D7.4.2 – Report on Final Dissemination Online Conference (3-4/09/2020)

Project information

Grant Agreement Number	*2017 - 2863 / 001 - 001*
Project Full Title	Towards responsive engineering curricula through europeanisation of dual higher education
Project Acronym	DYNAMIC
Funding scheme	*588378-EPP-1-2017-1-DE-EPPKA2-KA*
Start date of the project	01-11-2017
Duration	36 months

Deliverable Information

Deliverable n°	7.4.2
Deliverable title	Report on Final Dissemination Online Conference (3-4/09/2020)
WP	WP7
WP Leader	RAABE Bulgaria Ltd.
Contributing Partners	DYNAMIC consortium partners
Authors	Katerina Kasabova (RAABE Bulgaria Ltd.)
Contributors	DYNAMIC consortium partners
Reviewers	Sebastien Clerc-Renaud (HSW), Evgenia Mahler (HSW), Nadezhda Tzvetkova(RAABE)
Contractual Deadline	28/02/2021
Delivery date to EC	30/06/2021

Dissemination Level

PU	Public	✓
PP	Restricted to other programme participants (incl. Commission Services)	
RE	Restricted to a group specified by the consortium (incl. Commission Services)	
CO	Confidential, only for the members of the consortium (incl. Commission Services)	

Table of Contents

1. Executive Summary

This report summarizes the activities of the organization and the results of the conducted on 3 and 4 September 2020 Final International Dissemination Conference planned as a part of Dissemination and Exploitation activities in WP7 of Dynamic project.

The main goals of the Final Dissemination Conference "The University Business Cooperation in International Dual Higher Education" were:

- to present the achieved results from the implementation of the Dynamic project
- to reach a broader audience of project stakeholders and interests groups
- to strengthen the cooperation between education and business
- to encourage the future development of dual education in higher education

In line with the overall idea and main goals of the Dynamic project, the conference focused on actual issues:

- Ensuring more flexible routes for acquiring current industry-related skills necessary to boost and sustain innovation in the sectors identified by the national strategies of Smart Specialisation and regional innovation in the new member states.
- Possibilities for integration of regular practical phases in the ongoing engineering curricula with purpose accelerating the update of knowledge provided by higher education institutions.
- Further development of higher education and the education as whole: curricula changes, implementation of dual education in higher education, innovation alliances, entrepreneurial education, and university-business cooperation.

Because of COVID-19 pandemic the 2 days conference was organised online. It connected more than 260 participants (218 from which external stakeholders – university researches, policy makers, VET trainers, teachers, students, ect.) from more than 15 countries.

The report presents the preparation and organization phases of the conference; Conference program, Conference topics and speakers involved; results from the received Feedback Questionnaires, Conference Proceedings ect.

2. Introduction

In the context of a rapidly evolving world, university graduates need the appropriate competences to manage the changes, complexities and uncertainty of the modern world of work. Requirements of employment and the workplace reflect advancements in knowledge and innovation being adopted by companies and the economy. Designing sustainable and practical solutions to equip students with employability and entrepreneurial skills requires a dialogue between academia and business.

Finding space in the academic curricula to embed topics with relevance to the global labour market challenges can be addressed by mutually beneficial cooperation between these two stakeholder groups. The direct involvement of industrial stakeholders in the curriculum design and delivery is seen as an opportunity to keep certain study programmes closely relevant to the needs of the labour market.

In the conducted Final Dissemination Conference "The University Business Cooperation in International Dual Higher Education" part of the project DYNAMIC, academic and industrial experts came together to share ideas, innovation and good practises for practice-integrated dual higher education models, ideas for development of the higher education and strengthen the cooperation between education and business.

During the Final Dissemination Conference the project partners shared with participants and external stakeholders the results achieved and lessons learnt from the past 3 years of international cooperation (2017-2020) within the Dynamic project.

3. Planning and organisation

The Final Dissemination International Dynamic Conference was planned as a part from the activities of the Dynamic project in the WP7 Dissemination and Exploitation of results. According to the initial plan, it has to be held in Sofia, Bulgaria within 2 working days and to include 150 participants (external stakeholder), of which 80 local participants and 70 foreigners.

The main goal of the conference was to present the achievements and results of the implementation of the Dynamic project; to give greater popularity to the developed products and to reach a wider audience and target groups.

Preparations for the conference began immediately after the Project Meeting in Sibiu, Romania in October 2019, at which the project partners decided the date and place of the conference: September 3 -4.2020 in Sofia.

The planning activities included: preparation of a draft program; conducting preliminary talks with potential speakers and lecturers, policy makers; preparation of lists of potential stakeholders who would be interested in participating in the conference; finding a suitable place to conduct and ensure

the stay of the participants; planning the provision of logistical support for foreign participants; materials for the participants, etc.

The COVID crisis from the beginning of 2020 and the subsequent lockdown in almost all European countries for several months, as well as the travel ban, which affected almost every country, necessitated an urgent online meeting between the project partners and the decision to change the format of the conference: from present to online conference.

This necessitated the development of a new concept for the Dissemination conference: everything had to happen online, remotely and leave the feeling of a real event.

For this purpose RAABE Bulgaria – leading organization of WP7 after communication with the project coordinator and project partners started the preparation of an online conference. We separated the activities in few categories:

1. **Preparation of the conference program, communication and work with potential key note speakers, lecturers, project coordinator, project partners, European and national policy makers:**
    - Preparation of draft and final conference program
    - Preparation and sending invitation letters for participation in the conference to key note speakers and lectors
    - Preparation and sending of invitation letters to European and national policy makers
    - Daily communication and coordination of all activities with key note speakers, lecturers, project coordinator, project partners, European and national policy makers
    - Preparation of templates
    - Receiving, review and editing of the presentations
    - Conducting training and testing the online platform with lecturers, ect.

2. **Technical preparation of the conference**
    - Selection and testing of a suitable platform for holding an online event
    - Preparation of structure and content of the Conference website
    - Development and design of a conference website
    - Integration the Conference website into the website of the Dynamic project
    - Preparation of technical help for the participants and for the speakers
    - Technical support during the conference, ect.

3. **Preparation of a marketing plan, preparation and sending of marketing campaigns**
    - Preparation of marketing plan for the Conference
    - Preparation of potential stakeholder lists
    - Preparation and sending of marketing e-mail campaigns to the potential stakeholders and to all Dynamic project partners
    - Preparation and sending of Call for papers Invitation to the potential stakeholders

- Facebook advertising in order to increase interest to the event, ect.

4. **Registration and communication with participants in the conference**
    - Development of online forms for registration of the participants
    - Preparation and sending of a several reminder e-mails in order to maintain the interest in the conference among the registered participants
    - Answering questions and communication with the participants, ect.

5. **After conference activities**
    - Preparation and sending Conference Feedback Questionnaire to the participants
    - Preparation and sending of electronic certificates to the conference participants
    - Sending links to conference recordings and presentations
    - Preparing report from the conducted Final Dissemination Conference. ect.

In view of the many technical and organizational activities to ensure the holding of the conference, the few months of lockdown because of COVID-19 crisis and the short time left until the actual implementation of the conference, RAABE Bulgaria with purpose to ensure the smooth conduct of the conference involved almost all its employees in the preparation, organizational and conducting phases of the conference.

Final Conference Program

The Dynamic Final Dissemination Conference Program was discussed and prepared together with the project coordinator and project partners. With common efforts we decided about topics, key note speakers, trainers of the workshops and we finalized the program. The duration of the conference remained as planned: 2 days Conference.

Detailed description of the Conference program, key note speakers, abstracts, trainers and workshops is given in Part 5. Conference Program from this report.

Invitation letters to European and national policy makers

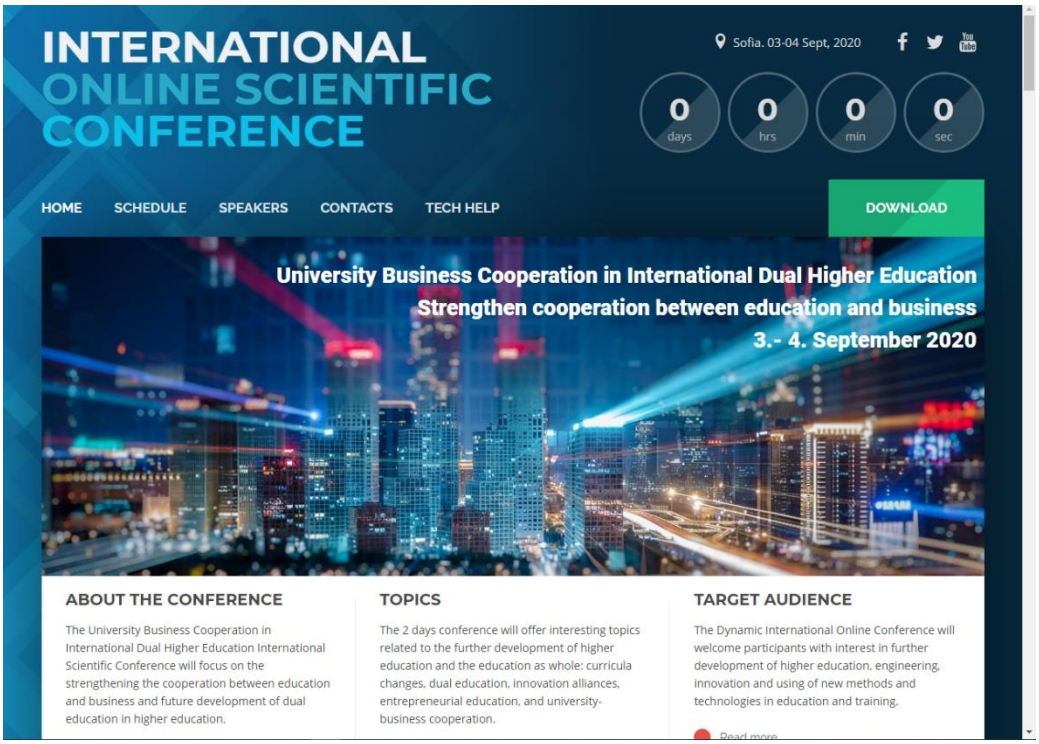
Invitation letters for participation as a high level policy makers and official quests to the online conference were sending to:

- Mariya Gabriel, European Commissioner for Innovation, Research, Culture, Education and Youth
- Ministry of education and science, Bulgaria
- Human Resource Development Centre (Bulgarian National Agency for Erasmus+ Program)
- National Agency for Vocational education and training (NAVET), Bulgaria
- other relevant stakeholders and high policy makers

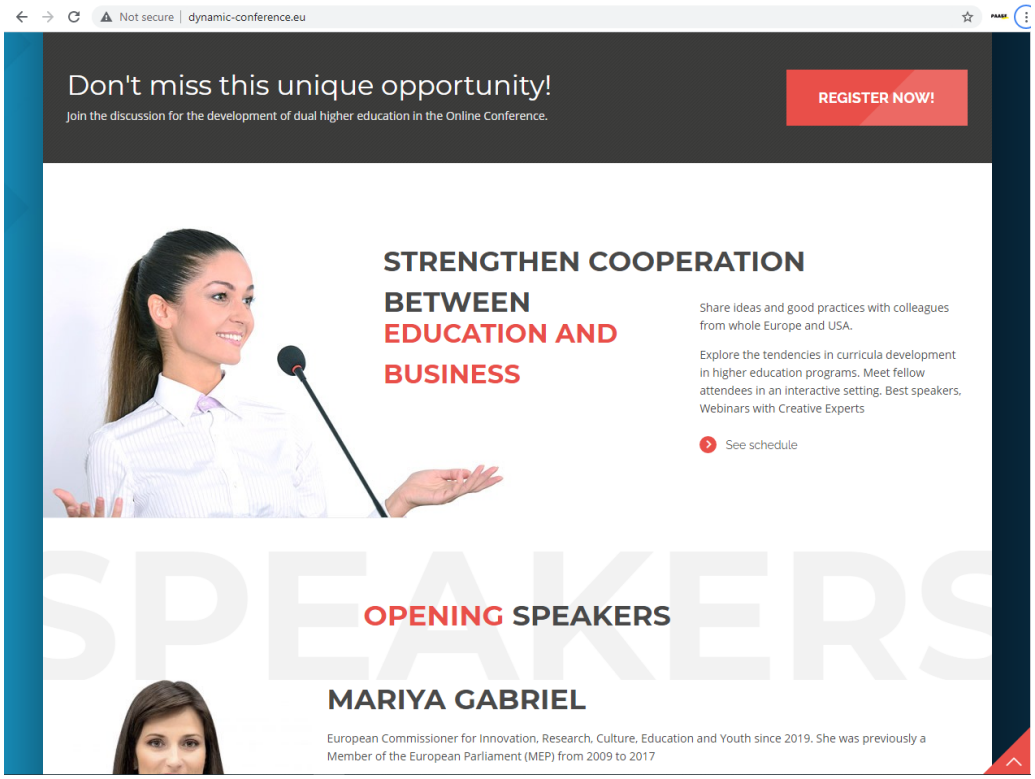
D7.4.2: Final Dissemination Online Conference (3-4/09/2020)

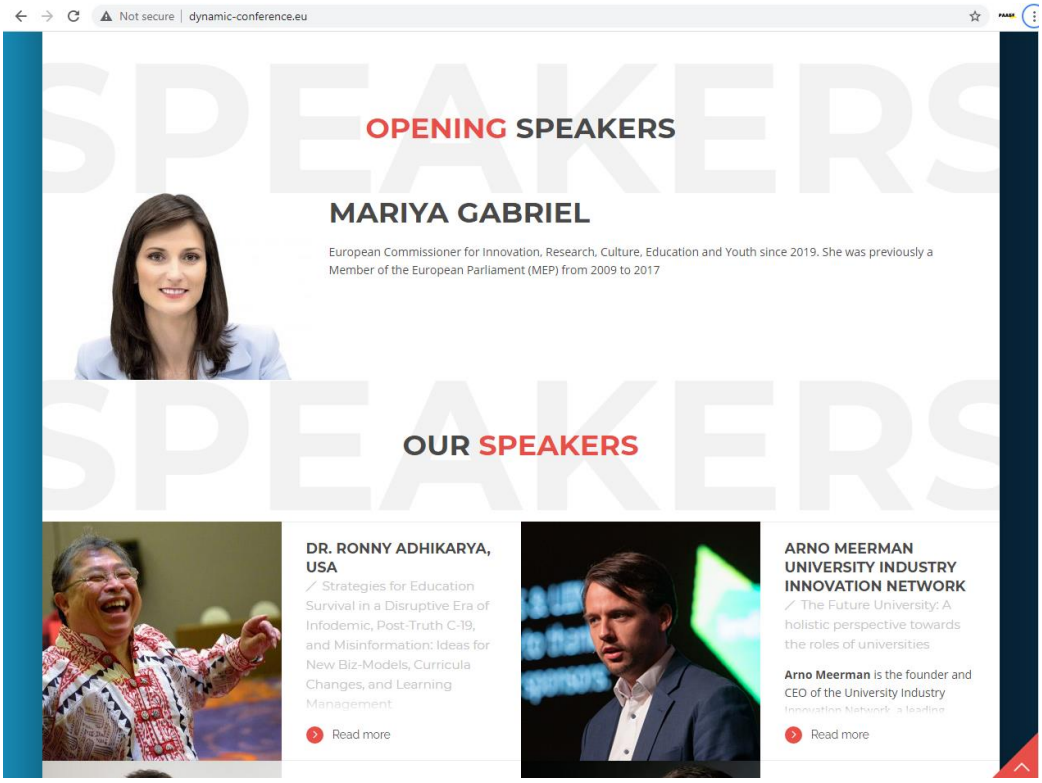
Technical preparation of the conference

The WordPress platform was used for creation of a conference website: http://www.dynamic-conference.eu/

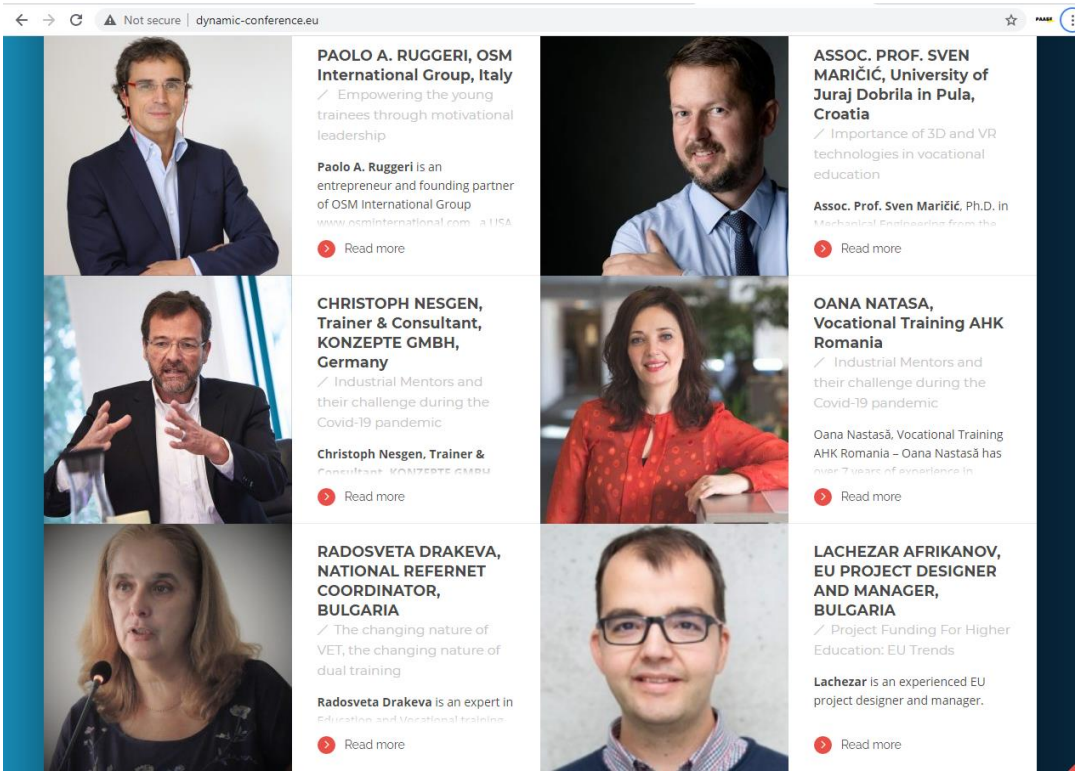


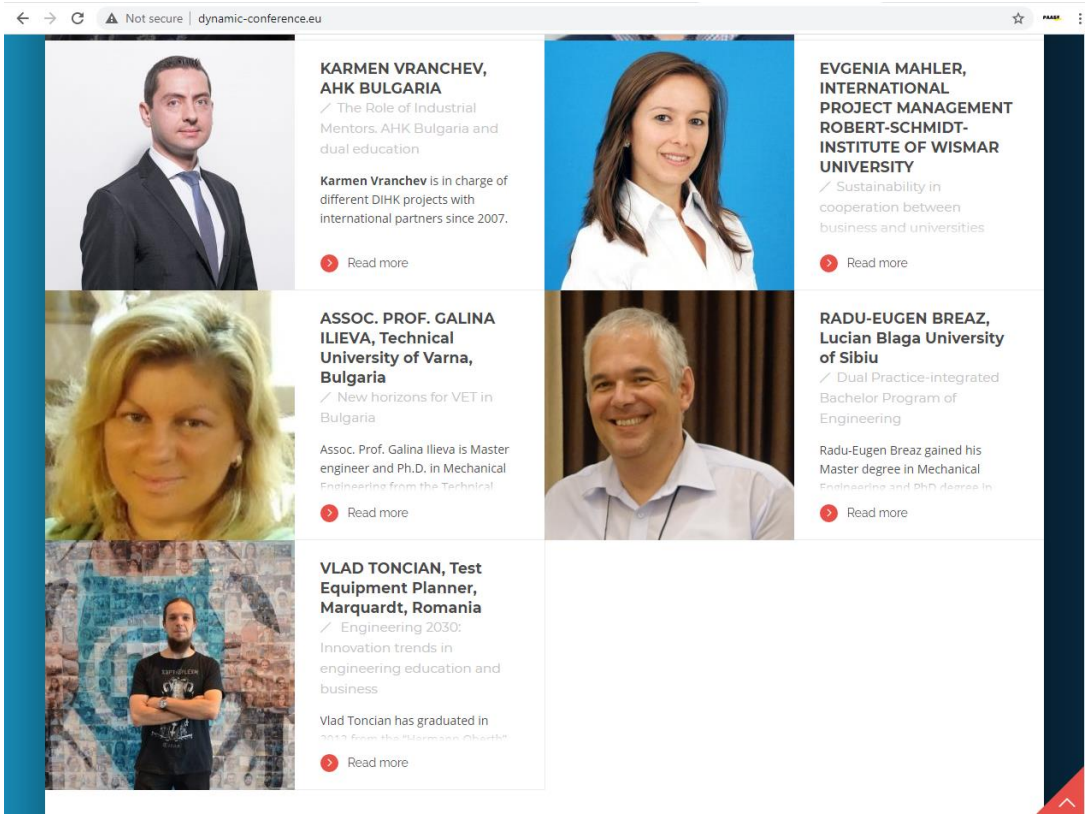
D7.4.2: Final Dissemination Online Conference (3-4/09/2020)



