



Report of the Situational Analysis Survey in the SHOW-VET project

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with contributions from all the partners





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1. Introduction to the SHOW-VET project

The aim of the Erasmus+ funded, Smooth Hybrid and Online Working for VET-project (SHOW-VET), is to increase teachers' competence on implementation of blended and distance teaching. The core idea of the SHOW-VET project is that the consortium of education providers and other partners will develop the content including pedagogical methods for teachers' guide and teachers' training material, to provide training for mentors and teachers from selected study fields and to create new e-learning materials. This will lead to development of the model of teachers digital learning process for VET providers. All the planned activities during the project life cycle aims to achieve the project's goals.

At the first stage in the Smooth Hybrid and Online Working for VET (SHOW-VET) project teacher's competence level is analysed, and current situation determined from the results of the situation analysis survey. The situation analysis survey of teachers' digital skills will be designed and conducted at the beginning of the project before the kick-off meeting. Based on the survey results and the needs, a guide for teachers will be developed in the partner network. This guide serves as a basis for creating training material for teachers.

New training material will be piloted its impact assessed during the mentor teachers' training. These trained mentors will then train other teachers locally. Teachers will work in both local and international teams and produce new e-learning material for their own study fields. Teacher participants will answer to the impact survey before and after the training. The improvement of teachers' digital skills will be evaluated by analysing the results of the survey. As a final project result, a model for smooth online working for VET providers will be established.

The coordinator of the project is the Vocational Education and Training Institute (Sedu), Finland. The other partners are: Apro Formazione from Italy, Departament D'educació – Generalitat de Catalunya from Spain, EfVET from Belgium, Roc Friese Poort from Netherlands, JAMK University of Applied Sciences and The Federation of Education in Central Ostrobothnia (Kpedu) both from Finland.

2. Teachers' digital competence

The vocational education and training (VET) sector plays a highly important role in digitalising education as it is tightly intertwined in educating skilled employees for future jobs. Within the VET system the use of technology is crucial for connecting VET organisations and workplaces as well as acknowledging different VET teacher profiles and their field specific needs for digital pedagogy. Thus, it is both VET education providers and VET teachers that are faced with continuous requirements of upskilling their competences posed by digitalisation.



Teaching face-to-face and/or online require both similar but yet different pedagogical skills. This makes it necessary for VET teachers to rethink their pedagogical approaches and competences as facilitators of learning. It has been discovered by Coker (2018) that teachers' pedagogical approaches and technological skills have a direct influence on how they facilitate online teaching, for example, either having collaborative activities or only delivering one-way information sessions.

Teachers' digital competence (TDC) is an important condition for the effective integration of technologies in education including both personal and context-related factors (Cattaneo, Antonietti & Rauseo, 2022). TDC can be broadly defined as the confident, critical and creative use of ICT to achieve goals related to work, employability, learning, leisure, inclusion and/or participation in society (Redecker, 2017). Cattaneo et al (2022) found out that VET teachers' attitude towards technology and use of digital tools contribute to TDC development.

Although many instruments and frameworks have been developed to measure TDC, research on digital competence in VET is still scarce (Cattaneo et al., 2022). The European Framework for the Digital Competence of Educators (DigCompEdu) has been used to develop and assess an instrument to measure TDC (Ghomi & Redecker, 2019). DigCompEdu describes what it means for educators to be digitally competent. It details 22 competences organised in six areas. The focus is not on technical skills, rather on how digital technologies can be used to enhance and innovate education and training (Redecker, 2017). DigCompEdu illustrates how a framework can contribute not only to setting official targets or standards for teachers' digital competence development, but also to engaging teachers themselves in the reflective process of understanding their competence levels and professional development goals (Caena & Redecker, 2019). However, Cattaneo et al (2022) indicate that to the best of their knowledge, there is no updated picture of the digital competence of in-service vocational education teachers.

3. Situational analysis- survey in the SHOW-VET project

The survey for the SHOW-VET project was created based on the framework of DigCompEdu2.0 and a Finnish survey on teachers' digi-pedagogical skills (OpenDP) that has its roots in the Technological Pedagogical Content Knowledge (TPAC) framework. Furthermore, some additional VET-specific items were integrated in the situational analysis survey used in the current study.

An anonymous web-based survey was created by the School of Professional Teacher Education at JAMK University of Applied Sciences in collaboration with the other project partners. The aim of the survey was to map current digital pedagogical competences of VET teachers representing one of the chosen VET professional fields: Digital, Beauty & Wellness, Business, Chemistry, Nature Guidance and Animal Care, Healthcare, Tourism, Mechanical Engineering, Production Technology and special programmes for adults. The survey was conducted among the VET teachers of the four partner countries: Finland, the Netherlands, Italy and Spain (Catalonia).



In the survey, the participants assessed their own digital pedagogy skills and prospects for digital activities in their own teaching processes. The survey included 18 questions of which 15 related to digi-pedagogical competences and the last three (3) were open-ended questions for qualitative responses. VET teachers were asked to assess their current digital pedagogy practices by responding to the set statements in a 4-point Likert scale ranging from 1=completely disagree to 4 =completely agree, which also had the possibility to choose an 'I don't know' option.

The survey was conducted using JAMK's Webropol-system between 21 March to 14 April 2022 resulting in 218 VET teachers responding to the survey, which exceeded the proposed figure in the project plan stating 30 replies per partner, in total 150. The original survey was created in English and once agreed upon the partners, translations into the appropriate languages were made utilizing the Webropol system and the accuracy of them was checked and approved by the local partners. Once all translated versions were approved, a link to the survey was sent by the local partner explaining to the VET teachers the purpose of the questionnaire. VET teachers were able to respond to the survey in their mother tongue.

The VET teachers' (n=218) answers were analysed quantitatively and qualitatively by the researchers at JAMK. For the Likert-scale questions the SPSS-analysis programme was used to identify frequencies and means of each question, and the open-ended questions (3) underwent an inductive content analysis (Tuomi & Sarajärvi, 2018) utilising the Atlas.ti programme.

