Course Module Evaluation Report I

D5.2

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1 EXECUTIVE SUMMARY

This report presents findings from pilot 1 of the ITELab project, conducted in 2018. It was the main goal of this pilot phase to test the materials developed, i.e. a module for implementation in initial teacher education classes all over Europe named “teaching, learning, and professional development in the digital world”, and a MOOC for preservice teachers about “the networked teacher – teaching in the 21st century”.

The evaluation of this first pilot followed multiple objectives. Centrally, there are two research questions to be answered by the evaluation over the project, one about the feasibility and usefulness of materials and courses, and the second one about their pedagogical quality and effectiveness. While these aspects will be explored in greater depth in pilot 2, to be conducted on a larger scale in 2019, the first pilot followed the main purpose of contributing to the ongoing development of materials, and to identify potential for improvement. Hence, the samples were comparably small, and an emphasis was put on qualitative input to inform the iteration of the design.

For the evaluation of the module, which is the focus of this report, a mixed methods approach was applied, including an online questionnaire for the student teachers participating in the pilot (n=16), two focus groups with student teachers participating in the pilot (n₁=5 and n₂=6), a focus group with teacher educators involved in the development and teaching of the materials (n=9), and an online survey for the industry partners of the project (n=1).

Overall, the evaluation revealed several confirmative conclusions, based on the outlined evaluation objectives. With regards to the research questions, evidence was found of a good feasibility and usefulness of the module; e.g., study participants found the module helpful for their future careers and rated it as “very useful” or “useful” when asked for their assessment. Also, there is data pointing to a perceived pedagogical quality and effectiveness of the module; e.g., the preservice teachers in the focus group interviews described a range of knowledge aspects they gained, and of new things they learned in the module.

In terms of the aspired contribution to the development of the materials, the evaluation revealed a number of facets which deserve further attention, and suggestions could be derived which will inform the ongoing iterative development process, e.g. with regards to language, instructions, or contents.

Overall, the evaluation approach has proven applicable and appropriate. Based on the experiences made in pilot 1, there will be some adjustments to meet the circumstances and requirements of pilot 2, such as increased flexibility of instructors in using the materials, a larger target group, and a deeper exploration of the research questions.
2 THE ITELAB PROJECT

The ITELab Knowledge Alliance project includes six partner universities providing initial/pre-service teacher education (ITE) and four partner companies that offer ICT solutions and professional development for teachers. It is co-ordinated by European Schoolnet (EUN), a pan-European network of 34 Ministries of Education (MoE) concerned with the transformation of teaching and learning in schools. EUN work in previous projects with MoE, plus a needs analysis carried out with teacher educators, highlighted that the way in which student teachers currently receive training on ICT is a key roadblock related to the mainstreaming of innovative pedagogical practice that involves ICT. There is also a ‘disconnect’ between ITE and continuing professional development (CPD) and, as a consequence, in-service training on the pedagogical use of ICT is increasingly required to equip teachers with the essential competences that they did not acquire during their initial training.

Universities and companies come together in ITELab and work with MoE, national ICT agencies and other stakeholders (participating as Associate Partners), to address these issues. The project provides data and case studies that highlight new approaches to integrating ICT within ITE courses and the challenges that still need to be addressed in order to boost innovation in this area within higher education. Based on this work, the project develops new course modules (face-to-face) and a MOOC (Massive Open Online Course) for student teachers and, in the first pilot in 2018, to pilot these with students enrolled on courses in the five partner universities. In the second pilot in 2019, the invitation to participate will be open to all initial teacher training universities or working in ‘teaching schools’ in different countries. As an open online course, the MOOC has the potential to reach thousands of student teachers from across Europe and beyond.

Finally, project partners put in place a new ITE University-ICT industry Forum and work with a wider group of stakeholders online and in three Capacity Development Workshops in order to establish and sustain this as a permanent network under the EUN, independently funded Future Classroom Lab. The project course modules and MOOC help bridging the ITE/CPD disconnect by providing concrete deliverables that will motivate ITE providers, companies and policy makers at national and regional level to actively participate in this project which EUN and its supporting ministries see as a strategic next step in the development of the Future Classroom Lab.
3 EVALUATION: INTRODUCTION

3.1 EVALUATION OBJECTIVES

The evaluation of the ITELab project course modules and MOOC, conducted by the University of Würzburg, aims to answer the following two research questions:

1. **Feasibility and usefulness of the materials and courses:**
   How applicable and how transferable are the course modules and the MOOCs? How is their usefulness perceived?

2. **(Pedagogical) quality and effectiveness of the materials and courses:**
   How did the course modules and the MOOCs impact on student teachers’ perceived knowledge?

The ITELab pilot phase 1, conducted in early 2018, served to pilot ITELab module A, “Teaching, Learning, & Professional Development in the Digital World”, and the MOOC “The Networked Teacher – Teaching in the 21st Century”. This report (D5.2) focusses on the evaluation of the module. Information on the MOOC can be found in deliverable D5.3.

The pilot phase 1 in early 2018 was limited to the five partner universities and a sample of their student teachers. The piloting with this core partner group is reflected in the small number of overall responses. The evaluation of pilot 1 was primarily intended to contribute to the ongoing process of iterative improvement of materials in order to facilitate the creation of suitable resources for the main pilot in 2019. Hence, an overall emphasis was put on acquiring insights into the perceptions of participants in pilot 1, and to gather evidence of problems and potential improvements. The pilot phase 2 in 2019, will be open to any interested university and their student teachers.

The differing implementation approaches for module A taken by the partner universities is reflected in the small survey numbers and underlines the importance of the focus group to gain in-depth qualitative feedback as part of the overall evaluation methodology. Universities have different flexibilities to be able to implement a new module within short timeframes, to fit within different teacher trainer curriculum and approaches to student teacher placements in schools. The module was offered as a flexible framework for each university to apply to their own situations.

This deliverable builds on and amends the internal report “ITELab pilot 1 evaluation: preliminary results and recommendations” (appendix A) which was distributed to the ITELab partners in June 2018 to pass on recommendations for further improvement of module and MOOC at an early point, based on first findings from the evaluation.
3.2 Pilot 1 Module Evaluation Methodology

The evaluation follows a mixed methods approach and combines several instruments in two pilot phases to collect data. Methods include qualitative and quantitative surveys and focus group interviews. In the pilot 1 module A evaluation, the following instruments and participants were involved:

Table 1: Pilot 1 module evaluation

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Target Group</th>
<th>Number of Participants</th>
<th>Appendix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student teachers online questionnaire (post-test)</td>
<td>Student teachers / module participants</td>
<td>n = 16</td>
<td>B</td>
</tr>
<tr>
<td>Student teachers focus groups</td>
<td>Student teachers / module participants</td>
<td>n = 11</td>
<td>C</td>
</tr>
<tr>
<td>Teacher educators focus group</td>
<td>Teacher educators / module teachers</td>
<td>n = 9</td>
<td>D</td>
</tr>
<tr>
<td>Industry partners online questionnaire (post-test)</td>
<td>Industry partners / module contributors</td>
<td>n = 1</td>
<td>E</td>
</tr>
</tbody>
</table>

The Student teachers online questionnaire was implemented as a post-test. Participation in the surveys was voluntary. Its main priority was gathering information on the population of student teachers in order to better align materials and resources to the participants of the main pilot study in 2019, and to receive feedback on the module. The survey consisted of two parts: part I collected demographic data and systematic feedback on and subjective assessment of certain aspects of the module while the second part included a self-assessment of competencies in the field of digital educational competencies. The first part of the survey was based on templates provided by EUN (cf. D5.1, Evaluation Plan). The self-assessment of competencies was achieved by means of an abbreviated version of TET-SAT in part II.

The Technology-Enhanced Teaching-Self Assessment Tool (TET-SAT) was a main outcome from the MENTEP project, a European policy experimentation funded by the European Commission via the Erasmus+ programme and coordinated by European Schoolnet (cf. http://mentep.eun.org/). Targeted at in-service teachers, its main goals are triggering self-reflection, identifying learning needs and initiating actions to develop competences. TET-SAT basically assesses four dimensions of
technology-enhanced teaching competence, which are 1) Digital pedagogy, 2) Digital content use and production, 3) Digital communication and collaboration, and 4) Digital citizenship (cf. figure 1).

Figure 1: TET-SAT

Each of these dimensions consists of up to four sub-areas (15 in total), each of which states one or several competencies. These are described according to five levels of progression: starter, beginner, capable, proficient, expert. Users can position themselves according to the level which best describes their teaching practice. After completing the survey, they are presented with a personalized feedback.

The selection of TET-SAT is based on the choice of the DigCompEdu framework as a reference point for the module. The module handbook offers a comprehensive overview of DigCompEdu competencies which are fostered by the respective ITELab module units. However, there is no validated test instrument for DigCompEdu so far. On the other hand, the TET-SAT which was developed in the course of the MENTEP project offers an appropriate tool for self-assessing related competencies. A detailed matching process indicated that the competencies described by DigCompEdu show significant references to those assessed in TET-SAT items (cf. Appendix F). On this basis, it was decided to use TET-SAT for the module evaluation in ITELab pilot 1.

Two challenges were identified: TET-SAT is quite long and comprehensive, and it specifically addresses in-service teachers. In response to these aspects, the TET-SAT was reduced to include only those items relevant for the competencies fostered by the module, which applies to 21 out of 30 items, and an introduction was added to emphasize that preservice teachers should imagine themselves in their future role of teachers and that they should self-assess their assumed future behavior.

The focus groups primarily served to gather evidence of the aspects as defined by the research questions, and to systematically identify potential for improvement of the materials developed. Their questioning routes were developed in accordance with related literature (e.g. Krueger & Casey, 2015), following seven steps: 1) Brainstorming, 2) Sequencing the questions, 3) Phrasing the questions, 4) Estimating time for each question, 5) Getting feedback from others, 6) Revising the questions.

1 https://twitter.com/EURasmusPlus/status/978623537438224385

and 7) Testing the questions (performed as an intense and iterated reflection and revision within the project team; pp. 60-71).

The focus groups were conducted during a face to face evaluation session in Brussels in June 2018. They were audio recorded, transcribed and analyzed by a deductive qualitative content analysis as suggested by Mayring (2015). There were two focus groups with student teachers (n=5 and n=6) for the module and one focus group with teacher educators (n=9) covering module and MOOC at the same time.

