Individual method

Measuring Teachers' Digital Competence

Madona Mikeladze, Tatia Nakashidze, Nana Makaradze, Nino Nakashidze, Mikheil Donadze, Tamar Siradze & Guladi Phartenadze, Batumi Shota Rustaveli State University

March 2023

1. Aims

The aim of the method is to measure teachers' digital competence. In particular, to determine what knowledge teachers have in terms of innovative technologies, how they use modern technologies in teaching, what difficulties they face in the teaching process, and what kind of support they need in order to increase their digital competences. The method is suitable to be used in phases *4. Mapping development needs* and *7. Reflection* of the school mentoring process. If self-evaluation is made in both phases of the process, it provides a possibility to make pre-post comparisons of the change.

2. Description

In the method, the SELFIEforTEACHERS tool is used to measure teachers' digital competence and whole school digital practices.

SELFIEforTEAHCERS (https://education.ec.europa.eu/selfie-for-teachers) is a survey tool provided for teachers by the European Commission. It is free of charge for every school. It is meant for teachers to review and get feedback on how they are currently using digital tools and technologies in their work.

This project has received funding from the European Union's Horizon 2020 research and innovation programme
Grant Agreement: 101004676

The SELFIEforTEACHERS survey includes the following main areas and items (questions) under them:

- *Area 1 - Professional Engagement*. Using digital technologies for communication, collaboration and professional development.
- *Area 2 - Digital resources.* Sourcing, creating and sharing digital resources.
- *Area 3- Teaching and learning.* Managing and orchestrating the use of digital technologies in teaching and learning.
- *Area 4 – Assessment.* Using digital technologies and strategies to enhance assessment.
- *Area 5 – Empowering learners.* Using digital technologies to enhance inclusion, personalisation and learners' active engagement.
- *Area 6 - Facilitating learners' digital competence*. Enabling learners to creatively and responsibly use digital technologies for information, communication, content creation, wellbeing and problem-solving.

According to the description given in the European Framework for the Digital Competence of Educators (DigCompEdu), the core of the DigCompEdu framework is defined by Areas 2-5. Together these areas explain educators' digital pedagogic competence, i.e. the digital competences educators need to foster efficient, inclusive and innovative teaching and learning strategies. Areas 2, 3 and 4 are anchored in the stages characteristic of any teaching process, whether supported by technologies or not. The competences listed in these areas detail how to make efficient and innovative use of digital technologies when planning (Area 2), implementing (Area 3) and assessing (Area 4) teaching and learning. Area 5 acknowledges the potential of digital technologies for learner-centred teaching and learning strategies. This area is transversal to Areas 2, 3 and 4 in the sense that it contains a set of guiding principles relevant for and complementary to the competences specified in these areas.[1]

[1] Redecker, C. (Editor Punie, Y.) (2017). European Framework for the Digital Competence of Educators: DigCompEdu. Luxembourg: Publications Office of the European Union. https://publications.jrc.ec.europa.eu/repository/handle/JRC107466

This project has received funding from the European Union's Horizon 2020 research and innovation programme
Grant Agreement: 101004676

3. Context

In our case, five Public Schools were selected to participate. The school levels were primary, elementary, and secondary. The schools were selected according to the following criteria: experience, size, geographical area, infrastructure and teacher achievements, etc. A total of 49 teachers participated in the survey. According to preliminary data (various surveys conducted throughout the country), it was certain that a large number of teachers faced certain difficulties in using digital technologies in the teaching process. By interviewing school principals and teachers themselves, it became clear that their desire and motivation to increase their competence was great.

4. Requirements for implementing and resources needed

The method can be used twice, at the beginnng of the process and at the end to measure the achieved progress; that can be done in three ways:

a) Teachers fill out the questionnaire independently. In this case, the teacher needs a computer and the Internet and access to the questionnaire;

b) Teachers are assisted by mentors when filling out the questionnaire in a face-to-face meeting format. In this case, an audience should be equipped with computers and Internet access, and the translation of the questionnaire into the participants' langauge is needed if not available in the tool;

c) Teachers are helped by mentors when filling out the questionnaire in an online session. In this case, the teacher needs a computer and the Internet, and the translation of the questionnaire into the participants' langauge is needed if not available in the tool.

This project has received funding from the European Union's Horizon 2020 research and innovation programme
Grant Agreement: 101004676

5. Structure

The process in our case included the following phases:

A. School selection

A meeting was held with the representative of the region in order to get acquainted with the goals and objectives of the project, as well as to clarify the details of cooperation within the project. We as mentors requested to select five schools based on geographic location (city school, rural school), number of students, and teachers' achievements. Five schools that were selected by these criteria were presented by the representative of the region.

B. Teacher selection

Meetings were held between the mentors and the principals of the five selected schools and heads of educational resource centres:

- The school principals were introduced to the goals and objectives of the project by the mentoring team.
- An agreement was reached with the principals of the schools on cooperation within the project.
- The mentoring team conducted an interview with the principals in order to determine the needs of the school and teachers in terms of implementation and development of digital innovations.
- School principals were asked to select teachers from all levels and from different subjects (target group).
- With the help of school principals, 49 teachers of different subjects of elementary, basic and secondary schools were selected.

C. Introducing the purpose

- A meeting was held with the teachers of the five selected schools. The mentoring team introduced the project goals, tasks, objectives of the research to be conducted, and research tools and methods.
- Due to the fact that the SELFIEforTEACHERS tool was in English, language competences were identified with the teacher at the meeting.

