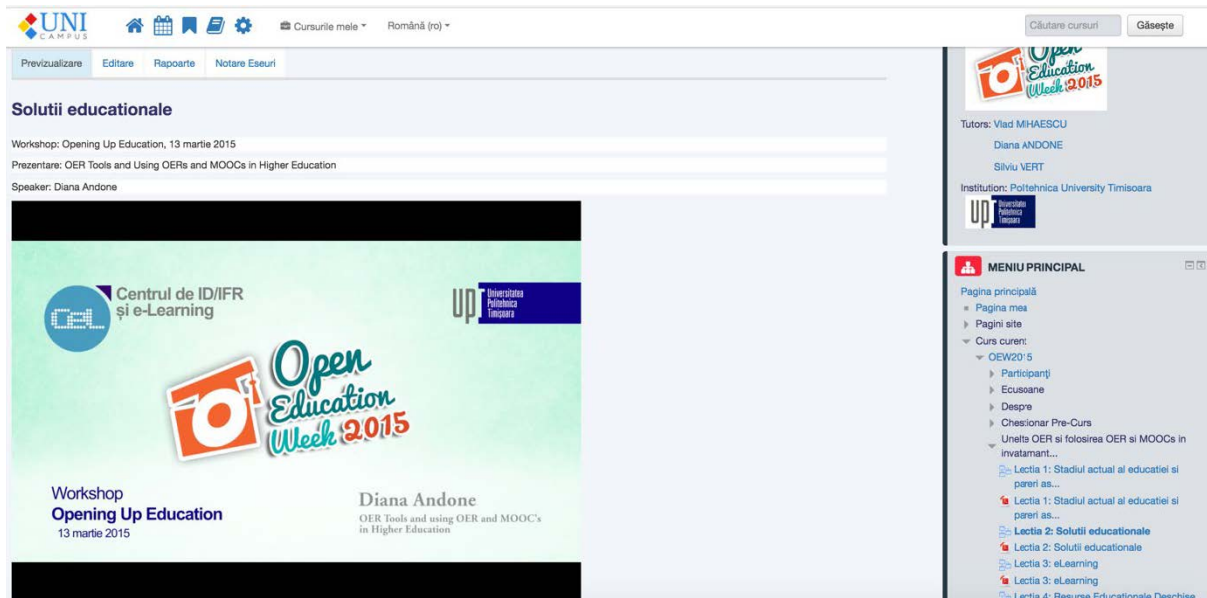


Figure 5. UniCampus Video structure

### Students Evaluation

Another important evaluation method was conducting focus groups with students. The purpose was to evaluate the implemented UniCampus platform and the OEW 2015 demo course taking into consideration its usability, learnability, technology and structure (Andone et al., 2009). We organized three separate focus groups with students from the 1st year Master Program of Communication, Public Relations and Digital Media (5 students), the 1<sup>st</sup> year Master Program of Multimedia Technologies (5 students) and the 4<sup>th</sup> year Bachelor Program of Multimedia Technologies from the Electronics and Communications Faculty (7 students), each student enrolled in the *Open Education Week 2015* Demo Course. We first asked the students to navigate through the platform and use as many tools as possible, completing the Pre-Course Questionnaire, going through at least one course module and solving at least one quiz, then, we asked specific questions. The first question was to analyse the possibility of connecting to the platform by using ones social media account, a module implemented by myself. All of the students agreed that this is a positive aspect, especially because of its time saving. However, there were some concerns regarding the information that the platform will automatically have access to, from the social media account.

The following questions were directed to the time availability for completing pre-course and post-course questionnaires. For the pre-course questionnaire, the opinions were equally divided between 5 and 10 minutes, while for the post-course questionnaire, a large majority preferred to give 10 minutes of their time.

Next, we directed the students to the introductory section and asked them to rate from 1 (*not useful*) to 5 (*useful*) the presence of each section. In order of their preferences, the sections received the following scores on average: Guideline (4.6), Syllabus (4.6), About (4.4), Structure (4.3), Tutors (4.1) and Grading System (4).

Then, we asked the students about their opinion regarding the structure of the Week 1 of the demo course. They appreciate it as well designed, accessible and easy to understand. Moreover, the learning content is considered well organized and easy to learn. The presence of the video as a course support material was highly praised. In addition, the students were happy with the lack of technical errors. However, there were some critics as well, the most important being the fact that not all the lessons have buttons for navigating between the week topics.