Finally, the industry partners online questionnaire was intended to gather additional qualitative feedback on the perception of module A and MOOC in terms of experiences made and potential for improvement. The industry project partners from IRIS Connect filled in this survey as the single respondent in pilot 1, which might be explained by their deep involvement in module A as opposed to the rather generic role of the other three industry partners, who did not fill in the survey. Based on the differing level of engagement in pilot 1, it was decided to focus on the input by IRIS and to include the other industry partners’ feedback in the pilot to come.

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4 STUDENT TEACHERS QUESTIONNAIRE PART I4

- **Target Group**: Student teachers
- **Number of Participants**: n=16
- **Priorities**:
  - Information on the population of student teachers
  - Feedback on the module
  - Stimuli for improvement of the module

4.1 DEMOGRAPHIC DATA

4.1.1 Number of responses, countries, gender

In the student teacher questionnaire we received 16 responses from four countries (cf. chart 1). There is an overwhelming majority of female participants (15 females, 1 male), and Italians.

![Chart 1: Module participants, countries](image)

4.1.2 Age

The modal value, which describes the age class that has been selected most frequently, is “21-25” (cf. chart 2).

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4 Cf. Appendix B for the full questionnaire.
4.1.3 Study biography

Most of the participants are studying in the fields of Kindergarten / primary school (15 primary, 1 secondary; cf. chart 3).

They are mostly Bachelor / undergraduate students (13 undergraduate, 2 graduate, 1 studies completed; cf. chart 4).
Most of the module participants are also taking part in the ITELab MOOC (14 yes, 2 no; cf. chart 5).

4.2 RELEVANT PRIOR KNOWLEDGE

On a scale from 1 (very poor) to 5 (very good), participants rate their competence in using ICT in teaching and learning as $\bar{x} = 3.6$ on average ($SD = 0.7$; cf. chart 6).
On a scale from 1 (very poor) to 5 (very good), participants rate their own English language proficiency as $\bar{x} = 3.6$ on average (SD = 0.9; cf. chart 7).

Chart 6: Module participants, ICT competence

Chart 7: Module participants, English proficiency
4.3 FEEDBACK ON SELECTED MODULE CHARACTERISTICS

4.3.1 Difficulty

On a scale from 1 (very easy) to 5 (very difficult), participants rate the difficulty of the module fairly balanced: $\bar{x} = 2.8$ (SD = 0.4; cf. chart 8).

![Module difficulty chart](chart8)

Chart 8: Module difficulty

4.3.2 Recommendation

On a scale from 1 (strongly disagree) to 5 (strongly agree), participants overall agree that they would recommend the module to a friend: $\bar{x} = 3.9$ (SD = 0.7; cf. chart 9).

![Recommendation likelihood chart](chart9)

Chart 9: Module recommendation
4.3.3 Enjoyment

On a scale from 1 (strongly disagree) to 5 (strongly agree), participants overall agree that they enjoyed the module: $\bar{x} = 4.1$ (SD = 0.4; cf. chart 10).

![Module enjoyment chart](chart10)

Chart 10: Module enjoyment

4.3.4 Helpfulness

On a scale from 1 (strongly disagree) to 5 (strongly agree), participants overall agree that they found the module helpful for their future careers: $\bar{x} = 4.1$ (SD = 0.6; cf. chart 11).

![Module helpfulness chart](chart11)

Chart 11: Module helpfulness
4.3.5 Curriculum integration

On a scale from 1 (strongly disagree) to 5 (strongly agree), participants overall agree that the module integrated well into their curricula, although there is also a case of disagreement: $\bar{x} = 3.8$ (SD = 0.7; cf. chart 12).

![Chart 12: Module curriculum integration](image1)

4.3.6 Structure

On a scale from 1 (strongly disagree) to 5 (strongly agree), participants overall agree that the learning objectives were clearly identified, although the responses are rather mixed and also show some disagreement: $\bar{x} = 3.3$ (SD = 0.8).

![Chart 13: Clarity of module learning objectives](image2)

On a scale from 1 (strongly disagree) to 5 (strongly agree), participants overall agree that the structure is clear and traceable, although there is also a certain share of disagreement: $\bar{x} = 3.3$ (SD = 0.8).
4.3.7 Usefulness

Chart 15 indicates the average ratings of usefulness of each session from 1 (not useful) to 5 (very useful) for the student teachers’ future careers. Out of the 10-week program, the first three sessions (“Teaching Today”, “Reimagining the Learning Space” and “Technology and Social Media in Learning”) were considered the most useful.
Chart 16 indicates the average ratings of **usefulness of module elements** from 1 (not useful) to 5 (very useful) for the student teachers’ future careers. Short-term projects at the student teachers’ schools, shared lesson observations and the assessment activity were considered most useful, while promotional videos, SoundCloud activities and Twitter activities received the lowest, yet above-average ratings.

<table>
<thead>
<tr>
<th>Element</th>
<th>Average Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Running a short-term project at your school</td>
<td>4.19</td>
</tr>
<tr>
<td>Shared lesson observations</td>
<td>3.94</td>
</tr>
<tr>
<td>The assessment activity, e.g. portfolio</td>
<td>3.94</td>
</tr>
<tr>
<td>The module demonstration pieces, e.g.,...</td>
<td>3.75</td>
</tr>
<tr>
<td>Padlet activities</td>
<td>3.75</td>
</tr>
<tr>
<td>Creating a promotional video</td>
<td>3.44</td>
</tr>
<tr>
<td>SoundCloud activities</td>
<td>3.27</td>
</tr>
<tr>
<td>Twitter activities</td>
<td>3.16</td>
</tr>
</tbody>
</table>

Chart 16: Usefulness of module elements

### 4.3.8 Learning outcomes

Chart 17 indicates the average agreement with learning outcomes as defined by the module handbook from 1 (strongly disagree) to 5 (strongly agree). There is little variation in the answers, which hints at a general agreement with the learning outcomes stated:
meet the challenges of sourcing, (re)purposing, and developing a range of rich-digital instructional and learning materials for use in classroom contexts

identify opportunities and plan effectively for on-line activities which relate specifically to digital learning design and innovative ICT usages, in both professional and pedagogical modes

plan, teach and evaluate digitally enhanced lessons in a confident and capable way, demonstrating strong levels of understanding and competence in relation to both technical and pedagogical principles & practices

Chart 17: Module learning outcomes

4.3.9 Suggestions for improvement

Table 2 lists the suggestions for improvement which the participants expressed by free text contributions. The comments are sorted and summarized according to inductively derived categories, which means that the categories were defined after a first analysis, based on the findings from the comments. The suggestions for improvement mainly relate to the contents or to language and instructions and imply a number of minor changes which the study participants would like to see for the improvement of the module.

Table 2: Suggestions for module improvement

<table>
<thead>
<tr>
<th>Suggestion category</th>
<th>Aspect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content</td>
<td>Improve fluency / flow</td>
</tr>
<tr>
<td></td>
<td>Cover more social media, not only Twitter</td>
</tr>
<tr>
<td></td>
<td>Add subtitles</td>
</tr>
<tr>
<td>Language and instructions</td>
<td>Make text easier to understand</td>
</tr>
<tr>
<td></td>
<td>Use native languages</td>
</tr>
</tbody>
</table>
4.4 Conclusions from student teachers questionnaire part I

For an appropriate assessment of the questionnaire results, it needs to be pointed out that the number of responses (n=16) is remarkably low, and that 11 out of these 16 responses are from Italy. Hence, the results are not representative for the population of module participants. For the pilots to come, the project consortium needs to consider ways to increase the number of responses, e.g. by making the post-test obligatory, including it into the last session, or better informing instructors about its value. The low number of responses and the composition of the survey participant group restrict the informative value of the data at hand.

Against the background of these restrictions, the data suggest that the module succeeded in several regards. Overall, the student teachers in the post-test:

- confirmed a balanced difficulty (cf. chart 8),
- indicated to like the module (cf. chart 9),
- would recommend the module to a friend (cf. chart 10),
- found the module helpful for their future careers (cf. chart 11), and
- described that the module integrated well into their local curricula (cf. chart 12).

Furthermore, there were mainly approving, but also undecided and critical responses to the assumptions that:

- the learning objectives were clearly identified (cf. chart 13), and that
- the module structure was clear and traceable (cf. chart 14).

It can be concluded that these two aspects leave room for improvement in future versions of the module, given the heterogeneous assessments of participants.

When asked for the usefulness of module sessions and module elements, the survey participants overall confirmed that all sessions and all elements were useful. There
was no session and no element which did not receive a rating above 3 on a scale from 1 (strongly disagree with usefulness) to 5 (strongly agree with usefulness). Against this background, the following three sessions were considered least helpful for the student teachers’ future careers:

- weeks 9 & 10: drawing the learning together and module assessment,
- week 4: personal and professional learning networks, and
- week 8: technology for international collaboration.

When rethinking and improving sessions for the pilot to come, these three sessions will be an appropriate starting point.

In terms of the usefulness of module elements, the following three elements received the lowest rating:

- creating a promotional video,
- SoundCloud activities, and
- Twitter activities.

These three elements might deserve special attention as well to ensure and enhance their usefulness.

The survey participants’ suggestions for improvement show a strong focus on the clarity of instructions, language and structure. Obviously, the participants would like to see improvements in this field, which should therefore be considered in detail for future versions of module A.

5 STUDENT TEACHERS QUESTIONNAIRE PART II: ASSESSING COMPETENCIES BY TET-SAT⁵

⁵ Cf. Appendix F
5.1 TET-SAT RESULTS: ITEMS

In the following, the self-assessment of competencies in technology-enhanced teaching by \( n=16 \) pre-service teachers in the post-test will be presented. The group of participants was the same as presented in part I, except for \( n=2 \) persons. These participants were asked to self-assess their competency in 21 questions. For each of these questions, 5 competency levels of increasing complexity were presented by a descriptor, and the participants had to select the level they considered most appropriate for their skills.

To calculate average means, the five progress levels have been transformed into numbers: Newcomer (1), Beginning (2), Capable (3), Proficient (4) and Expert (5).