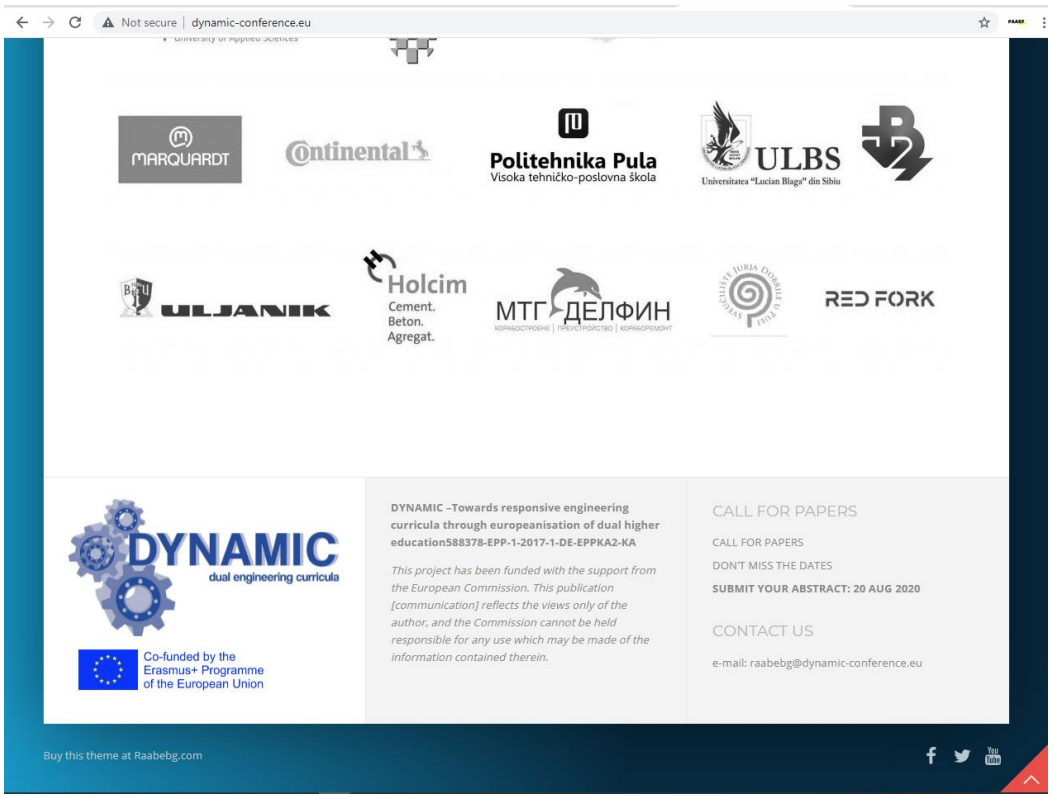


D7.4.2: Final Dissemination Online Conference (3-4/09/2020)



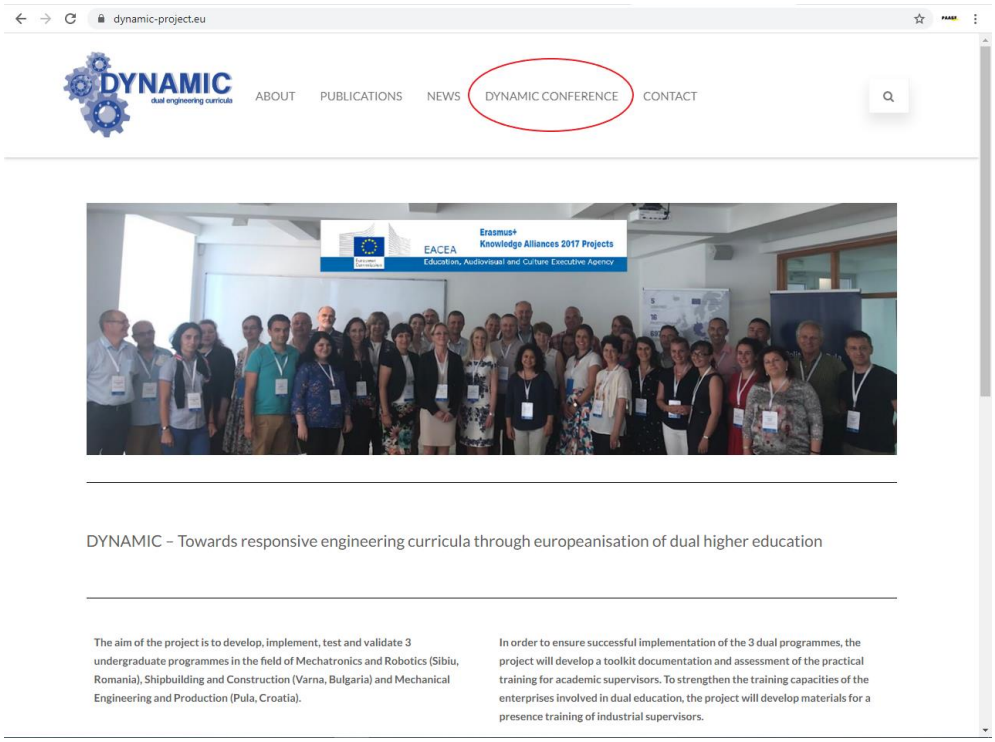


D7.4.2: Final Dissemination Online Conference (3-4/09/2020)



D7.4.2: Final Dissemination Online Conference (3-4/09/2020)

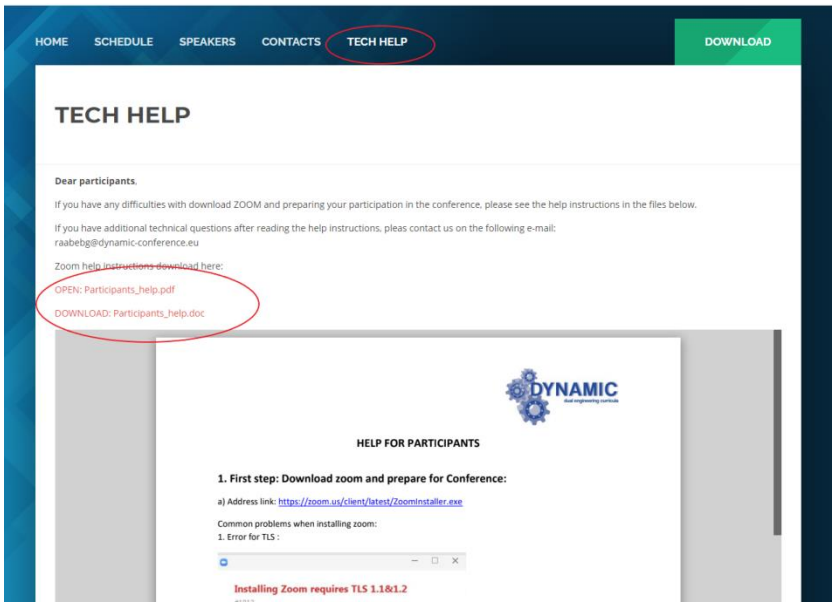
The Conference website was integrated into the Dynamic Project website: https://dynamic-project.eu/



The participants made registration for participation in the Conference through the **web Registration form.**

Instructions were prepared to support participants and speakers:

http://www.dynamic-conference.eu/tech-help/



We chose the **Zoom platform** to hold the online conference. The required number of online rooms for general sessions and parallel sessions was provided. Everything was tested in advance. And at an online meeting between the partners, held on 28.08.2020, the conference itself was tested, and everyone who was engaged as a speaker, moderator or technical support received specific guidelines.

Marketing campaign

Different channels were used to advertise the event:

- targeted e-marketing to different groups: universities, public authorities, dual VET-providers, comapnies
- sharing information through Dynamic partners networks
- FB marketing and posts

The announcement of the conference started in July 2020 with the 4th Dynamic e-newsletter and news published on Dynamic website: https://dynamic-project.eu/blog/join-the-dynamic-international-online-scientific-conference-university-business-cooperation-in-international-dual-higher-education-3-4-september-2020/

E-mail marketing:

The most used marketing channel for invitation of participants was e-mail marketing. All marketing e-mails were prepared in 2 languages: in Bulgarian for the Bulgarian audience and in English for the project partners and foreign participants. RAABE Bulgaria used its system for sending marketing e-mails to wider database.

D7.4.2: Final Dissemination Online Conference (3-4/09/2020)

Three e-mail marketing campaigns were prepared in html template and send to universities, teachers, companies, school principals for the period from: 3 August to 20 August 2020:

- First E-mail marketing campaign was send on 3 and 4 August 2020 to database from **8907 e-mails.** The
  The statistic is below:

Email Campaign Statistics for "Invitation_Dynamic_Conference_BG"

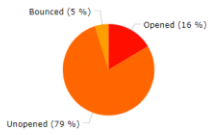
Statistics Snapshot | Open Statistics | Link Statistics | Bounce Statistics | Unsubscribe Statistics | Forwarding Statistics

A summary of the performance for the selected email campaign is shown below:

Statistics Snapshot	
Email Subject	ПОКАНА за участие в Международна научно-практическа конференция по проект Dynamic
Email Campaign	Invitation_Dynamic_Conference_BG
Contact Lists	BG - 0 - Targovski saobshtenia Obrazovanie,Колеги РААБЕ,BG - 0 - Targovski saobshtenia Obrazovanie CRM 2, aSc_Universiteti,
Start Sending	August 3 2020, 12:00 pm
Finished Sending	August 3 2020, 12:35 pm
Sending Time	35 minutes, 15 seconds
Sent To	6,651 of 6,651
Sent By	RAABE Bulgaria
Opened	1,443 / 1,093 Unique Opens
Open Rate:	16.43%
Click-through Rate:	1.88%
Bounced	323

Opened (16 %) 1,093
Unopened (79 %) 5,235
Bounced (5 %) 323

Email Campaign Summary Chart



JS chart by amCharts

Email Campaign Statistics for "Invitation_Dynamic_Conference_BG"

Statistics Snapshot | Open Statistics | Link Statistics | Bounce Statistics | Unsubscribe Statistics | Forwarding Statistics

A summary of the performance for the selected email campaign is shown below:

Statistics Snapshot	
Email Subject	ПОКАНА за участие в Международна научно-практическа конференция по проект Dynamic
Email Campaign	Invitation_Dynamic_Conference_BG
Contact Lists	Direktori Uchilishta,Колеги РААБЕ
Start Sending	August 4 2020, 2:25 pm
Finished Sending	August 4 2020, 2:26 pm
Sending Time	1 minute, 21 seconds
Sent To	2,256 of 2,256
Sent By	RAABE Bulgaria
Opened	848 / 694 Unique Opens
Open Rate:	30.76%
Click-through Rate:	1.46%
Bounced	0

Opened (31 %) 694
Unopened (69 %) 1,562
Bounced (0 %) 0

Email Campaign Summary Chart

- Second E-Mail marketing campaign was send on 13 August 2020 to database from **32 858 e-mails** (universities, companies in Bulgaria, teachers, school principals). The statistic from the second marketing e-mail campaign is below:

Email Campaign Statistics for "Invitation_Dynamic_Conference_BG"

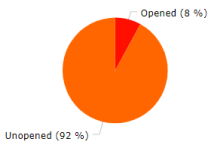
Statistics Snapshot | Open Statistics | Link Statistics | Bounce Statistics | Unsubscribe Statistics | Forwarding Statistics

A summary of the performance for the selected email campaign is shown below:

Statistics Snapshot	
Email Subject	ПОКАНА за участие в Международна научно-практическа конференция по проект Dynamic
Email Campaign	Invitation_Dynamic_Conference_BG
Contact Lists	BG - 0 - Targovski saobshtenia Danatsi, Pravo, Management,Колеги РААБЕ
Start Sending	August 4 2020, 3:20 pm
Finished Sending	August 4 2020, 5:07 pm
Sending Time	1 hour, 47 minutes
Sent To	24,272 of 24,272
Sent By	RAABE Bulgaria
Opened	2,398 / 1,934 Unique Opens
Open Rate:	7.97%
Click-through Rate:	0.52%
Bounced	0

Opened (8 %) 1,934
Unopened (92 %) 22,338
Bounced (0 %) 0

Email Campaign Summary Chart



Email Campaign Statistics for "Invitation_Dynamic_Conference_2"

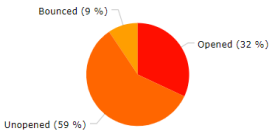
Statistics Snapshot | Open Statistics | Link Statistics | Bounce Statistics | Unsubscribe Statistics | Forwarding Statistics

A summary of the performance for the selected email campaign is shown below:

Statistics Snapshot	
Email Subject	Invitation - Dynamic International Online Scientific Conference
Email Campaign	Invitation_Dynamic_Conference_2
Contact Lists	Колеги РААБЕ,LEKTORI AVTORI,Dynamic_Universiteti
Start Sending	August 20 2020, 9:15 am
Finished Sending	August 20 2020, 9:15 am
Sending Time	55 seconds
Sent To	1,352 of 1,352
Sent By	RAABE Bulgaria
Opened	742 / 432 Unique Opens
Open Rate:	31.95%
Click-through Rate:	3.62%
Bounced	127

Opened (32 %)	432
Unopened (59 %)	793
Bounced (9 %)	127

Email Campaign Summary Chart



- Third E-Mail marketing campaign was send on 20 August 2020 to database from **4 397 e-mails** (universities, public authorities, teachers, VET school principals). The statistic from the third marketing e-mail campaign is below:

Email Campaign Statistics for "Invitation_Dynamic_Conference_2"

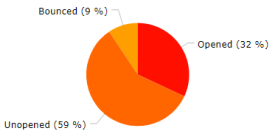
Statistics Snapshot | Open Statistics | Link Statistics | Bounce Statistics | Unsubscribe Statistics | Forwarding Statistics

A summary of the performance for the selected email campaign is shown below:

Statistics Snapshot	
Email Subject	Invitation - Dynamic International Online Scientific Conference
Email Campaign	Invitation_Dynamic_Conference_2
Contact Lists	Колеги РААБЕ,LEKTORI AVTORI,Dynamic_Universiteti
Start Sending	August 20 2020, 9:15 am
Finished Sending	August 20 2020, 9:15 am
Sending Time	55 seconds
Sent To	1,352 of 1,352
Sent By	RAABE Bulgaria
Opened	742 / 432 Unique Opens
Open Rate:	31.95%
Click-through Rate:	3.62%
Bounced	127

Opened (32 %)	432
Unopened (59 %)	793
Bounced (9 %)	127

Email Campaign Summary Chart



Email Campaign Statistics for "Invitation_Dynamic_Conference_2"

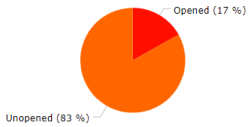
Statistics Snapshot | Open Statistics | Link Statistics | Bounce Statistics | Unsubscribe Statistics | Forwarding Statistics

A summary of the performance for the selected email campaign is shown below:

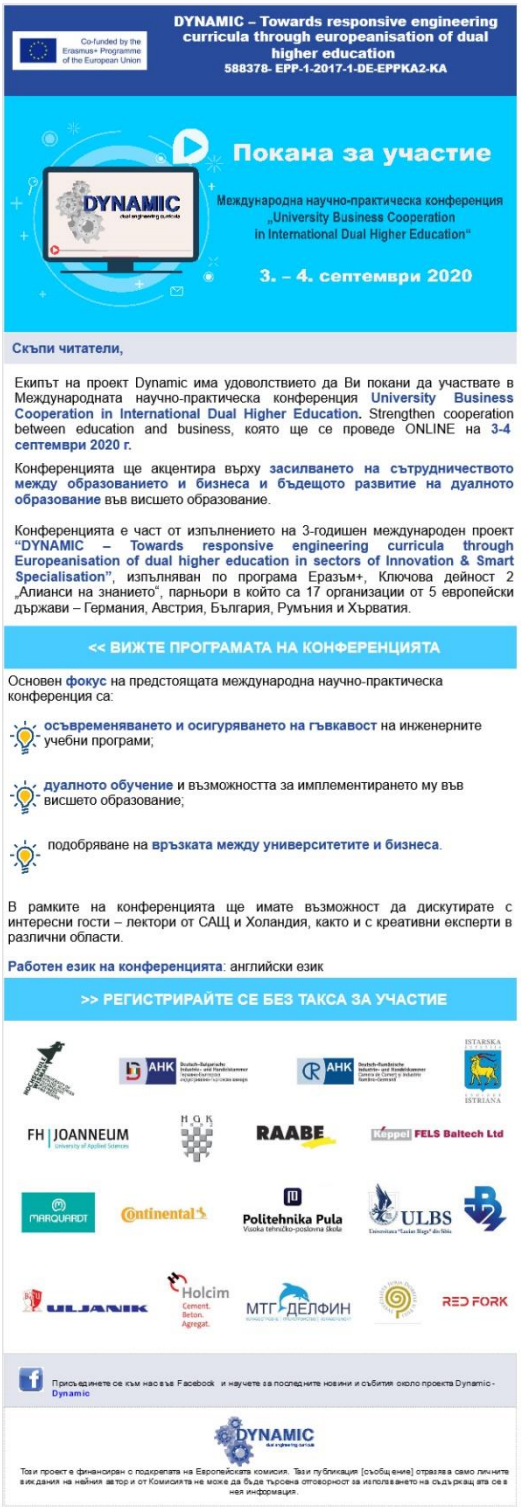
Statistics Snapshot	
Email Subject	Invitation - Dynamic International Online Scientific Conference
Email Campaign	Invitation_Dynamic_Conference_2
Contact Lists	BG - 3MVET tr,BG - 3MVET de,BG - 0 - Public administration, BG - 3MVET-08082018,CPO-List,Profesionalni Gimnazii
Start Sending	August 20 2020, 12:10 pm
Finished Sending	August 20 2020, 12:12 pm
Sending Time	2 minutes, 19 seconds
Sent To	3,045 of 3,045
Sent By	RAABE Bulgaria
Opened	701 / 513 Unique Opens
Open Rate:	16.85%
Click-through Rate:	0.46%
Bounced	0

Opened (17 %)	513
Unopened (83 %)	2,532
Bounced (0 %)	0

Email Campaign Summary Chart



D7.4.2: Final Dissemination Online Conference (3-4/09/2020)



Co-funded by the Erasmus+ Programme of the European Union

DYNAMIC – Towards responsive engineering curricula through europeanisation of dual higher education
588378- EPP-1-2017-1-DE-EPPKA2-KA

Покана за участие

Международна научно-практическа конференция
„University Business Cooperation
in International Dual Higher Education"

3. – 4. септември 2020

Скъпи читатели,

Екипът на проект Dynamic има удоволствието да Ви покани да участвате в Международната научно-практическа конференция **University Business Cooperation in International Dual Higher Education.** Strengthen cooperation between education and business, която ще се проведе ONLINE на **3-4 септември 2020 г.**

Конференцията ще акцентира върху **засилването на сътрудничеството между образованието и бизнеса и бъдещото развитие на дуалното образование** във висшето образование.