4. Background information of the participants

Nearly two-thirds (64%) of the respondents were female and one third (34%) were male. The majority of respondents (82%) belonged to the age group of 55 years or younger of whom a good a quarter (28%) had less than 5 years and 24% 5-10 years' experience in teaching. The remaining (48%) of the VET teachers had more than 10 years teaching experience. However, over half of the respondents (54 %) had none or less than two years of experience of online or hybrid teaching.



The participants indicated representing the following VET fields: Business 39%; Chemistry 13%; Digital 13%; Production Technology 10%; Beauty & Wellness (6%); Other (18%) and 1% didn't know their vocational field. Most of the replies were from Spain, Catalonia (n=115), whereas from Finland (n=50), Italy (n=32) and The Netherlands (n=22) VET teachers completed the questionnaire.

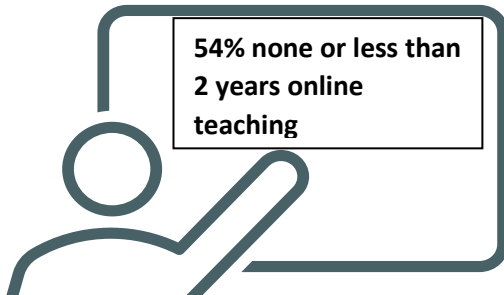


Figure 1: 54% have none or less than 2 years' experience in online teaching

5. Results of the quantitative questions

The survey included 15 quantitative questions by which VET teachers were asked to assess their current digital pedagogy practices. For 13 questions the participants were asked to respond to the set statements using the 4-point Likert scale. Question number 14 asked about confident use of some digital tools and the option ranged from 'I use daily – I'd like to know more how to use it' and having the possibility to choose an 'I don't know' option. Question 15 relating to self-assessment of current competences as an online/hybrid teacher, had six options from very poor – to very good and an option 'I cannot assess'. All quantitative questions were analysed using the SPSS-analysis programme to identify frequencies and means of each question, as previously mentioned.

The questions and results of the quantitative survey were grouped into three different clusters. The first one **General digital competences for online teaching**, included the following five questions: Q1. Organisation's technological learning environment; Q2. Searching for and utilising digital materials; Q3. Copyright competence; Q4. Web Content Production, and Q10. Information security and data protection. The second cluster **Competences for creating learning processes in online environments** also had five questions: Q5. Planning online teaching; Q6. Building interaction and teamwork; Q7. Guidance in hybrid and online learning environments; Q8. Learning tasks and Q9. Feedback and assessment. The final cluster **Competences for sharing and updating digi-pedagogy** included three questions: Q11. Developing and sharing my own digital competence; Q12. using and developing activating teaching methods; and Q13. Gamification as an activating teaching method in online learning environments. The answers to relating to questions 14 (In your opinion, how confidently you use the following tools) and 15 (How would you assess your current competences as an online/hybrid teacher?) will be described at the end of section 5.3 describing the third cluster.



5.1. General digital competences for online teaching

Overall, the results indicated VET teachers' having good competences in general digital skills based on the average scores displayed in the Table 1 below. The scores ranged from 2,8 (copyright competence) to 3,4 (own organisation's technology). However, deeper statistical analysis revealed that 61% of the respondents completely or somewhat disagreed utilising international, and 52% disagreed using national databases to search for digital materials for their teaching. Also 37% of the respondents reported that they were not sufficiently aware of their country's specific copying licensing policies, and 44% were unaware how to use the Creative Commons licencing system. Similarly, almost half of the teachers (49%) were not familiar with the EU's GDPR requirements for hybrid and online teaching. See Appendix 1 (p.13- 15) for detailed statistical information.

Table 1. Average mean of the cluster one

<i>Question</i>	<i>Average mean</i> (don't know answers not included)
<i>Q1. Organisation's technological learning environment</i>	3,4
<i>Q2. Searching for and utilising digital materials</i>	3,1
<i>Q3. Copyright competence</i>	2,8
<i>Q4. Web Content Production</i>	2,9
<i>Q10. Information security and data protection</i>	3,2

5.2. Competences for creating learning processes in online environments

The second cluster also included five groups of questions. When looking at the average results of each question group, the figures are fairly similar. See Table 2. The lowest scores were displayed in feedback and assessment (2,8) and planning online teaching (2,9), whereas the remaining groups had very similar scores; building interaction and teamwork (3,1); guidance in online (3,0) and learning tasks (3,0). However, when digging deeper in the statistics, some differences were found.

Table 2. Average mean of the cluster two

<i>Question</i>	<i>Average mean</i> (don't know answers not included)
<i>Q5. Planning online teaching</i>	2,9
<i>Q6. Building interaction and teamwork</i>	3,1
<i>Q7. Guidance in hybrid and online learning environments</i>	3,0
<i>Q8. Learning tasks</i>	3,0
<i>Q9. Feedback and assessment.</i>	2,8



VET teachers' scores indicated that 43% of them do not use digital technologies to give feedback and 52% do not utilise interactive tools for self- and peer-assessment. In planning online teaching, the scores revealed that 38% of the respondents completely or somewhat disagreed using collaborative digital tools or interactive teaching materials (46%). Furthermore, 48% of them do not co-operate actively with companies specific to their professional fields. When asking VET teachers about building interaction and teamwork, it was found that 32% do not use varied methods to create feelings of participation or team building (42%) in digital environments. Statistics also revealed that a sizeable number of VET teachers do not engage students (35%) or colleagues (44%) in digital learning material production. See Appendix 2 (p.16- 18) for detailed statistics.

5.3. Competences for sharing and updating digi-pedagogy

The third cluster included three groups of questions covering the areas of 1. developing and sharing my own digital competences; 2. using and developing activating teaching methods, and 3. gamification as an activating teaching method in online learning.

When evaluating one's own developing and sharing skills the scores were high. In five out of six statements assessed 65% or more of the respondents completely or somewhat agreed with them. Only one statement differed as 54% of VET teachers indicated not knowing or using national or international teacher networks to maintain their digital competences. Looking at the answers in using and developing activating teaching methods, the scores revealed that 52% of VET teachers did not know or were unaware of different types of activating teaching methods and their varied use in online environments. Likewise, for the majority of the respondents (61%) using gamification in online teaching was not a familiar method. See Appendix 3 (p. 19- 20) for detailed statistics.