After the first lesson, we built a quiz with two different types of questions: a multiple-choice question and a mini-essay question. The students think, in a high majority, that the multiple-choice question is friendly. Some believed that it is too easy while others thought that it was difficult, but not posing real problems. On the other hand, the mini-essay question was considered more relevant and difficult because it required the student to think and search for information in order to offer a correct answer. Some believe that this type of question could pose problems, as not everyone is patient to offer longer answers.

We also required the students to indicate how often these quizzes should appear in a course, offering them some choices: during videos, after every lesson, after every week, a few times during the course, only at the end of the course. The majority of the students agreed that the verification should happen either after each lesson or/and after each week. Even if all of the options were chosen, only one student opted for quizzes during videos, some students even claiming that this type of verification distracts the student from the educational content (Figure 6).



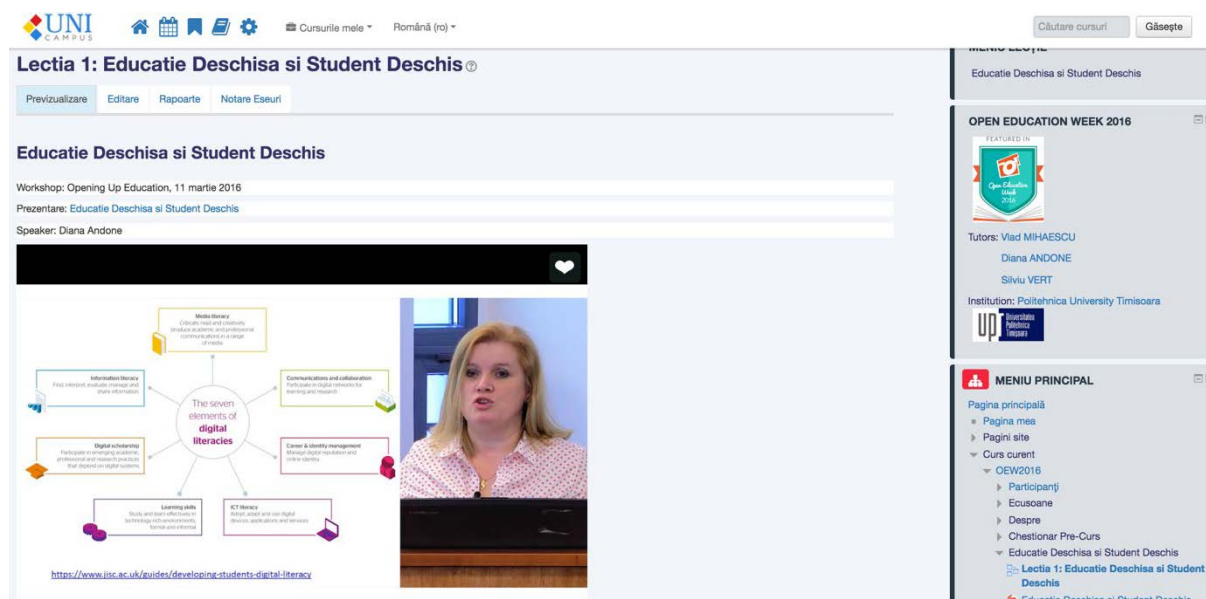


Figure 6. UniCampus video quiz

The final question related to the quiz, was if this type of examination should influence the final score of the student. The opinions were equally divided, with both pros and cons. Some believe the students will pay more attention at every lesson if they have quizzes that influence the final score, while others believe those quizzes should only stand for self-verification.

We asked the students to express their opinions regarding the use of subtitles and transcripts of the video lessons. Almost all of the students appreciate the importance and usefulness of the subtitles offered by the demo course. Their arguments in favour of subtitles are the decrease attention span from our days, the easiness to remember information when it is read, heard and visualized in the same time, or the fact that it helps people who do not know the language of the presentation so well. Some students would prefer a transcript as well and only one preferred the transcript to the subtitle arguing that the subtitle distracts his attention. One of the students could not find the way to activate the subtitle so this should be addressed in the FAQ section.

The students appreciate the presence of navigation buttons in some lessons (previous chapter, next chapter and refresh chapter). They insisted on having such buttons on every page for an easier navigation. Some students proposed design improvements for the buttons indicating a smaller, more discrete button would be better or by stating that rather than the arrow design that I chose, they would prefer buttons with explicit text (e.g. *To the next course*).

