Development of Human Resources - Learning in Clouds

Anna Czaja [*], Anna Grabowska [**]

[*] Gdańsk University of Technology, Management and Economics, Gdańsk, Poland

[**] Gdańsk University of Technology, Autodesk Authorised Academic Partner, PRO-MED sp. z o. o. Gdańsk, Poland

aczaja@zie.pg.gda.pl

anka.grabowska@gmail.com

***Abstract*— In the article implementation of a free cloud based hosting MoodleCloud is presented. This solution supports users who do not have neither technical skills nor financial resources to install and support LMS Moodle. MoodleCloud was announced in July 2015 and it is free up to 50 users. The most important advantage is that owners are not responsible for upgrading the system, it means that the provider always runs the very latest release of Moodle. In order to get the free Moodle site users should fill in a form which is verified on a basis on their mobile phones. As a case study the site Development of Human Resources is presented. The URL https://dehure.moodlecloud.com/ was established for the workshop „Learning in Clouds: Fusion 360 Case Study". Seven participants took part in the workshop on 20th September 2017 at the ICEM 2017 Conference. During the workshop they used the newest version of MoodleCloud including a web conferencing system BigBlueButton. The authors will also present the MOOCs Autodesk Fusion 360 developed on EMMA and Millionlights platforms. As well as future plans of using MoodleCloud in ERASMUS+ CoLED project.**

I. WHY LEARNING IN CLOUDS

Nowadays education is not a one-period event but a lifelong learning experience. A modern education should be performed in an interactive and an inspirational way and should enable students to achieve success not only in school but also in their personal life. Jobs today change very quickly and it is very important to gain new skills and keep up to date with market expectations. Updated skills and knowledge allow students to become a more valuable employee for a current or a future employer. While helping students to become more competitive on a job market Autodesk Authorised Academic Partner Development at Gdansk University of Technology decided to enable students to gain professional certificates by implementing Learning Room concept [1], [2], [3], [4] and online certification. In the period between 2016-2017 121 Learning Rooms were created with 476 registered users from 22 countries (Poland, Greece, Hungary, Slovakia, Spain, Sweden, Russian Federation, Georgia, Belgium, Bulgaria, Austria, France, Germany, Belarus, Albania, United Kingdom, Germany, Italy, Croatia, India, Portugal, Romania). From the point of view of roles in SP4CE platform, there are 5 Local (Country) Administrators, 48 Mentors, 23 Consultants and 409 Students in total.

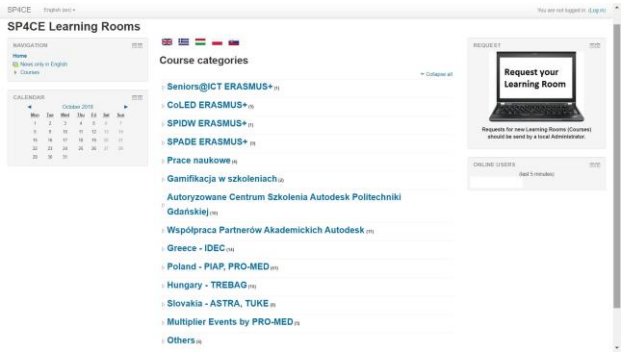

Figure 1. SP4CE Learning Rooms platform

II. DEVELOPMENT OF HUMAN RESOURCES IN MOODLECLOUD

Announced in July 2015, MoodleCloud is a powerful and flexible software. Developed to empower educators and students for collaborative learning, this Learning Management System is free of charge for courses with up to 50 registered users. The most important advantage is that course owners are not responsible for upgrading and maintenance of the site, it means that the provider always run the very latest release of Moodle. In order to create a free Moodle course the users should fill in a form which is verified based on their mobile phones numbers.