Question 14 focused on discovering VET teachers' confidence in using the selection of digital tools shown in Figure 2. The results revealed that listed tools that would enable collaboration and interaction, such as, Zoom and its breakout rooms, and online whiteboards e.g., Miro, Jamboard and Flinga, were not known or rarely used by the teachers. Figure 2 also shows that the same participants would like to know more about using breakout rooms, the above-mentioned online boards and a video tool called Panopto.

When asked in question 15 to assess their own current competence as an online teacher (How would you assess your current competences as an online/hybrid teacher?), the distribution was almost even. Half of the respondents reported having very good or fairly good competences for online teaching and 47% of them claimed to have very poor, fairly poor or neither good nor bad competences. There were no other statistically significant differences between gender, age or experience in teaching, only two or more years' experience in online or hybrid teaching seems to increase the teachers' confidence and competences on this. See Appendix 4 (p. 21) for further details.



Confidence in using different tools

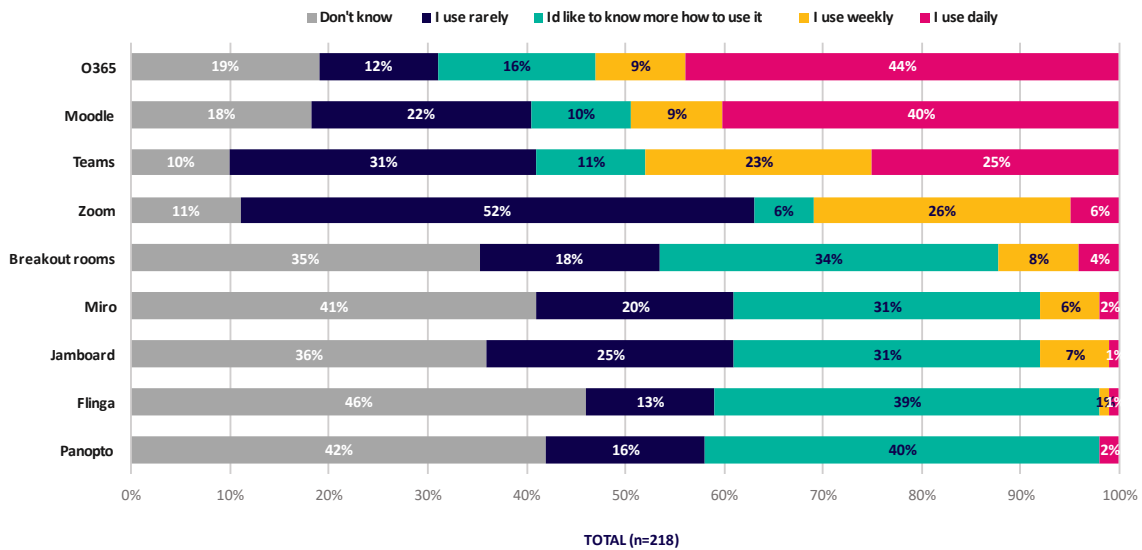


Figure 2: Confidence in using some digital tools

6. Results of the qualitative questions

The answers to the three open-ended questions (Q16. How would you like to develop your competences as a digital teacher? Q.17. What would you need from your educational institution to develop your digital competences? Q.18. What else would you like to share?) were translated into English by the local partners and then analysed qualitatively using an inductive content analysis (Tuomi & Sarajärvi, 2018) and the ATLAS.ti programme. The open-ended answers were categorized according to DigCompEdu’s six areas of digital competence for educators: professional engagement, digital resources, teaching and learning, assessment, empowering learners and facilitating learners' digital competence.

When asking VET teachers about *how they would like to develop their competences as a digital teacher*, the majority reported wanting to learn more about how to use different digital resources in a pedagogically appropriate way. The largest number of responses were classified under the area of professional development and in the category of professional development (CPD), indicating participants’ willingness to develop their digital skills many ways.

“Make more use of programs like Nearpod that support our online education”. “I would like to know tools to make the virtual classes more interactive as well as to be able to make videos of the subjects I teach”.

Notions such as how to engage learners, increase participation, build successful and varied learning processes in digital learning environments were common. Many wanted to gain more confidence in teaching their subjects using appropriate digital tools in hybrid or online contexts.



The situational analysis of the participants' competences on implementation of blended and online teaching in four partner countries, indicated that although the overall view is positive, some areas for upskilling are needed to meet the needs posed by the technologically rich education environments.

Based on the analysis of the survey, four main concluding aspects and recommendations for the next steps are emphasised. Firstly, **all VET teachers** regardless of their age, gender, experiences in teaching or the field of expertise, **are capable of and motivated to improve** and further **develop their digi-pedagogical skills**. The factor analysis of the participants' background data did not find any statistically meaningful variations, thus, **every VET teacher wanting to improve their skills should be given opportunities to do so and offered places and possibilities to practice online teaching**. This could be achieved, for example, by working with a more experienced colleague or with a designated mentor.

Secondly, ways and methods to improve interaction, collaboration and networking with students and other stakeholders in digital environments would be required. There are various digital tools that could be used to tackle this technically, however, more importantly, VET teachers need to **rethink their pedagogies, focus on student-centred learning, and support collaborative knowledge building**. When the pedagogical decisions are made, digital tools to support them can be found. One solution for this could be discussions with an e-learning designer or exchange ideas with other colleagues who teach in same professional field.

Thirdly, **initiatives to cooperate with colleagues, students and industry representatives when creating learning materials and designing digital learning environments are recommended**. This would require analysing and selecting appropriate digital tools for the chosen pedagogical ideologies and practices as well as **identifying ways for assessment and feedback** to support learning.

Lastly, it is essential that **VET teachers are aware of and follow the necessary guidelines issued by both European and national level authorities related to teaching in digital environments**. One of the commonly known and accepted phenomena is that the field of VET education is constantly changing and evolving, thus, VET teachers need to be equipped with accurate guidelines related to teaching in digital environments. For example, rules and regulations in terms of data security concerning individuals (i.e., students, teachers, staff members) as well as organisations (e.g., cyber security) should be reviewed and updated regularly.

