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Probation of IMA-NET Platform in the Framework of Flexible CEEPUS Course at the Summer Academia in UBT

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Abstract

Summer courses can be a valuable and rewarding experience for students who want to continue building and developing their learning skills during the summer. They offers both flexible and stress-free environments to whom want to master a specific course or gain experience in a totally new subject that they would not otherwise come into contact with during the school year. This helps to round out a student's educational experience and it can be very helpful to them when deciding what they want to do in college and in life.

UBT along with partners from TU-Sofia and more with the coordination of CEEPUS Network - CIII-BG-1103-05-2021 Modelling, Simulation and Computer-aided Design in Engineering and Management, organized a summer academy session with 20 hours Flexible CEEPUS Course. This was a great opportunity to probate IMA-NET, a web platform for innovative e-Management of Academic Network. Students from different countries, participating in the summer course, were introduced with the software. Diverse valuable information, including students preferred topics and evaluation of the whole event, collected through surveys and feedback in IMA-NET web application and some new features of IMA-NET platform as the Certificate generator option are described in the paper.

Keywords: E-Management, E-Learning, Academic network, Joint programs, Summer school, Students' mobility, Flexible CEEPUS Course, Web based application.

1. Introduction

Nowadays, flexibility is becoming a keyword in different areas and different higher educational institutions around the world has embraced this concept. The idea behind this term is to offer to the student the flexibility to choose between different courses and to the lecturer the possibility to select the content of a flexible course. Most of the times, organizing this kind of courses is a complicated and time consuming task for many HEI's. Since this process requires a hard work of too many resources, it is a software duty to avoid unnecessary overheat and this is when IMA-NET comes handy.

IMA-NET platform, [1] is a web application created to organize successful CEEPUS events, short and long term student's and teacher's mobility's, using the grants awarded to the network, in an optimal way. This web application is able to cover all flexible course phases starting from student registration up to generating participation certificates.

On July, 2021, a Flexible CEEPUS course was held at the summer academia in UBT Pristina, Kosovo. This flexible course was made possible by the help of the CEEPUS Network CIII-BG-1103-05-2021-M-150844 - Modelling, Simulation and Computer-aided Design in Engineering and Management. [2] Today, 16 countries participate in CEEPUS as beneficiaries of institutional networking, professional projects and inter-institutional mobility, joint research and degree programs. The course consisted in three different modules offered by three incoming teachers from Bulgarian and Albanian HEIs. Students of UBT, Kosovo, inscribed to the course and attended it for one week. Illustrative pictures from the Flexible course realized in UBT can be found in the CEEPUS network site at: <http://ceepusmodcad.ubt-uni.net/>.

One of the modules focused on explaining IMA-NET platform itself and it was a great opportunity to probate this web application. As concluded from Geoffrey. D. Borman in [3], if we want to prevent summer learning losses, programs should be evaluated using carefully designed randomized experiments.

IMA-NET platform offers the possibility to the administrator who is also the Coordinator of the CEEPUS network to design Flexible courses by selection 3 modules from 3 professors from the Modules Data Base of IMA-NET. Each flexible course is identified by the host institution and the dates of the event. In the Data Base of IMA-NET there are 34 modules proposed by 42 teachers. Most of the teachers proposed 3 or more modules to allow the administrator to adjust the course content conform to the background of the expected students. Some other teacher needs yet to insert their modules. Each Flexible course includes 3 teachers from different institutions from the CEEPUS network and in general from different countries. The 6 teaching hours modules are also conform to the teacher's mobility requirements in CEEPUS program [6].

IMA-NET platform uses two different questionnaires, results of whom can help hosting HEI's with data regarding students most preferred topics and students feedback over previous flexible courses. At the end of the Flexible CEEPUS course, IMA-NET application was also used to generate certificates of participation for both lecturers and students.