This project has received funding from the European Union's Horizon 2020 research and innovation programme
Grant Agreement: 101004676

D. Preparation for the self-assessment

- The mentoring team developed a strategy for conducting a survey of teachers' needs through SELFIEforTEACHERS, which included individual meetings with teachers (both face-to-face and online), familiarization with the principles of SELFIEforTEACHERS, and translation of questions from English.
- The mentoring team pre-tested the SELFIEforTEACHERS questionnaire with two participants. A purpose of this was to measure approximately how much time each teacher would need to complete the questionnaire, and to clarify the essence of all questions in order to avoid unexpected difficulties during the survey.

E. Conducting the self-assessment - using SELFIEforTEACHERS to measure teachers digital competence and identify their needs.

Answering to the survey was carried out according to the planned strategy:

- Teachers were allocated mentors from the mentoring team;
- Some of the teachers filled out the questionnaire independently, and some of them filled out the questionnaire with the help of mentors. Support refers to technical support only. No mentor intervened in the content part.

F. Analyzing data

After completing the survey, the mentoring team analyzed the results. After completing the questionnaire, the report was sent to each teacher by the tool. Teachers shared the reports with the mentors.

6. Actions after implementing the method

Face-to-face meeting was conducted with the participating teachers and the results of the survey were introduced. A short group interview was conducted to get the feedback on the self-assessment tool. The need for further steps were identified and trainings were planned according to the teachers' needs.

This project has received funding from the European Union's Horizon 2020 research and innovation programme
Grant Agreement: 101004676

A. Trainings and workshops

- A workshops based on the data and the feedback received from the teachers.
- Training N1 given by an expert in the field of education and digitalization on using digital tools in teaching.
- Training N2: one school teacher shared experiences of using the Padlet platform in teaching.
- Training N3: The second school teacher shares her experiences.
- Training N4: The expert conducted training on innovative methods and tools used in the teaching/learning process.

B. After the interventions (in the form of trainings) was implemented in schools, a survey was again conducted through SELFIEforTEACHERS to find out at what extent the teachers enhanced their competence.

7. Recommendations

The iterative process was much easier because the teachers were already familiar with the specifics of SELFIEforTEACHERS and did not need any technical help. They were also much more motivated and self-critical because they realized that the evaluation focused on their (teachers') development and not only on the evaluation of their competencies.

The experiences of this method showed that:

a) In contrast to the first stage of using SELFIEforTEACHERS, the digital competencies of the teachers involved increased;

b) The SELFIEforTEACHERS survey proved to be relevant for measuring teachers' competencies and identifying needs;

c) The participation of the teachers in the trainings after using SELFIEforTEACHERS for the first time was active, because the topics of the trainings were specifically planned according to their needs, as a result of their own self-evaluation;

d) Confidence in the SELFIEforTEACHERS method was high on the part of teachers, because the questionnaire is individual and all respondents have the opportunity to independently assess their competence.

This project has received funding from the European Union's Horizon 2020 research and innovation programme
Grant Agreement: 101004676

e) Schools gained experience in using the SELFIEforTEACHERS method, which will allow them to conduct similar research at other times and with other teachers.

Conclusions from using the method:

a) Self-assessment as part of the school development process - why and how, focus on school autonomy
b) Data not available for third parties
c) Variety of tools available

Moreover, the important circumstance that the teachers are more motivated and ready for development, when they have the opportunity to evaluate their own competence and to identify their own needs, has been clearly identified.

The SELFIEforTEACHERS method gives the school more independence. When the school/teacher has a label from the outset of low capacity, and when they are directed to what trainings to take to raise their competence, the human and financial resources spent for such professional development of teachers are not futile.

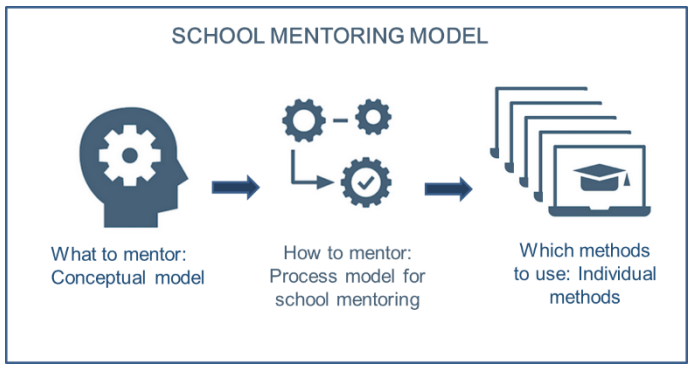
The SELFIEforTEACHERS method is easy to use and as an evaluation instrument it can be used by all schools, with all teachers and at different stages for different purposes.

This project has received funding from the European Union's Horizon 2020 research and innovation programme
Grant Agreement: 101004676

This material is part of the School mentoring model

The aim of the model is to foster the adoption of digital innovation at school level.

The focus is on teachers' understanding of digital technology and practices to implement technology in a pedagogically meaningful way.



The model promotes teachers' professional learning with peers and school management to create the culture and practices for evidence-informed implementation of digital innovation.

The model is created in the iHub4Schools project (2021-2023).

Tallinn University

University of Helsinki

Vilnius University

University of Bergen

STePS

University College London

École polytechnique fédérale de Lausanne

Estonian Education and Youth Board

Batumi Shota Rustaveli State University

This project has received funding from the European Union's Horizon 2020 research and innovation programme
Grant Agreement: 101004676

https://www.facebook.com/ihub4schools

https://www.ihub4schools.eu/