As a concluding remark, although this situational analysis offered only one viewpoint to VET teachers' digi-pedagogical competences in contemporary, information-rich contexts, it still highlighted that supporting VET teachers' confidence and competence building in digital-pedagogies, will offer one way to maintain high-quality VET education and increase the profession's attractiveness.



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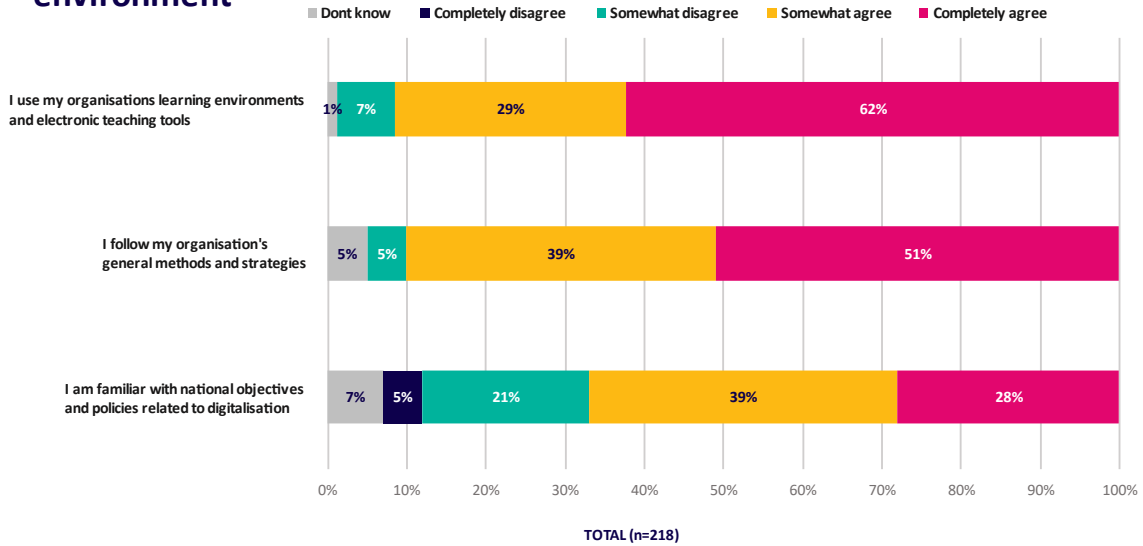
Tuomi, J. and Sarajärvi, A. (2018). *Laadullinen tutkimus ja sisällönanalyysi*. [Qualitative research and content analysis]. Helsinki: Tammi.