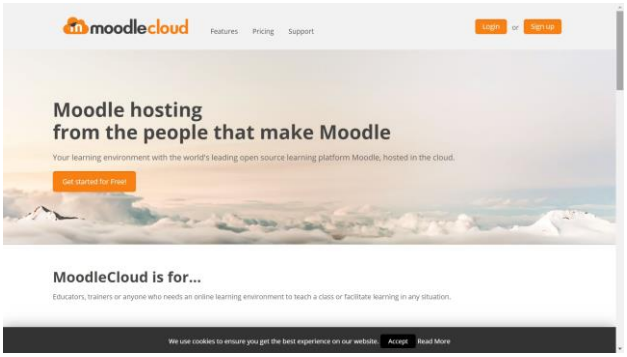

Figure 2. MoodleCloud LMS

The following features make MoodleCloud hosting the most recommended solutions:

- Simplicity – after signing up the learning site will be ready and open for students in minutes.

- Free maintenance – there is no need to install or upgrade anything.
- Auto update – MoodleCloud is updated with the latest version of Moodle with the newest features and improvements.
- Flexibility – building new courses is very easy and involves adding or removing activities, resources etc. Features like site name and logo are also customizable.
- Affordability –it is a free site for up to 50 users and the price of larger plans start at $80 AUD per year.

The DEHURE (**DE**VELOPMENT OF **HU**MAN **RE**SOURCES) platform (Fig.3) was established for a „Learning in Clouds: Fusion 360 Case Study" workshop. Five academic teachers, including PhD students, prepared and delivered the workshop on 20th September 2017 at the ICEM 2017 Conference (Table I).

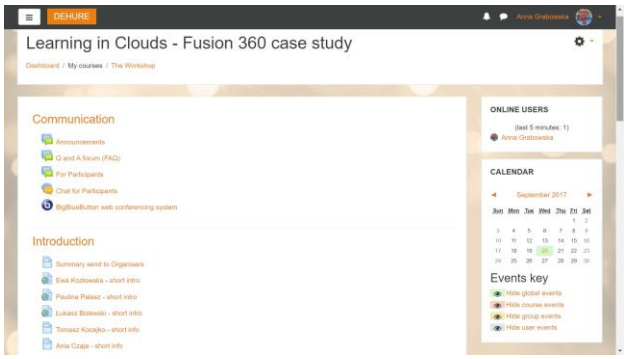

Figure 3. DEHURE - Learning in Clouds: Fusion 360 Case Study

TABLE I.
ASSIGNING ROLES TO A WORKSHOP TEAM MEMBERS

	Name and Surname	Institution	Role
1	Anna Grabowska	Gdansk University of Technology	Manager, Teacher, Student
2	Anna Czaja	Gdansk University of Technology	Manager, Teacher, Student
4	Ewa Kozłowska	Gdansk University of Technology	Teacher, Student
5	Łukasz Bolewski	Gdansk University of Technology	Teacher, Student
6	Paulina Pałasz	Medical University of Gdansk	Teacher, Student

On the Fig. 4 and the Fig. 5 the content of the workshop is shown. Some part of materials were delivered during Autodesk Fusion 360 DesignNow program [9]. It must be underlined that professional outlook of the content was achieved due to Autodesk involvement in the materials production.

One of the most important part of the workshop is a Forum – Frequently Asked Questions (Fig.6). The participants can find there answers for the following questions:

- What is ICEM about?
- Can I get Autodesk software for free?
- How can I get a Fusion 360 certificate and how much does it cost?
- How can I get Fusion 360 on my computer?
- What will be the schedule of the workshop and what tools for communication will be used?

The following tools were used for online communication (Fig. 7):

- Announcements
- Q and A forum (FAQ)
- For Participants
- Chat for Participants
- BigBlueButton web conferencing system

The BigBlueButton is a web conferencing system designed for online learning. The system provides real-time sharing of audio, video, slides, chat and screen. Students are engaged through sharing of emoji icons, polling, and breakout rooms. Moodle has a plugin for an integration of the BigBlueButton.

The final program of the ICEM 2017 workshop "Lear ning in Clouds – Fusion 360 case study" is shown on the Figure 7.