The outline of the paper is: In Section II the methodology used by IMA-NET application to gather and elaborate course feedback and survey results is considered, in Section III results of surveys and feedbacks from IMA-NET are presented and Section IV concludes the paper.

2. Methodology

IMA-NET platform is developed using five main technologies listed as: HTML, CSS, JavaScript, Code igniter (PHP framework) and MySQL. Code igniter and MySQL are used to handle the whole business logic aka. How the platform works meanwhile HTML, CSS and JavaScript are used to display the graphical user interface. There are many PHP and JavaScript libraries used by this platform, which helps fulfill different tasks. In this paper, we will cover the libraries used to display questionnaire and feedback results in fancy charts and to generate participant certificates in PDF format and also how this features works.

A set of modules and features of IMA-NET were probated through the Flexible course, part of the International Summer Academia of UBT in July 2021:

- The Flexible course design;
- The student inscription to a Flexible course procedure;
- The Survey feature, which determines student's interest;
- Course or event feedback option for students, teachers and attendees;
- The certificate generator.

The probation allows to test the conformity of Flexible courses as a new Joint program to CEEPUS requirements for 6 teaching hours for CEEPUS teaching mobility's and 3 ECTS for attending students. It probates also the integration of CEEPUS Flexible course with the host university teaching activities and recognition of student's achievements in terms of ECTS.

2.1. Design of the Flexible course in UBT and students inscription in IMA-NET

Only the system administrator has the possibility to create flexible courses in IMA-NET. The central IMA-NET database provides information regarding existing modules and the administrator can choose from there which modules students should follow for a flexible course.

The three modules, part of this specific flexible course offered in UBT, are listed as follows:

- Emerging technologies and security challenges
- Optimization and its implementation for energy flows in microgrids and portfolio optimization for business models
- Presentation and testing of the Platform IMA-NET for e-management of academic networks

In order to follow this courses the student must register to the system first. When a new student is registered the platform administrator receives an email alert containing a link which redirects him/her to the ima-net backoffice. There the administrator can accept or reject the applicant. Once accepted the user receives an email alert of acceptance. After he can login to the system with the credentials created before and register to one of the available flexible courses to follow.

During this session, the students followed a 20 hours course where each of the three teachers had 6 hours lectures and practical work. They were organized in couples and each couple had a specific subject to study and prepare a presentation on and to present it in front of the teachers and all other students. Each presentation is followed by questions and discussion. The students' assessment was based on their presentations. Each student who attended the course and made a presentation obtained a grade and 3 ECTS, included in the certificate generated by IMA-NET.

2.2 Feedback report generation

For each event or flexible course an IMA-NET user participates, it is required for him/her to leave behind a feedback. When the user starts to fill the feedback it is initially required to select the role he/she had in the event/flexible course. There are three options: Student, Lecturer and Attendee. This phase is important since there are different questions on the questionnaire based on the selected role. An example of the feedback form is presented in Fig.1 but we will display the full range of questions in Appendix A and Appendix B.

Please select your role

Student

Student name

Select a flexible course or an event *

How did you understand about this event? *

From the site of the CEEPUS network

What is the overall estimation of the event? *

Very bad

Bad

Average

Good

Very good

Fig.1. Example of student feedback form.

The results gathered from different feedbacks are available for the administrator of IMA-NET platform. They can be accessed in the section "Feedback results". Once in that section, the administrator has the possibility to choose between flexible course or event feedbacks. Various type of charts are generated to present the result of each feedback. We have used an agile JavaScript library named Apex Charts. As stated in [4], Apex Charts is a modern

charting library that helps developers to create beautiful and interactive visualizations for web pages. It is an open source project licensed under MIT and is free to use in commercial applications. Fig.2 displays an example of the results gathered for a single question.

What is the overall estimation of the event?