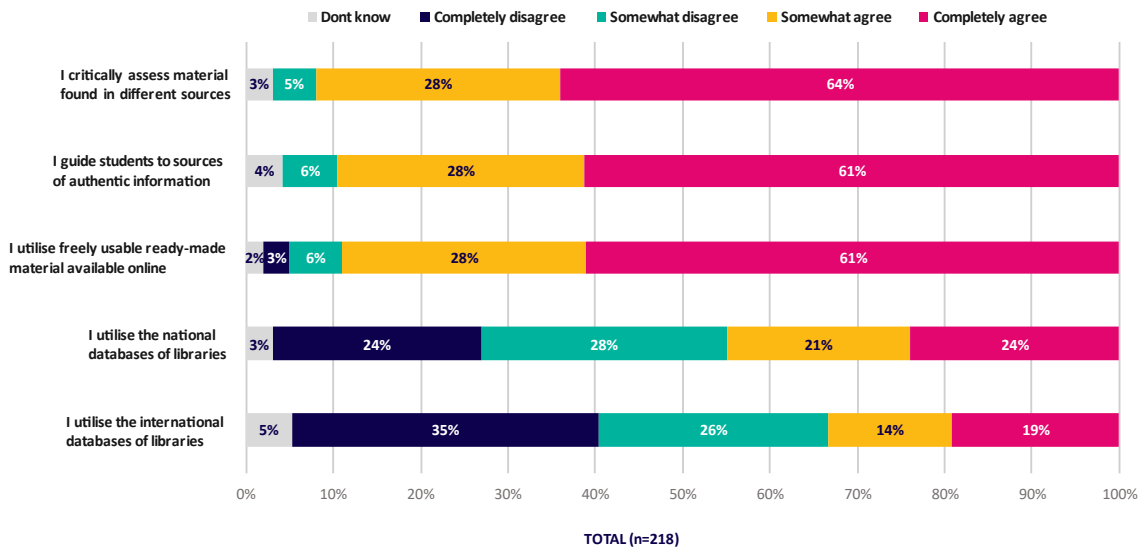
Appendices

Appendix 1: Detailed statistics of the cluster one

1. Knowledge of the organization's technological learning environment

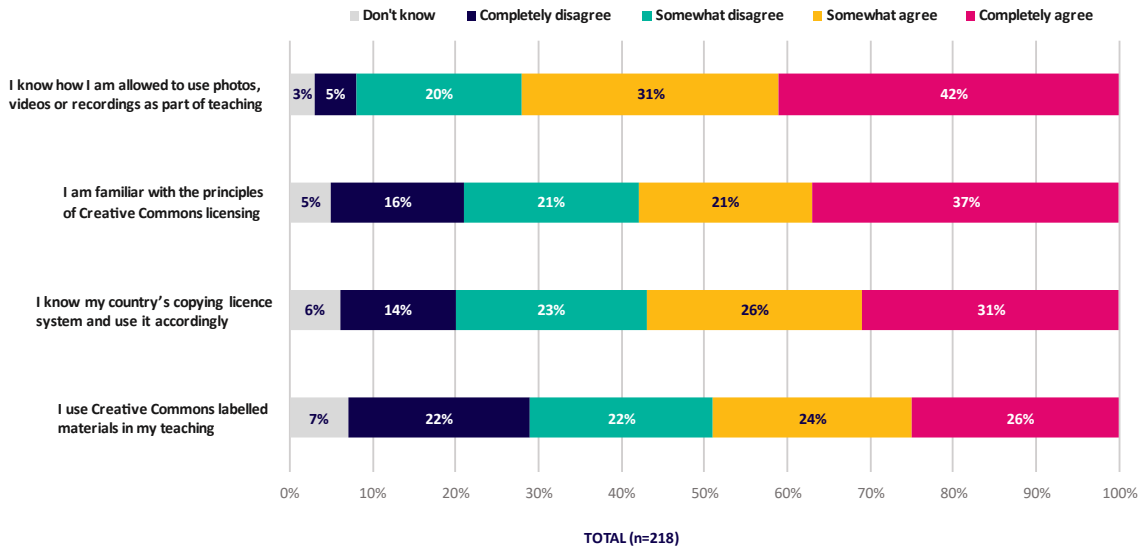


2. Searching for and utilising digital materials

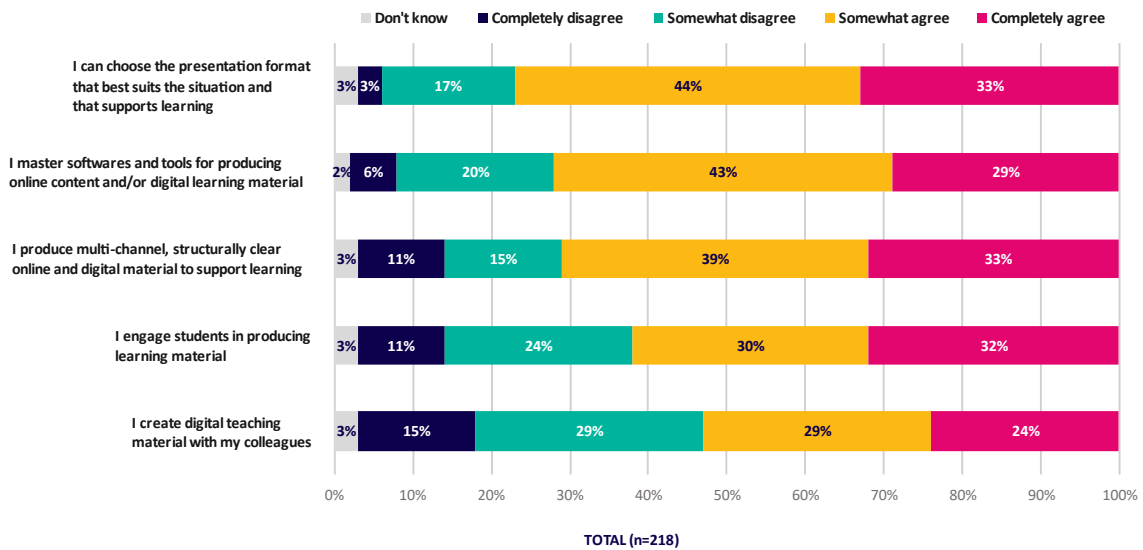




3. Copyright competence

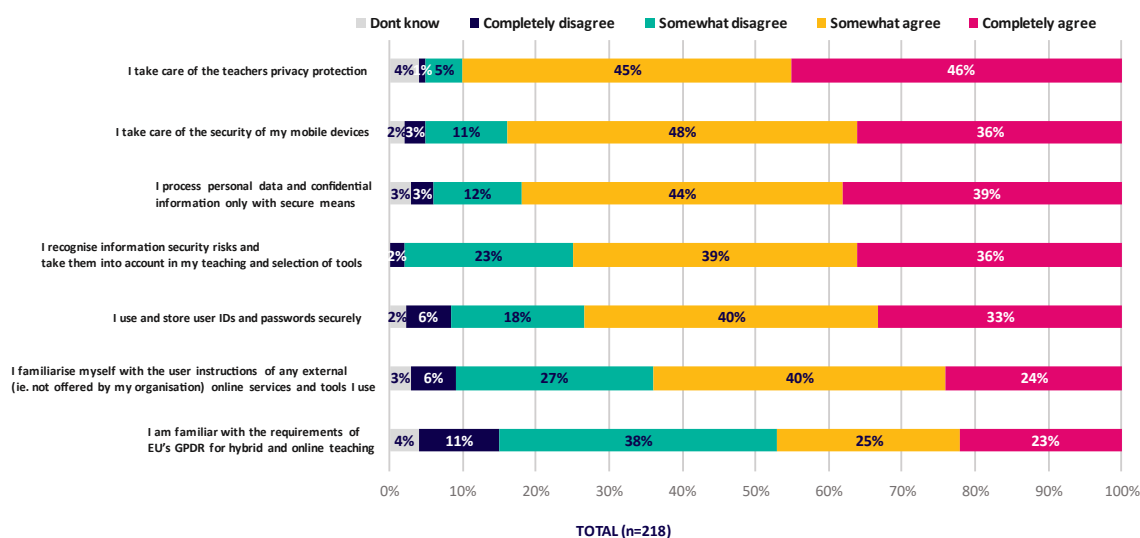