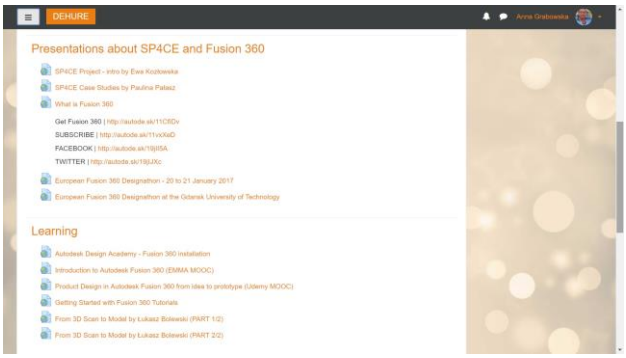

Figure 4. Learning in Clouds: Fusion 360 (Part1)

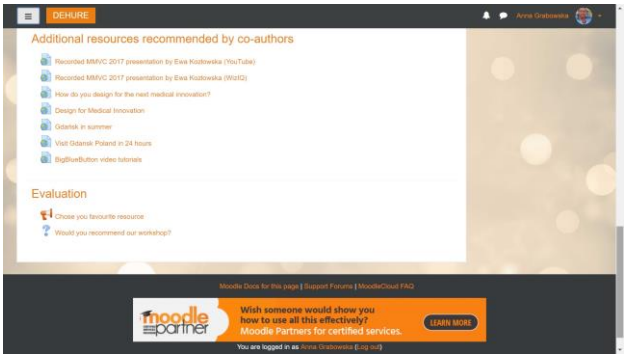

Figure 5. Learning in Clouds: Fusion 360 (Part2)

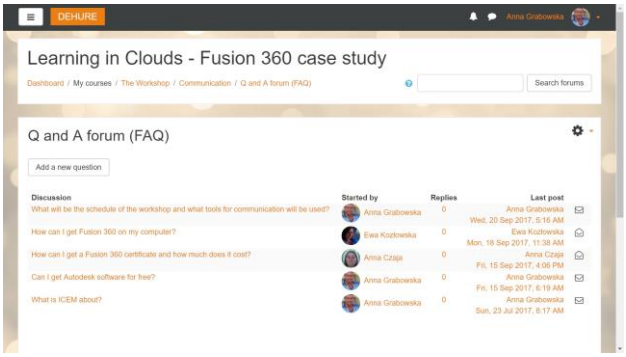

Figure 6. Learning in Clouds: Fusion 360 – Frequently Asked Questions (FAQ)

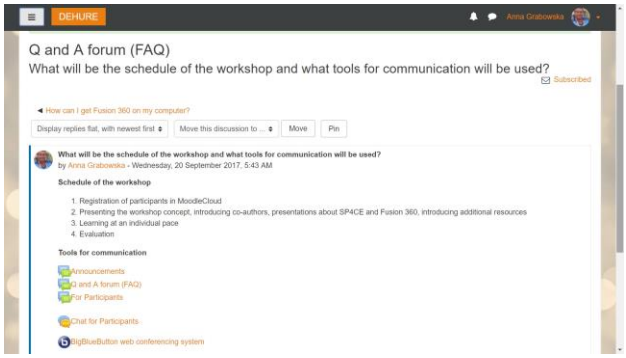

Figure 7. The program of "Learning in Clouds: Fusion 360" workshop

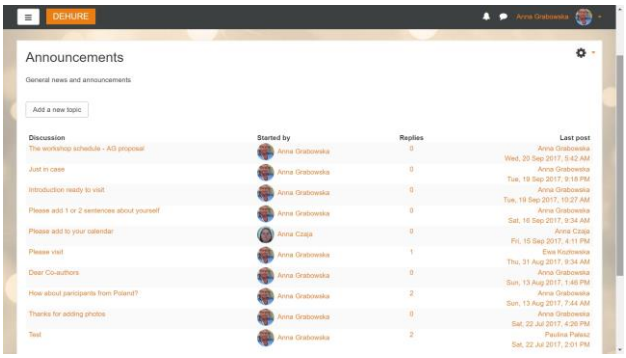

Figure 8. Registered participants of Learning in Clouds: Fusion 360

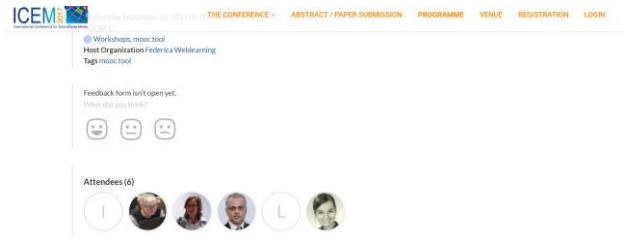

Figure 9. Registered participants of the ICEM 2017 Workshop

III. AUTODESK FUSION 360 IN EMMA AND MILLIONLIGHTS

The first MOOC "Introducion to Autodesk Fusion 360" was developed by ACSA PG [5] for EMMA platform [6]. Example screens are shown on Fig. 10, Fig.11 and Fig.12.

