

Interim and final study on skills and attitudes

D3.2 Evaluation of instructor training course delivery in the iQVet project

Interim and final study on skills and attitudes

Abstract

This final report departs from the surveys made with participating teachers in the teacher training workshop at Lake Balaton, 3 – 7 June 2024. All teachers took a pre- and a post-survey and interviews were made with targeted participants, both pre-survey interviews and post-survey with participants. The outcome of the surveys and interviews will be summarized here. In the Results of the interviews and Conclusion sections, we will draw some conclusions in relation to the outcomes of the project.

1. Introduction

The during workshop survey contained questions about the teachers' backgrounds in terms of work experience, taught subject, and targeted student groups. The focus, however, was dedicated to statements about conditions for cooperation and sharing experiences with others as well as sharing materials. Further, there were in-depth questions about their experiences and uses of the blended learning methods before participating in the teacher training workshop as well as after. Contextual factors for teachers' possibilities for implementing blended learning were also addressed. The final part of the pre-survey stated questions about reasons for using blended learning methods.

The post-survey focused on skills and attitudes after participating in the teacher training workshop as well as looking ahead at future applications of these methods, which led to slightly different in-depth statements for teachers to respond to.

During the seminar, there were one sets of semi-structured interview with the participants with the purpose of enhancing understanding of the participants' work, attitudes, and views of blended learning. The interviews took place at the end of the teacher training week, where participants were invited to elaborate around the questions asked in the pre-questionnaire concerning experience and habits around blended learning methods as well as procedures around usage. There were one rounds of semi-structured interviews with eight persons in each round from the partner countries, Hungary (2), Slovenia (1), Norway (1), Croatia (1) and Sweden (1). Those interviewed volunteered to be interviewed. All in all, 6 persons were interviewed. The interviews were audio-recorded and transcribed.

In the interviews, the participants were asked to elaborate on the following questions:

1. Have they used blended learning before this course?
2. How long have they been using blended learning?
3. For which subject areas have they used blended learning?
4. What is the average number of students in the class?

2. Results of teacher training workshop surveys and interviews

This section presents the results from the survey of attitudes and skills of VET teachers from the partner countries. A questionnaire was created to get a broad picture of the respondents' background, experience in technology, and context around blended learning methods specifically. The objective with the background information is that it serves as input for the hands-on blended learning activities and explorations of the tools targeted in iQVet. The questions were circulated among the partners to obtain a questionnaire that was representative of our objective to enhance our understanding of teachers' attitudes and skills in technology and blended learning methods of VET teachers.

The responses are based on the 25 participating VET teachers. There were two surveys with participants, one pre-survey and one post-survey. Most participants answered all questions in the surveys, but there were also questions skipped by some participants. There was one interview round with six participants in it.

2.1 Pre-survey data

This section describes the number of respondents, gender, mother tongue, and teaching experience of the questionnaire from the five partner countries. All in all, there were 25 participants.

From Hungary 10 participants attended to the train the trainer course. Their mother tongue was Hungarian and Algerian. Among the participants females and males also attended.

2.1.1 Students and context around teaching

The context of the implementation of work-based learning and flipped learning is the following. The students get or can bring a technical drawing of a pressure vessel and they will design its inspection and testing plan. After the task is finished the trainers will check their solutions and help them with advice. In the flipped learning method, the students will watch pre-recorded videos on different non-destructive testing methods, and they will discuss their understanding with the trainers later in the classroom.

2.1.1 Collaboration among teachers

During the train the trainer session the teachers worked together on the implementation of the work-based learning example. Different technical drawings were handed out of a pressure vessel and the trainers went through the solution of designing an inspection and testing plan. After that, additively manufactured samples were handed out, and the trainers discussed together the possible weld imperfections, and the implementation of this task into the education of non-destructive testing.

2.1.4 Experience of blended learning methods

The teachers and students had minor experience in the blended learning education methodology before. During the train the trainer session, the trainer got an extensive insight into the work-based learning and flipped learning methodologies. The feedback was clearly that, these methods can be implemented into the future education of the welded structure inspector courses. The work-based learning can be used in the teaching of inspection and testing of welded structures. The students can bring their own sample drawing from their industrial role, and one example on the inspection and testing can be ran through their sample. The implementation of flipped learning is also very promising in the field on non-destructive testing. Videos have been recorded about liquid penetrant inspection, magnetic particle inspection and ultrasonic testing procedures, which will be sent out to the student prior to the classes. The student will prove their understanding during the classes.

