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# NextGEng Project

## WP2

### Tailored training process

#### Deliverable R2.5.

## Report - Analysis on the implementation quality for upgraded joint courses

April 2024

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WP2	R2.5. Analysis on the implementation quality for upgraded joint courses
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<b>Short Description</b>	The report presents an analysis of the survey conducted among teachers and students involved in the first-round implementation of the upgraded courses. It evaluates participants' satisfaction with the quality of the courses, the educational materials produced, and the co-teaching process and lecturers.
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## 1. Introduction

WP2 activities support teachers in enhancing their teaching competencies through reflection on various teaching and learning methods, with a particular focus on student-centered approaches. These activities also provide opportunities for international co-teaching and collaboration with companies, thereby leveraging external resources.

To investigate the impact of WP2 on teaching, three questionnaires were set up. The surveys aim to assess the situation after the implementation of the upgraded courses, allowing a comparison of the impact of WP2 actions with implementations before upgrades in the NextGEng project. The student survey was designed and implemented in collaboration with WP3. The other two surveys were addressed to the teachers of the upgraded courses. One of the surveys was conducted after implementation of the upgraded courses for the teachers who participated in them and the other after the second WP2 virtual training day in February 2024.

The results of these surveys will be compared with the results of surveys conducted before the implementation of the upgraded courses, see reports R2.1 and R2.2. This report presents the situation after the development, for Courses C1 – C4 included in the first upgrading round, where the development has been completed by January 2024.

The surveys address the following qualitative and quantitative indicators associated with the WP2 activity A2.5, as shown in Table 1:

Table 1. Indicators associated with the WP2 activities.

No.	Quantitative indicator	Activity	Target group	Indicator Code
1	- 70% of the participating teachers gave positive feedback related the developed course content materials and co-teaching process	A2.5	Teachers	Q1
2	- 50 % of the participating students gave positive feedback related the course content materials and co-teaching process	A2.5	Students	Q2
3	- at least 75 participants (students and teachers)	A2.5	Students and Teachers	Q3

## 2. Overview to the surveys.

The surveys for students were distributed to all students who participated in courses/laboratories from C1, C2, C3 and C4 courses that were implemented during the Autumn 2023 and Spring 2024. The survey implementation period for the courses of the Autumn semester was from 28<sup>th</sup> August to 1<sup>st</sup> February 2024. The survey implementation period for the courses of the Spring semester started on 17 April 2024 and is still ongoing at the moment of writing of this report. The questionnaires were developed in collaboration with WP3, and only a portion of them pertained to WP2 subjects.

The first survey for teachers was distributed to all the teachers who were involved in co-teaching activities during the Autumn 2023 semester. The second survey for teachers was distributed to all teachers who participated in the second WP2 virtual training day organized in February 2024.

The survey questions for students related to WP2 were categorized into the following sections:

1. Background information.
2. Experience in company's involvement in the courses.
3. Experience in international teaching.

The results obtained from the surveys are presented in the subsequent subsections.

### 2.1. Background information

All together for the autumn 2023 semester, there were 32 responses (students) and for the spring 2024 semester, there were 7 responses for course feedback and 25 responses for laboratory feedback. First round of feedback from autumn 2023 booth courses and laboratory feedback was evaluated in the same time. Starting with the spring 2024 semester the feedback was asked from the students after each activity (course/laboratory) was delivered. The number of respondents with background information is shown in Table 2.

Table 2. Number of respondents by course and by partner higher education institution.

Course	Partner HEI	Autumn semester 2023	Spring semester 2024	
			Course	Laboratory
C1 - Strength of materials	TUCN			
	JAMK	10		1
	UJA	2		
C2 - Industrial Automation	TUCN		7	
	JAMK			
	UJA	1		16
C3 - Design projects	TUCN	9		
	JAMK			1
	UJA	9		

C4 - Quality Assurance and Applied Methods	TUCN		12	6
	JAMK	1		1
	UJA			
<b>Total</b>		<b>32</b>	<b>19</b>	<b>25</b>

All together 8 responses from Teachers were received for the first and second surveys. The number of respondents with background information is shown in Table 3.

Table 3. Number of respondents by partner higher education institution.

Partner HEI	n
TUCN	2
JAMK	5
UJA	1
<b>Total</b>	<b>8</b>

The goals of the quantitative indicator indicators Q3 (see Table 1.) set for the survey was achieved in proportion of 78.6% (51 students (32 autumn sem. + 19 spring sem.) + 8 teachers=> 59 participants). The result is presented in table4.

Table 4. Indicators and results associated with the WP2 activities.

Indicator code	Quantitative indicator	Subject to be evaluated	Result
Q3	- at least 75 participants (students and teachers)	- survey organized on implementation quality for upgraded joint courses - number of participants in the survey (students and teachers)	59 students and teachers have participated to the survey.

All together 59 students and teachers have answered the survey. All were involved in either studying or teaching/updating course material in the updated modules of the NextGEng project. The low number of responses was due to only two updated courses being run during autumn 2023.