4. Web Content Production





10. Information security and data protection

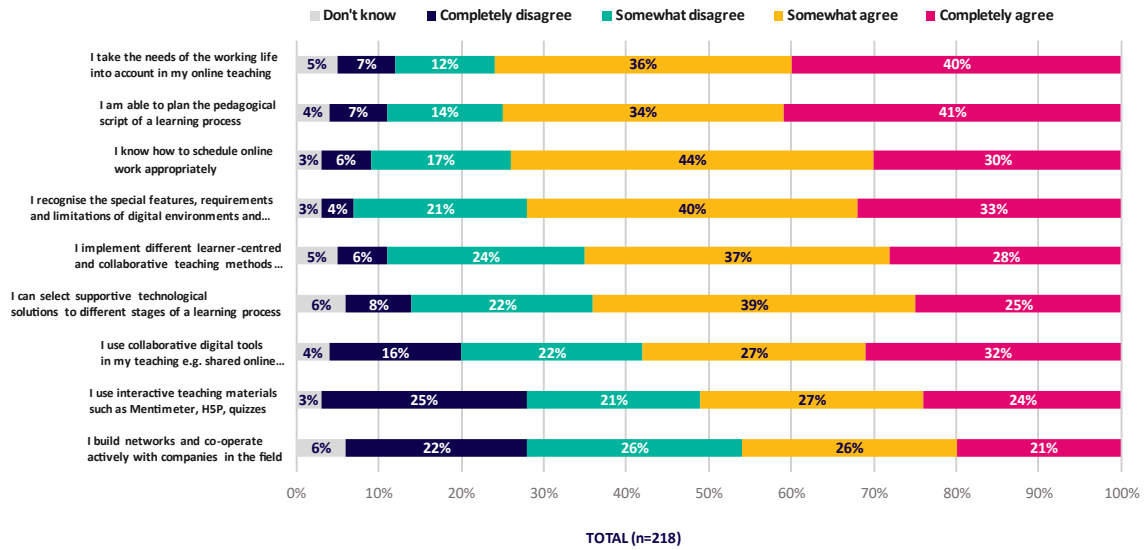


Appendix 2: Detailed statistics of the cluster two

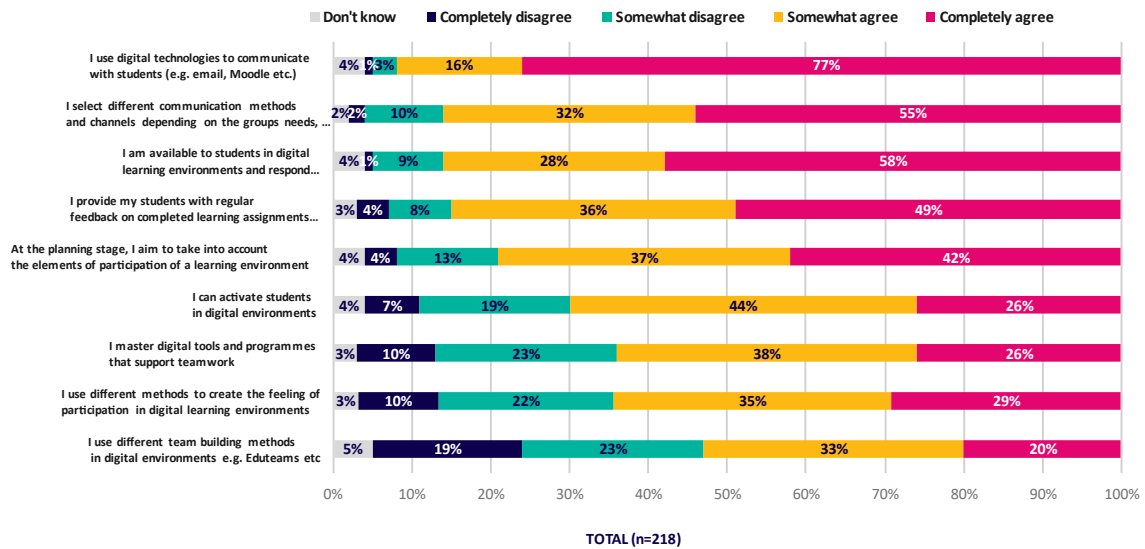




5. Planning online teaching

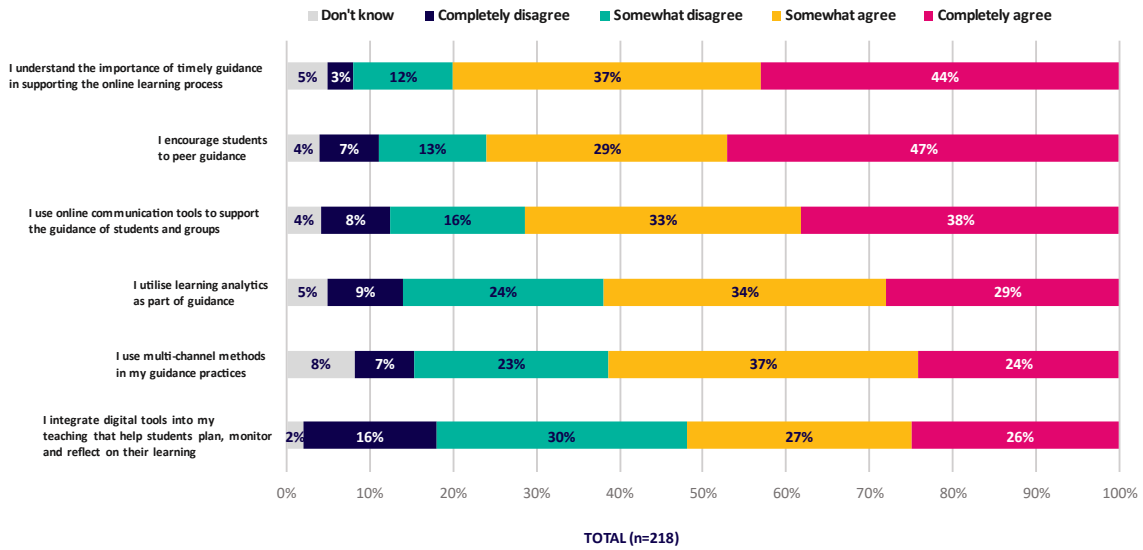


6. Building interaction and teamwork

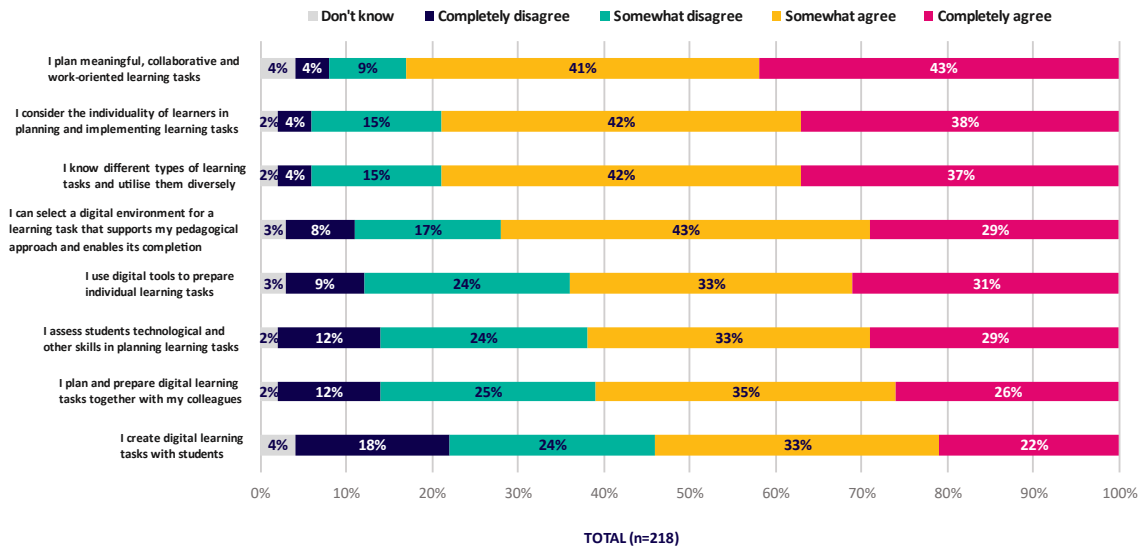