2.1.5 Opportunities from institution to staff development

Implementing work-based learning methodology does not require any additional IT equipment. By understanding the effectiveness of WBL, the trainers will have a new toolbox in their education praxis, which can be used in the teaching of different modules. The trainers who have attended to the train the trainer program have the possibility of further development through internal trainings, focusing on the flipped learning methodology.

2.2 Post-survey data

The post-survey was carried out in the form of interviews. During the interviews the trainers answered to the following questions:

1. Please introduce yourself briefly.
2. What is your occupation? Is it related to welding inspector training? Do you

have industrial experience in the field of inspection? What kind of experience do you have?

3. Which training methods have previously been and currently used in your school when educating within this field?
4. Do you think this type of training can improve the way you offer education and training in your school ?
5. What types of challenges do you expect to encounter if applying these new methods at your school? What is needed in order to succeed with the new training methods ?
6. What obstacles might appear when implementing the methods in your school?

2.2.1 Motivation for using blended learning methods

The implementation of blended learning methods significantly increases the quality of education. The application of work based and flipped learning not only improving the interaction between the students and the trainers, but also reducing the workload of the trainers. Through these methods the trainers will also be able to gain new knowledges, by analyzing tasks brought by students. Also, applying information technology into the education (flipped learning) can motivate students.

2.2.2 The students' perspective

The students prefer to use information technology in their education. Through flipped learning the time spent on-class can also be reduced, by watching and analyzing non-destructive testing-based videos at home. The work-based learning is also a positive example for students, because they can study designing inspection and testing plan of a welded product through their own example, brought from their workplace.

3. Results of the interviews - pointing further at values and problems in applying blended learning methods

The participants were interviewed once, before and after the seminar as well as asked to answer free text comments about their views of sharing (See Appendix). The interviews informed how participants considered blended learning methods in relation to their teaching and networking.

Concerning the answers from the pre-interview questions, they gave a broader picture of usage of the blended learning methods from the participants' view. The respondents elaborated on their usage, values and problems in usage, which is in line with the information provided in the surveys (see Appendix).

Generally, it can be said that the trainers are open toward the implementation of work-based learning and flipped learning into their educational activity. The trainers found it interesting to see how other partners implemented blended learning, and it was clear that beside work based learning, flipped learning gained the most attention.

About the challenges and obstacles, they mentioned that it will be difficult starting to use new IT tools after 10+ year of tradition teaching experience. Also, they mentioned that the trainers need extensive education about the usability of these method. Beside these challenges, they mentioned that more freedom forms the students side does not necessary leads to more self-learning activity.

4. Conclusion

Throughout the project, there have been several seminars where blended learning methods have been introduced for teachers in the partner countries, as well as seminars where we have worked further with methods to apply in VET education. The final seminar in Lake Balaton, Hungary was an opportunity to work in depth with refining methods around these tools further. The outcomes of the project show that implementing online blended learning methods are a slow but rewarding process.

The trainers from the Hungarian partner rated the train the trainer event very positively. They were encouraged to use work-based learning in the education of testing and inspection. The trainers highlighted that it was very interesting to see how other partners implemented new methods into their education. Among these new methods flipped learning gained the most attention among the Hungarian trainers.

APPENDIX

A. Pre-survey questions

BACKGROUND

1. What is your gender?
2. What is your age?
3. How would you describe your proficiency in applying blended learning?
4. Have you used blended learning before?
5. How long have you been using blended learning?
6. How many years of professional experience as a VET teacher do you have?
7. Please indicate your country of employment
8. What sector do you work for?
9. How long have you been working for your current employer?
10. What VET courses are you teaching?
11. What is the level of your students?
12. What is the age of your students?
13. How many students do you in average have in your class?
14. Do your students have a full job during their studies?
15. What language are students applying in their VET courses (native or foreign)?
16. What is your VET target group? (Groups / individuals / distance teaching)
17. How many hours of teaching per week do you do? How many hours of teaching per week per class do you do?
18. For what type of teaching have you been using blended learning before the workshop?
19. Why do you participate in this workshop?
- 20 a) I work together with other colleagues in the same office/on the same VET program.
Most of the time / Sometimes/ Rarely/ Never
- b) I work together with other colleagues outside my office/on the same VET program.
Most of the time / Sometimes/ Rarely/ Never
- c) I work together with local cooperation partners
Most of the time / Sometimes/ Rarely/ Never
- d) I work together with international cooperation partners
Most of the time / Sometimes/ Rarely/ Never
- e) I work independently.
Most of the time / Sometimes/ Rarely/ Never

