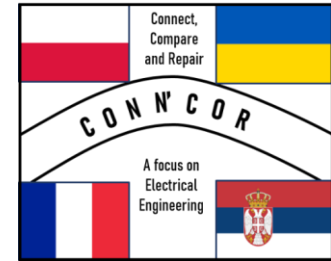




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AI TOOLS IN ENGINEERING EDUCATION

Jaroslav Makal, Bialystok University of Technology

In the frame of CONN'COR Project no. 2024-I-FR01-KA220-HED-000250882

Work package n°4 - Strengthening cooperation with Ukrainian university and use its experience of working and implementing projects under difficult conditions.

Activity: Enhancing competences and skills of participants' staff in the field of preparing project proposals

Bialystok, 15 of September 2025



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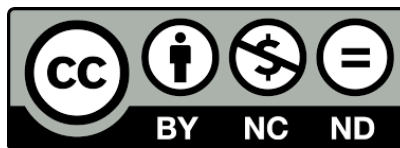
LECTURE 1. OVERVIEW OF A NEW PROPOSAL.

**LECTURE 2. DISCUSSION ON THE SUBJECT MATTER,
SCOPE AND CONTRIBUTION OF PARTNERS IN THE WORK
TO IMPROVE THIS PROPOSAL.**

Disclaimer

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or Agence Erasmus+ France, Education Formation. Neither the European Union nor the granting authority can be held responsible for them.

PUBLICATION FREE OF CHARGE



R4.3a Teachers trained to prepare project proposals. Training material available on the project website.

R4.3b Joint project proposal prepared by four universities. Project application ready to be submitted.

Call 2024 Round I KA2

KA220-HED - Cooperation partnerships in higher education

Deadline (Brussels Time) 05 Mar 2024 12:00:00

Inviting AI to the teaching and learning process in higher education in engineering fields - study cases

PARTNERS:

University of Nis (SRB)

Lviv Polytechnic National University (UA)

Klaipedos Valstybine Kolegija (LT),

Bialystok University of Technology (PL)

REALISATION:

01/09/2024 - 31/01/2026

17 months

120 000 EUR

RESULT: Total score 75/100

NO FUNDING !!!

Work package n°2

Development of a digital monograph containing examples of the use of AI tools in individual subjects, forms and levels of studies implemented at partner universities

Elaboration of a decision making application for 1st semester students on the base of AI to help them assess their chances of passing this semester

Collecting the study cases and editing the final version of the digital monograph

Work package n°3

Development of original subjects with detailed content, learning outcomes, etc. along with assessment systems, introducing students to the area of creating and using AI tools

Development of the courses „Introducing to AI tools“

Modernization of 8 professional courses involving the use of AI tools

Work package n°4

Using AI to teach students and realise projects in extraordinary conditions

Delivering the experience in running projects and teaching students in difficult conditions

(two seminars organised by LPNU about the implementation of AI tools in studying process and realising projects under war terms)

Assessment of the use of selected AI tools to achieve student learning outcomes in difficult conditions

(critical evaluation of AI tools used in teaching students based on surveys and interviews with students and teachers).

Preparation Process:

Teachers' Survey on the Use of AI in Teaching
(115 teachers)

Students' Survey on the Use of AI in Learning
(262 students)

Teacher's survey

How would you rate your overall awareness of AI?
(you can mark more than one)

☐ I know there is such a tool, ☐ I use AI tools in my work

Would you like your students to use AI while learning?

☐ no ☐ yes

Would you like to participate in workshops on the use of AI in teaching?

Have you incorporated any AI tools or technologies into your teaching methods?

☐ no ☐ yes

Teacher's survey

If „yes“ or „partly“, please provide short description of examples of specific AI tools or technologies you have used:

What areas of your teaching practice do you think could benefit the most from AI integration?

☐ preparing for classes, etc,

Do you believe that AI will play a large role in education in the future?

☐ no ☐ yes

Student's survey

Do you consider searching the Internet is equivalent to using AI?

Have any teachers told you that they use AI tools to prepare or conduct classes?

Has any teacher recommended you using AI tools for learning?

If so, please provide the names of these tools

Have you been using AI tools in learning, so far?

If yes, please provide the names of the applications you use.....

Student's survey

Would you say your overall experience while using AI in learning is positive or negative?

Have you already learned about ethical principles that apply to using artificial intelligence tools?

Are you interested in having more AI applications integrated into your learning experience?

Would you like to participate in workshops on the use of AI in learning?

RESULTS of SURVEYS:

- Confirmation of the need to to train teachers in the use of AI;
- Proving the thesis about the important role of AI in education.



Strengths:

- The project relates well to the specificity of the HE sector.
- Interesting and up-to-date theme of the project.
- Understandable and convincing motivation for the project.
- Correct approach to project management (WP1).
- Well-balanced distribution of roles and tasks between the consortium members.

Strengths:

- Convincing and adequate analysis of needs (surveys conducted in partner HEIs). However, more detailed information on specific needs of partners (especially Ukrainian) should be provided.
- Acceptable approach to inclusivity and compliance with green policies and digital policies. The whole project and cooperation between partners will be entirely based on the use of digital tools.