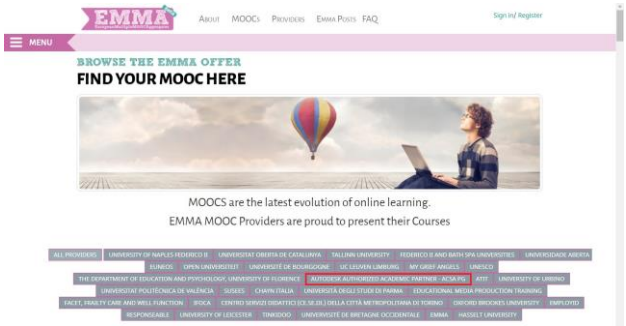

Figure 10. The European Multiple MOOC Aggregator - EMMA

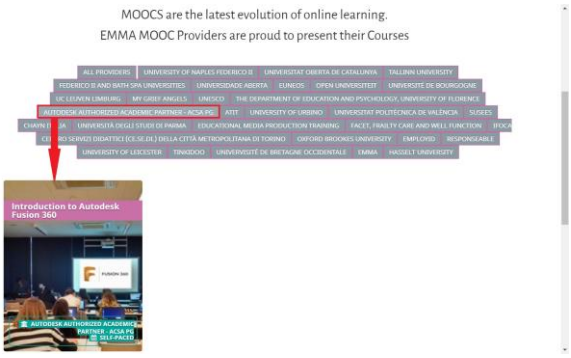

Figure 11. Introduction to Autodesk Fusion 360

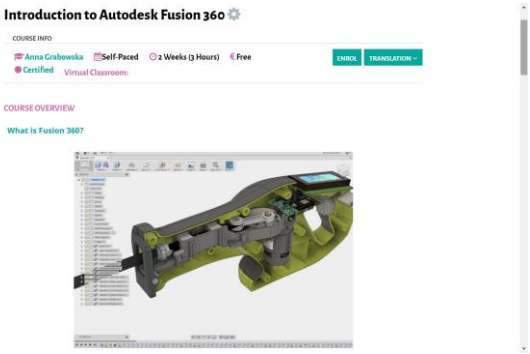

Figure 12. Introduction to Autodesk Fusion 360 – course overview

The results of co-operation within EMMA project were presented during the ICEM 2017 workshop in Naples (Fig. 13).

Figure 13. Confirmation of the ICEM workshop delivery

An intensive communication in video conferencing system BigBluButton was held between participants including a representative from Indian Company Millionlights.

After the workshop the head of the Autodesk Authorised Academic Partner at Gdańsk University of Technology (ACSA PG) was asked to develop Fusion 360 Massive Open Online Course (MOOC) at Millionlights platform.

Millionlights is a Private Limited Company headquartered in Pune with an office in New Delhi. It is a company with a focus on Higher Education, vocational training and industry certified skills. Millionlights is a group of educators, businessmen and people with extensive experience at the Policy making level. Their educational offer is available on three platforms: desktop, mobile and television. They provide access to education and training in real-world skills to a massive and often neglected market segment. The company plans to reach with its offer 50 million learners in the next five years. The courses are free, the only payment is for certification courses.

The Memorandum of Understanding was signed by representatives of ACSA PG and Millionlights platform.

Figure 14. Millionlights platform

Autodesk Authorised Academic Partner at Gdansk University of Technology [10] has got an access to Millionlights platform [14]. "Autodesk Fusion 360" MOOC has been available since October 2017. The modules are based on an original Autodesk educational content [8], [9], [11], [12], [13]. MOOC modules are shown on Fig. 15, 16, 17, 18, 19, 20, 21. Millionlights platform is based on Open EdX which is a nonprofit online initiative created by founding partners Harvard and MIT. Open edX is the open source platform that powers edX courses. The code of Open edX is available to the community for free. Institutions can host their own instances of Open edX and offer their own classes. Educators can extend the platform to build learning tools that precisely meet their needs. And developers can contribute new features to the Open edX platform.