7. Guidance in hybrid and online learning environments

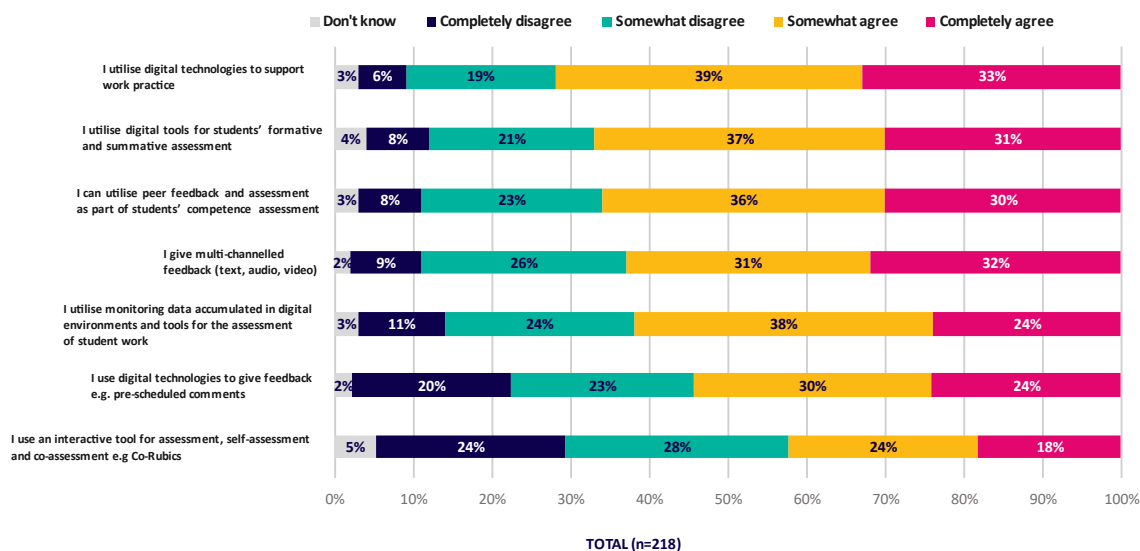


8. Learning tasks





9. Feedback and assessment

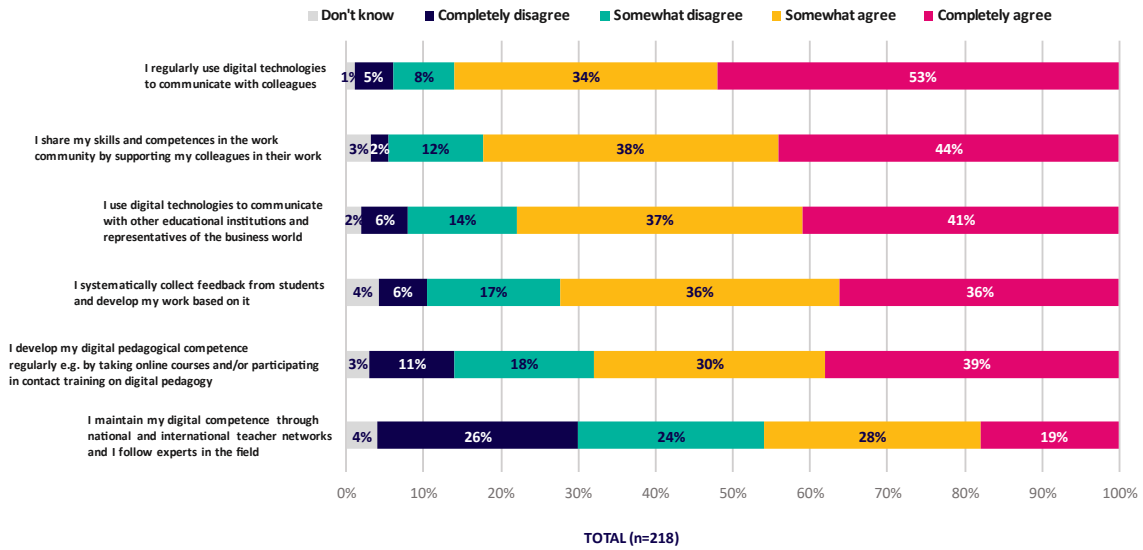


Appendix 3: Detailed statistics of the cluster three

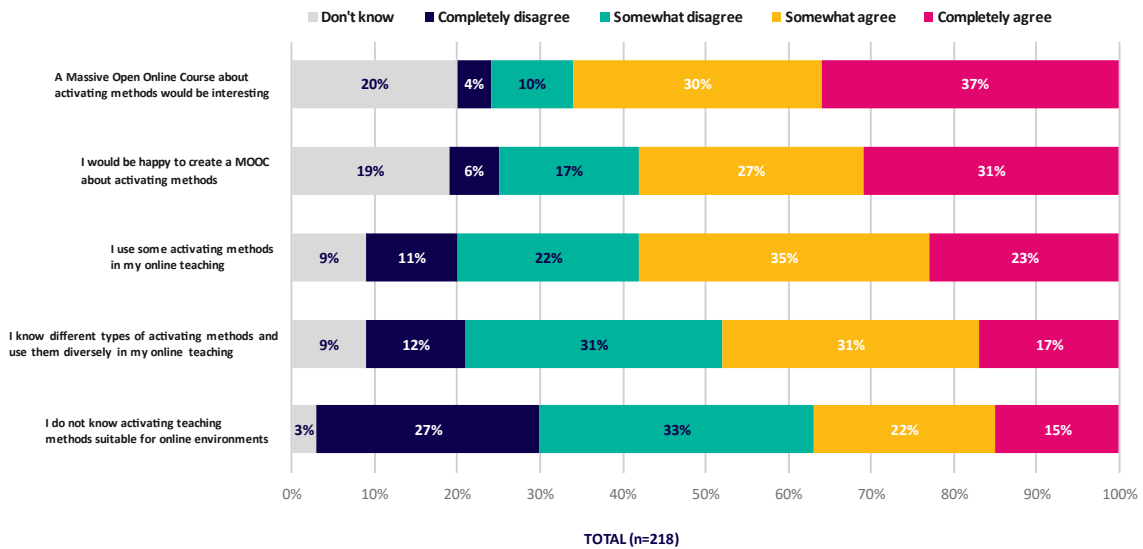




11. Developing and sharing my own digital competence