Конференцията е част от изпълнението на 3-годишен международен проект **"DYNAMIC – Towards responsive engineering curricula through Europeanisation of dual higher education in sectors of Innovation & Smart Specialisation"**, изпълняван по програма Еразъм+, Ключова дейност 2 „Алианси на знанието", парньори в който са 17 организации от 5 европейски държави – Германия, Австрия, България, Румъния и Хърватия.

<< ВИЖТЕ ПРОГРАМАТА НА КОНФЕРЕНЦИЯТА

Основен **фокус** на предстоящата международна научно-практическа конференция са:

- **осъвременяването и осигуряването на гъвкавост** на инженерните учебни програми;
- **дуалното обучение** и възможността за имплементирането му във висшето образование;
- подобряване на **връзката между университетите и бизнеса**.

В рамките на конференцията ще имате възможност да дискутирате с интересни гости – лектори от САЩ и Холандия, както и с креативни експерти в различни области.

Работен език на конференцията: английски език

>> РЕГИСТРИРАЙТЕ СЕ БЕЗ ТАКСА ЗА УЧАСТИЕ

Присъединете се към нас във Facebook и научете за последните новини и събития около проекта Dynamic - **Dynamic**

Този проект е финансиран с подкрепата на Европейската комисия. Тази публикация [съобщение] отразява само личните виждания на нейния автор и от Комисията не може да бъде търсена отговорност за използването на съдържащата се в нея информация.

Co-funded by the Erasmus+ Programme of the European Union

DYNAMIC – Towards responsive engineering curricula through europeanisation of dual higher education
588378- EPP-1-2017-1-DE-EPPKA2-KA

Join us

Dynamic International Online Scientific Conference
„University Business Cooperation
in International Dual Higher Education"

3. – 4. September 2020

Dear readers,

Dynamic team have the pleasure to invite you to participate in **Dynamic International Online Scientific Conference** „University Business Cooperation in International Dual Higher Education" on **3-4 of September 2020**, fee free.

The conference will **focus on the strengthening the cooperation between education and business and future development of dual education in higher education**.

The Conference is part from **DYNAMIC – Towards responsive engineering curricula through europeanisation of dual higher education Project**.

The main focus is to **ensure more flexible routes for acquiring current industry-related skills** necessary to boost and sustain innovation in the sectors identified by the national strategies of Smart Specialisation and regional innovation in the new member states.

Recommended for:
University professors, PhD, assistants; Students; VET trainers, Enterprise trainers; VET educators and teachers; Dual education policy makers; Dual education experts ect.

Working language(s): English

<< LEARN MORE ABOUT THE CONFERENCE

Keynote speakers

Dr. Ronny Adhikarya
USA

Strategies for Education Survival in a Disruptive Era of Infodemic, Post-Truth C-19, and Misinformation: Ideas for New Biz-Models, Curricula Changes, and Learning Management

Dr. Ronny Adhikarya had a 45-year career in international development assistance, serving for the World Bank, United Nations, and other international organizations. He was also associated with Educ. & Research institutions such as Stanford Univ., the East-West Center, and had conducted training in many learning institutions worldwide. He promoted the improvement of training quality and effectiveness through excellence in customer service and appropriate uses of interactive & distance or mobile learning technologies, cyber-marketing, quality assurance, peer-based & participatory knowledge management, sharing and utilization.

Arno Meerman,
University Industry Innovation Network

The Future University: A holistic perspective towards the roles of universities

Arno Meerman is the founder and CEO of the University Industry Innovation Network, a leading network that conducts research, provides events and training, and consults government, universities and industry on university-industry interaction. In his role Arno has built UIIN to one of the largest networks on university-industry interaction globally. Arno actively works with the European Commission, European Institute for Innovation and Technology, and other government bodies towards professionalisation of university-industry relationships, entrepreneurial universities and partnerships.

>> REGISTER NOW
fee free

Join us on Facebook and learn about the latest news and events on Dynamic project - **Dynamic**

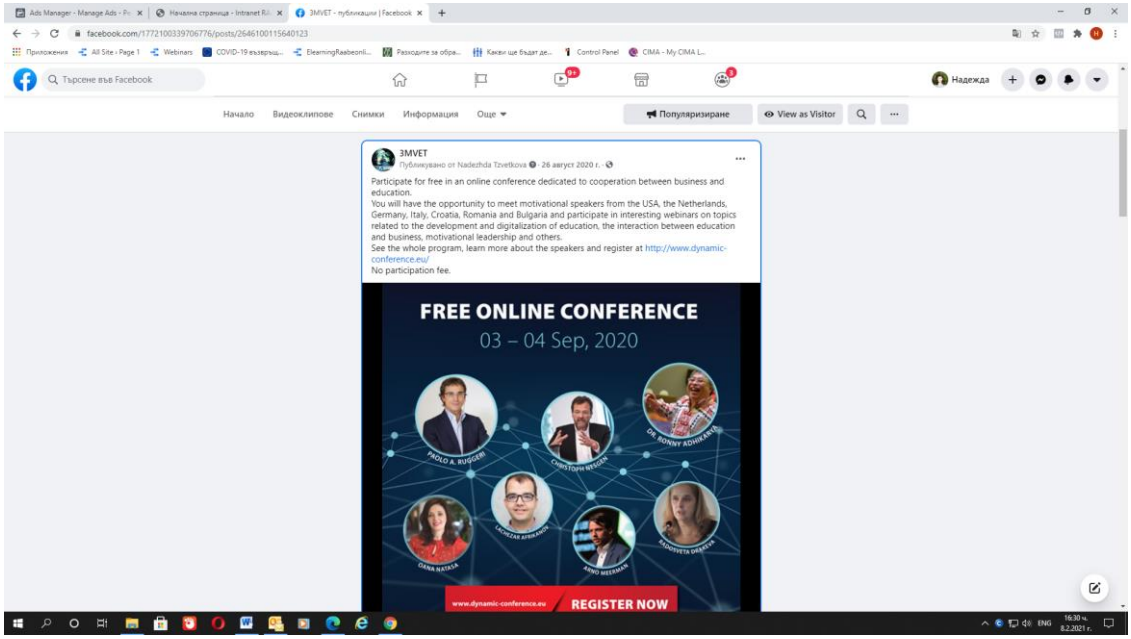
This project has been funded with the support from the European Commission. These publications [communications] reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

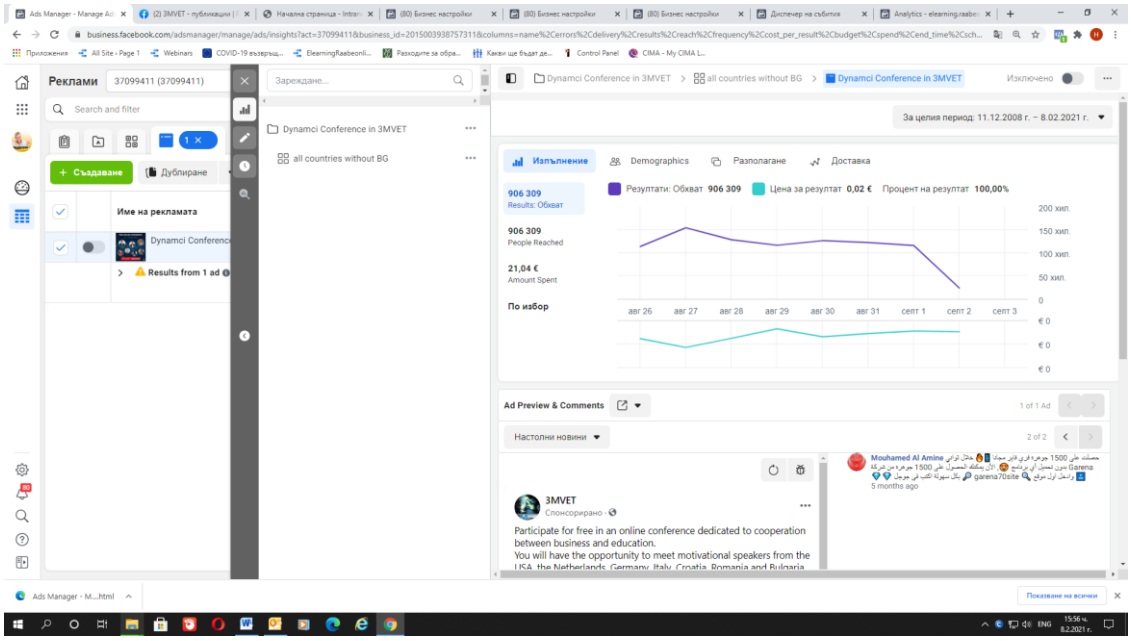
FB marketing:

In order to further promote the conference, the social network FB was also used as a distribution channel. Below we present the FB ads and posts we made in FB groups and results achieved:

Facebook Ads:

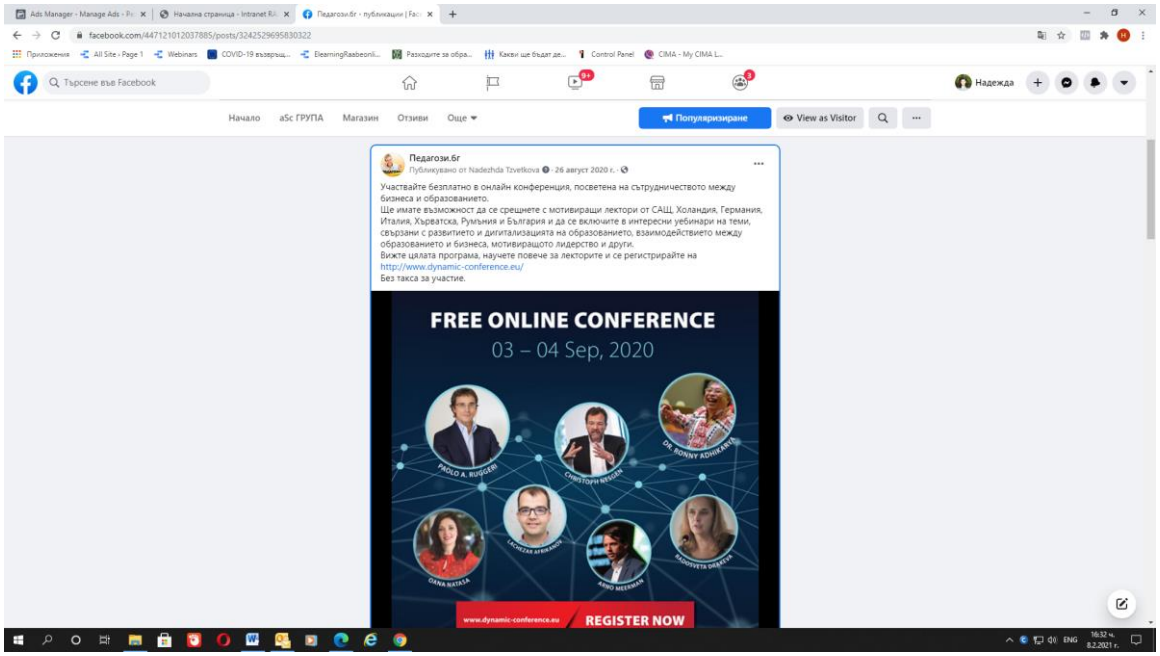
https://www.facebook.com/1772100339706776/posts/2646100115640123

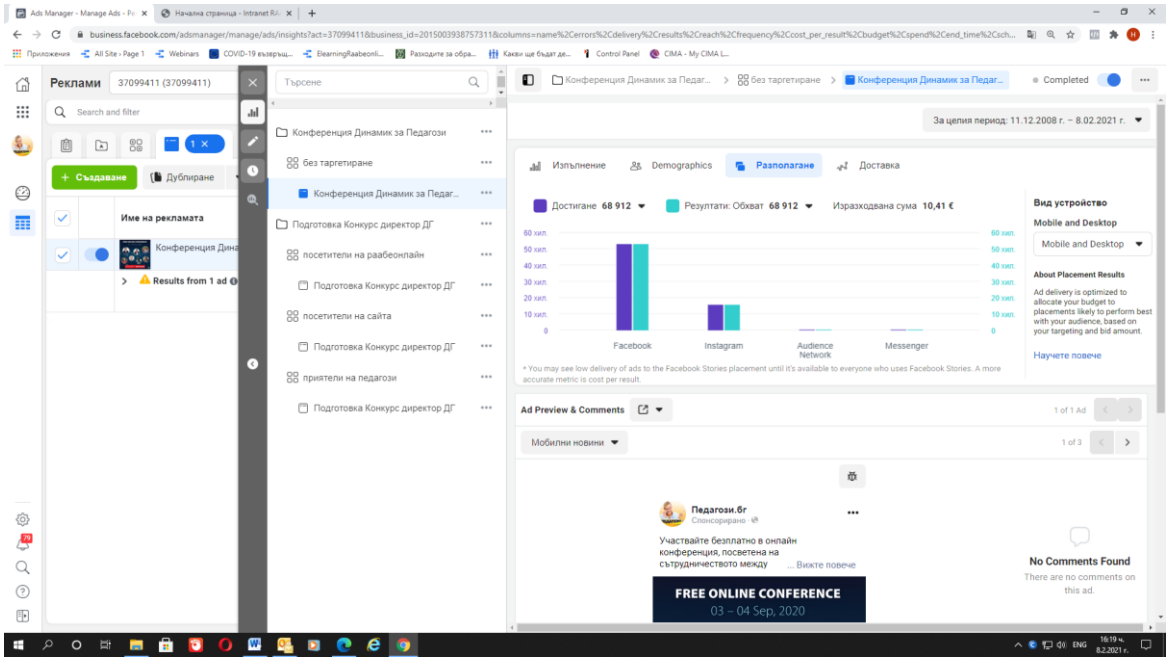




D7.4.2: Final Dissemination Online Conference (3-4/09/2020)

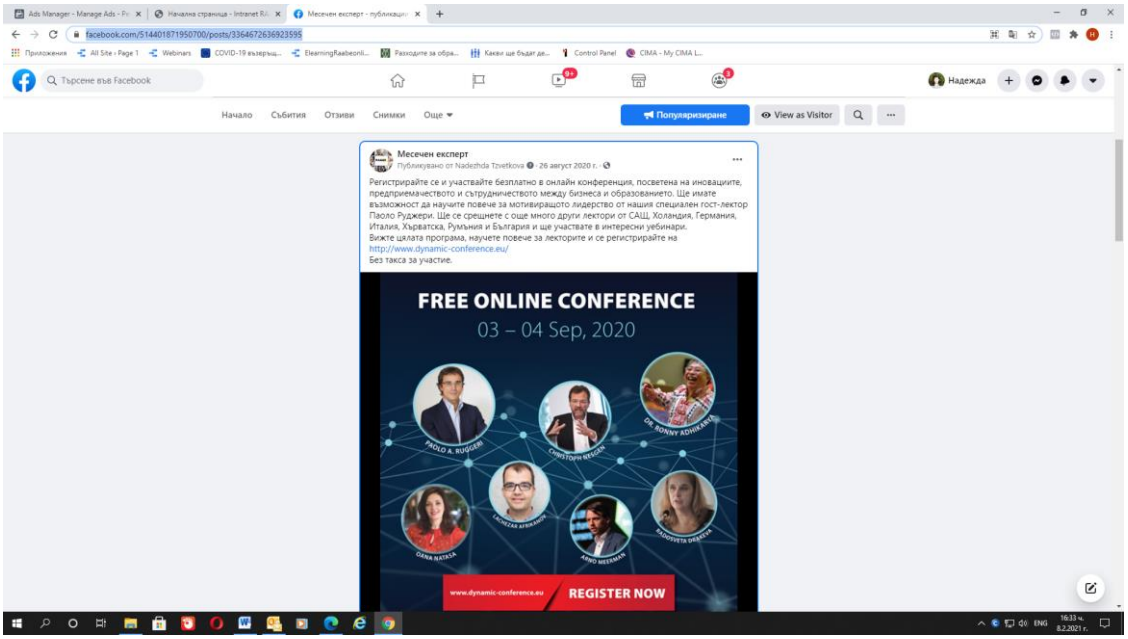
Facebook Ads: https://www.facebook.com/447121012037885/posts/3242529695830322