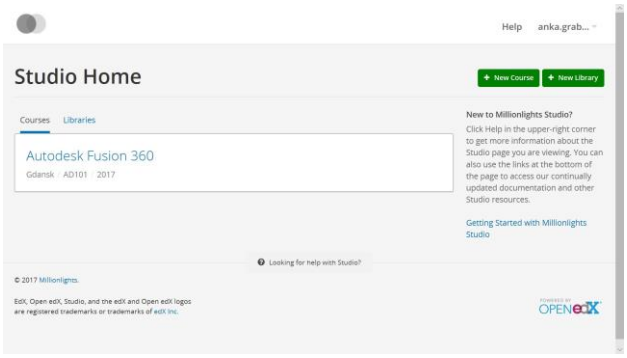

Figure 15. Autodesk Fusion 360 in Millionlights Open edX – welcome page

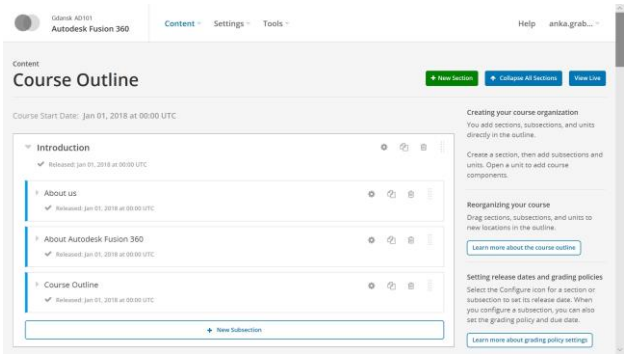

Figure 16. Fusion 360 Outline – 1st module

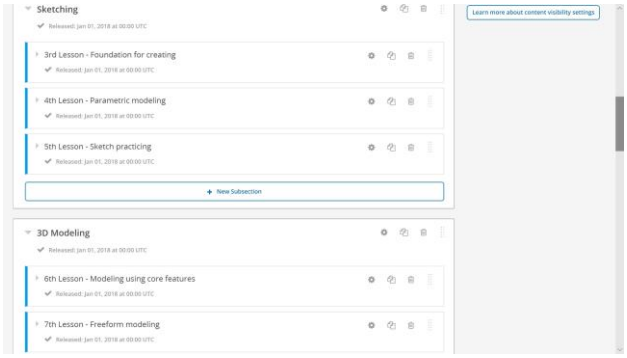

Figure 17. Fusion 360 Outline – 2nd and 3rd modules

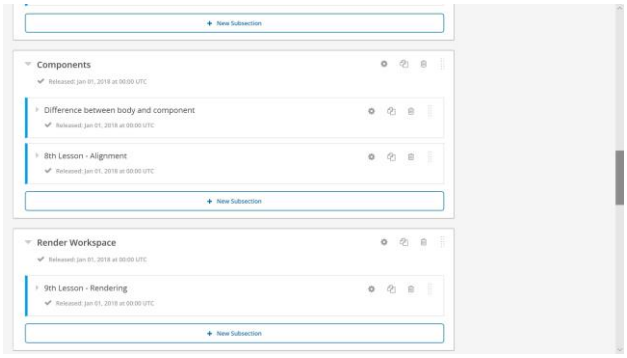

Figure 18. Fusion 360 Outline – 4th and 5th modules

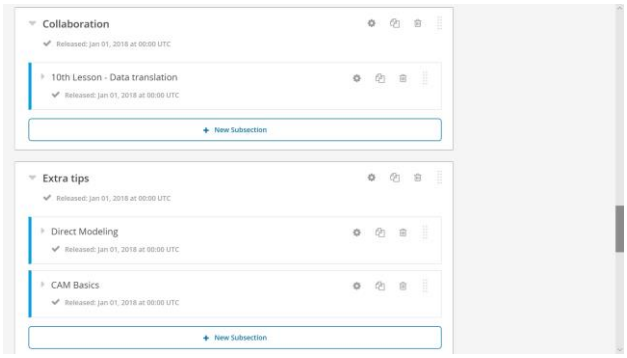

Figure 19. Fusion 360 Outline – 6th and 7th modules

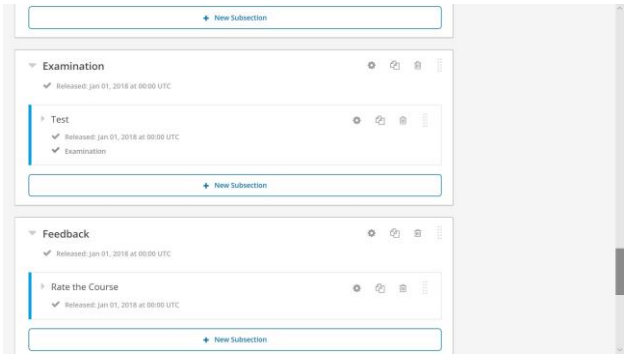

Figure 20. Fusion 360 Outline – 8th and 9th modules

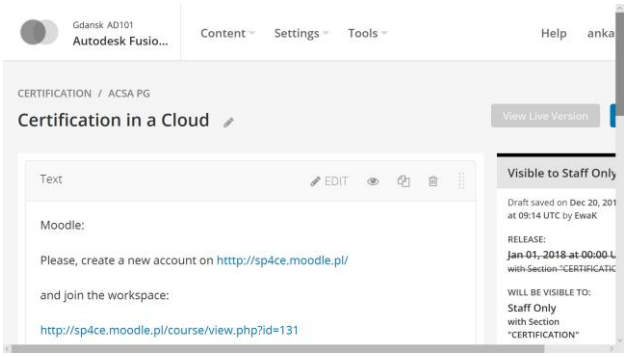

Figure 21. Fusion 360 – certification in a Cloud

IV. SUMMARY

While developing a platform for the Collaborative Learning Environment for Engineering Education (CoLED) project Learning Rooms concept developed and implemented under SP4CE ERASMUS+ will be implemented.

The dedicated Learning Rooms will be established for each Working Group (Fig. 22).