16. Are you part of any local online network of teachers?
17. Are you part of any international online network of teachers?
18. What iQVet tools have you used (before the workshop) CNC / Flipped learning tools / Virtual simulators / Response systems /None of them
19. How long have you been using these tools ?
20. How often have you been using these tools?
21. When considering the use of blended learning, how easy was it to get starting using this method? (Very easy / Easy / Complicated / Very complicated)
22. How easy is it to make good work-based learning practices? (Very easy / Easy / Complicated / Very complicated)
23. How easy is it to make good learning activities? (Very easy / Easy / Complicated / Very complicated)
24. How long time do you spend on making a question / an activity?

CONTEXTUAL FACTORS

25a. Please respond to the following questions by choosing only one option per question.

To what extent has your institution / employer offered opportunities for exchange of experiences on how to use blended learning in teaching? To a limited extent / To a satisfactory extent / To the fullest extent

25b. Please respond to the following questions by choosing only one option per question.

To what extent has your institution / employer offered opportunities for demonstrations of the technical aspects (i.e. how to fully make use of the technology) when using blended learning in teaching? To a limited extent / To a satisfactory extent / To the fullest extent

USAGE OF BLENDED LEARNING

25. Do you use blended learning in you teaching while in class?
26. Do you let your students respond to training activities using blended learning solutions in their own free time?
27. Do you let your students respond to work-based training practices using blended learning solutions in their own free time?

B. Post-questionnaire questions

1. What type of blended learning activities do you plan to use?
2. Where would you like to use blended learning methods (context)?
3. For what focus of teaching would you like to use blended learning after the workshop?
4. I would like to use blended learning methods to create variation in my teaching (Unlikely / Less likely / Likely / Most likely)
5. I would like to use blended learning methods to create better opportunities for interaction with my students. (Unlikely / Less likely / Likely / Most likely)
6. I would like to use blended learning methods to create better opportunities for interaction between my students. (Unlikely / Less likely / Likely / Most likely)
7. I would like to use blended learning methods to increase the commitment of my students. (Unlikely / Less likely / Likely / Most likely)
8. I would like to use blended learning methods to increase the enthusiasm of my students. (Unlikely / Less likely / Likely / Most likely)
9. I would like to use blended learning methods before introducing a new activity/theme to get a better understanding of what the students know. (Unlikely / Less likely / Likely / Most likely)
10. I would like to use blended learning methods at the end of class/activity to get a better understanding of what the students have understood. (Unlikely / Less likely / Likely / Most likely)
11. I would like to use blended learning methods to make my students more aware of their own learning. (Unlikely / Less likely / Likely / Most likely)
12. I would like to use the results from blended learning methods to give feedback to my students. (Unlikely / Less likely / Likely / Most likely)
13. I would like to use the results from blended learning methods to adjust my focus of teaching (i.e. what I'm teaching). (Unlikely / Less likely / Likely / Most likely)
14. I would like to use the results from blended learning methods to adjust my teaching practice (i.e. how I teach it). (Unlikely / Less likely / Likely / Most likely)

c. Interview questions (during workshop interview, semi-structured)

1. When I say blended learning – what is the first thing that comes to your mind then?
2. Could you please describe your use of this/these blended learning method(s)?
 - a) In what way is dialogue a part of your use?
 - b) Have you used recognition of students prior learning to map the level of understanding and/or progression in class?
 - c) Hva mener de med Prior Learning I denne sammenhengen?
 - d) What do you do with the results that you get from your students?
Is there anything that has surprised you about using blended learning methods? Follow up: Can you give an example?
3. Would you say that your use of the blended learning method(s) is of value?
 - a) For what purpose it is of value?
 - b) To whom (teacher, students) is it of value?
 - c) How do you think the students think about the usage of blended learning methods?
4. If you think beyond any kind of practical restriction/problem that can stop you from using blended learning methods, what would you use blended learning methods for?
5. Lastly, as we are in the final stage of this project, what has the iQVet project meant to you professionally? To your institution?
 1. What is your understanding of the project?
 2. What challenges did you meet in this project?
 3. What could be done differently if we were to start over again? (support etc...)
6. Is there anything you would like to add?

d. Interview questions (post workshop related interview, semi-structured)

1. Are you part of any online local network of teachers?
2. Are you part of any online international network of teachers?
3. What do you share (in terms of ideas and content)?
4. Why do you share?