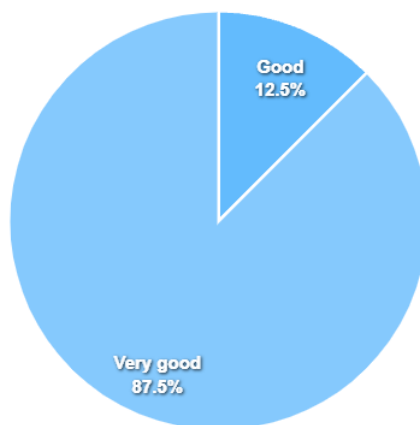


Fig.2. Results gathered for a specific question of a random flexible course selected

2.3 Surveys report generation

During the probation of IMA-NET in the Flexible CEEPUS course, we also gently asked to the students to fill the surveys IMA-NET offers. These surveys consist on five different categories where each of the categories has a list of topics the user can choose from. Categories and topics can be easily managed from the dashboard of the administrator. The results gathered can be used to help other event organizers to have a detailed idea of what are the student preferences regarding topics. Fig 3. Shows an example of survey section of the web API.

Please fill in the survey

Full Name

Email

University

Country

Afghanistan

Mathematical and/or theoretical methods

1	2D and 3D modeling and drawings in CAD systems	<input type="checkbox"/>
2	Advanced Control Design Methods	<input type="checkbox"/>
3	Advanced process control	<input type="checkbox"/>
4	Agent based simulation and hybrid methods (combining DES/SD/ABM)	<input type="checkbox"/>

Fig.3. Survey section, IMA-NET

The results generated are accessible by the system administrator directly in their main dashboard page. We use ChartJs library to generate different reports gathered from the survey such as demographics, top five preferred topics etc. Charts generated from this library differs only in design from the charts ApexCharts generates. The only reason we use two different libraries for the same purpose is the need to adapt chart design with the general platform design. Integrating with this library is easy. According to [5] all that is required is the script included in your page

2.4 Pdf certificate generation

Every participant, whether student, lecturer or participant is provided with a certificate of participation. In IMA-NET software we use a standard certificate template with variable labels which change values depending on who is receiving the certificate. To generate this certificate, we make use of Dompdf library. Dompdf is a PHP library which helps to transform a ready-made sample HTML template into a pdf document. As stated in [6] Dompdf is a style-driven renderer: it will download and read external stylesheets, inline style tags, and the style attributes of individual HTML elements. Only the system administrator can generate certificates. Fig. 4 displays an example of a participation certificate released in the framework of the Flexible CEEPUS course held in UBT, Kosovo.



Fig.4. Certificate of participation generated via IMA-NET platform

3. Results

During the flexible course, we were able to get feedback and survey from ten participants from which three of them were the lecturers of the modules and the other seven were students. There are two different questionnaires used. One for lecturer users and one for users who accessed the platform as students or attendee.