The concept of development of CoLED ERASMUS+ platform is presented in Table II.

The Gantt Chart of the CoLED project ERASMUS+ is presented on Fig. 23. The final results will be presented in 2020.

The proposed model based on authors experiences is presented on Fig. 24.

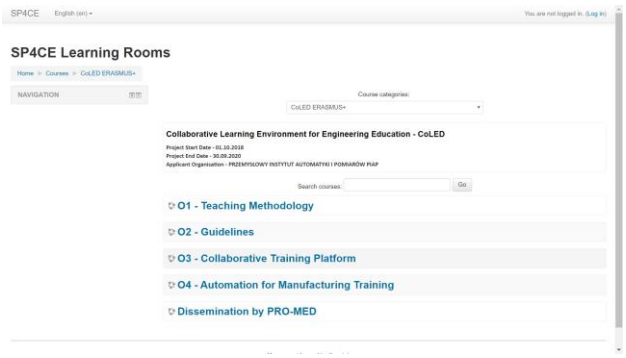

Figure 22. Introducing Learning Rooms for CoLED ERASMUS+

TABLE II.
DESCRIPTION OF DEVELOPMENT OF THE COLED PLATFORM

Action no	Description
1	Establishing CoLED Learning Rooms in SP4CE
2	Developing the prototype of CoLED in SP4CE
3	Establishing CoLED platform in Moodle – English version
4	Developing e-courses and localization in CoLED platform
5	Evaluation of CoLED platform and e-courses
6	Developing e-course including FAQ for local administrators
7	Establishing sustainable versions of CoLED platform in MoodleCloud in national languages
8	Pilot Courses in national laguages in MoodleCloud and evaluation
9	Sharing CoLED platform and e-courses with students/pupils from local schools