5.1.1 Area 1: Digital Pedagogy

Area 1.1: Plan and implement teaching with ICT (Learning Design)

1.1.1 Develop, implement, reflect and redesign ICT supported teaching and learning strategies with ICT: participants self-assessed their competency in this field as \( \bar{x} = 2.5 \) (\( SD = 1.1 \); cf. chart 18). The most frequently selected level of competency was “beginning”, which means that the following competency descriptor achieved the highest approval: “I use ICT to support teaching and learning. I need more competence to implement ICT to improve my teaching and students learning”.

- **Target Group**: Student teachers
- **Number of Participants**: \( n=16 \)
- **Priority**: Information on the population of student teachers: learning opportunities in fields related to technology-enhanced teaching
1.1.1 Teachers’ attitudes, awareness and understanding towards ICT in education: participants self-assessed their competency in this field as $\bar{x} = 3.4$ (SD = 1.2; cf. chart 19). The most frequently selected level of competency was “proficient”, which means that the following competency descriptor achieved the highest approval: “I think the use of ICT improves and enriches both my teaching and students learning experience”.

1.1.3 Designing engaging learning activities with ICT: participants self-assessed their competency in this field as $\bar{x} = 2.9$ (SD = 1.4; cf. chart 20). The most frequently selected level of competency was “beginning”, which means that the following competency descriptor achieved the highest approval: “I find some inspiration on the Internet on how to make engaging learning activities with ICT, and try to implement some in my teaching”.

Chart 18: TET-SAT item 1.1.1

Chart 19: TET-SAT item 1.1.2
1.1.3 Designing personalized student activities: participants self-assessed their competency in this field as $\bar{x} = 2.7$ (SD = 1.3; cf. chart 21). The most frequently selected level of competency was “capable”, which means that the following competency descriptor achieved the highest approval: “I implement personalized teaching and learning activities, using technology to support students' needs and learning preferences”.

![Chart 20: TET-SAT item 1.1.3](image)

1.1.4 Designing collaborative learning activities with ICT: participants self-assessed their competency in this field as $\bar{x} = 2.4$ (SD = 1.1; cf. chart 22), which is the second lowest average value of all TET-SAT items. The most frequently selected levels of

![Chart 21: TET-SAT item 1.1.4](image)
competency were “beginning” and “capable”, which means that the following competency descriptors achieved the highest approval: beginning: “I use ICT to prepare collaborative student activities, but lack some knowledge and competence to implement them effectively with my students”, and capable: “I use ICT to design student collaborative learning activities, where students use some digital tools that support their collaborative learning as a group”.

Chart 22: TET-SAT item 1.1.5

1.1.6 Implement ICT in cross-curricular approaches/project work: participants self-assessed their competency in this field as $\bar{x} = 3.0$ (SD = 1.2; cf. chart 23). The most frequently selected level of competency was “proficient”, which means that the following competency descriptor achieved the highest approval: “When implementing cross curricular approaches or project work, I use ICT to enhance students’ learning in different subjects. I use ICT critically to support learner’s choice and needs inside and outside the classroom”.

Chart 23: TET-SAT item 1.1.6

Area 1.2: Design and manage ICT based learning environments
1.2.1 Plan, use and evaluate digital tools to be integrated in the teaching and learning process: participants self-assessed their competency in this field as $\bar{x} = 3.5$ (SD = 1.2; cf. chart 24). The most frequently selected level of competency was “capable”, which means that the following competency descriptor achieved the highest approval: “The use of different devices and tools can be challenging, so whenever I select and use digital tools or devices, it is carefully planned and implemented to support my teaching”.

![Chart 24: TET-SAT item 1.2.1](image)

1.2.2 Capacity to manage a digital classroom and students working with ICT: participants self-assessed their competency in this field as $\bar{x} = 3.1$ (SD = 0.9; cf. chart 25). The most frequently selected levels of competency were “capable” and “proficient”, which means that the following competency descriptors achieved the highest approval: capable: “I can manage a classroom where students use computers or other devices mainly in terms of organising the process, less so in supporting efficiently students learning”, and proficient: “I can manage students using different devices in the classroom and support them in their learning”.

![Chart 25: TET-SAT item 1.2.2](image)
1.2.3 Teachers’ and students’ use of virtual learning environments (VLE) and web based tools: participants self-assessed their competency in this field as $\bar{x} = 2.9$ (SD = 1.2; cf. chart 26). The most frequently selected level of competency was “proficient”, which means that the following competency descriptor achieved the highest approval: “I have good knowledge of the advanced features of a VLE and web based tools and can use them in a way that benefits my teaching and students learning”.

![Chart 26: TET-SAT item 1.2.3](chart.png)

**Area 1.3: ICT supported assessment**

1.3.1 Teachers’ competence to use and adapt ICT based assessment tools to support different types of assessment: participants self-assessed their competency in this field as $\bar{x} = 2.8$ (SD = 1.4; cf. chart 27). The most frequently selected level of competency was “beginning”, which means that the following competency descriptor achieved the highest approval: “I use some ICT tools (e.g. computer based quizzes, games, tests, or eportfolios) for assessment. These tools do not cover the whole process of assessment that I would like to use. I would need to extend my knowledge/ skills in this area”.
1.3.1 Knowledge of instructing students to conducting **self and peer assessment** of their own work and the work of other with the support of ICT: participants self-assessed their competency in this field as $\bar{x} = 3.3$ (SD = 1.5; cf. chart 28). The most frequently selected level of competency was “expert”, which means that the following competency descriptor achieved the highest approval: “I instruct my students in conducting self- and peer evaluation with ICT, considering learning goals”.

1.3.2 Applying teaching methods that **support students in the reflection of their learning** with the use of ICT: participants self-assessed their competency in this field as $\bar{x} = 3.4$ (SD = 1.1; cf. chart 29). The most frequently selected level of competency was “capable”, which means that the following competency descriptor achieved the highest approval: “I sometimes practice strategies where my students reflect on their learning supported by the use of ICT”.
5.1.2 Area 2: Digital Content Use and Production

Area 2.1: Selection and use of digital resources

2.1.1 Finding and evaluating digital information: participants self-assessed their competency in this field as $\bar{x} = 4.1$ (SD = 1.2; cf. chart 30), which is the highest mean value of all TET-SAT items. The most frequently selected level of competency was “expert”, which means that the following competency descriptor achieved the highest approval: “I teach my students to apply criteria and strategies for evaluating and verifying information they find online, and engage my students in peer evaluation of the information found”.

2.1.2 Selection, use and adaption of digital resources: participants self-assessed their competency in this field as $\bar{x} = 3.4$ (SD = 1.3; cf. chart 31). The most frequently
selected level of competency was “capable”, which means that the following competency descriptor achieved the highest approval: “I am able to search and select some digital resources where students can use them to support their learning tasks or when it can enhance accessibility for students with special needs”.

![Chart 31: TET-SAT item 2.1.2](image)

**Area 2.2: Creative Production**

2.2.1 Teachers’ capacity to integrate ICT based productivity tools for the creation of content: participants self-assessed their competency in this field as $\bar{x} = 3.4$ (SD = 1.2; cf. chart 32). The most frequently selected levels of competency were “capable”, “proficient” and “expert”, which means that the following competency descriptors achieved the highest approval: capable: “I can use digital productivity tools to create a digital product or digital content (e.g. text, images, audio, video)”, proficient: “I integrate and re-elaborate resources to create new and relevant digital content in different formats, including multimedia (e.g. text, tables, images, audio, video). I engage students in creating their own content”, and expert: “I engage students in creative digital production and innovations and support them in collaborative production of content using ICT. I can produce digital content in different formats, platforms and environments”.

![Chart 32: TET-SAT item 2.2.1](image)
Area 2.3: Copyright and Licenses

2.3.1 Teachers’ knowledge, understanding and application of copyright and licences: participants self-assessed their competency in this field as $\bar{x} = 3.0$ (SD = 1.2; cf. chart 33). The most frequently selected level of competency was “proficient”, which means that the following competency descriptor achieved the highest approval: “I apply copyrights and licences properly to information and educational content I create/ find /share and I teach about copyrights and licences (open source and open licenses such as Creative Commons) to my students”.

![Chart 33: TET-SAT item 2.3.1]

5.1.3 Area 3: Digital Communication and Collaboration

Area 3.1: Communicating using technologies and social media

3.1.1 Considering different communication formats and channels depending on the target audience, settings and learning goals: participants self-assessed their competency in this field as $\bar{x} = 3.1$ (SD = 1.2; cf. chart 34). The most frequently selected level of competency was “capable”, which means that the following competency descriptor achieved the highest approval: “I choose different communication formats and channels including social media depending on the target audience (teachers, students, parents)”. 
Area 3.3: Online participation

3.3.1 Engaging in educational online communities (communities of practice for teachers or students): participants self-assessed their competency in this field as $\bar{x} = 2.9$ (SD = 0.9; cf. chart 35). The most frequently selected levels of competency were “beginning”, “capable” and “proficient”, which means that the following competency descriptors achieved the highest approval: beginning: “I know an online community for teachers or students and check activities sporadically to be inspired for my own teaching practice”, capable: “I find and use material from educational online communities in my own teaching practice”, and proficient: “I contribute to an educational online community for teachers or students by adding content and comments”.

3.3.2 Engaging in online opportunities for professional development to develop my digital skills or pedagogical ICT skills: participants self-assessed their competency in this field as $\bar{x} = 2.1$ (SD = 1.0; cf. chart 36), which is the lowest average value of all TET-SAT items. The most frequently selected level of competency was “capable”, which
means that the following competency descriptor achieved the highest approval: “I search for online opportunities (e.g. online webinars, MOOCs) that can improve my digital skills or pedagogical ICT skills”.

![Chart 36: TET-SAT item 3.3.2](chart)

**Area 3.4: Collaboration through ICT**

3.4.1 Using ICT for team work, for **collaborative processes** and for the common creation of resources, knowledge and contents: participants self-assessed their competency in this field as $\bar{x} = 2.6$ (SD = 1.3; cf. chart 37). The most frequently selected levels of competency were “newcomer” and “capable”, which means that the following competency descriptors achieved the highest approval: newcomer: “I hardly use ICT to collaborate with my colleagues and to contribute to the common creation of knowledge, resources and contents”, and capable: “I use technology and digital means in collaborative processes and for the common building and creation of resources, knowledge and contents”.

