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IO4: Practices, training and skills needs of the digital teachers

National Research: Finland

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NATIONAL REPORT "PRACTICES, TRAINING AND SKILLS NEEDS OF THE DIGITAL TEACHERS"

Forward

According the Decode project plan The Practices, Training and Skills needs of the Digital teachers- questionnaire was sent to Finnish teachers in February and March 2018. Questionnaire was made together with other partners during autumn 2017 and translated to Finnish language. All collected answers were in Finnish language. Teachers around the Finland are interested about digital methods in teaching. This fact was highlighted according the answers in questionnaire organized by DECODE project. DECODE online survey was sent twice by e-mail for recipients. E-mail addresses was search from education providers websites. Surveys were sent equally to all education levels: in field of early childhood education, primary school education, secondary school education and VET and provinces around Finland: Southern Finland, Western Finland, Eastern Finland, Oulu, Lapland and Åland.

Questionnaire was sent to 474 organizations and for three months there was collected 332 answers. The response percentage was around 5% if it´s assumed that every organization is employer for 15 teachers. Most actively answered teachers from western part of Finland on VET and early childhood level. Also, Lapland province was very well represented compared to its number of inhabitants. There is total 3395 educational organizations (31.12.2016) in Finland (https://www.stat.fi/til/kjarj/2016/kjarj_2016_2017-02-14_tie_001_fi.html), comparing this number our results are only for guidance.

Introduction

The first chapter describe the sample involved in the survey and the sample distribution by age, gender, order of school, teaching matter, institutional role, etc. The second chapter is devoted to the presentation of research results through reconstruction of the practices that have been identified.

The third chapter focuses on updating teachers and their training needs. We therefore dwell on 1) the updated experiences of teachers; 2) the self-assessment of digital skills according to DigCompEdu Framework 2017 and 3) the representation of the "digital teacher" in the national context as emerges from the portrait depicted in relation to needs expressed in relation to digital technologies in professional and didactic practice. The fourth chapter illustrates teachers' personal views regarding using digital technologies (beliefs and motivations). The conclusions give an overview of the whole research.

1. Sample description

Most of the teachers worked in high school or vocational school and in kindergarten. Some of the respondents worked in elementary school or in upper level school.
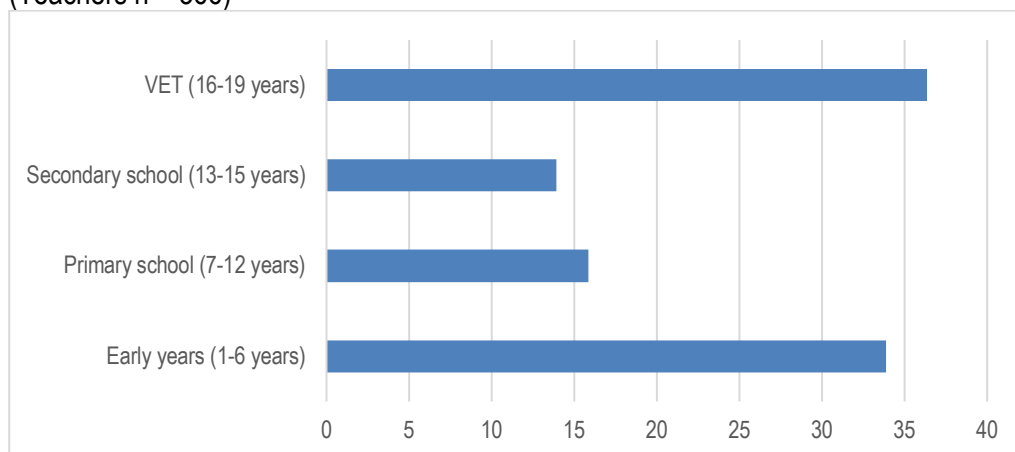
School type
(Teachers n = 366)

Chart 1 – School type (%)

Respondents from Western Finland province, Southern Finland province and Lapland province distributed to the survey with the biggest numbers. Other respondents were from Province of Oulu, Eastern Finland province and Åland province.
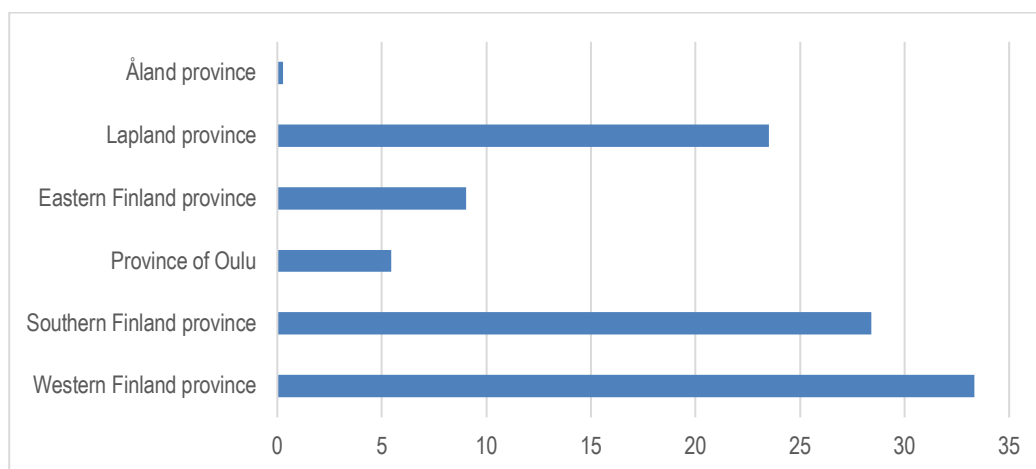
Region
(Teachers n = 366)