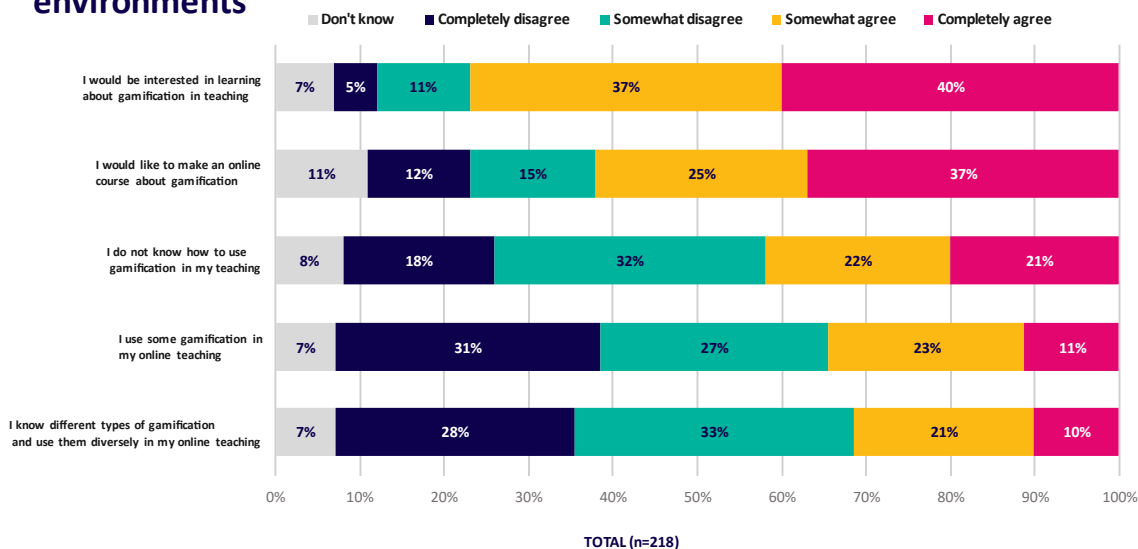


12. Using and developing activating teaching methods



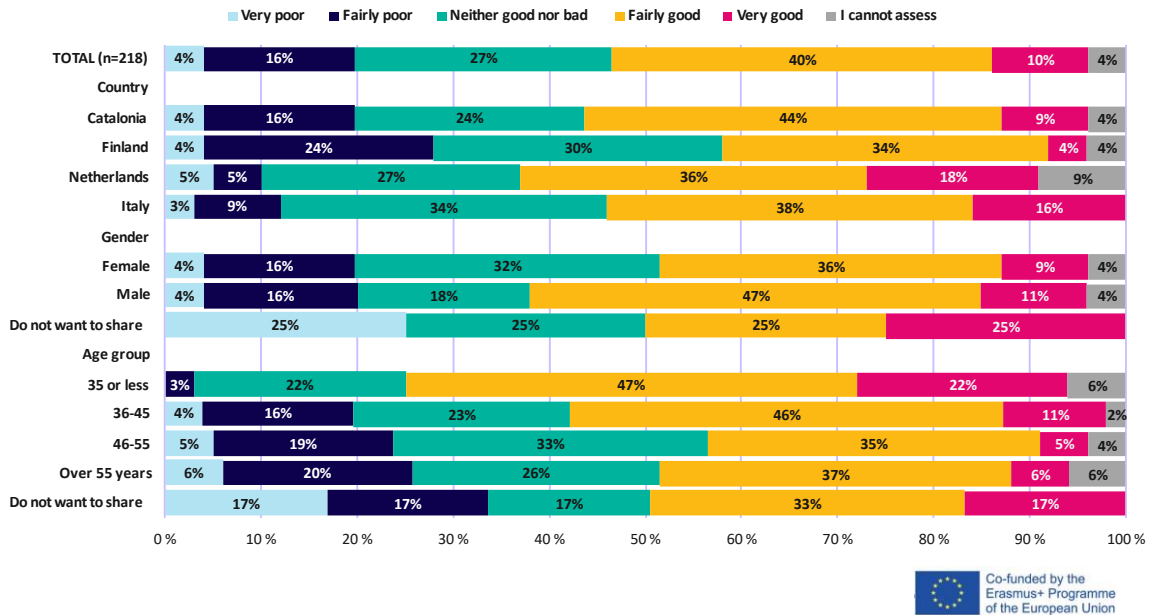


13. Gamification as an activating teaching method in online learning environments





Assessment of current competence as an online/hybrid teacher (1/2)



Assessment of current competence as an online/hybrid teacher (2/2)