![Chart 37: TET-SAT item 3.4.1](chart)
5.1.4 Area 4: Digital Citizenship

Area 4.2: Digital Identity Management

4.2.2 Actively protecting personal data, respecting others’ privacy and guiding students in this respect: participants self-assessed their competency in this field as $\bar{x} = 3.6$ (SD = 1.1; cf. chart 38), which is the second highest mean value of all TET-SAT items. The most frequently selected levels of competency were “capable” and “proficient”, which means that the following competency descriptors achieved the highest approval: capable: “I understand data protection issues, and in my work protect passwords, respect others’ privacy and am careful not to disclose personal information”, and proficient: “I guide students in protecting their personal data and managing their digital identity”.

![Chart 38: TET-SAT item 4.2.2](image)

5.2 Summary overview of TET-SAT items and areas

Chart 39 lists the average values of self-assessment of the TET-SAT items comprehensively.

Chart 40 summarizes the average values for each of the subareas of TET-SAT, which have been calculated out of the average values of all items of a subarea.
Overview of TET-SAT items

1.1.1 ICT supported teaching and learning
1.1.2 Attitudes, awareness and ICT use
1.1.3 Learning activities with ICT
1.1.4 Personalization
1.1.5 Collaborative learning activities
1.1.6 ICT in cross-curricula approaches
1.2.1 Plan, use and evaluate digital tools
1.2.2 Managing a digital classroom
1.2.3 Virtual learning environments
1.2.4 Planning and evaluating digital tools
1.2.5 Integrating ICT based productivity
1.3.1 ICT based assessment tools
1.3.2 Self- and peer-assessment
1.3.3 Supporting students in the ICT environment
1.3.4 ICT for collaboration
1.3.5 Learning in the ICT environment
2.1.1 Finding and evaluating digital tools
2.1.2 Selection, use and adaption of digital tools
2.1.3 Copyright and licences
2.1.4 Plan, use and evaluate digital tools
2.2.1 Integrating ICT based productivity
2.3.1 Copyright and licences
3.1.1 Different communication formats
3.1.2 E-communication
3.3.1 Educational online communities
3.3.2 Online opportunities for collaboration
3.4.1 ICT for collaboration
3.4.2 E-communication
4.1.1 ICT usage
4.1.2 Self-assessment
4.2.2 Protecting personal data

Chart 39: Overview of TET-SAT items
5.3 Conclusions from Student Teachers Questionnaire Part II

For a consideration of the results from the TET-SAT, it needs to be considered that the data do not allow for conclusions on the impact of the module on the competencies in question. It would require an experimental design with pre-test, post-test and, ideally, a control group to learn about the changes that the module initiated in the student teachers’ competencies, which is beyond the intention and scope of methods applied here. Moreover, it has to be pointed out again that the sample is quite small and not representative, which renders it impossible to make generalizations about the results.

Yet, the data serve to illustrate the learning opportunities that students had in certain fields before they took the survey – this may but does not necessarily have to include the teaching of the ITELab module. Student teachers assessed their competencies in some fields as quite high, which can be understood as evidence of deeper and more respective learning opportunities in these fields as compared to the fields where the student teachers estimated having a lower level of competency.
There are two lessons to be learnt from this questionnaire: first of all, it allows for insights regarding the participant group and conveys an impression of the status of the participants’ learning opportunities in relevant fields. Second, it offers starting points for the ongoing improvement of the module. It has been defined a target of the module to foster the participants’ competencies as described by DigCompEdu. The items and subareas which received low average ratings in the questionnaire will be an appropriate starting point for processes of improvement to compensate for less-focused fields and to ensure that module participants after taking the module feel confident in all of the areas that were targeted.

Against the background of these limitations, it seems noteworthy that participants gave the lowest rating to the following items:

- 1.1.1 Develop, implement, reflect and redesign ICT supported teaching and learning strategies with ICT ($\bar{x} = 2.5$),
- 1.1.5 Designing collaborative learning activities with ICT ($\bar{x} = 2.4$), and
- 3.3.2 Engaging in online opportunities for professional development ($\bar{x} = 2.1$).

If it is an aim of the module to foster the competencies as described by DigCompEdu and measured by TET-SAT, then these competencies will be a solid starting point for improvements.

On the other hand, the following items were given the highest ratings on average:

- 2.1.1 Finding and evaluating digital information: ($\bar{x} = 4.1$),
- 4.2.2 Actively protecting personal data, respecting others’ privacy and guiding students in this respect ($\bar{x} = 3.6$), and
- 1.2.1 Plan, use and evaluate digital tools to be integrated in the teaching and learning process ($\bar{x} = 3.5$).

It seems that the pre-service teachers had various learning opportunities in these fields, and that the next version of the module should retain those elements that affect these and other elements with high ratings.
6 STUDENT TEACHERS’ AND TEACHER EDUCATORS’ FOCUS GROUPS

- **Target Group**: Student teachers and teacher educators
- **Number of Participants**: n=11 student teachers, n=9 teacher educators
- **Priorities**:
  - Evidence of aspects as defined by research questions
  - Identification of potential for improvement

There were two separate focus groups for student teachers, one with n=5 and one with n=6 participants, and a third focus group with n=9 teacher educators. The student teachers in the focus groups were selected by their module instructors. Their selection criteria were (1) participation in the module or, in case a group from a partner university did not implement the module, familiarity with the materials, and (2) sufficient English language level skills. The participation in the focus group was not linked to a participation in the questionnaire described in part I.

The nine teacher educators in the study were all ITELab project partners, either from a partner university or from EUN, who were involved in the development of the materials and also in their implementation, e.g. as an instructor in class.

While there were three separate focus groups, the results will be presented in a summarizing way in the following for reasons of conciseness.

6.1 RESULTS ON FEASIBILITY AND USEFULNESS OF THE MODULE

Student teachers and teacher educators mentioned a number of factors or aspects that they felt limit the feasibility of the module, i.e. its applicability, accessibility and transferability:

- The module is less applicable in the context of schools with poor technological equipment,
- Instructions were not clear or too general,
- The English language was difficult / too advanced,
- The fact that the module was in English language might discourage potential participants and delimit the target group,
- The innovative format might not appeal to everybody because some students might prefer traditional teaching,
- Some activities could not be completed due to technical problems,
- Instructors sometimes were ill-informed,

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6 Cf. Appendices C and D for the full focus group questioning routes
• The fixed timing for sessions were problematic, with regards to the specific dates and also with regards to exam periods.

Overall, student teachers and teacher educators indicated that the module was useful for the student teachers’ future careers, and the student teachers predominantly rated it as “very useful” or “useful” when asked for a rating. This was specified by contents and learning achievements that focus group participants considered as specifically useful:

• Building networks and exchange,
• Being a 21st century teacher,
• Using technology in teaching,
• Getting to know useful tools,
• Consciousness about differences in access to technology,
• Learning about things that can be applied in the classroom directly,
• Developing English language skills,
• Video-based lesson analysis,
• Positive change in awareness of and attitudes towards technology.

**6.2 Results on Knowledge Acquisition**

Overall, focus group participants confirmed that there was an increase in knowledge acquired. The following aspects were mentioned in this context:

• Getting to know new technologies and tools, thinking, talking and reflecting about them and methodology,
• Changing attitudes, increased self-awareness of a teacher’s role in a world infused by technology,
• Networking, exchanging and collaboration,
• Video-based lesson analysis,
• Active learning methodology,
• Critical aspects of media and technologies,
• Innovation of learning spaces,
• Developing English language skills.

It is noteworthy that a clear majority of statements on learning outcomes and knowledge acquisition were about the tools and technologies that the student teachers got to know and learned to apply. According to the focus group participants, the module was a success in conveying insights into technology and tools and gave the student teachers a set of applications and ideas to try out in their own teaching practice.
6.3 Potential for Improvement

The focus group participants identified a number of potential improvements of the module, which are naturally linked closely to the delimitations of feasibility as mentioned in 5.1. The following ideas were mentioned:

- Enhanced technological equipment and support,
- Support with authorization which the participants required from their schools to be allowed to complete tasks related to video recordings,
- Clearer and more specific instructions,
- Easier language,
- More time / less content,
- More materials for preparing sessions / flipped classroom elements,
- More reading / background information / videos / optional further reading,
- More expert voices / consulting, specifically ITELab industry partners,
- Better informed instructors, i.e. a facilitated exchange between module instructors who sometimes appeared ill-informed,
- More direct and flexible communication with module participants from other countries instead of fixed dates for live-to-air sessions, e.g. instant messaging or chatting,
- Discussion at the live-to-air sessions instead of just presenting formerly prepared results,
- A student hub for exchange,
- A central platform for materials,
- An index or glossary,
- Native languages, at least in some elements (e.g. own contributions),
- Better timing,
- More feedback,
- Alternatives for activities,
- More acknowledgment of technologically disadvantaged schools,
- Ways to get help, e.g. a Q&A section or a help chat for students and for instructors,
- More transfer of knowledge and applications to real practice.

7 Industry Partners Online Questionnaire

- **Target Group**: ITELab industry partners
- **Number of Participants**: n=1
- **Priority**: additional information on the perception of the module

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7 Cf. Appendix E.
For the industry partners online questionnaire, we received one out of four possible responses. This response yielded the following results:

- “The intention to guide the student teachers through a set of activities that demonstrate the available resources and principles for attaining the competences required for teaching in the 21st century” was perceived positively.

- In terms of potential for improvement of the module, it was suggested “framing the units in the module in a way that demonstrates more clearly the purpose and the benefits of the proposed activities, linking them with the objectives of the module and therefore providing a more obvious flow”.

- In terms of potential for improvement of the pilot procedures for pilot 2, it was advised “Taking on board the feedback from the participants in the initial pilot - addressing the challenges they have faced in implementing the module; providing more clear framing for the content we have included; pointing out the value proposition we offer”.

- Concerning the University-ICT industry forum, it was remarked that “they are a good opportunity for knowledge sharing on a wider scale, from various stakeholders in pertinent topics. They are also a good networking opportunity”.

While the industry partners questionnaire is limited in its scope and extent, it supports and amends the conclusions from the other elements of evaluation. There are overlaps e.g. with regards to a beneficial clarification of instruction, and it supports the evaluation approach which builds significantly on the participants’ feedback.

8 OVERALL CONCLUSIONS ON PILOT 1 EVALUATION

As described in the beginning, the ITELab module evaluation aims to answer two research questions, which are about feasibility and usefulness of the materials and courses, and about their pedagogical quality and effectiveness. Furthermore, it was the main goal of pilot 1 to identify potential for improvement of the materials and to facilitate and support the ongoing material development. Also, there are conclusions to be drawn regarding the evaluation process.