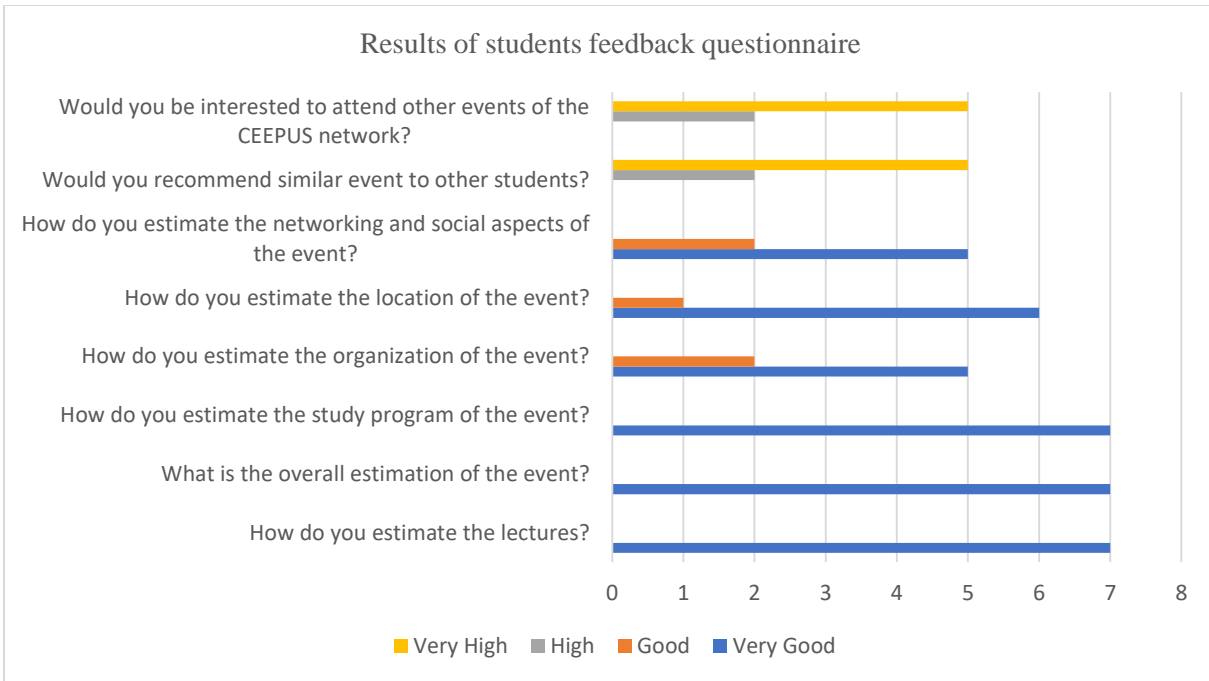


Fig.5. Results of students feedback questionnaire

From the results gathered, we can state that 100% of the student were very happy with the event in general, study program and the lectures. They are willing to recommend similar events to other students and are interested to follow similar events themselves. 86% of the students found the organization of the event to be very good and 24% of them found it good.

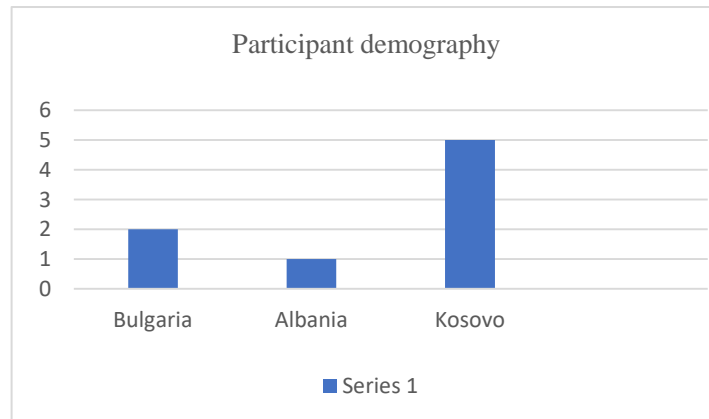


Fig.6. Participants demography

As shown in Fig. 6, 70% of participants of the flexible course are from Kosovo, 10% from Albania and 20% from Bulgaria. Based on feedback results, all of them were comfortable with the event location. In Fig.7, we have listed the result gathered from feedback of the three lecturers who participated in the flexible CEEPUS course.