Strengths:

- Generally correct promotion and dissemination strategy, however clearly focused on the partnership and local levels only.
- Sufficiently explained the expected impact of the project on local levels. No explanation of international / European level.

Strengths:

- The concept of pre- and post-implementation surveys to be conducted before and after the project among teachers and students.
- The cost effectiveness is unquestionable, as well as the estimated workload in working days. A positive element is the declaration of own contribution.

Weaknesses:

- The composition of the consortium does not convince in terms of documented "know-how" in the applications of AI in education.
- This particularly applies to partner institutions and staff delegated to the project.
- Individual staff experiences do not indicate their specialization in the area of AI applications.

Weaknesses:

- The main project objective is not clearly articulated in the proposal. It may cause potential problems at the stage of final evaluation.
- The needs analysis of target groups is not based on specific data and research, especially within the partnership and countries represented in the partnership.

Weaknesses:

- Not enough detailed description of main outputs (products) of WPs (handbook, smart study assistant, model / framework program).

RELEVANCE OF THE PROJECT

(18/25)

The main project objective is not clearly articulated.

The individual experiences of the delegated staff do not indicate their specializations in the area of AI applications.

The needs analysis of the administration and employers groups is not based on specific data and research, at least within the partnership and partner countries.

RELEVANCE OF THE PROJECT

The Applicant does not specify in the proposal what elements of the project will distinguish it from existing resources. It is difficult to say if the content of handbook will be innovative and different from numerous textbooks available on academic market.

It is not explained who will bear the consequences of wrong decisions made by personalized AI applications, which would possibly result in wasted time during studies (ethical aspects of AI).

RELEVANCE OF THE PROJECT

It is difficult to say that project is complementary to other initiatives already carried out by partners.

There is no clear information on specific projects carried out in the field of AI applications.

The information on complementary activities is very general. The exception is the information provided by UNI (SRB).

Quality of the project design and implementation (20/30)

The Applicant is not enough precise in terms of project objectives. The provided information is far from the rules of SMART.

The Applicant is focused on products (outputs) and not on results (outcomes).

The final evaluation of the project in terms of achieving its goals will be very difficult, if not impossible.

Quality of the project design and implementation

The attached schedule raises doubts in terms of the logical sequence of some tasks. i.e. the “Training of teachers for use AI tools” is planned before the main products are completed.

The same doubt relates to the online seminars, to development of the courses „Introducing to AI tools” and to Modernization of 8 professional courses involving the use of AI tools.

Quality of the project design and implementation

The titles of WP2 and WP3 are unclear to understand.

WPI Project Management

The reservations concern very extensive (bureaucratic) management structures (MC, QAC, ICB, SC) which seem be inadequate to project scale.

There is some doubts concerning the cost of Dissemination Project Meeting combined with Final Project Meeting (11200 EUR).

WP2 Digital monograph and Smart study assistant.

The description of the WP' outputs is not systematized and difficult to understand.

The content of monograph and functionalities of the assistant are not satisfactorily explained, also in the aspect of innovation.

WP2 Digital monograph and Smart study assistant.

The information on training of teachers to use AI tools (4 workshops), on-line seminars for partner project teams and on collecting the study cases is insufficient (too general).

The indicators are focused on workshops / seminars and not on main products..

WP3 Course program and modernization of 8 courses

(Remark: the title of WP is unclear).

The outputs of the WP are described widely but the description is not systematized and difficult to understand.

The main outputs (products) are as follows: the model course "Introduction to AI Tools" and modernised programs of at least 8 professional courses that include the use of AI tools. Both are described in very general way.

WP3 Course program and modernization of 8 courses

The delivery method (remote learning platforms powered by AI tools ?) is not clearly explained.

Quality of the project team and the cooperation arrangements (17/20)

The consortium is composed of 4 HEIs which are not leaders in AI technology / applications in Europe.

It is a pity that the consortium did not include any partner from countries leading in the implementation of AI in industry and education.

Quality of the project team and the cooperation arrangements

However, it should be noted that except Ukrainian partner (LPNU) the remaining delegated staff lacks experience and competences related to the implementation of AI applications in the HE teaching.

Documenting "know-how" in the applications of AI in education is generally not a strong point of the consortium.

Quality of the project team and the cooperation arrangements

The roles of industrial partners in project implementation are not highlighted in the proposal.

There are no supporting letters issued by the associated partners and attached to the application.

It is not known whether these are companies involved in AI technology.

Impact (20/25)

The Applicant does not explain how he intends to assess in the final phase of the project implementation whether and to what extent its objectives have been achieved.

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Impact (20/25)

There is the lack of activities clearly addressed to international audiences.

The content of the application does not provide grounds for expecting any noticeable impact of the project at the international/European level.

This should be assessed as a significant deficiency in the overall concept of the project.

WHAT WE CAN DO?

- Elaborate a new proposal
- Improve the „old” one

It's time for a short discussion:

Thank you
for your attention
and
your patience



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