Research questions

1. Feasibility and usefulness of the materials and courses

The ITELab pilot 1 evaluation reveals that the preservice teachers in the study experienced module A as feasible and useful in certain regards. E.g., they mostly agreed that the module integrated well into their studies (cf. 4.3.5), they found it
helpful for their future careers (cf. 4.3.4) and rated it as “very useful” or “useful” also in the focus group interview (cf. 6.1). They also highlighted particularly useful elements in the questionnaire, such as running short-term projects in their schools, shared lesson observations, or the assessment activity (cf. 4.3.7). Limitations to the usefulness and feasibility were also mentioned and can be worked on in the future material development, such as a limited applicability in the context of schools with limited technical equipment, or a perceived potential for improvement in the clarity of some instructions (cf. 6.1).

2. (Pedagogical) quality and effectiveness of the materials and courses

According to the student teachers’ and teacher educators’ data in the study, module A also had a positive impact on the student teachers’ perceived knowledge. E.g., the student teachers described that they got to know new tools and learned how to think, talk and reflect about them, that they improved in technologically enhanced collaboration, and that their attitudes and beliefs shifted (cf. 6.2).

Potential for improvement

The evaluation revealed a number of aspects which can be improved in the materials for the upcoming pilot. Examples for such potential improvements relate e.g. to the module contents, instructions, language or communication (cf. 4.3.9).

Evaluation approach

Based on the results described, it can be concluded that the evaluation approach for the ITELab module evaluation in pilot 1 was successful. The triangular methodology provided significant insights into the perceptions of the study participants and into the perceived effects and quality of the module. It offers various starting points for improvements to be made for the main pilot in 2019.

Yet, there are lessons to be learnt for the evaluation. Most centrally, for the main pilot in 2019 it will be important to consider ways to increase participation in all questionnaires. Suitable methods might include obligatory participation, inclusion of the survey in a face-to-face session, or various incentives. Also, it will be important to increase awareness of the significance of the module evaluation among partners and students to make sure that a higher number of participants will contribute to the evaluation.

Besides, pilot 1 revealed a need for adapting the evaluation approach in some regards. The following aspects are considered central in this regard:

- Partners use the materials flexibly and individually and will be encouraged to do so also in the main pilot. The evaluation will need to respond to this flexibility and to heterogeneous implementations, particularly as there will be modules A, B and C in the study.
- The issue of knowledge acquisition and pedagogical effectiveness will need to be explored in greater depth, e.g. by a closer link to DigCompEdu and explicit self-assessments of knowledge gain in the course.
• In accordance with the evaluation plan, there will be no focus groups in pilot 2.

• The industry partner questionnaire did not achieve the desired response and will be challenged in its format and integration.
9 APPENDIX

9.1 APPENDIX A: ITELab Pilot 1 Evaluation: Preliminary results and recommendations (module sections)

In the following, the internal report of preliminary results and recommendations from pilot 1, published in June 2018, will be presented. The excerpt is limited to the results of the module. The MOOC contents are to be found in deliverable D5.3.

ITELab Pilot 1 Evaluation ·

Preliminary results and recommendations

Scope of this document

The following document presents first results and tendencies of the evaluation of ITELab pilot phase 1 in early 2018. It is a working document intended for internal use only and will be amended over the next months and replaced by a full evaluation report towards the end of 2018.

The document comprises first results from the different evaluation methods (i.e., pre- and post-test (MOOC), post-test (module), and focus groups (MOOC & module)). Given the early stage of evaluation analysis, the current version of this document presents a subjective selection of highlights and subjective recommendations, which are hoped to contribute to the further development and improvement of MOOC and module already but may be subject to addition and change at later stages.

This document frequently refers to the presentation of evaluation highlights which was presented at the Brussels workshop in June. Details on figures etc. can be found in this presentation and will not be repeated in detail here.

9.1.1 MOOC

[...]
9.1.2 Module

9.1.2.1 Post-test
We only have 16 responses, 11 of which are from Italy. For the pilots to come, we should consider ways to increase the number of responses, e.g. by making the post-test obligatory, including it into the last session, or better informing instructors about its value. The low number of responses and the predominance of post-test participants from Italy restrict the informative value of the data.

On a scale from 1 (strongly disagree) to 5 (strongly agree), the two items “clear identification of learning objectives” and “clear and traceable structure” received comparably low average values ($\bar{x} = 3.3$), with some participants ticking “disagree”. There seems to be potential for improvement with regards to these aspects.

Regarding the usefulness of module elements, these three received the lowest rating: “creating a promotional video” ($\bar{x} = 3.44$), “SoundCloud activities” ($\bar{x} = 3.27$), and “Twitter activities” ($\bar{x} = 3.16$). These three elements might deserve special attention.

The suggestions for improvement include a variety of facets, but they show a strong focus on the clarity of instructions, language and structure. Obviously, the participants would like to see improvements in this field.

The self-assessment of digital educational competencies as performed with TET-SAT offers a number of conclusions. It does not directly tell us the competencies and competency areas where the module had a positive influence, given that we did not have an experimental design with pre- and posttest and control groups. However, it points out competencies which are developed quite high after the module, according to the preservice teachers’ self-assessment, and competencies and areas which might have been impacted by the module but are still developed comparably low. This refers especially to the following items:

- 1.1.1 Develop, implement, reflect and redesign ICT supported teaching and learning strategies with ICT ($\bar{x} = 2.5$)
- 1.1.5 Designing collaborative learning activities with ICT ($\bar{x} = 2.4$)
- 3.3.2 Engaging in online opportunities for professional development ($\bar{x} = 2.1$)

If it is an aim of the module to foster the competencies as described by DigCompEdu and measured by TET-SAT, then these competencies might be a starting point for improvements.

9.1.2.2 Module Focus Groups: Central suggestions for improvement

Language:
- Some participants had problems with the level of English. In comparison to the very easy and accessible language in the MOOC, they had more difficulties with understanding. They suggested making the language easier.
• Also, participants expressed a need for clearer communication of tasks and for clearer instructions which seemed to be not specific enough in some cases.

• Regarding the module being in English language, the participants generally approved of it and appreciated the learning opportunity, consenting that it is important to learn and practice English. If the language was easier, they were confident that they will be able to understand and work with the English version. Right now, some participants did not understand all of the material.

• Interestingly, only the English native speakers suggested not forcing English upon everybody and e.g. offering instructions in native languages.

• Few non-native speakers suggested doing assessments and tasks in their native languages or giving participants a choice regarding languages (no consent here).

• Naturally, the English language makes the module less accessible for persons with low English language proficiency. Suggestions to handle these difficulties include a glossary or further supportive materials for difficult vocabulary.

Contents:

• The use of the IRIS Connect Kit for video filming was not clear. Participants criticized the screen turning black once the recording starts, and they would like to see this fixed to be able to see what they record.

• In the context of the IRIS Connect recordings, participants described the authorization process as problematic. They would appreciate prepared authorization sheets to help them organize their recordings.

• Overall, it seems that some contents are rather vague. Sometimes, students felt lost and would like it more specific, which corresponds to the claim for clearer instructions. More feedback would also help against the feeling of being lost.

• It was mentioned that there was too much content per session sometimes, which did not leave enough room for exploration. In this context, it was suggested to have videos or literature which can be explored in preparation of a session, to leave more room for discussion and collaborative work in the session.

• Generally, focus group participants approved of the idea of more (optional) background information or literature / reading tasks, especially for the initial exploration or start of a new topic.

• Some participants would like to see the possibility to select contents based on the technical equipment of their schools, including good practice examples.

• Some activities could not be completed by everybody, e.g. the school did not allow for playing youtube videos, and the preservice teachers and their instructors did not know how to handle this. It could be a solution to offer alternative tasks to choose from, taking into account diverse preconditions. This relates not only to preconditions for the preservice teachers’ consumption of content, but also to differing technical equipment of the schools. Some videos were just not relevant for some participants.

• Some videos were not accessible due to out-dated links.
Some participants would like more contents about eTwinning, and some suggested taking into account inclusive teaching and learning with technology.

(Expert) support:
- Focus group participants would prefer more contact with experts. They felt that the industry partners should be taken more advantage of, and they would like to see a union of experts from the industry and of teachers as experts for teaching.
- They felt that more instructions about how to use tools would be helpful. Such instructions should be available for themselves, but they would also like to see the instructors and tutors to be provided with more information and material, because they sometimes could not help with problems or questions and seemed ill-informed.
- The focus group participants expressed a need for ongoing support, i.e. someone to answer their questions about the module. They described an additional webinar which was perceived as very helpful.
- A chat was suggested for the purpose of constant and on-the-spot trouble shooting, e.g. with Conor, all lecturers or the industry partners.

Communication and collaboration:
- Focus group participants repeatedly supported the idea of a student hub or communication platform. They expressed a need for ongoing communication beyond the live-to-air sessions, which were perceived as interesting and beneficial (if working), but also problematic in terms of organization and technology.
- The hub should allow for helping each other with problems, but also for sharing and collaborating.
- The student teachers would approve of pictures or avatars in the student hub or forum.
- Following the concept of a forum, there could be threads for single tools to be discussed across nations.
- To improve the live-to-air sessions, the following ideas were mentioned:
  - Clearer tasks
  - Reliability of technology
  - Dialogue and discussion instead of just summarizing previously discussed contents
  - Communication in advance of the session, e.g. by instant messaging or via the student hub, to get to know each other, and to exchange and prepare contents together

Implementation: The timeframe for the implementation of the module was difficult for some preservice teachers, in terms of proximity to exams, time of the day, etc.
ITELab (Initial Teacher Education Lab) is a Knowledge Alliance project between higher education institutions and industry to foster innovation and knowledge exchange in initial/preservice teacher education (ITE). The ITElab Knowledge Alliance project includes six universities providing teacher education, of which five will pilot the modules and student MOOC and one will act in an evaluation capacity. Project partners also include four companies that offer Information and Communications Technology (ICT) solutions and professional development for teachers.

This TET-SAT tool was developed as part of the project MENTEP (Mentoring Technology-Enhanced Pedagogy), a major European Research project to boost teachers’ competence and confidence to use Information and Communications Technologies (ICT) in the classroom. The project, which ran from March 2015 to February 2018, investigates the potential of an online Self-Assessment Tool (SAT) to empower teachers to progress in their Technology-Enhanced Teaching (TET) competence at their own pace.