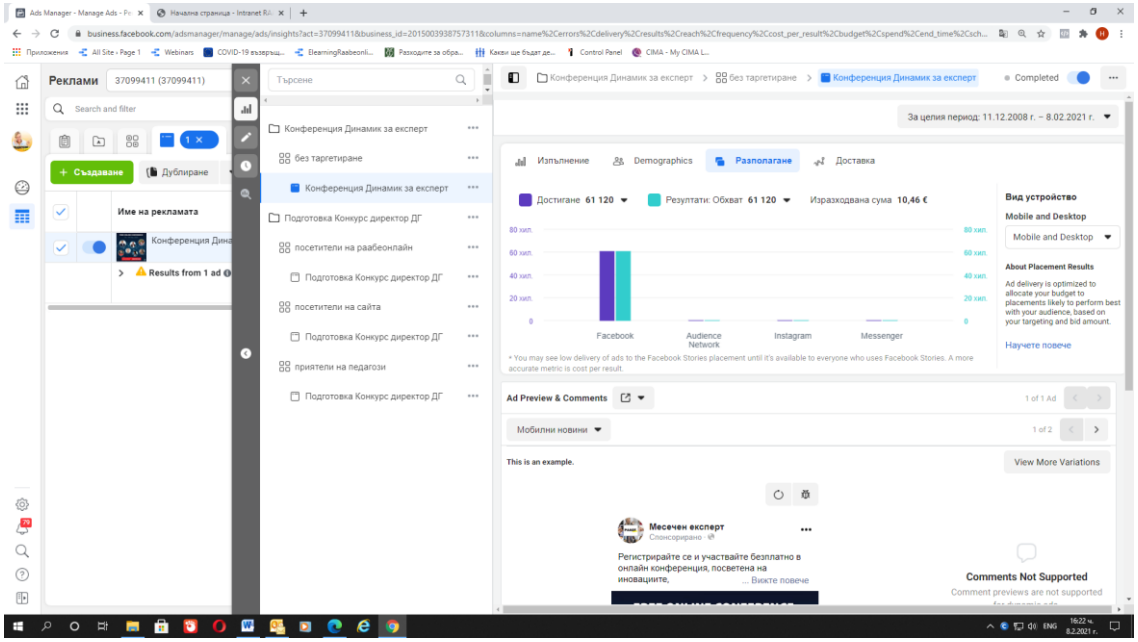




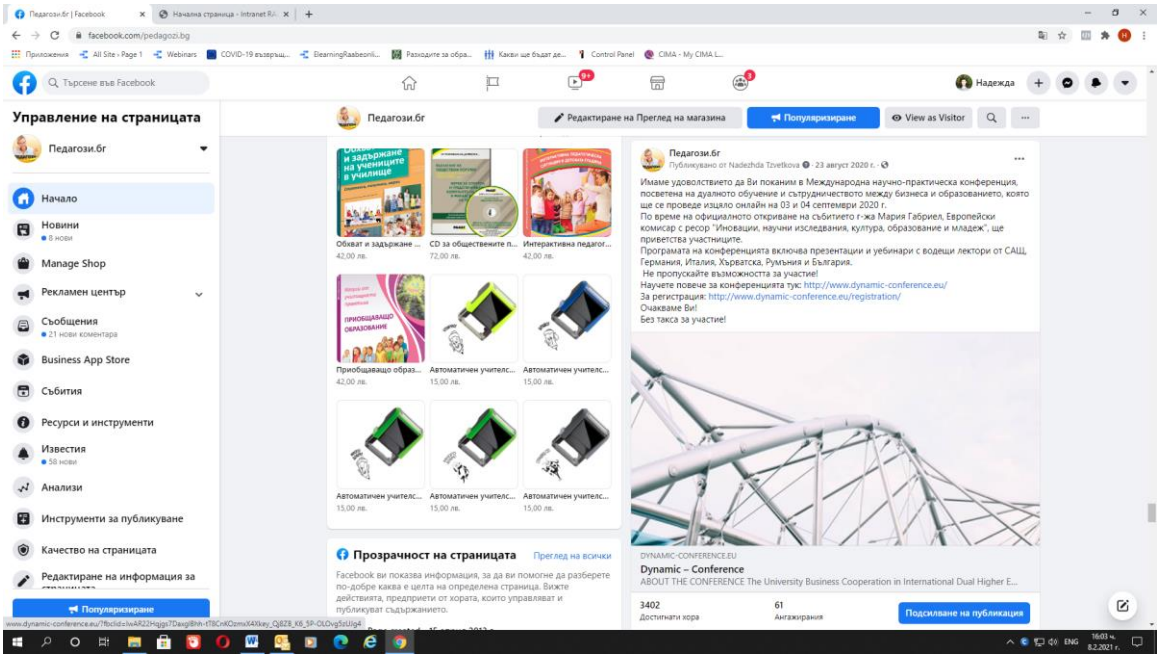
D7.4.2: Final Dissemination Online Conference (3-4/09/2020)

Facebook Ads: https://www.facebook.com/514401871950700/posts/3364672636923595





Post in the FB page of RAABE Bulgaria with more than 30 000 followers:



Sharing information through Dynamic partners networks

All project partners shared with their network and partners lists information about the upcoming event.

Additionally the AHK Bulgaria send to their members network (mainly companies) information about the upcoming conference with their weekly newsletter *Bulgarien Aktuell*:

Wird diese Nachricht nicht richtig dargestellt, klicken Sie bitte **hier** .

Bulgarien Aktuell

Newsletter von:

AHK Deutsch-Bulgarische Industrie- und Handelskammer Германо-Българска индустриално-търговска камара

GTAI GERMANY TRADE & INVEST

Ausgabe 33 | 18. August 2020 | **Български**

DBIHK Nachrichten | Meldungen | Veranstaltungen | Messen | Von Mitgliedern für Mitglieder

Vollversammlung der DBIHK

Sehr geehrte Mitglieder,

die Deutsch-Bulgarische Industrie- und Handelskammer lädt Sie herzlich zur diesjährigen **Vollversammlung am Donnerstag, den 17. September 2020, um 18.00 Uhr im Interpred WTC Sofia, Saal Sofia, Dragan Tsankov Blvd. 36, 1040 Sofia** ein.

Die Materialien im Zusammenhang mit der Tagesordnung finden Sie **hier** sowie im Büro der Deutsch-Bulgarischen Industrie- und Handelskammer innerhalb der Geschäftszeiten.

Sie können sich gern bis zum 16.09.2020 online **hier** anmelden.

Bitte beachten Sie, dass die Veranstaltung gemäß den COVID-19 geltenden Präventionsmaßnahmen stattfindet und die Plätze im Saal begrenzt sind. Das Tragen einer Schutzmaske im Veranstaltungsgebäude ist obligatorisch.

Mehr lesen

VIP Partner

D7.4.2: Final Dissemination Online Conference (3-4/09/2020)

Internationale wissenschaftliche Online-Konferenz Zusammenarbeit zwischen Unternehmen und Universitäten für die duale Hochschulbildung

Im Zeitraum vom 3. bis 4. September 2020 findet eine **internationale wissenschaftliche Online-Konferenz zum Thema „Zusammenarbeit zwischen Unternehmen und Universitäten für die duale Hochschulbildung“** statt. Die Konferenz konzentriert sich auf die **Entwicklung der dualen Hochschulbildung im Ingenieurwesen.**

Die Konferenz ist Teil des von der Hochschule in Wismar koordinierten Erasmus+- Projekts **„DYNAMIC – Towards responsive engineering curricula through europeanisation of dual higher education“.**

Die Konferenz wird sich auf die **Stärkung der Zusammenarbeit zwischen Bildung und Wirtschaft und die künftige Entwicklung der dualen Hochschulbildung** konzentrieren.
Der **Schwerpunkt** der bevorstehenden internationalen wissenschaftlich-praktischen Konferenz liegt auf:

- Aktualisierung und Flexibilität der **technischen Lehrpläne;**
- duale Bildung und die **Möglichkeit ihrer Umsetzung in der Hochschulbildung;**
- **Verbesserung** der Beziehungen zwischen Universitäten und Unternehmen.

Während der Konferenz haben Sie die Möglichkeit, mit Gastrednern aus den USA und den Niederlanden sowie mit kreativen Experten aus verschiedenen Gebieten zu diskutieren.
Arbeitssprache der Konferenz: **Englisch**

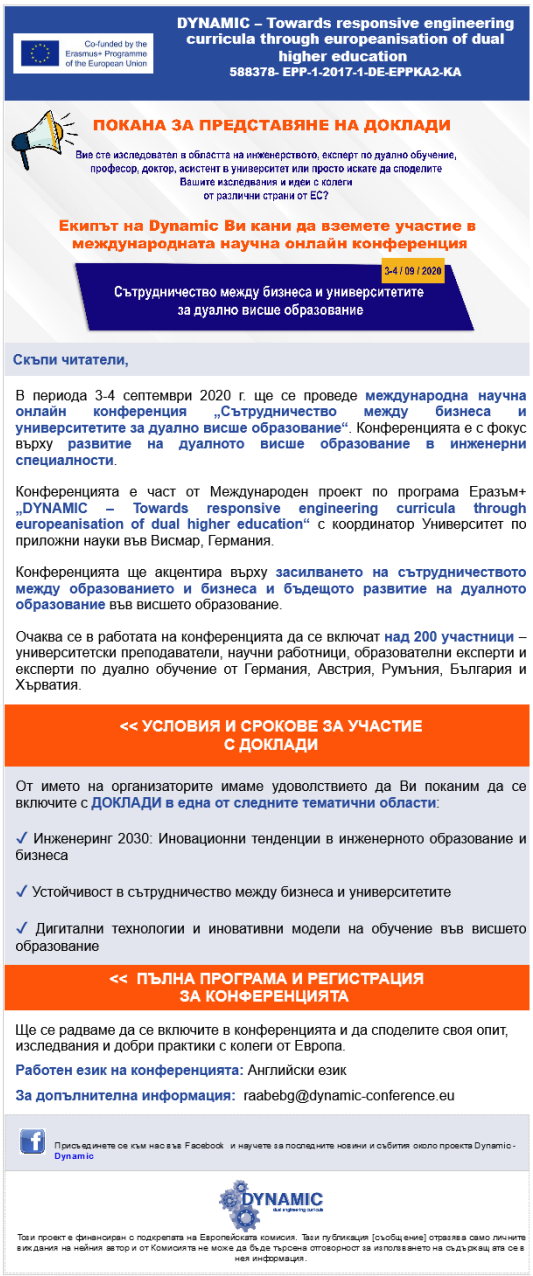
An der Konferenz werden **mehr als 200 Teilnehmer** teilnehmen - Universitätsprofessoren, Forscher, Bildungsexperten und Experten für duales Lernen aus Deutschland, Österreich, Rumänien, Bulgarien und Kroatien.

Weitere Informationen zur Veranstaltung sowie zur Anmeldung zur Teilnahme finden Sie **hier**.

D7.4.2: Final Dissemination Online Conference (3-4/09/2020)

Call for papers

Invitation for Call for papers were prepared in html and send by e-mail to universities, researchers in engineering, a dual education experts:



Co-funded by the Erasmus+ Programme of the European Union

DYNAMIC – Towards responsive engineering curricula through europeanisation of dual higher education
588378- EPP-1-2017-1-DE-EPPKA2-KA

ПОКАНА ЗА ПРЕДСТАВЯНЕ НА ДОКЛАДИ

Вие сте изследовател в областта на инженерството, експерт по дуално обучение, професор, доктор, асистент в университет или просто искате да споделите Вашите изследвания и идеи с колеги от различни страни от ЕС?

Екипът на Dynamic Ви кани да вземете участие в международната научна онлайн конференция

3-4 / 09 / 2020

Сътрудничество между бизнеса и университетите за дуално висше образование

Скъпи читатели,

В периода 3-4 септември 2020 г. ще се проведе **международна научна онлайн конференция „Сътрудничество между бизнеса и университетите за дуално висше образование“**. Конференцията е с фокус върху **развитие на дуалното висше образование в инженерни специалности**.

Конференцията е част от Международен проект по програма Еразъм+ **„DYNAMIC – Towards responsive engineering curricula through europeanisation of dual higher education“** с координатор Университет по приложни науки във Висмар, Германия.

Конференцията ще акцентира върху **засилването на сътрудничеството между образованието и бизнеса и бъдещото развитие на дуалното образование** във висшето образование.

Очаква се в работата на конференцията да се включат **над 200 участници** – университетски преподаватели, научни работници, образователни експерти и експерти по дуално обучение от Германия, Австрия, Румъния, България и Хърватия.

<< УСЛОВИЯ И СРОКОВЕ ЗА УЧАСТИЕ С ДОКЛАДИ

От името на организаторите имаме удоволствието да Ви поканим да се включите с **ДОКЛАДИ в една от следните тематични области**:

✓ Инженеринг 2030: Иновационни тенденции в инженерното образование и бизнеса

✓ Устойчивост в сътрудничество между бизнеса и университетите

✓ Дигитални технологии и иновативни модели на обучение във висшето образование

<< ПЪЛНА ПРОГРАМА И РЕГИСТРАЦИЯ ЗА КОНФЕРЕНЦИЯТА

Ще се радваме да се включите в конференцията и да споделите своя опит, изследвания и добри практики с колеги от Европа.

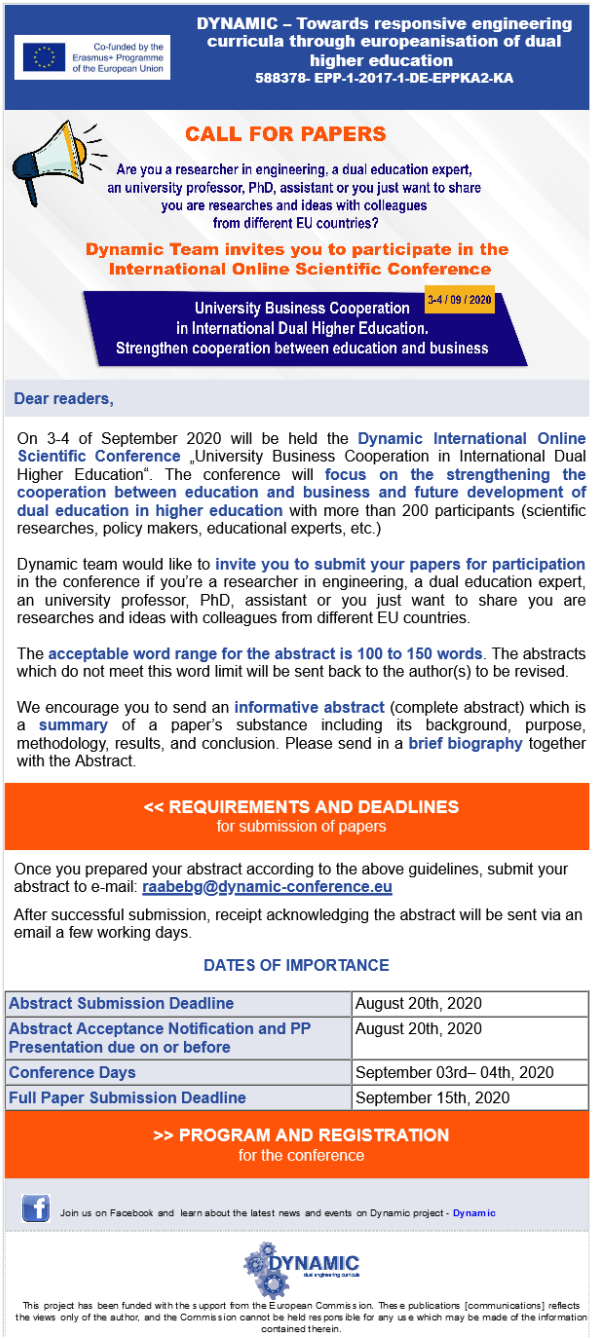
Работен език на конференцията: Английски език

За допълнителна информация: raabebg@dynamic-conference.eu

Присъединете се към нас във Facebook и научете за последните новини и събития около проекта Dynamic - Dynamic

DYNAMIC

Този проект е финансиран с подкрепата на Европейската комисия. Тази публикация [съобщение] отразява само личните виждания на нейния автор и от Комисията не може да бъде търсена отговорност за използването на съдържащата се в нея информация.



Co-funded by the Erasmus+ Programme of the European Union

DYNAMIC – Towards responsive engineering curricula through europeanisation of dual higher education
588378- EPP-1-2017-1-DE-EPPKA2-KA

CALL FOR PAPERS

Are you a researcher in engineering, a dual education expert, an university professor, PhD, assistant or you just want to share you are researches and ideas with colleagues from different EU countries?

Dynamic Team invites you to participate in the International Online Scientific Conference

3-4 / 09 / 2020

University Business Cooperation in International Dual Higher Education. Strengthen cooperation between education and business

Dear readers,

On 3-4 of September 2020 will be held the **Dynamic International Online Scientific Conference** „University Business Cooperation in International Dual Higher Education“. The conference will **focus on the strengthening the cooperation between education and business and future development of dual education in higher education** with more than 200 participants (scientific researches, policy makers, educational experts, etc.)

Dynamic team would like to **invite you to submit your papers for participation** in the conference if you're a researcher in engineering, a dual education expert, an university professor, PhD, assistant or you just want to share you are researches and ideas with colleagues from different EU countries.

The **acceptable word range for the abstract is 100 to 150 words**. The abstracts which do not meet this word limit will be sent back to the author(s) to be revised.

We encourage you to send an **informative abstract** (complete abstract) which is a **summary** of a paper's substance including its background, purpose, methodology, results, and conclusion. Please send in a **brief biography** together with the Abstract.

<< REQUIREMENTS AND DEADLINES
for submission of papers

Once you prepared your abstract according to the above guidelines, submit your abstract to e-mail: raabebg@dynamic-conference.eu

After successful submission, receipt acknowledging the abstract will be sent via an email a few working days.

DATES OF IMPORTANCE

Abstract Submission Deadline	August 20th, 2020
Abstract Acceptance Notification and PP Presentation due on or before	August 20th, 2020
Conference Days	September 03rd– 04th, 2020
Full Paper Submission Deadline	September 15th, 2020

>> PROGRAM AND REGISTRATION
for the conference

Join us on Facebook and learn about the latest news and events on Dynamic project - Dynamic

DYNAMIC

This project has been funded with the support from the European Commission. These publications [communications] reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

4. Participants

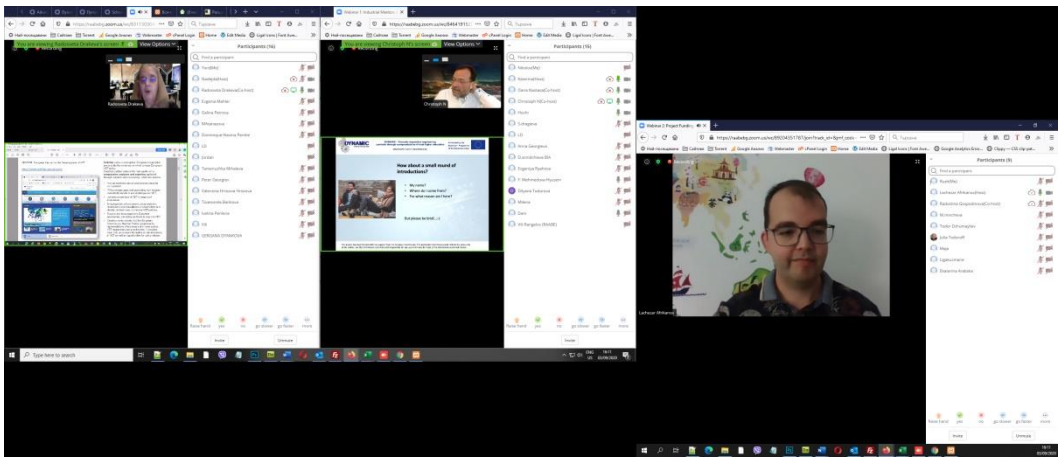
The online format of the Conference gives the possibility in the conference to be involved people from all over the world. If we look at the registration list of participants we will see **246** participants, of which:

- ✓ **164** local participants from Bulgaria
- ✓ **82** participants for different countries: Austria, Belgium, Croatia, Germany, Hungary, Spain, Indonesia, Italy, Luxemburg, Madagascar, Poland, Portugal, Romania, England, Turkey, Vietnam, Egypt, and the Philippines

28 from the registrations are of people from the organizations of Dynamic project partners, which mean that **218** are the external stakeholders involved in the Final Dynamic Dissemination Conference which is with **68** participants more than initial planned number of participants in the conference.