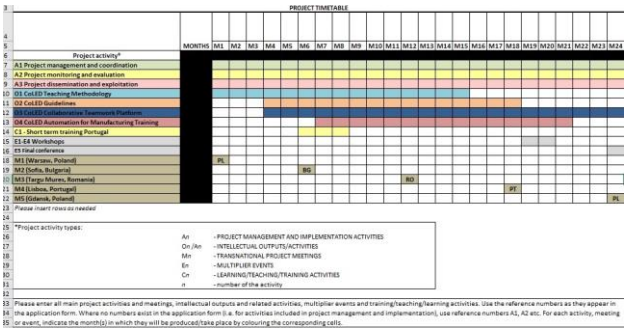

Figure 23. Gantt Chart of the CoLED ERASMUS+ project

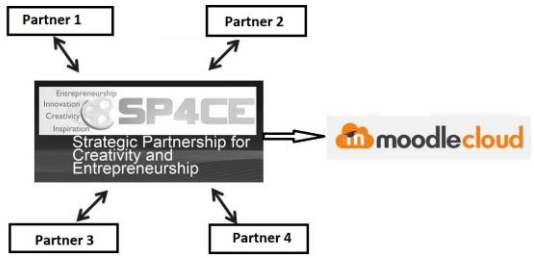

Figure 24. The sustainable model of CoLED ERASMUS+ platform

ACKNOWLEDGMENT

The project Strategic Partnership for Creativity and Entrepreneurship (SP4CE) has been funded with support from the EU (European Commission).

The project Collaborative Learning Environment for Engineering Education (CoLED) has been funded with support from the EU (European Commission).

This publication/article reflects the views only of the authors. The Commission cannot be responsible for any use which may be made of the content/information contained in the article.

REFERENCES

[1] A. Grabowska, N. Urbancikova, M. Słowikowski, J. Zieliński, *"SP4CE – strategic partnership for creativity and enterpreneurship successor openinn"*, Zeszyty Naukowe Wydziału Elektrotechniki i Automatyki Politechniki Gdańskiej, Gdańsk, vol. 41, pp. 15-21, April 2015.

[2] Czaja A., Palova D., Anagnostaki O., Grabowska A., Zieliński J., Kengyel G., *"SP4CE portal"*, http://sp4ce.eu/, October 2018.

[3] A. Grabowska, Palova D., Anagnostaki O., Kozłowska E., Zieliński J., Kengyel G., *"SP4CE Learning Rooms"*, http://sp4ce.moodle.pl/, October 2018.

[4] A. Grabowska, E. Kozłowska. *"Moodle MOOCs – przypadki użycia w projekcie SP4CE (Partnerstwo strategiczne na rzecz przedsiębiorczości i kreatywności"*, Zeszyty Naukowe Wydziału Elektrotechniki i Automatyki Politechniki Gdańskiej, Gdańsk, vol. 48, pp. 29-34, April 2016.

[5] A. Grabowska, *"Basic of Fusion 360 in MoodleCloud"*, https://sp4ce.moodlecloud.com/course/view.php?id=6, October 2018.

[6] CORDIS, "European *Multiple MOOC Aggregator*", http://cordis.europa.eu/project/rcn/191824_en.html

[7] A. Grabowska, A. Czaja, E. Kozłowska, T. Kocejko, *"Introducion to Autodesk Fusion 360"*, Autodesk Authorised Academic Partner, EMMA - the European Multiple MOOC Aggregator, https://platform.europeanmoocs.eu/course_introduction_to_autodesk_fusio, October 2018.

[8] Autodesk Website, http://www.autodesk.com/products/fusion-360/overview, October 2018

[9] UDEMY: "*Product Design in Autodesk Fusion 360 from idea to prototype*", https://www.udemy.com/product-design-fusion-360/, October 2018.

[10] A. Grabowska, *"Autodesk Authorised Academic Partner at Gdansk University of Technology"*, http://acsa.pg.gda.pl/, October 2018.

[11] Connect/KnowledgePoint, *DesignNow with Fusion 360 Partner Toolkit*, https://sway.com/Vz3bOHYY2iPMRrgV, October 2018.

[12] Autodesk tutorials:"*Get started with Fusion 360*", http://www.autodesk.com/products/fusion-360/learn-training-tutorials , October 2016.

[13] Autodesk's webinar "*Fusion 360 for Beginners*", https://www.youtube.com/watch?v=VbSkwvZyU_0, October 2018.

[14] Millionlights Studio, https://studio1.millionlights.org/, October 2018