European Schoolnet, a network of 34 ministries of Education in Europe coordinates both these projects. The University of Wurzburg is responsible for the quantitative and qualitative evaluation of the ITElab project.

The two questionnaires available here are intended for student teachers who participated in the ITElab course module on Teaching, Learning, & Professional Development in the Digital World. This module is part of a pilot project which will be evaluated to assess its success and to identify potential for improvement.

The evaluation approach includes two surveys. Please fill in both of them. The first survey is about your demographic data and your user experience with the module. The second survey is about your competencies in technology-enhanced teaching.

Your answers in both of these questionnaires are a central resource for this evaluation and of great value for this project. There are no right or wrong answers. Please fill in all questions from both surveys honestly and completely to ensure a comprehensive and significant evaluation.

If you have questions regarding the surveys or the evaluation process, please contact: media.deleyr@eun.org

More Info

Questionnaire 1: Administrative Questionnaire
The survey you will find in the following is about your demographic data and your user experience with the module. The second survey, which you will also find on the ITElab platform, is about your competencies in technology-enhanced teaching.

Demographic Data Applicability, transferability, perceived usefulness
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Next question

Demographic Data Applicability, transferability, perceived usefulness
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48
In which country are you studying / teaching?

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- [ ] Bulgaria
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- [ ] Cyprus
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- [ ] Denmark
- [ ] Estonia
- [ ] Finland
- [ ] France
- [ ] Germany
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- [ ] Hungary
- [ ] Iceland
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- [ ] Malta
- [ ] Monaco
- [ ] Montenegro
- [ ] Netherlands
- [ ] Austria
- [ ] Portugal
- [ ] Romania
- [ ] Russian Federation
- [ ] Slovakia
- [ ] Slovenia
- [ ] Spain
- [ ] Sweden
- [ ] Switzerland
- [ ] Turkey
- [ ] United Kingdom
- [ ] United States
- [ ] Other: please indicate

What is your level of study or job title?

- [ ] Bachelor / Undergraduate degree
- [ ] Master / Graduate degree
- [ ] Studies completed
- [ ] Other: please indicate

How do you evaluate your own expertise regarding the integration of ICT into education?

- [ ] Very good
- [ ] Good
- [ ] Acceptable
- [ ] Poor
- [ ] Very poor
Your school's participation is extremely important.

How do you evaluate your own English language proficiency?

Very good  Good  Acceptable  Poor  Very poor

Which course were you a part of that offered the ITELab course module?

During the module, you may have heard about the ITELab MOOC: The Networked Teacher. Teaching in the 21st Century. Did you participate in this MOOC, beyond the respective module session?

Yes  No

Questionnaire 2: (Pedagogical) quality and effectiveness of the materials and courses - TET-SAT tool

What is TET-SAT?

TET-SAT is an online tool to support you in developing your pedagogical competences to use ICT (Information and Communication Technologies) in your future teaching.

This new online tool is there for you to REFLECT on how you use ICT in your future teaching practice. It allows you to self-assess your competences in 4 areas:

- Digital Pedagogies
- Digital Literacies & Productions
- Digital Communication & Collaboration
- Digital Citizenship

The following questions are taken from the TET-SAT tool which you may have encountered in the course of the module already. To answer them and self-assess your competences in technology-enhanced teaching, please imagine yourself in your future role as a teacher. Remember the experiences you have made in school placements already, and anticipate what you will do and how you will act in future placements and once you have finished your studies and start teaching at school. There are no right or wrong answers, and we are interested in your honest self-assessment.

The test can help you to identify your current competence level in teaching with ICT, and to monitor your progress over time. It can also inspire you about different ways of teaching with ICT, and help you identify in which areas you might want to improve next. When the test is completed, a series of questions, after you answered to all questions in the test, you will receive feedback on your competence level. At the end of the feedback page, you can find two self-assessment resources in each of the 4 competence areas.

Your results are anonymous and confidential. We will include the results into our evaluation and link it to your results from the second survey, but we will work with anonymized data and cannot link it to your person.

Practical Tips

How to use the tool?

Please fill in the tool after completing the ITELab module.

The tool works both on laptops and mobile devices.

For each competence (ICT) you will find 5 different statements representing 5 different proficiency levels. To answer, the questions and self-assess your competences in ICT in technology-enhanced teaching, please imagine yourself in your future role as a teacher. Remember the experiences you have made in school placements already, and anticipate what you will do and how you will act in future placements and once you have finished your studies and start teaching at school. There are no right or wrong answers, and we are interested in your honest self-assessment.

You can go through the questions in any order you like. It is up to you which area and then you want to start with. If you are interrupted while answering the questions, you can log in back to the ITELab platform and open the test again you will see that all your previous answers have been saved.

How to get feedback?

You need to answer ALL the questions in all areas. Once you replied to all self-assessment items, the "Finish" button will appear at the bottom of the page. To submit your answers, click on the "Finish" button.

Based on your selected items, the tool calculates your level of competence. You will be immediately directed to a feedback page which gives you an overview of your level in the 4 competence areas.

You can also print your feedback page as a PDF just click on the "Download as PDF" button at the bottom of the feedback page. This might be useful e.g. to discuss your current level of ICT with your fellow student teachers or others.

How to find suitable training offers?

Based on your results you might want to envisage training. At the end of the feedback page you will find a link to pages with high quality European training resources.
D5.2 Course Module A Evaluation Report

Digital Pedagogy

Question 1
I have limited or no experience of using ICT for teaching or learning purposes in the classroom.

Question 2
I use ICT to support teaching and learning. I need more competence to implement ICT to improve my teaching and students learning.

Question 3
I reflect upon my ICT based teaching through critical and systematic assessment of the teaching and learning processes and redesign my teaching strategies accordingly.

Question 4
I implement ICT as a tool to support common teaching methods and tasks, and can adapt my teaching to create new learning experiences for my students.

Question 5
I develop ICT supported teaching and learning strategies to enhance my teaching and reflect on a regular basis on the meaningful use of these strategies.

Digital Pedagogy

Question 1
I consider ICT useful for lesson preparation, and try to implement ICT in my teaching, but I am not sure about the advantages of using during my lessons.

Question 2
I think the use of ICT can change the teaching process and make my teaching more efficient.

Question 3
I am not sure how the use of ICT could benefit my teaching and learning of my students.

Question 4
I think the use of ICT improves and enriches both my teaching and students learning experience.

Question 5
I think ICT has a key role to transform my teaching and students learning processes and to benefit students learning outcomes and key competencies.

Digital Pedagogy

Question 1
I hardly or never design teaching and learning activities with ICT to engage students more in the learning.

Question 2
I adopt and rework my teaching and learning strategies with ICT, and evaluate the suitability of the chosen methods according to students’ needs, engagement and goals.

Question 3
I use existing digital content and learning environments to differentiate my teaching to create engaging activities for students.

Question 4
I find some inspiration on the Internet on how to make engaging learning activities with ICT, and try to implement some in my teaching.

Question 5
I create digital material and learning environments to differentiate my teaching and alternate different pedagogical methods supported by ICT to create engaging activities for students.

Digital Pedagogy

Question 1
I have some knowledge about personalized learning activities with ICT considering different students’ needs, but I find it difficult to find suitable activities for my lesson.

Question 2
I implement personalized teaching and learning activities, using technology to support students’ needs and learning preferences.

Question 3
I have very little or no knowledge about ICT can support the personalization of student learning and do not use ICT for personalized student activities.

Question 4
I design personalized student activities where ICT is used to identify and support the individual students’ choices, needs and learning preferences.

Question 5
I design personalized student activities where ICT is used to identify and support the individual students’ choices, needs and learning preferences.

Digital Pedagogy

Question 1
I design collaborative student activities where students themselves manage their collaboration together with ICT tools. Students use collaborative online tools inside and outside the classroom to collaborate with teachers and other stakeholders (e.g., experts), and also use ICT for collaborative assessment.

Question 2
I use ICT to design student collaborative learning activities, where students use some digital tools that support their collaborative learning as a group.

Question 3
I organize collaborative student activities, they are mainly based on textbooks and students work without ICT.

Question 4
I use ICT to design collaborative student activities. Students, under my guidance, use collaborative online tools to collaborate with each other in and outside of school.

Question 5
I use ICT to prepare collaborative student activities, but lack some knowledge and competence to implement them effectively with my students.

Digital Pedagogy

Question 1
I easily implement ICT in project work and cross-curricular activities.

Question 2
When implementing cross curricular approaches or project work, I use ICT for collaboration between students and for cooperation with teachers of different subjects.

Question 3
When implementing cross curricular approaches or project work, I use ICT to support learners’ learning in different subjects. I use ICT critically to support learners’ learning in different subjects.

Question 4
When implementing cross curricular approaches or project work, I use ICT to support learners’ learning in different subjects. I use ICT critically to support learners’ learning in different subjects.