The professional profile of the participants shows that most of them are representatives of universities, teachers from vocational high schools, students. High interest to the conference has shown also the business sector and the industrial chambers. The conference was also attended by European and national policymakers: representatives from European Commission - Education, Audiovisual and Culture Executive Agency (EACEA), Ministry of Education and Science in Bulgaria, Bulgarian National Agency for Vocational education and training, Bulgarian National Teacher's Training Institute and others.

All participants actively participated in the discussions, asked questions to the lecturers and shared their views on improving higher education curricula, the opportunities for the development of dual education and improving the relationship and collaboration with business.



6. Conference program

The program of the online conference was organized on two consecutive days (September 3 and 4, 2020) and included keynote presentations, five webinars and one session with papers.

The program of the conference is presented in detail below:

University Business Cooperation in International Dual Higher Education

International Online Scientific Conference

Strengthen cooperation between education and business

3.- 4. September 2020

CONFERENCE PROGRAM

Day 1, 3rd September	
9:30 – 10:30	**Opening ceremony** ***Mariya Gabriel**, European Commissioner for Innovation, Research, Culture, Education and Youth* ***Prof. Dr. Bodo Wiegand-Hoffmeister,** Rector of Wismar University*
10:30 – 11:15	**Strategies for Education Survival in a Disruptive Era of Infodemic,** **Post-Truth C-19, and Misinformation:** **Ideas for New Biz-Models, Curricula Changes, and Learning Management** *Keynote speaker: **Dr. Ronny Adhikarya,** USA* *Moderator: **Sebastien Clerc-Renaud**, Wismar University*
11:15 – 12:00	**The Future University: A holistic perspective towards the roles of universities** *Keynote speaker: **Mr. Arno Meerman,** University Industry Innovation Network, Netherlands* *Moderator: **Sebastien Clerc-Renaud**, Wismar University*

12:00 – 12:30	Pause		
12:30 – 14:00	**Dual Practice-integrated Bachelor Programs of Engineering** ***Radu-Eugen Breaz***, *Lucian Blaga University of Sibiu, Romania* **Importance of 3D and VR technologies in vocational education** ***Sven Maricic***, *University of Juraj Dobrila in Pula, Croatia* **New horizons for VET in Bulgaria** ***Galina Ilieva***, *Technical University Varna, Bulgaria* *Moderator:* ***Nadezhda Tzvetkova***, *RAABE Bulgaria*		
14:00 – 14:15	**The Role of Industrial Mentors. AHK Bulgaria and dual education** ***Karmen Vranchev***, *AHK Bulgaria*		
14:15 – 14:30	**Business Talks: Engineering on the way to 2030** ***Continental Automotive Systems Sibiu***, *Romania*		
14:30 – 15:00	Pause		
15:00– 16:30	**Webinar 1. Industrial Mentors and their challenge during the Covid-19 pandemic** ***Christoph Nesgen***, *Trainer & Consultant, KONZEPTE GMBH, Germany* ***Oana Nastasă***, *Vocational Training, AHK Romania* *Moderator:* ***Katerina Kasabova***, *RAABE Bulgaria*	**Webinar 2. Project Funding For Higher Education: EU Trends** ***Lachezar Afrikanov***, *EU Project Expert, Bulgaria* *Moderator:* ***Radostina-Gospodinova-Ileva***, *RAABE Bulgaria*	**Webinar 3. The changing nature of VET, the changing nature of dual training** ***Radosveta Drakeva***, *National ReferNet Expert, Bulgaria* *Moderator:* ***Nadezhda Tzvetkova***, *RAABE Bulgaria*
Day 2, 4th September			
9:00 – 10:30	**Empowering the young trainees through motivational leadership** *Keynote speaker: Paolo A. Ruggeri, OSM International Group, Italy* *Moderator:* ***Nadezhda Tzvetkova***, *RAABE Bulgaria*		
10:30 – 11:00	Pause		
11:00 – 12:30	**Webinar 4.** Engineering	**Papers Session.**	**Webinar 5.** Digital

	2030: Innovation trends in engineering education and business ***Vlad Toncian**, Test Equipment Planner, Marquardt, Romania*	Sustainability in cooperation between business and universities 1. **Evaluation of practice-integrated dual study models in Bulgaria and Romania and implications for cross-border European cooperation between universities and business** *Evgenia MAHLER, University of Applied Science Wismar, Germany* *2.* **CAD/CAM technologies in vocational studies** *Deni Macovec, Ivan Veljovic, Sven Maricic, University of Juraj Dobrila in Pula, Croatia* 3. **Sustainable partnership between universities and the non-profit sector** *Violeta Toncheva-Zlatkova, University of National and World Economy, Bulgaria* *Moderator: **Evgenia Mahler**, International project management Robert-Schmidt-Institute of Wismar University, Germany*	Tsunami Disruption: Impact on Business Models, Education Strategies, Competencies and Curricula ***Dr. Ronny Adhikarya,** USA* *Moderator: **Katerina Kasabova**, RAABE Bulgaria*
12:30	End of the conference		

Opening speeches:

Mariya Gabriel, European Commissioner for Innovation, Research, Culture, Education and Youth

In her speech Mrs. Mariya Gabriel told she was very pleased to see that the broad objective of the Dynamic project reflects what the European Commission is striving to achieve in education: developing entrepreneurial skills and strengthening the link between academia, business and industry so that the curricula match the market needs. Higher education institutions will have to find solutions to the challenges we face and prepare the next generations to lead the way in technological and social innovation. She told we need to equip our citizens with the knowledge skills and attitudes to thrive in life and cope with challenges now and in the future. She presented the three main objectives in education sector and focused on the main goals in higher education: to work with the sector and the member states for a transformation of all higher institutions in Europe taking into account the lessons learned from the COVID-19 crisis. Such a transformation will focus both on the connectivity between higher education institutions and on the purpose of covering the four missions of universities: education and research leading to innovation and service to society.

The universities have trained potential to create new learning pathways; we are laying the groundwork towards the European degree; more students having mobility experience; more flexible and modular learning; more practical skills. That's way the dual higher education is so important. We have to address the question of quality assurance and the higher education will also need to strengthen its role in supporting lifelong learning. The reality, she told, is that most people once they join the labor force do not have the capacity or just the possibility to combine their job with further studies. Many universities already think about the needs and how to associate private sectors with adult learners to provide executive education for professionals through dedicated evening and weekend classes and that needs more systematic approach. In the next years the efforts will be focused on supporting building trust across Europe for wider use, portability and recognition of micro credentials and this is especially important after the COVID-19 crisis.

European education systems need to be ready to answer a call when European needs upskilled and reskilled people and they have to do so in an inclusive way . we need to make sure that the student body entering and graduating from higher education reflects the diversity of europe's population The dual education is one of our tools to touch people that actually are not so much engaged

Especially efforts will be placed on European research education and how researchers can work with private sector and how together we can join our efforts in order to see that excellence in research and innovation can be translated into impact and concrete benefits: jobs for our citizens; leadership for our regions and perspectives for Europe. We need to take to think about ecosystems and when we talk about ecosystems of course dual higher education has a special role to play.

At a final point in her speech Mrs. Maria Gabriel put attention on Digital education action plan. COVID-19 crisis has affected the pace of the digital transition because that was a serious shock to education and training. At the same time the positive thing is that this leads to a rapid shift to remote emergency teaching. Some universities and colleges were better placed to adapt especially if staff and students had experience with online or blended learning. however for many there is a lot of challenges, a lot of difficulties and I believe that actually we have an opportunity to surface, to share the normative practice and to see how we can really scale up them at European level.

At the end she told that the Dynamic project is certainly an excellent example and wished the participants continued success as their look at innovative ways to bring together industry and higher education together.

Full record of the speech of Mrs. M. Gabriel is available for download on the website of Dynamic Final Dissemination Conference: http://www.dynamic-conference.eu/video_download/MARIYA_GABRIEL.mp4#

Prof. Dr. Bodo Wiegand-Hoffmeister, Rector of Wismar University, Germany

In his speech Prof. Wigand-Hoffmeister congratulated the all-Conference participants from the name of Wismar University and Dynamic project partners. He expressed regret that because of the COVID-19 situation there is no possibility to meet the participants in Sofia. He mention that the higher education institutions and centers of learning need to sustain the engagement with their industrial partners and international collaborators and stay in continues dialog to refine, reshape and co-design the future of education and training in the post pandemic times. The past few months were very challenging for the higher education institutions. Universities will need more resources allowing them to move with greater speed in changing to hybrid or blended teaching and learning.

The role of industrial partners remains essential to design, relevant and future oriented learning experiences and together with the universities to ensure that graduate skills profiles match technology trends. The universities can foster the skills of creative, creativity, innovation and entrepreneurship to help people to arrive in the constantly changing world. In order to prepare individuals to adapt to change, to take the initiative, to be creative, the universities must ensure that the systems of education become more responsive and relevant to the fast involving society we live in. The need for more flexible and more responsive higher education linked to the needs of society and labor market is strongly addressed by the EU funded project Dynamic. The cooperation between the university and business has core role for the innovation and future. At the end of his speech prf. Wigand-Hoffmeister expressed gratitude to all European and National high policy makers that took part in the conference, to all participants, to Organizational committee of the conference and all Dynamic project partners.

Full record of the speech of Prof. Dr. Bodo Wiegand-Hoffmeister is available for download on the website of Dynamic Final Dissemination Conference: http://www.dynamic-conference.eu/video_download/1_rector_Wismar_university_small.mp4

Key note speakers

Dr. Ronny Adhikarya, Educational Expert, USA

Presentation: Strategies for Education Survival in a Disruptive Era of Infodemic, Post-Truth C-19, and Misinformation: Ideas for New Biz-Models, Curricula Changes, and Learning Management

Dr. Ronny Adhikarya had a 45-year career in international development assistance, serving for the World Bank, United Nations, and other international organizations. He was also associated with educ. & research institutions such as Stanford Univ., the East-West Center, and had conducted training in many learning institutions worldwide. He retired from the World Bank in 2003, and was then reappointed as the Food & Agriculture Organization (FAO)/United Nations Representative & Country Director (w/Ambassador-level credentials) in Pakistan.

He now provides consultancy/advisory services, part-time, through RAdhikarya International's "Tacit Knowledge Sharing Service". He is often invited a KeyNote Speaker at international conferences, and gives public lectures in at least 28 countries.

At the World Bank, he directed the Knowledge Utilization through Learning Technologies (KULT) Program, which included franchising, & marketing demand-driven educational/training services to ensure financial health & sustainability as part of institutional/staff capacity development programs. He promoted the improvement of training quality and effectiveness through excellence in customer service and appropriate uses of interactive & distance or mobile learning technologies, cyber-marketing, quality assurance, peer-based & participatory knowledge management, sharing and utilization.

Originally from Indonesia, Dr. Adhikarya since 1972 has undertaken professional assignments & official missions in 52 countries, and travelled to a total of 103 countries. He has written 8 books (two are also available in electronic/CD-ROM version) on communication, extension, training and education subjects published in Germany, Italy, England, USA, Singapore and Malaysia as well as numerous book-chapters, journal articles, and consulting reports.

Dr. Adhikarya has served various international advisory boards/committees of several leading development organizations and/or educational or training institutions in Singapore, Thailand, England, Switzerland, etc. He obtained his Masters from Cornell Univ. and his Ph.D. from Stanford Univ. He now lives in the "Silicon Valley" of California and Honolulu, Hawaii, where he also serves as a member of the Board of Directors of the Hawaii-Indonesia Chamber of Commerce (HICHAM), and the Executive Board of the East-West Center Association (EWCA).

RESUME OF PRESENTATION:

At the conference Dr. Adhikarya shared some disturbing phenomena facing public education in the use of such technologies, especially in the midst of the Covid-19 Pandemic, and the deteriorating Post-Truth's quality of information & communication, especially in the social-media space. He focused his presentation on the Challenges of Public Education in Competing with DISINFORMATION and Post-

Truth INFODEMIC. Never before, the rate of diffusion of innovation or technology adoption is faster than today, in the use of online/virtual communication tools/process in public education. The slow process of adoption of such technologies in the last 20 years was transformed almost overnight, mainly due to Covid-19 (C-19). Just one illustrated case, the use of Zoom's virtual audio/video communication technologies increased in 3 months (Jan. - Apr. 2020) from 20 million to 300 million users globally, not only by educators but by the public at large.

The "business-as-usual" in education has changed forever. The era of virtual, cyber/cloud-based, mobile public education is here to stay. There is no turning back to the pre-Covid-19 public education regime. However, wider-adoption of such technologies in public education is still a human-resource challenge, due to inadequate qualitative mastery of optimal communication technology application & usage, learning strategies & methods, and operational management, by most educators world-wide.

Furthermore, democratization of information & communication gives rise to Crowd-Sourcing. Opensource education has become the "New-Normal". It provides the netizens' rights to information access, production, and distribution - with, or without credibility, validity and responsibilities.

1. THREATS TO EDUCATIONAL INSTITUTIONS

One of the most THREATENING CHALLENGES to EDUCATORS (at all levels) now is the COMPETITION POSED BY HOAX/FAKE INFORMATION. Most people, not only students and teachers/professors, are now getting more info. from social media (WA, FB, IG, YouTube, TikTok, etc.), and many of them are not able or willing to verify and fact-check the validity and credibility of such "new knowledge".

Unless the public is educated to become critical & astute communicators and learners, education institutions will lose their importance, relevance, practical utility. Educators at all levels must offer programs and teach competencies to the Public on how to deal and counter-attack DISINFORMATION in the era of Post-Truth INFODEMIC!!

2. PEERS/FRIENDS ARE (Mis)PERCEIVED AS MORE BELIEVABLE THAN EDUCATORS

Most of the public now seem to obtain significant amount info & knowledge through their friends/peers, who are often (mis?) perceived as more INFLUENTIAL, TRUSTED, and CREDIBLE than formal educators or formal sources. Most of such information is forwarded or "viral" (Post-Truth?) information, with unknown or dubious authors/sources or invalid/false information. Almost daily we

are now getting many Free Invitations through WApp, FBook, e-mail, etc. to participate in so many WEBINARs or Virtual Learning activities on all kinds of topics, speakers, and from various countries.

However, often the information or "knowledge" obtained through these online/virtual communication and learning activities (often fee-based and offering e-Certificates), is fake, hoax or half-truth information, at best. One of the reasons is the LACK of CRITICAL ABILITY to fact-check, verify and validate the info., or simply too "lazy" to do so. Hence, the important priority task of educators to address and solve this problem, before their role and function become irrelevant.

3. POLITICIZATION of EDUCATION

Conceptually the wide utilization of virtual communication tools allows for more and better GLOBAL COLLABORATION and INTERNATIONALIZATION in EDUCATION. However, the practical implementation depends on each country's POLITICAL-BIASES that may permeate university policies and strategies.

Examples of such "politics-in-education" as a reflection of "POPULISM" movements, and/or "Trade & Technology War", for instance, can be seen in the rapidly decreasing number of foreign students & scholars, especially from China, in US university campuses during the last few years.

Anti "Beyond Nationalism" movements may have also negatively affected the regional & international collaboration of European educational institutions with other countries, even within Europe, or with other countries as well.

In addition, the impact of Covid-19 will perpetuate such a trend due to travel restrictions and/or F2F/direct-group meetings limitation. It may further hamper international collaboration and exchange of experiences. In some cases, there are also indications of politicization in opening a country's borders for certain nationalities.

4. MONETIZATION of NEW VIRTUAL EDUCATION BUSINESS MODEL

As many students may not spend much time on campus, and not using many university's facilities & services, a new, demand-driven, and efficient business model for education management must be developed and marketed anew. Few examples and lessons learned from leading global MOOC-oriented virtual learning programs, such as Coursera, Chegg, Pearson, edX, Udemy, etc. may be examined for its financial strategies.

Educational institutions' FINANCIAL ADJUSTMENT is also an important issue due to the UNDERUTILIZED university FACILITIES & RESOURCES. Such inefficiency may need rationalization and optimization in the use and management of ASSETS and available resources, as a result of the shift toward predominantly virtual learning modalities, with more online courses offered off-campus.

The synergic collaboration and win-win partnership between educational institutions and relevant businesses need to be forged by providing opportunities for students' internship, mentorship,

coaching, incubation, etc. If planned and implemented properly, it can ADD-VALUE to the costs of education, and make it a mutually-beneficial business partnership between universities and business companies.

In view of the above, the cost of education may also need to be readjusted accordingly, as learning processes, modalities, activities, and services are changing.

5. QUANTITY versus QUALITY of EDUCATION

The above are only few problems faced by most educational institutions, esp. those migrating to virtual learning operations. However, the main problems and challenges are the controversies of the QUANTITY vs. QUALITY EDUCATION issues.

We now find a proliferation and mushrooming of virtual learning activities, including online classes, Webinars, video-based learning modules, etc. and offered by anyone, with or without "educator" credentials, competencies, or experiences.

The majority of its learning contents are of sub-standard quality, delivered usually through videorecordings/streaming of "talking-heads", or Zoom-based presentation and interactions, without incorporating appropriate cost-effective pedagogical methods, learning processes and management.

Serious learning organizations or institutions will, therefore, need to address and ensure, at least, the following prerequisites for offering responsible and quality education are met and taken care of:

a. Cultivating the psychological confidence and "Growth" Mind-Set of teaching staff in transitioning from "old-school" attitude of learning to a more democratic, needs-based, and collaborative tacit knowledge sharing educational system.

b. Preparing the readiness and competency of most educators on the use of appropriate online/virtual and mobile learning process & methods.

c. Continually revising curricula according to changing market needs, with adequate portions devoted to character, ethical, integrity and civic education, business & social entrepreneurship, futuristic visioning & forecasting, and cyber-law & responsibilities.

d. Developing relevant and practical ways to ensure and measure/assess learning standards and quality achievements.

e. Applying cost effectiveness & efficiency of learning management and operations system.

Full record of the presentation of Dr. Adhikarya is available for download on the website of Dynamic Final Dissemination Conference: http://www.dynamic-conference.eu/schedule-download/

Arno Meerman, University Industry Innovation Network, Netherlands

Presentation: The Future University: A holistic perspective towards the roles of universities

Arno Meerman is CEO of the University Industry Innovation Network, a leading global network that facilitates interaction and stimulates cooperation between higher education institutions and industry. In this role Arno has built UIIN to one of the largest networks on university-industry interaction globally. Arno consults government, university and industry towards professionalisation of university-industry relationships, entrepreneurial universities and partnerships. He has led a number of UIINs research and development projects for the European Commission on innovation alliances, entrepreneurial education, and university-business cooperation. Some of Arno's recent publications are around the Future of Universities Thoughtbook, The State of University-Business Cooperation in Europe and the Future of Universities in Australia Thoughtbook.

Due to illness on the day of the conference, Mr. **Arno Meerman** could not attend, but a presentation on his topic was made by his colleagues **Prof Todd Davey** and **Dr. Balzhan Orazbayeva** from University Industry Innovation Network, Netherlands

RESUME OF PRESENTATION:

The main focus of the presentation was put on the future of the universities. After a short review on the historical development of the higher education separated in 3 generations of university development, the 4th Generation University was present as university in which academics and students work is in real time, is place-based symbiotic relationships with industry, government and societal stakeholders, as well as relationships between humans and technology.

- How the today megatrends affects on the higher education?
- What will happened in the future?