## 2.2. Experience in company's involvement in the courses.

The questions related to the experience of company's involvement were:

- Did you have teaching activities in collaboration with foreign teachers and/or experts from companies?
  - o It presented examples on how to apply theory to practice (industry cases)
  - o It allowed me to get in contact with company representatives and/or teachers from other universities.
- Did you have laboratory activities/tasks (projects) in collaboration with industry companies?

Table 5 shows the answers of the student for the questions concerning the company involvement.

Table 5. Results of the survey for the students.

	Survey Autumn 2022			Survey Autumn semester 2023			Question number
	Agree	Neutral	Disagree	Agree	Neutral	Disagree	
It presented examples on how to apply theory to practice (industry cases)	59%	31%	0%	91%	5%	4%	1
It allowed me to get in contact with company representatives and/or teachers from other universities	61%	31%	8%	74%	13%	13%	2
	Yes	No		Yes	No		
Did you have teaching activities in collaboration with foreign teachers and/or experts from companies?	18%	82%		72%	28%		3
	Survey Autumn 2022			Survey Spring semester 2024			Question number
	Agree	Neutral	Disagree	Agree	Neutral	Disagree	
It presented examples on how to apply theory to practice (industry cases)	59%	31%	0%	95%	5%	0%	1
It allowed me to get in contact with company representatives and/or teachers from other universities	61%	31%	8%	89.5%	10.5%	0%	2
	Yes	No		Yes	No		
Did you have teaching activities in collaboration with foreign teachers and/or experts from companies?	18%	82%		68%	32%		3

The survey shows a clear increase in internationalization and company involvement in the teaching process (question no.3). The percentage of respondents who answered "Agree" to the question " It presented examples on how to apply theory to practice (industry cases)" has increased from 59% to 91% during autumn semester 2024 and to 95% in spring semester 2024. Similarly, the number of positive responses to the question: " It allowed me to get in contact with company representatives and/or teachers from other universities" had risen from 61% in autumn 2022 to 74% in autumn semester 2023 and to 89% in spring semester 2024. Students were also more likely to identify labs with companies or learning assignments from companies, an increase in identification from 18% to 72% and 68%. The survey shows that on average 82% of students were positive about the possibility of getting to contact with industry during the studies.

The goals of the qualitative indicators Q2 (see Table 1.) set for the survey were achieved.

## 2.3. Experience in international teaching.

The questions related to the experience of teaching for students were:

- Have you had international visiting professors in the course?
- Was the learning material in a domestic or foreign language or both?
- Did you have teaching activities in collaboration with foreign teachers and/or experts from companies?
  - o It allowed me to learn in an international environment and increased my communication skills.

Table 6. Results of the survey for the students.

	Survey Autumn 2022			Survey Autumn semester 2023			Question number
	Yes	No		Yes	No		
Have you had international visiting professors at the course?	8%	92%		78%	22%		4
	Domestic	Foreign	Both	Domestic	Foreign	Both	
Was the learning material in a domestic or foreign language or both?	33%	4%	63%	3%	41%	56%	5
	Yes	No		Yes	No		
Did you have teaching activities in collaboration with foreign teachers and/or experts from companies?	18%	82%		72%	28%		6
	Agree	Neutral	Disagree	Agree	Neutral	Disagree	
It allowed me to learn in an international environment and increased my communication skills	54%	46%	0%	69%	22%	9%	7
	Survey Autumn 2022			Survey spring semester 2024			Question number
	Yes	No		Yes	No		

Have you had international visiting professors at the course?	8%	92%		100%	0%		4
	Domestic	Foreign	Both	Domestic	Foreign	Both	
Was the learning material in a domestic or foreign language or both?	33%	4%	63%	11%	47%	42%	5
	Yes	No		Yes	No		
Did you have teaching activities in collaboration with foreign teachers and/or experts from companies?	18%	82%		60%	40%		6
	Agree	Neutral	Disagree	Agree	Neutral	Disagree	
It allowed me to learn in an international environment and increased my communication skills	54%	46%	0%	93%	7%	0%	7

The survey showed that students identified cooperation between their own and other universities in terms of teacher exchanges and shared materials. The percentage of students who answered "yes" to the question "Have you had international visiting professors at the course?" increased from 8% to 78% in autumn 2023 and 100% in spring 2024. There was also a linguistic diversification of teaching materials, with English materials now available in addition to the home language. In response to the question "Was the learning material in a domestic or foreign language or both?", 97% (autumn 2023) / 89% (spring 2024) of the respondents now answered that the teaching material was either in English or in both English and the home language. In the autumn 2022 survey, the corresponding percentage was 67%. Students also better identified opportunities for international activities and company cooperation. In the previous survey, only 18% said yes, compared to 72% who said yes in the autumn semester 2023 and 60% in the spring semester 2024 for the question "Did you have teaching activities in collaboration with foreign teachers and/or experts from companies?". The number of respondents who answered positively to question "It allowed me to learn in an international environment and increased my communication skills" also increased from 54% to 69% (autumn 2023) and 93% (spring 2024).