Question 5
When implementing cross curricular approaches or project work, I use ICT to support learners’ learning in different subjects. I use ICT critically to support learners’ learning in different subjects.
### Digital Pedagogy

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<tbody>
<tr>
<td>I am confident with choosing and using digital tools and devices to carry out new tasks that I would not be able to do without the technology. I can help colleagues with choosing the right technology in their teaching.</td>
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<td>Although I sometimes use digital tools and devices in the classroom, I am not quite confident on how to select the most appropriate tools for teaching and learning purposes.</td>
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<td>I am quite confident with selecting and using different types of digital tools or devices to enrich my teaching and support students learning. I have an alternative of the technology I use.</td>
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<td>The use of different devices and tools can be challenging in whichever I select and use digital tools or devices, it is carefully planned and implemented to support my teaching.</td>
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### Digital Content Use and Production

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<tr>
<td>When I try to manage my classroom, students use computers or other devices, I sometimes feel that it is difficult to maintain control.</td>
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<td>I effectively manage a classroom where students use different devices and can respond to individual students’ needs.</td>
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<td>I can manage students using different devices in the classroom and support them in their learning.</td>
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<td>I have no or little experience in managing a classroom where my students use computers or other devices. I feel most confident using traditional teaching tools (not based on ICT).</td>
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### Digital Communication and Collaboration

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<tr>
<td>I have limited experience of using virtual learning environment and other web based tools in my teaching.</td>
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<td>I can use the common features of a virtual learning environment for administrative, to organise my teaching and be in contact with students, mainly use a VLE during my lessons.</td>
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<td>I can use a virtual learning environment or web-based tools mainly for administration and storing of documents, but I am not confident about how to use them with students for teaching and learning.</td>
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<td>I consider myself to be an advanced user of the VLE and web based tools and can adapt and use it beneficially and according to my students’ needs. I use it for learning, assessment and to extend learning beyond the classroom.</td>
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### Digital Citizenship

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<tr>
<td>I use ICT based assessment systematically throughout the year, as known varied ICT tools suitable for different assessment methods (summative as well as formative).</td>
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<td>I use ICT based assessment tools, but not yet strategically in conveying my next ICT based assessment strategies.</td>
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<tr>
<td>I use ICT based assessment tools with respect to students’ needs and specific context of learning situation and goals. These ICT based tools cover summative and formative methods and also enable to measure individual learning progress of each student (e.g. through learning progress map, digital portfolios or learning analytics).</td>
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### Knowledge of Instructional Teaching and Assessment

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<td>I do not know how to teach any ICT based strategies, which enable my students to reflect on their learning supported by the use of ICT.</td>
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<td>I sometimes practice strategies where my students reflect on their learning supported by the use of ICT.</td>
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<td>I develop and apply active learning strategies supported by ICT with my students which help them reflecting upon their own learning. I evaluate the learning process together with my students.</td>
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<td>I teach my students on how to make a reflection on their learning with the use of ICT, in and out of classroom. My students reflect upon their own learning by practicing it in a variety of ways making blogging, using digital or traditional sources.</td>
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### Finding and Evaluating digital Information

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<td>I think my students to apply critical thinking and strategies for evaluating and verifying information they find active, and engage my students in peer evaluation of the information found.</td>
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<td>I find information online that I use in my teaching. I use information that is conveniently available online. I would like to acquire more strategies for finding relevant and quality information.</td>
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<td>I teach my students criteria and strategies for evaluating and verifying information they find online.</td>
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<td>I rarely look for information online in order to use it in my teaching, and rely on paper/analogue traditional sources (e.g. textbooks).</td>
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<td><strong>Question 17</strong></td>
<td>I am familiar with laws for privacy and legislation relating to data protection and I guide students and colleagues in this topic.</td>
<td>I guide students in protecting their personal data and managing their digital identity.</td>
<td>I understand the basics of privacy and protecting personal data, but I have difficulties to implement this in practice.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Question 18</strong></td>
<td>I guide students in protecting their personal data and managing their digital identity.</td>
<td>I know little about how to protect my privacy and personal data when I am online.</td>
<td>I understand data protection issues, and in my work protect passwords, respect others' privacy and am careful not to disclose personal information.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Question 19</strong></td>
<td>I understand the basics of privacy and protecting personal data, but I have difficulties to implement this in practice.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Question 20</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Question 21</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Question 22</strong></td>
<td>I am familiar with laws for privacy and legislation relating to data protection and I guide students and colleagues in this topic.</td>
<td>I understand data protection issues, and in my work protect passwords, respect others' privacy and am careful not to disclose personal information.</td>
<td></td>
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</tr>
</tbody>
</table>
## 9.3 Appendix C: Student Teachers Focus Group Questioning Route

### ITELab Focus Groups · Questioning Route · Student teachers: Module

<table>
<thead>
<tr>
<th>No.</th>
<th>Start</th>
<th>End</th>
<th>Type</th>
<th>Question</th>
<th>Prompts</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.05</td>
<td>0.10</td>
<td>Opening q.</td>
<td>Please introduce yourselves briefly: tell us your name and where you</td>
<td>• Integrated into a seminar/lecture etc.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>come from and what you study.</td>
<td>• Extra/additional offering</td>
</tr>
<tr>
<td>1</td>
<td>0.10</td>
<td>0.15</td>
<td>Introductory q.</td>
<td>Which experiences with technology-enhanced teaching and learning</td>
<td>• sourcing, (re)purposing, and developing rich-digital instructional and learning materials</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>have you made before the ITELab experience?</td>
<td>for use in classroom contexts</td>
</tr>
<tr>
<td>2</td>
<td>0.15</td>
<td>0.20</td>
<td>Introductory q.</td>
<td>How was the ITELab module integrated into your studies?</td>
<td>• plan, teach and evaluate digitally enhanced lessons</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• understanding and competence in relation to both technical and pedagogical principles &amp;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>practices</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• identify opportunities and plan effectively for on-line activities which relate</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>specifically to digital learning design and innovative ICT usages, in both professional and</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>pedagogical modes</td>
</tr>
<tr>
<td>3</td>
<td>0.20</td>
<td>0.40</td>
<td>Key q.: Knowledge</td>
<td>What did you learn from the module?</td>
<td>• Scale: very useful, useful, a bit useful, not useful at all</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>acquisition</td>
<td></td>
<td>• Reasons for your rating?</td>
</tr>
<tr>
<td>4</td>
<td>0.40</td>
<td>0.50</td>
<td>Key q.: Usefulness</td>
<td>How useful did you find the module for your future career as a teacher?</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>0.50</td>
<td>1.00</td>
<td>Key q.: Perception of</td>
<td>What did you like most about the module, and why?</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>module</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>1.00</td>
<td>1.10</td>
<td>Key q.: Perception of</td>
<td>What problems did you encounter with the module?</td>
<td>• Curriculum fit</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>module</td>
<td></td>
<td>• Time issues</td>
</tr>
<tr>
<td>7</td>
<td>1.10</td>
<td>1.20</td>
<td>Optional q.:</td>
<td>Which improvements would you like to see for the module?</td>
<td>• Content</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Improvements</td>
<td></td>
<td>• Language</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Technical issues</td>
</tr>
<tr>
<td>8</td>
<td>1.20</td>
<td>1.30</td>
<td>Ending q.</td>
<td>Have we missed anything?</td>
<td>• Contents</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Activities</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Live events</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Language</td>
</tr>
<tr>
<td>9</td>
<td></td>
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</tr>
</tbody>
</table>

**Summary, goodbye, thank you**
## 9.4 Appendix D: Teacher Educators Focus Group Questioning Route

### ITELab Focus Groups · Questioning Route · Teacher Trainers

<table>
<thead>
<tr>
<th>No.</th>
<th>Start</th>
<th>End</th>
<th>Type</th>
<th>Question</th>
<th>Prompts</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.05</td>
<td>0.05</td>
<td>Welcome time</td>
<td><em>Welcome time, smalltalk, etc.; Introduction</em></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>0.05</td>
<td>0.10</td>
<td>Opening q.</td>
<td>Please introduce yourselves briefly: tell us where you come from and explain us your role in the preparation of teachers at your university.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>0.10</td>
<td>0.15</td>
<td>Introductory q.</td>
<td>Which experiences with preparing preservice teachers for technology-enhanced teaching have you made before the ITELab experience?</td>
<td></td>
</tr>
</tbody>
</table>
| 3   | 0.15  | 0.20| Introductory q.| How were the ITELab module and the MOOC integrated into initial teacher education at your institution? | • Integrated into a seminar/lecture etc.  
• Extra/additional offering |
| 4   | 0.20  | 0.30| Key q.: Applicability | How easy was it for you to integrate the module and the MOOC into initial teacher education at your institution? | • Organizational problems  
• Acceptance (students, institution)  
• Credit Points  
• Language  
• Technical issues |
| 5   | 0.30  | 0.40| Key q.: Applicability | How do you assess the transferability of the module and the MOOC? | • Could your colleagues use it as well?  
• Could it be applied in other European countries?  
• Ideas to improve transferability? |
| 6   | 0.40  | 1.00| Key q.: Knowledge acquisition | From your perspective, what did your students learn from the module and the MOOC? | Module  
• sourcing, (re)purposing, and developing rich-digital instructional and learning materials for use in classroom contexts  
• plan, teach and evaluate digitally enhanced lessons  
• understanding and competence in relation to both technical and pedagogical principles & practices  
• identify opportunities and plan effectively for on-line activities which relate specifically to |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th>digital learning design and innovative ICT usages, in both professional and pedagogical modes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>MOOC</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Curation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Collaboration</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Using Twitter for professional development</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Risks and challenges in using digital media</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• digital judgment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Integrating research findings into classroom practice</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Gaining profit from the MOOC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Connecting classrooms for collaborative projects</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Communities of practice</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Attitude of innovation and experimentation, tools and apps for “take-away”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• A clearer idea of how teaching is changing</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Practical competences in pedagogical ICT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• How MOOCs work</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Developing my own PLN</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Sharing digital resources</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Using tools and services that support networked professional development</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Ideas and understanding of Active Learning</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Importance of lifelong learning as a teacher</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>1.00</th>
<th>1.20</th>
<th>Key q.: Usefulness</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td></td>
<td></td>
<td>How relevant and useful did you find the module and the MOOC for your students’ future careers as teachers?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Relevant: how important are the contents for future teachers generally?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Useful: did your students learn things they need and can apply?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Scale: very useful, useful, a bit useful, not useful at all</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Reasons for your rating?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>1.20</th>
<th>1.30</th>
<th>Ending q.</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.</td>
<td></td>
<td></td>
<td>Have we missed anything?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• New aspects you would like to talk about?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Anything you have to add?</td>
</tr>
</tbody>
</table>

Summary, goodbye, thank you
### 9.5 Appendix E: Industry Partners Online Questionnaire

<table>
<thead>
<tr>
<th>Please select your company:</th>
<th>SMART / Steelcase / Microsoft / IRIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>What did you like most about the ITELab module A?</td>
<td>[open answer]</td>
</tr>
<tr>
<td>Where do you see potential for improvement of module A?</td>
<td>[open answer]</td>
</tr>
<tr>
<td>What did you like most about the ITELab MOOC?</td>
<td>[open answer]</td>
</tr>
<tr>
<td>Where do you see potential for improvement of the ITELab MOOC?</td>
<td>[open answer]</td>
</tr>
<tr>
<td>What experiences did you make in regard to the University-ICT industry Forum?</td>
<td>[open answer]</td>
</tr>
<tr>
<td>Based on your overall experiences with the first pilot, which ideas for improvement do you have for the pilots to come? (e.g. in relation to processes, communication, partners' involvement, contents development, etc.)</td>
<td>[open answer]</td>
</tr>
<tr>
<td>Any final comments?</td>
<td>[open answer]</td>
</tr>
</tbody>
</table>