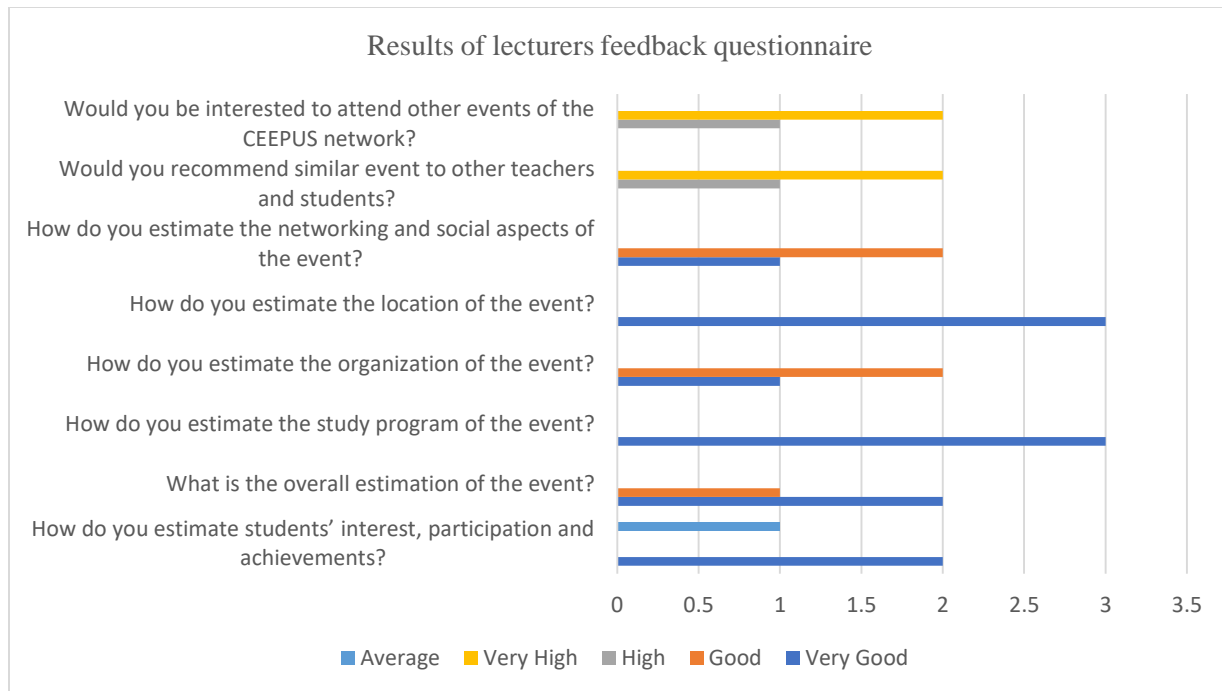


Fig.7. Results of lecturers feedback questionnaire

We can say that 100% of the lecturers were very happy with the location and the study program of the event. They seem all interested to recommend this type of events to other colleagues or students and to participate in other events like these themselves. 67% of the lecturers rated as very good the interest, participation and achievement of their students meanwhile 33% had an average opinion about this.

As mentioned above, in addition to questionnaires related to the event, students were asked to fill a survey regarding their preferred topics they would like to follow in such kind of flexible courses. From seven students, six of them selected 2D and 3D modeling and drawings in CAD systems, Autocad and E-commerce/ E-business meanwhile 5 of seven students also chose HTML and E-learning development in technical and non technical areas.

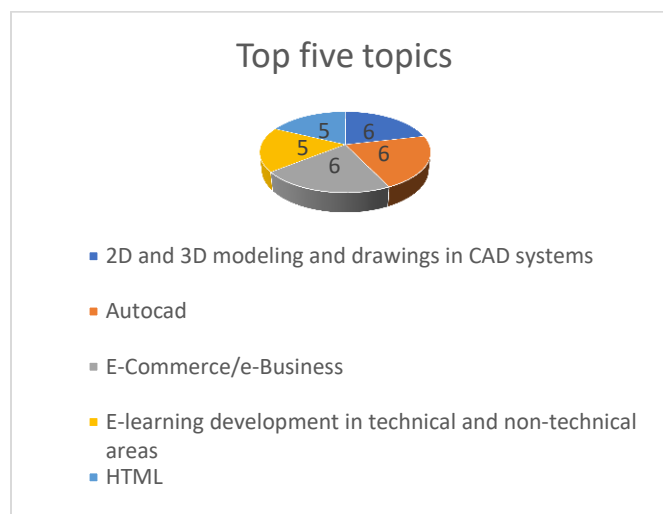


Fig.8. Results of most preferred topics survey from students of the flexible CEEPUS course

4. Conclusions

This article revealed that the flexible CEEPUS course was a success. Generally, the participants were very happy with the study programs developed during the one week of the course. They were willing to join other similar events and also recommend it to other students and colleagues. Most of them were from Kosovo and all of them were from Europe. This was a good test for IMA-NET platform even though it would have been better if the number of participants was bigger. Results gathered from the preferred topic survey says that they students are more focused in engineering tools and programming languages.