Next, we asked the students about their views regarding the *Course Completion Status* section. They agree this is extremely useful and the vast majority prefer that the course automatically checks as completed the activities which they finish. Another argument in the favour of progress checking is the fact that this motivates users and helps them track their evolution.

Another motivational tool is the *Badges* section, where users receive various predetermined virtual ribbons for completing certain tasks. All the students believe this helps them to be

more motivated and complete more activities. An interesting proposal was of using a system similar to the ones found in gaming, where the “player” receives experience points (XP) for completing certain tasks. After passing predetermined thresholds, the user advances to the next level and receives certain bonuses. It would be interesting for further study to see if and how this system could be integrated in MOOCs.

Distribution of content on social media was the next topic of discussion. All of the students agreed this is a positive aspect and stated they would share certain course topics with others in order to help others learn and easily find information.

Regarding the type of content the students prefer, we asked them to rate in order of preference the following type of content: video, html text, pdf text, ppt, external links or combinations. The only type they all agreed upon was the video, which was rated the first in their preferences. Next, the opinions are equally divided between ppt and pdf type files. The least preferred were the html pages and the external links. The combination that was proposed by some students was video-text content.

The last specific aspects that we required students to rate from 1 (*not useful*) to 5 (*useful*) were the following tools and sections: wiki, bibliography and links, discussion forum, glossary, document sharing, FAQ, student handbook, to do list, virtual programming lab, virtual study room, video conference, calendar, upcoming events and blog. The results were positive as all of these tools received an overall above the average score in usefulness. A detailed view is presented in Figure 7, with an emphasis on at the highest scores were received by the *Bibliography and Links* section together with the *Video Conference* tool. The least appreciated tools were the *To Do List* and the *Calendar*.

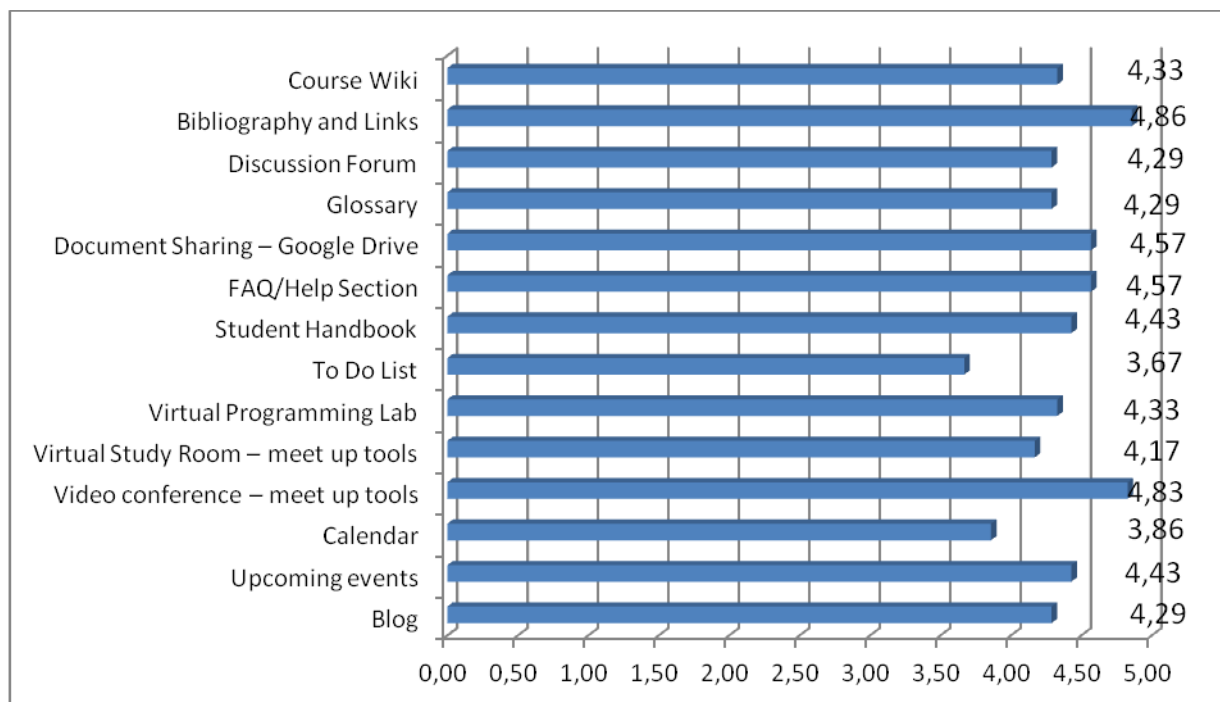


Figure 7. Students Evaluation of UniCampus – tools rating

The next step into evaluating the platform was using the desirability model (Andone et al., 2009). From an existing list of words that describe usability and interaction, we asked the students to select as many words as they wish, which best describe their overall experience with the UniCampus platform. In order of the most choices, these words are efficient, useful and accessible as seen in Figure 8.