### 9.6 Appendix F: Matching of relevant DigCompEdu-Competencies and TET-SAT

<table>
<thead>
<tr>
<th>ITELab</th>
<th>DigCompEdu Competencies</th>
<th>TET-SAT Equivalents</th>
</tr>
</thead>
</table>

Co-funded by the Erasmus+ Programme of the European Union
<table>
<thead>
<tr>
<th>Unit / Week</th>
<th>1:2 Professional Collaboration:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>to use digital technologies to engage in collaboration with other educators, sharing and exchanging knowledge and experiences and collaboratively innovating pedagogic practices.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3.4 Collaboration through ICT:</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.4.1 Using ICT for team work, for collaborative processes and for the common creation of resources, knowledge and contents.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1.2. Design and manage ICT based learning environments:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2.1. Plan, use and evaluate digital tools to be integrated in the teaching and learning process (ICT devices, digital tools and software, Internet and networks)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2.1 Selection and use of digital resources:</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1.1 Finding and evaluating digital information</td>
</tr>
<tr>
<td>2.1.2 Selection, use and adaption of digital resources</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2:1 Selecting digital resources:</th>
</tr>
</thead>
<tbody>
<tr>
<td>To identify, assess and select digital resources for teaching and learning. To consider the specific learning objective, context, pedagogical approach, and learner group, when selecting digital resources and planning their use.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2:2 Creating &amp; modifying digital resources:</th>
</tr>
</thead>
<tbody>
<tr>
<td>To modify and build on existing openly-licensed resources and other resources where this is permitted. To create or co-create new digital educational resources. To consider the specific learning objective, context, pedagogical approach, and learner group, when designing digital resources and planning their use.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2.2 Creative production:</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2.1 Teachers capacity to integrate ICT based productivity tools for the creation of content</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3:3 Collaborative learning:</th>
</tr>
</thead>
<tbody>
<tr>
<td>To use digital technologies to foster and enhance learner collaboration. To enable learners to use digital technologies as part of collaborative assignments, as a means of enhancing communication, collaboration and collaborative knowledge creation.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1.1 Plan and implement teaching with ICT (Learning Design):</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1.5 Designing collaborative learning activities with ICT</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4:2 Analyzing evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>To generate, select, critically analyse and interpret digital evidence on learner activity, performance and progress, in order to inform teaching and learning.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1.3 ICT supported assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.3.1 Teachers competence to use and adapt ICT based assessment tools to support different types of assessment (formative, summative)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5:1 Accessibility &amp; inclusion:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Plan and implement teaching</td>
</tr>
</tbody>
</table>

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**Unit 1 / Week 1**

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**Unit 2 / Week 1**

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**Unit 3 / Week 1**

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**Unit 4 / Week 1**

---

**Unit 5 / Week 1**

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To ensure accessibility to learning resources and activities, for all learners, including those with special needs. To consider and respond to learners’ (digital) expectations, abilities, uses and misconceptions, as well as contextual, physical or cognitive constraints to their use of digital technologies.

<table>
<thead>
<tr>
<th>1:3: Reflective Practice</th>
<th>1.1 Plan and implement teaching with ICT (Learning Design):</th>
</tr>
</thead>
<tbody>
<tr>
<td>To individually and collectively reflect on, critically assess and actively develop one’s own digital pedagogical practice and that of one’s educational community.</td>
<td>1.1.1 Develop, implement, reflect and redesign ICT supported teaching and learning strategies with ICT</td>
</tr>
</tbody>
</table>

| 1:2, 2:1, 2:2, 3:3, 4:2, 5:1: see above |

**3:4: Self-regulated learning**

To use digital technologies to support self-regulated learning processes, i.e. to enable learners to plan, monitor and reflect on their own learning, provide evidence of progress, share insights and come up with creative solutions.

<table>
<thead>
<tr>
<th>1:1 Plan and implement teaching with ICT (Learning Design):</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1.4. Designing personalized student activities (activities according to needs of students: their interests, learning preferences and styles (sound, images))</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1.3 ICT supported assessment:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.3.2. Knowledge of instructing students to conducting self and peer assessment of their own work and the work of other with the support of ICT.</td>
</tr>
<tr>
<td>1.3.3. Applying teaching methods that support students in the reflection of their learning with the use of ICT (Metacognition supported via blogging, vlogging, etc.)</td>
</tr>
</tbody>
</table>

**4:3: Feedback and planning**

To use digital technologies to provide targeted and timely feedback to learners. To adapt teaching strategies and to provide targeted support, based on the evidence generated by the digital technologies used. To enable learners and parents to understand the evidence provided by digital technologies and use it for decision-making.

| 1:2, 1:3, 2:1, 2:2, 3:3, 4:2, 5:1: see above |

**1:1: Organisational communication**

To use digital technologies to enhance organisational communication with learners, parents and third parties.

<table>
<thead>
<tr>
<th>3.1. Communicating using technologies and social media</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1.1. Considering different</td>
</tr>
</tbody>
</table>
To contribute to collaboratively developing and improving organisational communication strategies. 

communication formats and channels depending on the target audience (students; teachers, parents), settings (inside and outside the classroom) and learning goals

### 3:1: Teaching

To plan for and implement digital devices and resources in the teaching process, so as to enhance the effectiveness of teaching interventions. To appropriately manage and orchestrate digital teaching interventions. To experiment with and develop new formats and pedagogical methods for instruction.

### 1.1 Plan and implement teaching with ICT (Learning Design):

#### 1.1.1 Develop, implement, reflect and redesign ICT supported teaching and learning strategies with ICT

#### 1.1.3. Designing engaging learning activities with ICT

### 1.2. Design and manage ICT based learning environments:

#### 1.2.1. Plan, use and evaluate digital tools to be integrated in the teaching and learning process (ICT devices, digital tools and software, Internet and networks)

#### 1.2.2. Capacity to manage a digital classroom and students working with ICT

#### 1.2.3. Teachers’ and students’ use of virtual learning environments (VLE) (e.g. Moodle) and web based tools (e.g. document sharing tools and cloud based services)

1:2, 1:3, 2:1, 2:2, 3:3, 3:4, 4:2, 4:3, 5:1: see above

### Unit 2 / Week 5

1:1, 1:2, 1:3, 2:1, 2:2, 3:1, 3:3, 3:4, 4:2, 4:3, 5:1: see above

### 2:3: Managing, protecting and sharing digital resources

To organise digital content and make it available to learners, parents and other educators. …

… To effectively protect sensitive digital content. To respect and correctly apply privacy and copyright rules. To understand the use and creation of open licenses and open educational resources, including their proper

### 2.1 Selection and use of digital resources:

#### 2.1.2 Selection, use and adaption of digital resources

### 2.3. Copyright and Licenses:

#### 2.3.1. Teachers knowledge, understanding and application of copyright and licences

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<table>
<thead>
<tr>
<th>3:2: Guidance</th>
<th>4.2 Digital Identity Management</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>To use digital technologies and services to enhance the interaction with learners, individually and collectively, within and outside the learning session. To use digital technologies to offer timely and targeted guidance and assistance. To experiment with and develop new forms and formats for offering guidance and support.</em></td>
<td><em>4.2.2. Actively protecting personal data, respecting others’ privacy and guiding students in this respect</em></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1.2. Design and manage ICT based learning environments:</th>
<th>3.1. Communicating using technologies and social media</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>1.2.3. Teachers’ and students’ use of virtual learning environments (VLE) (e.g. Moodle) and web based tools (e.g. document sharing tools and cloud based services)</em></td>
<td><em>3.1.1. Considering different communication formats and channels depending on the target audience (students; teachers, parents), settings (inside and outside the classroom) and learning goals</em></td>
</tr>
</tbody>
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<thead>
<tr>
<th>3.3. Online participation</th>
<th>1.3 ICT supported assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>3.3.1. Engaging in educational online communities, (communities of practice (e.g. social networks) for teachers or students</em></td>
<td><em>1.3.1 Teachers competence to use and adapt ICT based assessment tools to support different types of assessment (formative, summative)</em></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4:1: Assessment strategies</th>
<th>1.1 Plan and implement teaching with ICT (Learning Design):</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>To use digital technologies for formative and summative assessment. To enhance the diversity and suitability of assessment formats and approaches.</em></td>
<td><em>1.1.4. Designing personalized student activities (activities according to needs of students: their interests, learning preferences and styles (sound, images)</em></td>
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<thead>
<tr>
<th>5:2: Differentiation and personalisation</th>
<th>1.1 Plan and implement teaching with ICT (Learning Design):</th>
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</thead>
<tbody>
<tr>
<td><em>To use digital technologies to address learners’ diverse learning needs, by allowing learners to advance at different levels and speeds, and to follow individual learning pathways and objectives.</em></td>
<td><em>1.1.3. Designing engaging learning</em></td>
</tr>
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</table>

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<thead>
<tr>
<th>5:3: Actively engaging learners</th>
<th>1.1 Plan and implement teaching with ICT (Learning Design):</th>
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<tbody>
<tr>
<td><em>To use digital technologies to foster learners’ active and creative engagement with a subject matter. To</em></td>
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</table>
use digital technologies within pedagogic strategies that foster learners’ transversal skills, deep thinking and creative expression. To open up learning to new, real-world contexts, which involve learners themselves in hands-on activities, scientific investigation or complex problem solving, or in other ways increase learners’ active involvement in complex subject matters.

<table>
<thead>
<tr>
<th>activities with ICT</th>
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<tbody>
<tr>
<td>1.1.4. Designing personalized student activities (activities according to needs of students: their interests, learning preferences and styles (sound, images))</td>
</tr>
<tr>
<td>1.1.6. Implement ICT in cross-curricula approaches/project work</td>
</tr>
</tbody>
</table>

### 2.2 Creative production:

#### 2.2.1 Teachers capacity to integrate ICT based productivity tools for the creation of content

<table>
<thead>
<tr>
<th>1:1, 1:2, 1:3, 2:2, 3:1, 3:3, 3:4, 4:2, 4:3, 5:1: see above</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unit 2 / Week 7</strong></td>
</tr>
<tr>
<td><strong>Unit 2 / Week 8</strong></td>
</tr>
<tr>
<td><strong>Unit 3 / Weeks 9-10</strong></td>
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</tbody>
</table>
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