5. Acknowledgments

The authors acknowledge the support from UBT University and CEEPUS network CIII-BG-1103-05-2021 - Modelling, Simulation and Computer-aided Design in Engineering and Management for making possible the realization of this flexible course and consequently the probation of IMA-NET platform.

6. References

- [1] G. I. Marinova and K. L. Tola, "IMA-NET: Innovative e-Management Platform for Academic Network," 2020 55th International Scientific Conference on Information, Communication and Energy Systems and Technologies (ICEST), 2020, pp. 69-72, doi: 10.1109/ICEST49890.2020.9232857." 2020
- [2] Adrian Curaj, Ligia Deca, Remus Pricopie "European Higher Education Area. Challenges for a New Decade", Springer International Publishing, 2020, ISBN: 978-3-030-56316-5, DOI 10.1007/978-3-030-56316-5
- [3] Geoffrey. D. Borman "The Effects of Summer School: Questions Answered, Questions Raised. Monographs of the Society for Research in Child Development, Vol.65, 2000,pp: 6-9, Online ISSN:1540-5834
- [4] Site of Js APEX Charts, <https://apexcharts.com>, last accessed 2021/10/02
- [5] Site of ChartJS, <https://www.chartjs.org/docs/latest>, last accessed 2021/10/02
- [6] Site of CEEPUS <https://www.ceepus.info>, last accessed 2021/10/05

7. Appendix A

7.1 Lecturer's feedback questionnaire

1) How did you understand about this event?

- From the site of the CEEPUS network
- From my university
- From a mail
- From a colleague
- Other

2) What is the overall estimation of the event?

- Very bad
- Bad
- Average
- Good
- Very good

3) How do you estimate the study program of the event?

- Very bad

- Bad
- Average
- Good
- Very good

4) How do you estimate students' interest, participation and achievements?

- Very bad
- Bad
- Average
- Good
- Very good

5) How do you estimate the organization of the event?

- Very bad
- Bad
- Average
- Good
- Very good

6) How do you estimate the location of the event?

- Very bad
- Bad
- Average
- Good
- Very good

7) How do you estimate the networking and social aspects of the event?

- Very bad
- Bad
- Average
- Good
- Very good

8) Would you be interested to attend other events of the CEEPUS network?

- Very low
- Low
- Average
- High
- Very high

9) Would you recommend similar event to other teachers and students?

- Very low
- Low
- Average
- High
- Very high

10) Your comments and recommendations

8. Appendix B

8.1 Student's feedback questionnaire

1) How did you understand about this event?

- From the site of the CEEPUS network
- From my university
- From a mail
- From a colleague
- Other

2) What is the overall estimation of the event?

- Very bad
- Bad
- Average
- Good
- Very good

3) How do you estimate the study program of the event?

- Very bad
- Bad
- Average
- Good
- Very good

4) How do you estimate the lectures?

- Very bad
- Bad
- Average
- Good
- Very good

5) How do you estimate the organization of the event?

- Very bad
- Bad
- Average
- Good
- Very good

6) How do you estimate the location of the event?

- Very bad
- Bad
- Average
- Good
- Very good

7) How do you estimate the networking and social aspects of the event?

- Very bad
- Bad
- Average
- Good
- Very good

8) Would you be interested to attend other events of the CEEPUS network?

- Very low
- Low
- Average
- High
- Very high

9) Would you recommend similar event to other students?

- Very low
- Low
- Average
- High
- Very high

10) Your comments and recommendations