MEGATRENDS:

Emerging markets and urbanisation: the shifting of the locus of economic activity and dynamism to emerging markets like China and to cities within those markets; the locus of economic activity is shifting within these markets

Trade, people, finance and data: greater global connections; the degree to which world is much more connected through trade and trough movements in capital, people, and information (data and communication)

Responding to the challenges of an aging world: the human population is getting older; while aging has been evident in developed economies for some time, the demographic deficit is now spreading to China and soon will reach Latin America.

WHAT ARE THE OPPORTUNITIES AND CHALLENGES FOR HIGHER EDUCATION:

Emerging markets and urbanisation:

Opportunities: income from tuition (education as an export; brain-power through internationals; demand for HE will grow; urban universities will benefit from urbanization

Challenges: elite universities vs. non-elite universities; less demand to attend universities in developing countries; retaining talent within the country; brain-drain to cities – challenge for regional universities

Trade, people, finance and data:

Opportunities: more connected networks of universities, business etc.; global movement of students; collaboration of elite universities and major international companies.

Challenges: non-elite universities will try to survey through innovating and diversifying; new players: Coursera, edX, LinkedIn etc.

Accelerating technological change

Opportunities: reduced amount of routine and administrative issue; MOOCs becoming more accessible; an individually supporting attaining the degrees and students' pulse-rate; virtual, augmented and mixed reality.

Challenges: Reduction of the number of lecturers; need for more personalized mentoring; synthesizing the student interaction across disciplines and borders.

Responding to the challenges of an aging world:

Opportunities: aging population will turn back to universities; universities will have a chance to diversify their programmes.

Challenges: jobs taken over by technologies; need for more human-centred health care workers; changing employer and types of jobs at an advanced age.

Based on the research provided by the University Industry Innovation Network 5 key roles of the future university were determinate:

- Talent-engine: developing and validating students' competences
- Life partner: adding or scaling the skills of professionals
- Discovery: cutting edge visionary and collaborative research
- Home-base: open co-working exchange space for the region

- Launch-pad: entrepreneurial base for students, academics, business

Paolo Rudgeri

Presentation: Empowering the young trainees through motivational leadership

Paolo A. Ruggeri is an entrepreneur and founding partner of OSM International Group www.osminternational.com , a USA based management consulting company with existing offices in Europe, Latin America and Asia, offering unique analysing tools and business development methods with proven results for over 25 years. OSM helps to transform your business with its unique HR recruitment process, people management and motivation techniques.

Paolo Rudgeri is an expert in leadership and people development. **His books on the subject have been translated in 9 languages** and have become best sellers in Europe and the Americas. Paolo is a **TEDx speaker who has delivered speeches in 15 countries**.

One of his books, **The New Leaders**, a Leadership Manual for the Third Millenium Manager, **has sold over 100,000 copies** and is a best seller both in Europe and in the United States.

Besides OSM Paolo owns 12 other companies in 6 different countries ranging from real estate to international consulting, book publishing and hospitality.

Workshops and Conference presentations:

Evgenia Mahler, International Project Management Robert-Schmidt-Institute of Wismar University

Presentation: DYNAMIC -Project overview: University Business Cooperation in International Dual Higher Education

Mrs. Mahler is a project developer and research associate Robert-Schmidt Institute of Wismar University. In her research work, she investigates forms of university-business cooperation, including international comparative studies of education and employment systems.

Since 2013, she is involved in international cooperation projects on work-based module design and curriculum development with academic and business partners from Southeast Europe, southern Africa and Latin America.

RESUME OF PRESENTATION

In her presentation Mrs. Mahler made a short overview of the Dynamic Project:

Needs analysis:

- Skilled professionals to sustain innovation and economic growth

- Need for modernization of curricula
- Faster or regular updating of engineering curricula
- Dialogue between industry and academic stakeholders

Innovation

- "Dual study" -new educational model in the partner countries
- Country-specific transfer of the dual study model
- Adaptive education programs with flexible components
- Aims at solving the conflict between the long-term accreditation of new programs and the rapid technological changes
- Aims at long-term innovation in the industries of smart specialization

Project objectives

- Content development for the practical phases of 3 dual study programs.
- Flexibilization of the curricula through adaptive practical phases.
- Involving industry experts in curriculum development and delivery.
- Development of templates and tools for the implementation of practical phases
- Demonstrate the benefits of the dual study model through pilot implementation and evaluation

Thematic areas

- Curriculum Development Focus group reports: Approved curricula; Contractual arrangements
- Capacity Building: Flowchart; Checklists and templates for implementation & documentation
- Training: Train the trainer programmein local languages
- Pilot implementation: Piloting & evaluation
- Knowledge Transfer: Evaluation plan; Methodological guidelines

Expected results:

- 3 Dual Bachelor Programmes
- Toolkit for implementation
- Train-the-trainer Programme
- Methodological Guidelines

Consortium structure

- 6 Large Enterprises
- 3 Chambers of Industry and Commerce
- 5 Universities

- 1 Regional Authority

Radu-Eugen Breaz, Lucian Blaga University of Sibiu, Romania

Presentation: Dual Practice-integrated Bachelor Program of Engineering

Radu-Eugen Breaz gained his Master degree in Mechanical Engineering and PhD degree in Industrial Engineering both at Technical University of Cluj-Napoca, Romania.

He is working at Lucian Blaga University of Sibiu as full professor (since 2008) and doctoral advisor (since 2016).

His fields of expertise are CNC machine-tools, mechatronics and industrial robots, and automation systems for manufacturing. He has published over 70 papers in these fields and related ones.

Currently, he is vice-dean of Faculty of Engineering, responsible for student activities, connection with the business environment, and international relations.

RESUME OF PRESENTATION

Mr. Radu-Eugen Breaz presented the steps they orginised the pilot implementation of dual-study program within the Dynamic project and challenges they met during the implementation

Before starts it was required to find the answers to the following questions:

- *Question 1:* Which study program?
- *Question 2:* What should a graduate of the targeted study program be able to do ?
- *Question 3:* Can the curriculum of the targeted study program be tailored to suit the needs of partner companies?
- *Question 4:* How will the supplementary hours of practical activities be integrated into the present curriculum?
- *Question 5:* What should include the syllabus for practical activities?
- *Question 6:* How should the students be selected for the dual-study program?
- *Question 7:* How should the students be assessed?

Starting from academic year 2018-2019, the ***dual-study option*** for ***Mechatronics*** study program was launched (both for MECH-RO and MECH-EN).

- Supplementary hours of practical activities were added
- A supplementary amount of ***810 hours*** of practical activities were added to the existing ***240 hours***, which will lead to a total amount of ***1050 hours*** for the dual study option
- Nine weeks of supplementary hours were added at the end of the 2nd, 4th and 6th semesters (a period which now is allocated to the summer holidays)

- A new syllabus for practical activities was designed;
- The syllabus was designed taking into consideration the following:
    - the content was tailored according to the content of the curriculum and the requirements of the partner companies;
    - during internships students should become familiar with all sections and activities of the partner companies (CASS and MSS);
    - the training items were designed to match the content of ***Mechatronics*** as multi-disciplinary study program, the main field of activity of the partner companies, ***automotive industry*** the new paradigm of ***"Industry 4.0"***
- A selection procedure was proposed and implemented
- The main selection criteria considered:
    - academic results (grades) – 30%;
    - interview – 70%;
    - distance from student's home to the receiving company location.

Conclusion: Mechatronics, as dual-study program has continued in the framework of Dynamic project, but it had also a new start in academic year 2019-2020, with students in the 1st semester, which are now pursuing practical activities:

- 15 students at CONTI
- 10 students at MSS

Assoc. Prof. Sven Maričić, Juraj Dobrila University of Pula, Croatia

Presentation: Importance of 3D and VR technologies in vocational education

Assoc. Prof. Sven Maričić, Ph.D. in Mechanical Engineering from the Juraj Dobrila University of Pula and Faculty of Medicine in Rijeka, Croatia. He is also a guest professor in University North in Croatia and FH Burgenland, Austria. Dr. Maričić holds the Croatian national award for Science and has several accolades and awards for his mentoring work in startup projects. He is involved in several EU projects at the University of Rijeka and University of Pula.

Currently, he is Director of Science-Technology Institute VISIO, head of Center for Bio-modeling and Innovation in Medicine as well as a leader of several projects with EU financing.

Assoc. prof. Sven Maričić has published more than 30 papers on CAD/CAM modeling, additive technologies, biotech design, VET, problems and perspectives of education, etc.

Assoc. Prof. Galina Ilieva, Technical University of Varna, Bulgaria

Presentation: New horizons for VET in Bulgaria

Assoc. Prof. Galina Ilieva is Master engineer and Ph.D. in Mechanical Engineering from the Technical University of Varna, Bulgaria. She holds degree "Master after Master" in "Turbomachinery and Propulsion Systems" from von Karman Institute for Fluid Dynamics (Belgium). Dr. G. Ilieva holds award "Varna" for elaboration of effective methodologies for numerical research of flows. She was involved in several EU projects at the Center for Mechanical and Aerospace Science and Technology, Portugal

Currently, assoc. prof. G. Ilieva is Director of Institute for Science for Research - TUV, head of Heat Turbomachines Laboratory, as well as leader of several projects with EU financing.

Assoc. prof. G. Ilieva has published more than 35 papers on CFD analysis, biomimetics, innovative propulsion systems, design and air-vehicles and platforms, VET, fluid dynamics, etc. Her research interests are in the area of innovative propulsion systems, fluid mechanics, rotating machinery, air-vehicles, problems and perspectives of education, green energy, etc.

RESUME OF PRESENTATION

VET? What is hidden behind? VET contributes to enterprise performance, to strengthen competitiveness, to research and innovation practices, important to society. According to the economy VET means new skills, knowledge & competences; broaden professional horizons; competitiveness and personal development; must ensure profitable and enjoyable future.

Main tasks of the European VET systems:

- to provide more flexible ways to enhance the access to VET;
- to provide more effective opportunities to development of key competences and skills through I-VET and C-VET;
- to promote work-based learning, to gather commercial chambers, partners, companies to contribute in the best way to development through innovation and entrepreneurship;
- to introduce and develop innovative approaches and opportunities for continuous professional development of VET trainers and mentors.

VET system in Bulgaria:

- strong educational traditions;
- demographic specifics affected educational system;
- reforms at all levels of education;
- focus on the problems - early school leaving, lack of introduced dual learning, need of highly educated people;
- need to solve problems, improve digital skills and strengthen learning system and the educational outcomes.

A positive trend for the development of dual education - willingness of the business to allocate staff for elaborating a curriculum that will match the needs of the business and contribute in qualified labor training.

Karmen Vranchev, AHK BULGARIA

Presentation: The Role of Industrial Mentors. AHK Bulgaria and dual education

Karmen Vranchev is in charge of different DIHK projects with international partners since 2007.

Experience in project management, coordination, monitoring and evaluation of projects, financial monitoring, multilateral cooperation and projects related to internationalization of SMEs, entrepreneurship, investments, economic growth and competitiveness, capacity building, knowledge transfer, economic development, startups, VET, elaboration of educational programs, EU projects, projects with candidate countries and non-EU countries, fairs representation etc.

Manager Dual Education at AHK Bulgaria, responsible for implementation of German dual education and all educational projects, train the trainer courses and activities in the field of dual education.

RESUME OF PRESENTATION

During his presentation Mr. Karmen Vranchev presented the offered by AHK Bulgaria “Train the trainer” course for companies:

- the content of the course;
- the main goals of the course – to develop methodical, organisational, social, managerial skills of in-company mentors.

Christoph Nesgen, Trainer & Consultant, KONZEPTE GMBH, Germany

Workshop: Industrial Mentors and their challenge during the Covid-19 pandemic

For more than 20 years Christoph Nesgen has been on the go as a trainer and consultant in 15 countries worldwide. He holds a master’s degree in psychology, education and philosophy.

Christoph is an expert for vocational education and training (“Dual System”) - especially for the qualification of company trainers and instructors. He is also an expert for blended learning concepts and digital learning formats. He has extensive experience in the field of intercultural learning projects and the implementation of learning concepts in different cultures.

Christoph has accompanied AHK Romania as a consultant for several years. The current project focuses on the didactic qualification of “Live Online Trainers”.

D7.4.2: Final Dissemination Online Conference (3-4/09/2020)

Oana Nastasă, Vocational Training AHK Romania

Workshop: Industrial Mentors and their challenge during the Covid-19 pandemic

Oana Nastasă has over 7 years of experience in training young people in technical field.

Since 2017, since she is working at AHK Romania, she has specialized herself in training for mentors, applying the methods from the German model of Train the Trainer Course (Ausbildung der Ausbilder).

She is also very involved in the development of the dual education system in Romania.

MINUTES FROM THE WORKSHOP:

During this workshop Christoph Nesgen and Oana Nastasă put on focus the following questions:

- Which is the role of the Industrial Mentors in the dual higher Education?
- How can be adapted "on the job training" to the digital learning context?
- Which learning platforms and tools can be used by the mentors?

The role of Mentor/Trainer in Online Training Contexts:

- Technical support for the learners
- Technical instructions
- Preparation of the links and platforms
- Encourage active participation
- Pay attention to the learning culture and how learners interact
- Enabling "social presence": Time for private topics, introduction of the participants, etc
- Teaching
- Evaluate knowledge
- Connecting knowledge
- Didactic principles of teaching
- Asking questions
- Instructions
- Using visual language
- Mix of different methods

Differences between "F2F" and Digital Learning Formats: Didactic aspects

F2F Formats

- Teaching the learning content in front of the whole group
- High flexibility in spontaneous selection of content and method
- *"Let me explain this to you again..."*

- Spontaneous use of teaching media possible (e.g. new flipchart paper and a rough drawn model)

Digital Learning Formats

- Teaching into the “black hole”
- Less flexibility in spontaneous selection of methods
- Content and media needs to be prepared precisely
- Attention level drops rapidly
- High level of self-organisation

Learning Philosophy - the real challenge in Digital Learning Formats

Lachezar Afrikanov, EU Project designer and manager, Bulgaria

Workshop: Project Funding For Higher Education: EU Trends

Lachezar Afrikanov is an experienced EU project designer and manager.

In the last 14 years he has been actively involved in the Lifelong Learning Programme and Erasmus+.

He is external evaluator of project proposals in three European countries. His primary focus is development of innovations projects.

He has specific expertise in the dual track education system, being one of the national experts to introduce the Swiss dual education approach in Bulgarian vocational education and training system.

Currently, he is enrolled in a PhD programme in the field of theory and management of education.

MINUTES FROM THE WORKSHOP:

During the workshop on project funding, the participants had the opportunity to exchange their ideas and expertise with other participants from different countries. Lachezar Afrikanov shared key sources of funding available under Erasmus+ for higher education institutions and tips & tricks for successful project proposals design.

Radosveta Drakeva, National ReferNet coordinator, Bulgaria

Workshop: The changing nature of VET, the changing nature of dual training

Radosveta Drakeva is an expert in Education and Vocational training with more than 20 years’ experience. Her interests are in the area of structural reforms, quality assurance and educational data

analysis. She has wide international experience in VET, being involved in Technical assistance projects for support of education and VET sectors in Croatia, Kazakhstan and Turkmenistan.

Radosveta is a PhD-candidate in European Studies and a part-time lecturer in Sofia University – Department of European Studies. She is the National coordinator of the ReferNet network for Bulgaria, as well as a member of the Resource group to the National Consultative Council for VET in Bulgaria, which currently focuses its activity on the quality assurance in dual training.

MINUTES FROM THE WORKSHOP:

The workshop focused on some latest trends in VET and work-based learning, based on examples from CEDEFOP research and data collection.

CEDEFOP – the European Centre for the Development of Vocational Training - is nowadays paying particular attention to the way the content and profile of vocational education and training is changing, responding to changing demands for skills and competences at work and in society at large. The webinar addressed the challenges and opportunities arising from this for the dual training, based on the information available in one of the CEDEFOP's online tools: Database on apprenticeships in the EU (https://www.cedefop.europa.eu/en/tools/financing-apprenticeships). Some other functionalities of the database, useful for researchers and policy makers, were demonstrated too.

Vlad Toncian, Test Equipment Planner, Marquardt, Romania

Workshop: Engineering 2030: Innovation trends in engineering education and business

Vlad Toncian has graduated in 2012 from the "Hermann Oberth" Engineering Faculty, majoring in Computer Sience. Since then, he has activated in the Automotive Industry both in Research and Development, as Software System Test Engineer, as well as in Industrialization, as Test Equipment Planner.

With a strong R&D background and with four years' experience in Industrialization, the skill-stack acquired by Vlad allowed him to efficiently organize the student's Internship program for IE Department as well as other workshops specially created for High School Students.

Over the last years, Vlad also has acquired the Lean Six Sigma – Green Belt Certification by IASSC and the Project Management Certification by Romanian Ministry of Labor, certificates, which he puts to good use in his daily work activities within Marquardt Group.

In his speech, **Vlad Toncian** presented to the participants the the Marquardt vision for the *Automotive Engineering field in 2030: innovation, challenges, as well as trends in education and business.*

During the workshop he focused on **Challenges & Solutions for The Global Health Crisis**:

- Location temporarily was closed in accordance with the emergency status declared by the Romanian Government;
- Local Task Force teams were organized for handling critical topics;
- After returning to work, several health security measures were implemented, such as:

- Optimized workflows and pathways so that employees limit their physical / face-to-face interactions;
- Optimized commute schedules with high regard to the employees health security were implemented;
- All meetings were migrated in the online environment;
- Several investments were done for assuring employees safety and productivity;
- For limiting the personnel number present in the office space, a well-defined home-office (telework) system was defined, with methods and tools which can be also found in the International Labors' Organization "Teleworking during the COVID-19 pandemic and beyond" Guidebook;

The goal was to detect the suspicious cases and avoid contamination, a feat which was successfully achieved by the Company thanks to the afore mentioned actions.

Due to the special conditions of the current global health crisis, the **Erasmus Internship Program** took place exclusively online, using Google Classroom and Google Meet software tools:

CLASSROOM

- one class will be created for each academic year
- teachers and students will be added to the classes
- the online project managers will be posted in the teachers section

CLASSROOM calendar

- courses will be added to the class calendar
- students will receive an automatic invitation to attend classes
- all can be seen by both students and teachers

HOW TO TEACH ONLINE

- - the courses will take place online in video format, through Google Meet.
- - each course will have a link to facilitate the meeting between the trainer and students.
- - the trainer will invite the students too access this link.
- - the meeting can take place in video or audio format only.