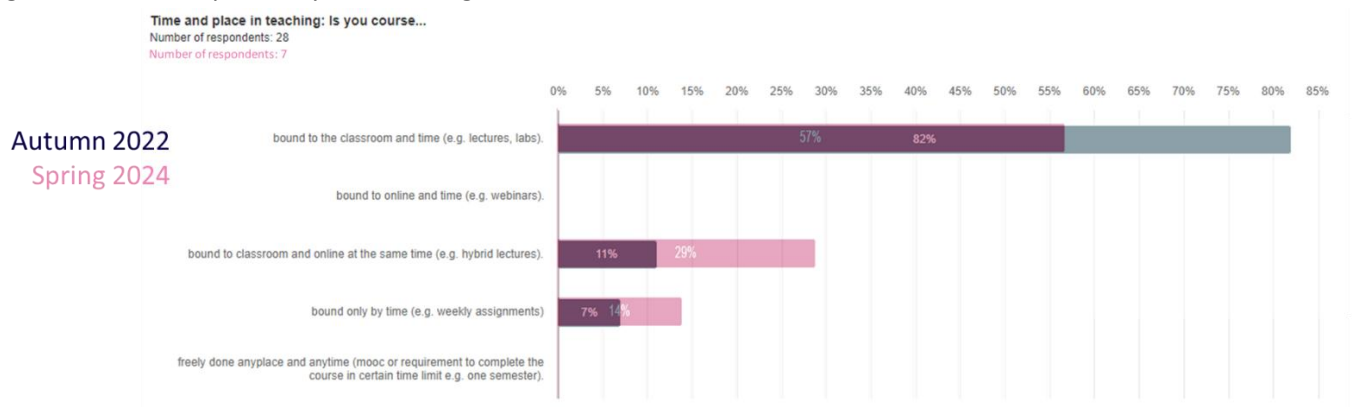
The answers to the first of the surveys for teachers point in the same direction as those of the students in the student survey as shown in table 7.

Table 7. Results of the first survey for the teachers.

	Survey Autumn 2022			Survey Spring 2024			Question number
	Yes	No		Yes	No		
Have you had international visiting lecturer on your course?	18%	82%		86%	14%		1

The learner-centeredness can also be seen to have increased compared to previous implementations before NextGEng, as shown in Figure 1. This is reflected in the increased possibility for students to choose the most convenient time and place to study.

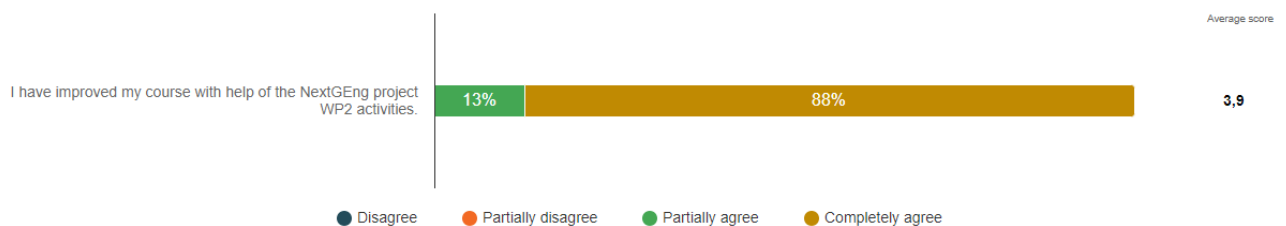
Figure 1. Time and place in your teaching.



Teachers' positive attitude and ability to use WP2 activities is reflected in the second question in the teachers' survey, shown in Figure 2.

Figure 2. Evaluate the improvement of the course.

Evaluate the improvement of the course  
Number of respondents: 8, selected answers: 8



	Disagree	Partially disagree	Partially agree	Completely agree	Total	Average	Median
I have improved my course with help of the NextGEng project WP2 activities.	0	0	1	7	8	3,9	4,0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>7</b>	<b>8</b>	<b>3,9</b>	<b>4,0</b>

All teachers who responded felt that they had benefited from the WP2 actions and therefore gave positive feedback, resulting in 100% satisfaction.

### 3. Conclusions

As shown in Table 8, the number of respondents did not reach the desired level. This is mainly due to the number of updated and completed courses. The update and implementation of the NextGEng project's courses will be largely completed by autumn 2024, after which a survey of students in Work Package 3 will allow the validity of the indicative conclusions now obtained to be verified. However, the responses already show that both students and teachers are satisfied with the project and that the courses are improving. All the qualitative indicators were achieved.

Table 8. Results of the indicators associated with the WP2 activities.

No.	Quantitative indicator	Acti vity	Target group	Indicator Code	Result
1	- 70% of the participating teachers gave positive feedback related the developed course content materials and co-teaching process	A2.5	Teachers	Q1	- <b>achieved 100%</b>  Details: 100 % of the teachers gave positive feedback
2	- 50 % of the participating students gave positive feedback related the course content materials and co-teaching process	A2.5	Students	Q2	- <b>achieved 100%</b>  Details: 82% of the participating students gave positive feedback
3	- at least 75 participants (students and teachers)	A2.5	Students and Teachers	Q3	- <b>achieved 78.6%</b>  Details: 59 students and teachers participated in the survey