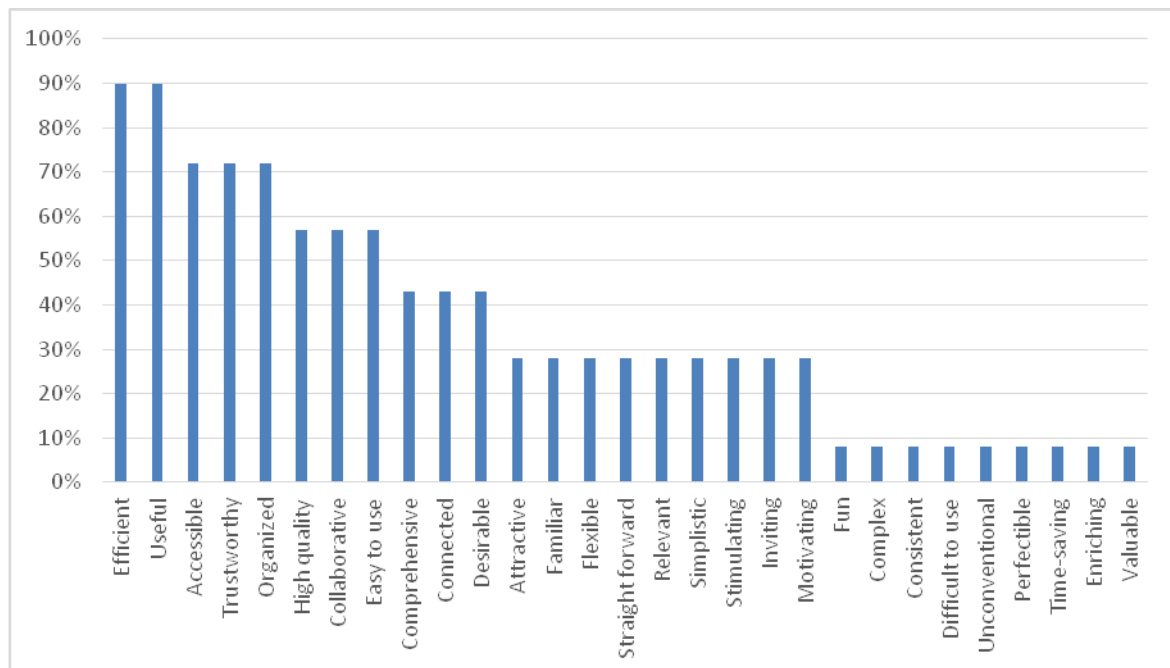


Figure 8. Students Evaluation of UniCampus – desirability

Then, the students were required to choose 5 words best describing their experience with the course video content and then arranging these words from 1 to 5, 1 standing for the word that best describes the item. The most mentioned words were useful, high quality, comprehensive, efficient and trustworthy. Finally, we asked the students to choose again 5 words and rate them from 1 to 5, this time for the tools of the UniCampus platform. The most chose words have been organized, efficient, easy to use, complex and familiar.

## Conclusion

Based on this evaluation UniCampus, the Romanian MOOC platform, was further developed and enhanced and is now running one course in Mobile Commerce with three more in the area of information and communication technologies and mechatronics being released in the autumn of 2016.

We consider that in today's world, it can be beneficial for every University professor or student to be involved in the MOOC experience. Offering the best courses by each university, addressed to people who are not regularly attending a university course, it is a great opportunity both to nourish minds but also to promote itself. For Romanian universities, which are public funded, the involvement on the development of a Romanian MOOC Is mainly backed by their belief that valuable knowledge and information need to be made available, freely to the public and into own national language. New methods of teaching and

instruction need to be used and students need to be fully encouraged to discover and develop skills for online and lifelong learning, also by eliminating the confusion with distance, blended, open education, as we believe this is just 21<sup>st</sup> century learning.

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