The Future is not fully predictable but there are a few emerging theories in regard to new careers:

- A.I. experts / scientist / engineers;
- Augmented reality engineers;
- Quantum scientist, quantum computer architect;
- I.o.T. consultants / experts/ architects
- Artificial Intelligence & cognitive computing;
- Shift from classical computers to quantum computers;
- Quantum science, communication and encryption: paradigm shift from binary digital logic to quantum logic (using the proprieties of quantum physics for achieving unmatched parallelism in computational tasks);
- "Humanity 2.0"

Vision for continuously improving Educational Programs and Institutions with hands-on experience within the Organization – The "Lifelong Learning Continuum":

Five big ways Internet of Things (IoT) is Transforming the Automotive Industry:

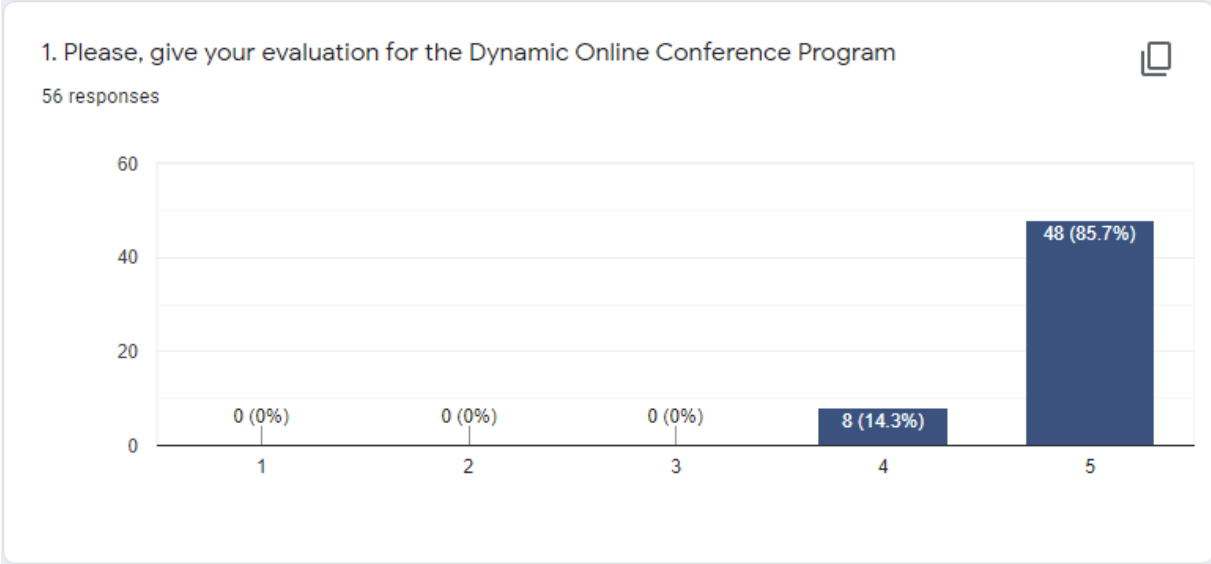
1. It will change the way people drive: the standard car will evolve from merely assisting drivers to fully taking control: apart from widespread automation, cars will become more integrated through IoT technology;
2. It will improve road safety: the IoT can also be used to make roads safer through alerts that detect accidents and even bad driving: "IoT Now.com" reports that there are already devices that automatically detect collisions and immediately contact emergency services with the location;
3. It can solve traffic congestion in cities: the IoT can be used for swarm intelligence in traffic, which allows traffic operators to coordinate cars in order to reduce congestion;
4. It can help reduce pollution and energy expenditure: IoT data can reveal a lot of information about city roads, which can be used to create greener solutions;
5. It will lead to better roads: with the "Internet of Things", state and local departments are able to build roads that can help detect road maintenance needs, traffic usage, and accident statistics in a matter of seconds: this will ensure that roads are not left in a poor condition for extended periods of time. In the future IoT technology will also allow engineers to turn roads into energy sources by using solar energy to power electric vehicles.

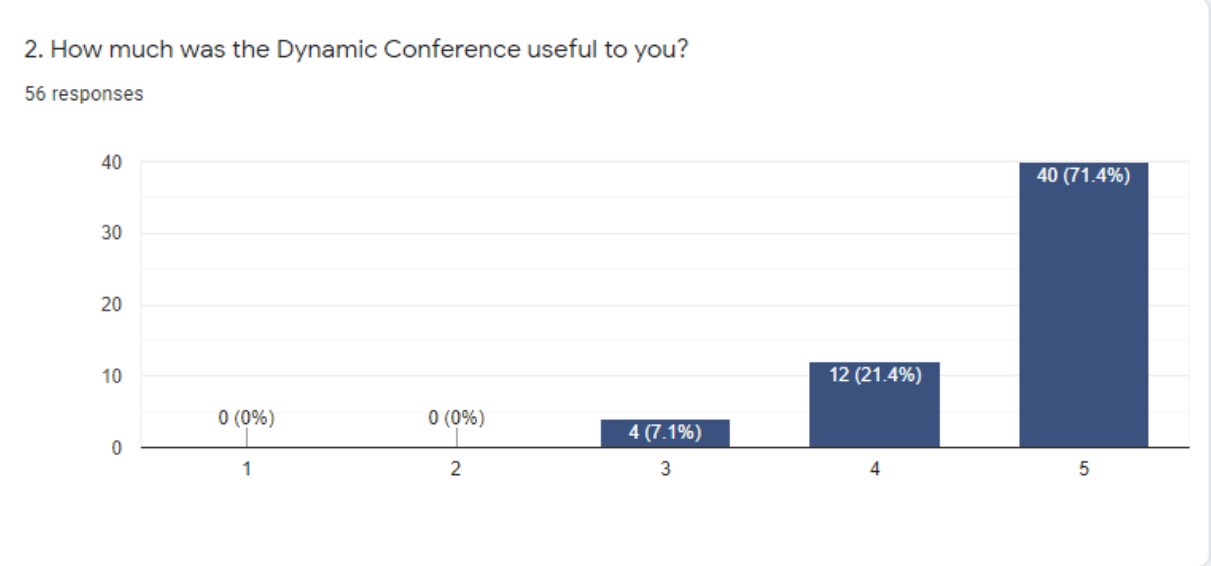
6. Feedback Questionnaires

The conference feedback questionnaire was prepared in Google Forms and included 7 questions: evaluation of the conference program, evaluation of usefulness of the conference, evaluation of the information received before the conference, evaluation of the distribution and duration of individual sessions, evaluation of the selection of speakers, evaluation of themes.

D7.4.2: Final Dissemination Online Conference (3-4/09/2020)

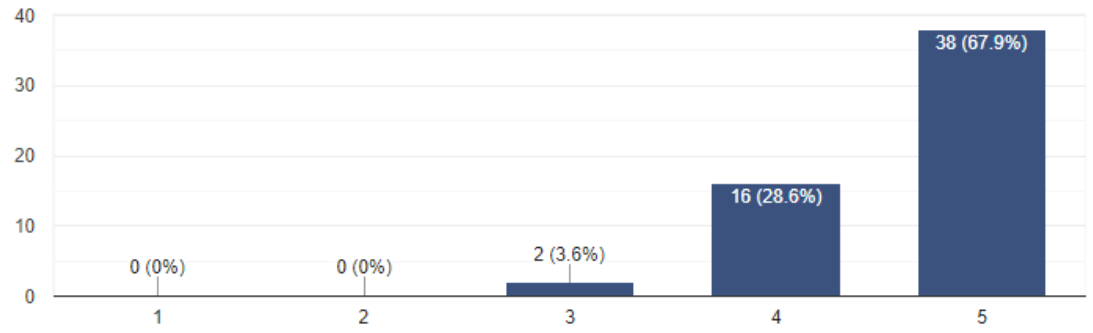
Summary information from the Feedback questionnaires received (56 in number) from the conference participants can be seen in the charts below:





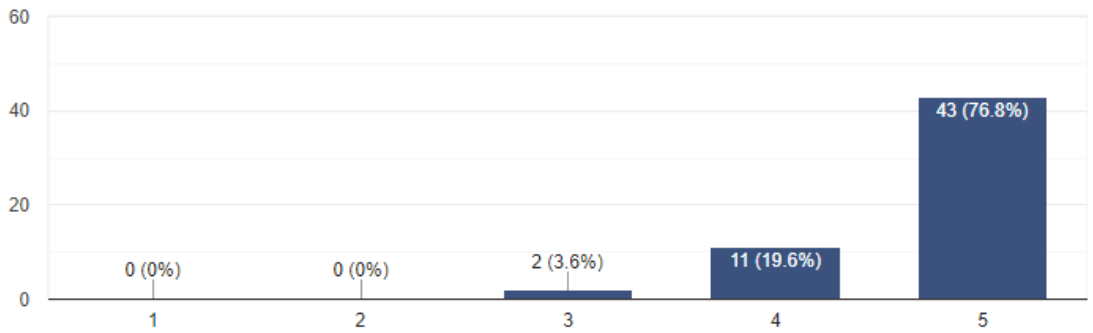
3. The received before the conference information was detailed and useful.

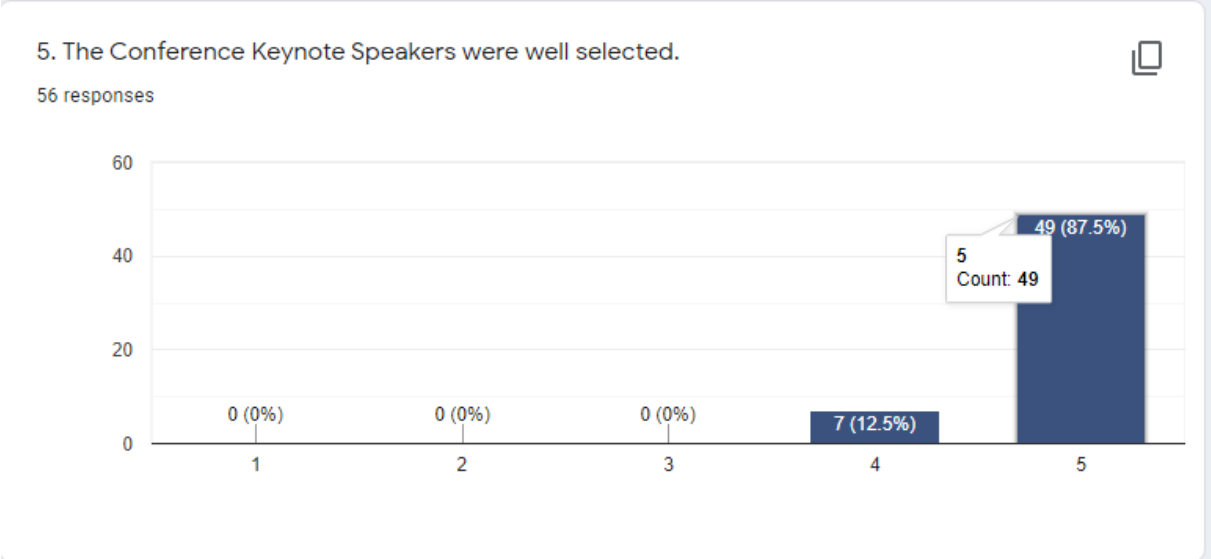
56 responses

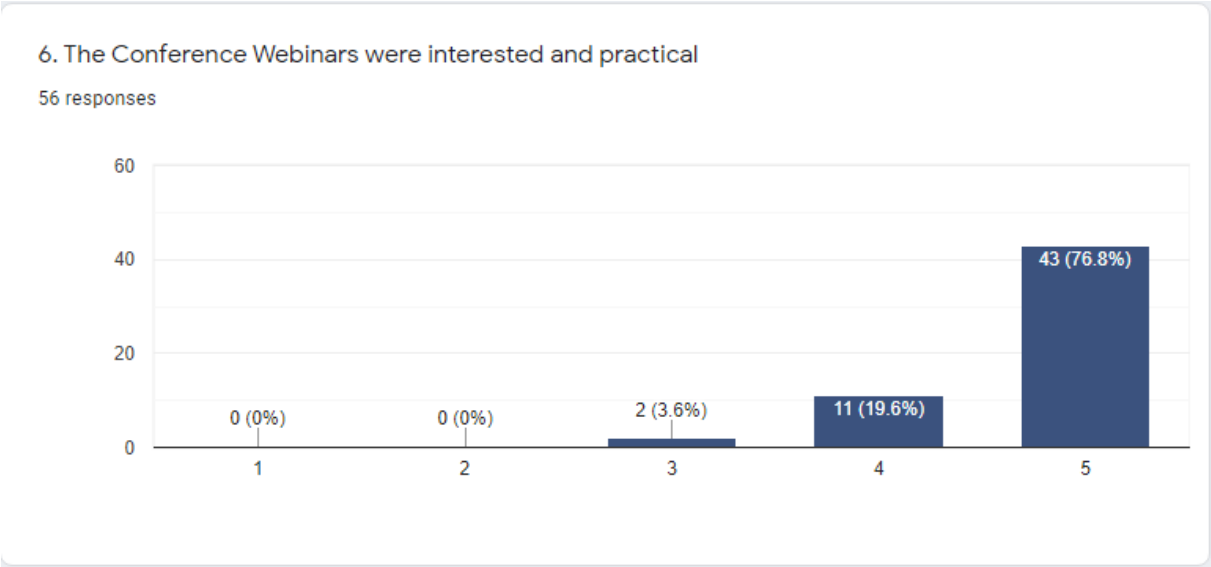


4. The Conference Time Schedule was well structured and orginised.

56 responses







The last question was about recommendations for dissemination of project's results. The participants give positive feedback from the event. Below are some of the comments and recomendations gived in the Questionnaires:

- *"Such Online Conferences are the best way for dissemination of project's results in our difficult situation of communication. It is nice that initiative people managed to organize and apply this possibility in practice. I will present some of the presentations to my colleagues and discuss them."*
- *"Arrange project sustainability assessment through follow up fair for new partners. I will use them in my lesson."*
- *"Please inform us for further occasion. I wish to have more collaboration. Secondary school teachers may have their own questions and interests."*

- *"It would be great to be informed about upcoming activities of the project.''*
- *"I've just informed about the conference, and wish to catch also the upcoming events, activities of the project. Participants e-mails can be used in this regard.''*
- *"Via Regional Education Offices the results should be transferred to vocational schools. It is where all starts."*
- *"My special appreciation is for the content and way of presentation. it was very useful for me. it will rise the quality of the classes which are held by me."*

In conclusion, it can be concluded that the participants are satisfied with the organized conference, give high marks to the program and the speakers.

7. Conference proceedings

During the Conference 3 papers were presented:

1. **Evaluation of practice-integrated dual study models in Bulgaria and Romania and implications for cross-border European cooperation between universities and business**

   Evgenia MAHLER, University of Applied Science Wismar, Germany

2. **CAD/CAM technologies in vocational studies**

   Deni Macovec, Ivan Veljovic, Sven Maricic, *University of Juraj Dobrila in Pula, Croatia*

   Croatia

3. **Sustainable partnership between universities and the non-profit sector**
   Violeta Toncheva-Zlatkova, University of National and World Economy, Bulgaria

Evaluation of practice-integrated dual study models in Bulgaria and Romania and implications for cross-border European cooperation between universities and business

Evgenia MAHLER

University of Applied Science Wismar, Germany

Keywords: *dual higher education, in-company training, responsive engineering curricula, industry-related skills, professional education*

ABSTRACT

The paper addresses the country-specific pilot implementation of dual higher education programmes from the engineering domain in Bulgaria and Romania. The paper presents a summary of the findings from the evaluation of the pilot programmes. The data evaluated has been collected in each country by the means of a peer review in the implementing institutions with the participation of the three main stakeholder groups involved - students, academic staff and industrial mentors. Qualitative data collection tools and interpretative data evaluation methods have been applied in this research. The set of methods include table-based group exercises with each stakeholder group combining open-ended questions, semi-structured group discussions and observation. Inductive research approach has been applied in the evaluation of the collected data. Finally, the data interpretation serves to discusses the impact of the piloted dual education model in both countries and provides an outlook with regard to the cooperation in education and training at European level.

INTRODUCTION

A strong industrial base is perceived as fundamental for Europe's competitiveness, economic growth and job creation.1 Easter Europe represents a region of opportunities for the development of a modern industrial landscape taking into consideration regional core advantages such as strategic geographic location with market proximity to Western EU, Russia and Asia, highly educated affordable workforce, stable macroeconomic environment and strong digital infrastructure.2 Despite the numerous advantages as an investment destination, the region has been exposed to increased international competition developing third countries that drives a shift to high value-added and dynamic manufacturing strongly relying on high-skilled labour (Marr, 2019). Technological advancement, knowledge-based and service-linked activities, shift to network-based organisation and emerging of new business practices, new professions and new customer needs and preferences shape the new profile of the manufacturing industries.3 Thus, the competitive industrial development needs to be in line with innovation policies that promote close cooperation between companies and universities (Aiginger 2012, 2014). As the sector is becoming increasingly knowledge-intensive academic and industrial stakeholder will need to work together in order to develop people with appropriate skills. This is why dual education has gained a lot of attention in the recent years in the countries Bulgaria and Romania. While dual education

has been introduced by law at secondary level, dual higher education is still subject to investigation and testing of pilot models.

Dual study is defined as a hybrid qualification model combining elements from both vocational and higher education systems. A dual study programme is composed of academic elements acquired at the university and professional elements practically acquired at a company. The company-based elements rest and construct on the theory basics from the academic part of education. The direct involvement of industrial stakeholder in the curriculum design and delivery is seen an opportunity to keep certain study programmes closely relevant to the needs of the labour market. The integration of regular practical in-company phases aims to make curricula more flexible and responsive in order to keep pace with the rapid technological advancement and increasing innovation pressure (Mahler & Bernett, 2015).

---

1 European Committee of the Regions (2017): The Future of Industry in Europe. DOI: 10.2863/709269. Available at: https://espas.secure.europarl.europa.eu/orbis/espas/

2 McKinsey Global Institute (2013): A new dawn: Reigniting growth in Central and Eastern Europe. Available at: https://www.mckinsey.com/featured-insights/europe/a-new-dawn-reigniting-growth- in-central-and-eastern-europe

3 European Committee of the Regions (2017)

RESEARCH CONTEXT

Education providers are challenged to regularly update engineering curricula in order to respond to the rapidly changing business and technological environment. However, the modernisation of the ongoing curriculum is often obstructed by long process of design, approval and accreditation phases within the laggard legal framework (Mahler, et.al. 2019). The project DYNAMIC has been developed to address the urgent need to create a flexible, adaptable and active learning workforce in the new EU member states. This objective has been materialised through the joint development and implementation of practice-integrated dual study programmes by working groups of academic and industrial partners in Bulgaria and Romania. An initial analysis of the conditional framework was conducted in order to explore the feasibility for implementation of the dual study model in both countries. In the course of this analysis, transferable elements from the German education system were explored. As a result, potential parallels with the practice-integrated dual studies model in Germany were defined in specific implementation recommendations. These recommendations served as foundation for the development of a pilot programmes in the scope of the „DYNAMIC" project. The pilot dual programmes encompass amended/adapted existing engineering curricula and newly developed curricula parts for practical training at partner companies. The pilot implementation of the dual programmes has been evaluated in the scope of two peer reviews. The findings of the evaluation process are subject to the present paper.

METHODOLOGY

The methodological framework of the described study uses empirical data collection through qualitative methods. A peer review at Lucian Blaga University of Sibiu (Romania) and Technical

University Varna (Bulgaria) was used to capture the experience and impressions of all direct stakeholder gained through the pilot implementation. The overall purpose of the peer reviews was to reflect on the implementation of the dual curricula developed, identifying strengths and challenges for the involved stakeholders during the implementation process. The evaluation model developed for the peer reviews incorporates the following components:

- General reflection of the programme implementation using two structured questionnaires for the stakeholder groups 1) students of the dual study programme and 2) industry mentors,
- Semi-structured interviews with academic mentors,
- Feedback collected in written form from each of the stakeholder groups 1) students of the dual study programme, 2) academic mentors and 3) industry mentors, using the principles of the method called "World Café".

Evaluation model applies several methods. First, World Café method as a structured group session with common parts serving the comparability between the stakeholder groups and of specialised elements designed for each of the stakeholder groups separately. The common method used with each of the stakeholder groups is the question round with each of the groups. The purpose wass to find out to what extend the expectations of the separate stakeholder groups towards the dual study model match. The method also serves the comparability of the data collected during the peer review in Romania and Bulgaria. The following questions were asked:

Question 1: Do you see the connection between the theoretically taught contents of the university and the given practical training at all?

Question 2: What do you see as the biggest benefit for the company and the students?

Question 3: How can you understand whether the company's activities really complement the curriculum?

Question 4: Are the quantity and quality of care provided by the mentors sufficient?

Question5: Which kind of assessment and feedback tools (written or oral) did you use to reflect the practical training? To whom these were submitted?

Additional methods were then applied specific for each stakeholder group.

Additional methods used with the students:

Prior to the face-to-face interaction with the group of the students, an online-based questionnaire was distributed to all dual students participated in the pilot. In total, 56 students were selected for the dual option and participated in practical training (41 in Romania and 15 in Bulgaria). The online questionnaire aimed to collect data from as many participants as possible, knowing that only a part of the dual students will be able to attend the face-to-face meeting with the peer review team.

The questions represent the following topical areas:

- Satisfaction with the programme
- Satisfaction with the organisation
- Satisfaction with the mentorship provided (supervision, support, assessment)

The questionnaire filled in in advance for identifying challenges as well as potentials during the implementation that could be addressed more detailed during the face-to-face session.

Additional methods used with the industry mentors:

After the 5-question round, a guided discussion of 40 minutes took place. During the discussion, the companies were asked about their experience in working with the students, in particular challenges, providing feedback and assessment of students, communication with university, impressions and lessons learnt from the "Train the Trainer Training". After the face-to-face meeting with the industry mentors, they were provided with an online-based open-question questionnaire to answer and send back. The questionnaire targeted department instructors, responsible for the technical instruction and activity supervision and HR staff, responsible for the general organization.

Additional methods used with the academic mentors:

An interview with question catalogue was prepared in order to collect data specific for this stakeholder group. Due to time restrictions during the face-to-face interaction, the question catalogue was distributed digitally to the academic mentors via google online form after the peer review. The reflection from the online question catalogue addresses the implementation of the practical phases, the assessment of students' results as well as communication and administration issues.

SUMMARISED RESULTS AND MAIN FINDINGS

The main findings from the peer reviews and the interaction with the three stakeholder groups in Bulgaria and Romania are summarised in generic form representing common similarities for the target groups in both countries. Where such generalisation was not possible due to context and implementation specific factors, the findings are explicitly presented per country or addressed pilot case.

Main findings for the group of students:

In general, students have demonstrated high interest in the new dual forms of their study programmes and readiness to participate in the practical trainings in the partner companies. In the example of Romania, all students start as regular students being informed about the dual option just after admission. From 64 students enrolled in the Bachelor programme in "Mechatronics" in the year of the pilot, 41 have selected the dual option. In Bulgaria this rate of students enrolled in the dual option also represents about 2/3.

The common motivation for the extra effort in comparison with the regular study form is to acquire competitive advantage to other job seekers after graduation. Considering the situation that work experience is still a challenge when applying for a job position, the interviewed higher semester students expressed that hands-on learning made them more confident for job

application process.

The biggest benefit from the dual form of education students see in its value for career orientation and the opportunity to create a vision for their future career development.

> "When we start academic education, the job perspectives are still a "black hole". The practical training helped me to get aware about the opportunities in my professional field." (Interview with a TUV student, February 2020)

Several students expressed a preference to extend the practical experience during their study to more companies. Nevertheless, they also understand the benefits of practical rotations in the same company. This is seen as an opportunity to acquire deeper knowledge in a certain professional field and to specialise in the processes in the one company, which is a potential employer after graduation.

Although the overall satisfaction with the piloted dual models is very high, a few areas for future improvement could be identified after the discussions with the students:

1) A group of students expressed the opinion that the company did not use their full potential during the practical training. This was observed in the companies with less experience with the dual education or other forms of university-business cooperation. In order to make the best benefits of the dual training, partner companies should establish trust in the capabilities of the students and assign them more responsibilities during the practical phases.
2) In general, students experienced good quality of mentoring during the practical trainings

   but would wish more "quantity". This could be explained with the innovative character of the dual study form creating the necessity for more intensive guidance until experience is generated and can be shared among peers.

Finally, the practical trainings integrated into the pilot dual programmes have been indicated as a great learning opportunity and a means to shape the individual career pathway. Its potential to foster personalised education and training in higher education has been recognised by the students leading to the expressed desire for individual task plan that better match company activities with students' strengths and interests.

Main findings for the group of company representative:

The satisfaction of the partner companies involved in the piloting could be also assessed as high. Despite the challenges identified during the pilot, the experience in general was positive stimulating the companies to seek further engagement opportunities with the academia.

A positive outcome from the early engagement with the students is the recognition of their innovation potential, which could be observed still during the first in-company phase of the 1st year students in Romania. Despite their limited knowledge in the professional specialisation of the department they were assigned to, students still could meaningfully contribute to the idea generation process in the team.

> "1st year students were good in thinking outside of the box as they still don't know what is inside the box. However, their communication skills and self-confidence need to be strengthened." (Interview company representative, October 2019)

The 1st year students were more creative than higher grade students, which makes them a valuable creative force especially for the R&D department. However, they often fear to express their thoughts and lack of confidence which is a challenge for the mentor to use this potential. Therefore, students need to learn very early how to sustain or make use of good ideas and to acquire practice of good documentation and presentation. During the first practical phase the companies have also noticed the power of motivation and inspiration when 1st year students had the chance to meet and interact with higher grade students working in the company.

As a short-term benefit from the pilot dual format, the companies appointed the training for industrial mentor that was offered to them prior to the first in-company practical phase. The training for industrial mentors has been designed according a standardised training model developed the German Chamber of Industry and Commerce, customised to the specific national context in Bulgaria and Romania. The training has been delivered with respect of the work load of the industrial experts who will act as mentors during the pilot implementation. The train the trainer course raised awareness about methods and techniques used in the work with students. As most beneficial component of the training the industrial mentors pointed out the communication patterns practiced. This was particularly the case of departments such as in the mechanical production, where it was difficult to translate the complex technical information to understandable for the students language. The mentors learned during a practical workshop how to approach the students from simple to complex situations, taking them step by step along the learning curve instead of "pushing them into the cold water".

In general, all mentors indicate the first practical phase as a learning experience rather than application of already acquired knowledge. Such type of interaction between students and companies required more personal than technical mentorship. Mentoring the dual students was more intensive requiring more time invested to learn about the job, the colleagues, the product, etc. However, a in long-term companies expect that this investment will be more rewarding in building up relationship with future employees.

Main findings for the group of academic mentors:

In general, the group of the academic mentors sees the benefits of the dual higher education in the connection with the company that allows combining the theoretical and practical knowledge. This form of education provides students with better understanding of contents and work and helps to educate well-qualified engineers. The academic mentors could observe increased understanding in the taught subject area and more motivated student participation after the practical phase in the company. The academic mentors see the biggest benefit for the students gaining practical skills, they are prepared for the world of work, the curricula can be constantly improved and aligned with needs from the industry.

Additional benefit from the regular communication and feedback loops between academic and industrial mentors could be identified for improving the quality also of the regular programmes. During the adaptation process, missing aspects in the curriculum were supported by introducing additional elective courses delivered by the company at the university. These additional courses

were mandatory for the dual students but free to attend by all other students. Moreover, the new insights in the current industrial processes gained by the academic mentors during the exchange with the industrial mentors or during company visits are applied in the teaching of both dual and regular structures programmes.

Among the challenges identified by the academic mentors is the lack of mentoring experience and additional time effort related to the mentorship of the dual students as long as this form is not officially recognised and the workload is adjusted to the new teaching methods. In addition, the intensity of the academic mentoring was restricted due to the fact that the whole process was running during the holiday period in order to avoid significant interventions in the approved study plan.

LIMITATIONS OF THE FINDINGS

In the interpretation of the presented findings, the following limitations should be taken into consideration:

Within the project lifetime limited to 3 years, it is not possible to develop, implement, observe and evaluate dual students throughout the whole study. In the pilot case in Bulgaria, higher semester students have been selected, so that they can apply prior knowledge from the university in performing activities assigned in the company. This implies significant restrictions on the adaptation extend possible for the ongoing study plan. According to the Higher Education Law, the student has to complete his/her training on the curriculum on which he / she started. (Ilieva, 2019)

In the pilot case of Romania, 1st year students have been involved in the dual implementation. Thus, they have less background knowledge and can undergo limited specialisation within the project lifetime (two practical rotation, the first of which has introduction character). During the first year, students are usually taught mainly theory in basics subjects. In some subjects such as Technical Drawing, students could apply university knowledge in the company. In other basic subjects such as Maths or Chemistry, the connection between theory and practice at this stage is difficult.

IMPACT

Preceding literature review has indicated the possibility of intensive collaboration between companies and educational institutions without existing regulatory framework at macro-level. Such collaboration on the meso-level is a necessary activity for the implementation, reproduction and continuity of the system. (Gessler, 2017) A feasibility study conducted with respect of the transferability of the dual study model in Bulgaria and Romania indicated favourable framework conditions (both political and economic) set up so that a fundamental transfer potential exists. (Mahler, et.al. 2019) The evaluation of the pilot dual programmes confirmed that the flexibilization of engineering higher education through integration of VET resp. company-based learning components is possible but the process is slow. Ongoing curricula allows only moderate changes or adaptations as the case in Bulgaria showed. The impact can be maximised if programmes are designed as dual, as demonstrated in Romania. However, a political support in form of appropriate regulatory framework is necessary in a mid-term to establish quality assurance measures, transparency and certification of dual higher education. The relationship and communication between a higher education institution and its partner companies has been confirmed as central

success factor. Particularly in programmes subject to mandatory national and international standards (e.g. in the field of maritime engineering), in which curriculum changes are extremely difficult, the close collaboration is essential to enable regular updates.

IMPLICATIONS FOR CROSS-BORDER EU COOPERATION

The Bologna Declaration started a coordinated activity to establish a common European Higher Education Area (EHEA) by meanwhile 48 signatory countries, including Bulgaria and Romania, with the aim to increase transparency, mobility and mutual recognition. (Heitmann, Kretzschmar 2017, p.13) The adaptation of the pilot programmes for dual implementation has been guided by the Bologna principles and the integration of the practical activities followed the logic of nationally and institutionally approved curricula design and approval procedures. In the case of dual higher education, the in-company training is mapped to learning outcomes and the workload is calculated with the ECTS methodology. Curricula adaptation and training design approach based on the EHEA instruments allows transparency and comparability of the pilot programmes subject to evaluation. Thus, the evaluated pilot programmes demonstrate a high degree of transferability and adaptation in other national settings within the EHEA.

Since the pilot programmes have been developed and tested within the existing national legal framework applying minor curricular changes that are in line with the Bologna system, a student mobility component could be integrated without significant recognition obstacles. Moreover, the practical phases are assigned in the summer months so that the usual semester plan, confirmed at ministerial level, could remain unchanged. Such timely arrangements allow two types of student mobility, using the Erasmus+ mobility schemes:

(1) mobility for practical training in a company subsidiary abroad
(2) mobility for academic semester in partner university

Beside the mobility implications, the piloting of the dual higher education model in Bulgaria and Romania result in an added value for the university-business research community at European level. The new cooperation model between industry and academia provides new practitioner cases and new country-specific examples that contribute in the discussion of student employability and skills development in respect of future industry needs.

CONCLUSION

Skills shortage and rapid workplace change create the need for agile workforce. To achieve this goal, higher education curricula should be more flexible and adaptive to the current industrial needs. The close business-academia cooperation is expected to strengthen the employability of the graduates by providing them with improved knowledge, skills and motivation. The dual higher education model provides a solution for more responsive education and talent growing for the benefit of all stakeholders.

REFERENCES

Aiginger, K. (2012): A systemic industrial policy to pave a new growth path for Europe, WIFO Working Papers 421

Aiginger, K. (2014): Industrial policy for a sustainable growth path, WWWforEurope Policy Paper n°13

Gessler, M. (2017). The Lack of Collaboration Between Companies and Schools in the German Dual Apprenticeship System: Historical Background and Recent Data. International Journal for Research in Vocational Education and Training (IJRVET), 4(2), 164–195.

Heitmann, G. & Kretzschmar, D. (2017). Guidelines on Engineering Programme Design in Alignment with European Qualifications Frameworks, European Standards for Accreditation of Engineering Programmes and the Southern African Quality and Accreditation Standards.

Document produced in the Edulink's PEESA project

Mahler, E., Bernett, J. (2015). Machbarkeitsstudie zum Transferpotenzial des Deutschen Dualen Studiums in Bulgarien und Rumänien. Study conducted in scope of project EUDURE – European Dual Research and Education (01DS15017), funded by the German Ministry of Education and Research

Mahler, E., Ilieva, G., Braez, R. Georgieve P. (2020). Flexible Pathways for Modernisation of Undergraduate Engineering Programmes by Country-Adapted Implementation of the Practice-Integrated Dual Study Model in Bulgaria and Romania. Balkan Region Conference on Engineering and Business Education. DOI: 10.2478/cplbu-2020-0008

Marr, B. (2019). The 10 Vital Skills You Will Need For The Future Of Work. Forbes Magazine. Retrieved September 23, 2019, from https://www.forbes.com/sites/bernardmarr/2019/04/29/the-10- vital-skills-you-will-need-for-the-future-of-work/#377e51bf3f5b

ACKNOWLEDGEMENT

This paper was created with the support of the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

We thank our colleagues from the projects DYNAMIC - Towards responsive engineering curricula through europeanisation of dual higher education (588378-EPP-1-2017-1-DE-EPPKA2-KA) and EUDURE – European Dual Research and Education (01DS15017) who provided insight and expertise that greatly assisted the research, as well as for their active contribution and documentation of project results.

The presented paper **was published online** and **on paper** in the **issue 2, 2021** of **the scientific journal Vocational Education** – the scientific journal is intended for teachers, university students, PhD students, professors and professionals in the field of vocational education and training and continuous education.

ISSN 1314–8567 (Online)

ISSN 1314–555X (Print)

The articles in Vocational Education are referred, listed and abstracted in:

- European Reference Index for the Humanities and the Social Sciences (ERIH PLUS)
- Central and Eastern European Online Library (CEEOL)
- EBSCOhost Research Databases
- Google Scholar
- Primo (Ex Libris)
- Summon (ProQuest)

Links to the online journal and to the online published article:

https://vocedu.azbuki.bg/en/

https://vocedu.azbuki.bg/en/professional/sadarzhanie-na-sp-profesionalno-obrazovanie-2021-g/sp-profesionalno-obrazovanie-knizhka-2-2021-godina-xxiii/

https://azbuki.bg/wp-content/uploads/2021/04/Vocational_Education_2_21_Evgenia-Mahler.pdf

CAD / CAM TECHNOLOGIES IN VOCATIONAL STUDIES

Deni Makovec, Ivan Veljović, Sven Maričić

Keywords: VET, CAD/CAM, additive technologies, FFF

ABSTRACT:

Vocational studies emphasize the industrial work experience of the students during their studies. In vocational curricula, CAD /CAM technologies play an important role. Especially in large areas such as mechanical design, practical manufacturing simulation and digital production. It is very important to follow the direction of development of new technologies in the CAD /CAM environment. This approach combines theoretical teaching with new manufacturing technologies. In the context of having better hands-on experience, low-budget 3D printers have also been developed, which have become very affordable and allow a significant expansion of the use of additive manufacturing for development and production. In this paper a brief overview of the use of CAD /CAM technologies in the process of 3D printer model production is given.

ACKNOWLEDGMENTS:

This article was made under the support of DYNAMIC project – 588378-EPP-1-2017-1-DE-EPPKA2-KA, Towards responsive engineering curricula through europeanisation of dual higher education.

REFERENCES:

[1] 3D Systems.com, (web accessed: 15.7.2020)

[2] Godec, Damir; Šercer, Mladen. 2015. Aditivna proizvodnja, Sveučilišni udžbenik. Fakultet strojarstva i brodogradnje u Zagrebu.

[3] Maričić Sven & Haber Iva Mrša & Radolović Donald & Veljović Ivan, 2019. "The Emerging Role of New Technologies in Vocational Education," Balkan Region Conference on Engineering and Business Education, Sciendo, vol. 1(1), pages 75-80, October 2019.

[4] Xin, Li. (2018). Curriculum Reform and Practice of Mechanical CAD/CAM Technology. International Journal of Emerging Technologies in Learning (iJET). 13. 78. 10.3991/ijet.v13i08.9040.

SUSTAINABLE PARTNERSHIP BETWEEN UNIVERSITIES AND THE NON-PROFIT SECTOR

Assist. Prof. VIOLETA TONCHEVA-ZLATKOVA, PhD
Public Administration department, UNWE, Sofia, Bulgaria

Keywords: university-community partnership; pro-bono; social innovation; community engagement; social capital.

ABSTRACT:
Universities often look to create deep partnerships with non-profit organizations in their local communities. These collaborations serve the combined purpose of providing opportunities for research and education around the non-profit setting and of enhancing community capacity and social capital. This article presents the successful partnership of the University of National and World Economy and NPOs. The collaboration, called Pro Bono workshops was based in a BEESE project - a pilot program designed to address management/communication/finance challenges of non-profits and provide meaningful and relevant learning experiences for students through the use of community-based research, a joint research study among students, faculty, and non-profits designed to produce recommendations that will positively affect the NPOs and the community.

- Universities will receive a new approach to strengthen ties with NPOs and companies to boost social commitment in their students and to facilitate new skills acquisition in their students.
- At the level of university students, they will improve their employability, by acquiring new competences, working together with professionals and facing real problems. On the other hand, it will empower their social engagement, by making them aware of social issues in which NPOs are working, which they will support through their pro bono consultancies.
- The NPOs will obtain professional consultancies for free, which will allow them to improve their management and increase their social impact.
- This practice will allow companies to offer a new way of doing corporate volunteering for their employees, who will support social causes within the Pro Bono, developing a new way of discovering talent in university students and give practical training to young people.

Assessment data are significant, indicating that students increased their understanding of the sector while non-profit partners received valuable resources. The article concludes with strategies for non-

profit practitioners and faculty who wish to develop a similar model. Implications for practice and the classroom are discussed.

8. Conclusion

The Final Dissemination Online Conference "The University Business Cooperation in International Dual Higher Education" was conducted with high quality of organization, interesting topics and speakers, presentation and workshops and fulfils its goals:

- to present the achieved results from the implementation of the Dynamic project
- to reach a broader audience of project stakeholders and interests groups
- to strengthen the cooperation between education and business
- to encourage the future development of dual education in higher education

The deliverables from the Final Dissemination Online Conference can be summarized as follow:

- Developed webpage of the conference
- List of participants with 246 registrations, of which: 164 local participants from Bulgaria and 82 international participants, from 15 countries – 218 external stakeholders
- Full Video Records of the conference by days and 12 presentations from the conference
- 56 received Conference Feedback Questionnaires
- 170 Attendance Certificates
- Statistics from e-mail marketing campaigns and Facebook
- 1 paper published in scientific journal