Chart 2 – Region (%)

Many of the respondents represented age range from 51 to 60 and from 41 to 50. Other respondents represented age range from 31-40, from 25 to 30. Least represented were age ranges over 60 years and under 25 years.
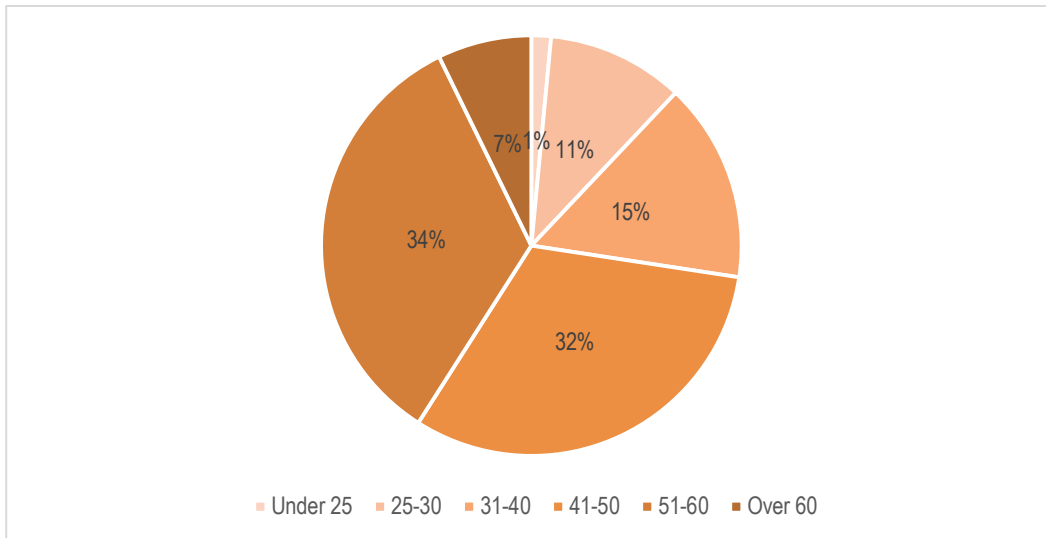
Age range
(Teachers n = 366)

Chart 3 – Age range (%)

Majority of respondents were women and minority were men.
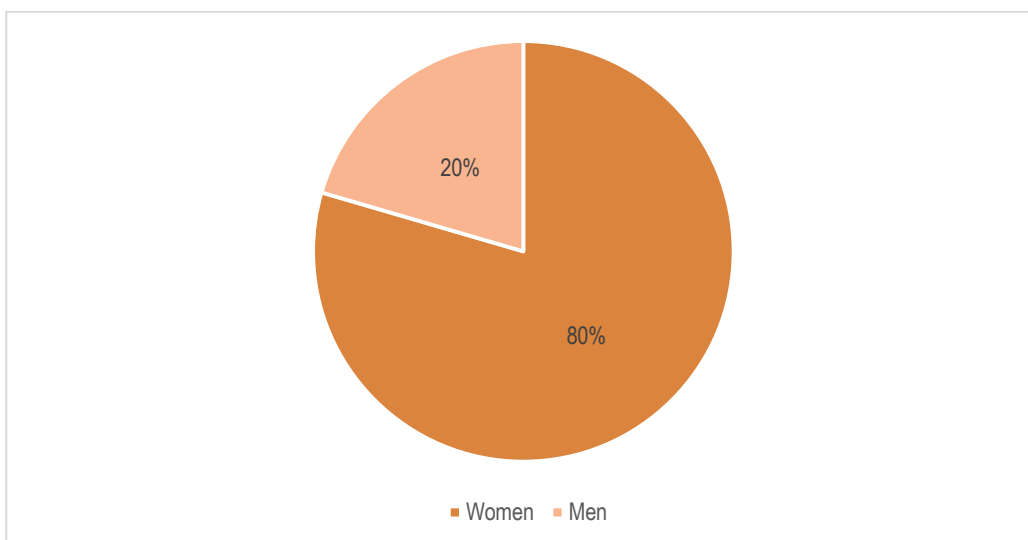
Gender
(Teachers n = 332)

Chart 4 – Gender (%)

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Respondents teaching areas covered over the last three years were quite divided. Almost half of the respondents has taught Numeracy and Literacy. Around third of the respondents has taught Arts, Sciences, Physical education, Music or ICT. Other teaching areas and represented less than quarter were Religious education, History, Modern Foreign languages, Special education needs, Learning approaches, Social sciences, Personal Social and Health Education and Ethics and Democratic Citizenship.

35,85% of respondents informed that they have taught some other subject not mentioned in survey. Most of the respondents informed their some other subject was Early childhood education, Pre-school education or Occupational subjects: Nursing, Educational sciences, Rehabilitation, First aid, Mental health and Intoxicant work, Behavioral sciences, Nutrition, Household services, Leadership, Business, Construction branch, Entrepreneurship, Financial management, Accounting, Meeting and council skills, Legislation, Marketing, product information and salesmanship, Media industry, Logistics, Electronics, Vehicle technology, Property maintenance, Graphic design, Clothing business, Shoe manufacturing, Wood technology, Travel business, and Catering. Other informed subjects were Handicraft, Domestic science, Emotional and social skills, Expression skills, Study counselling and Technical work.

Which subject area have you taught over the past three years?
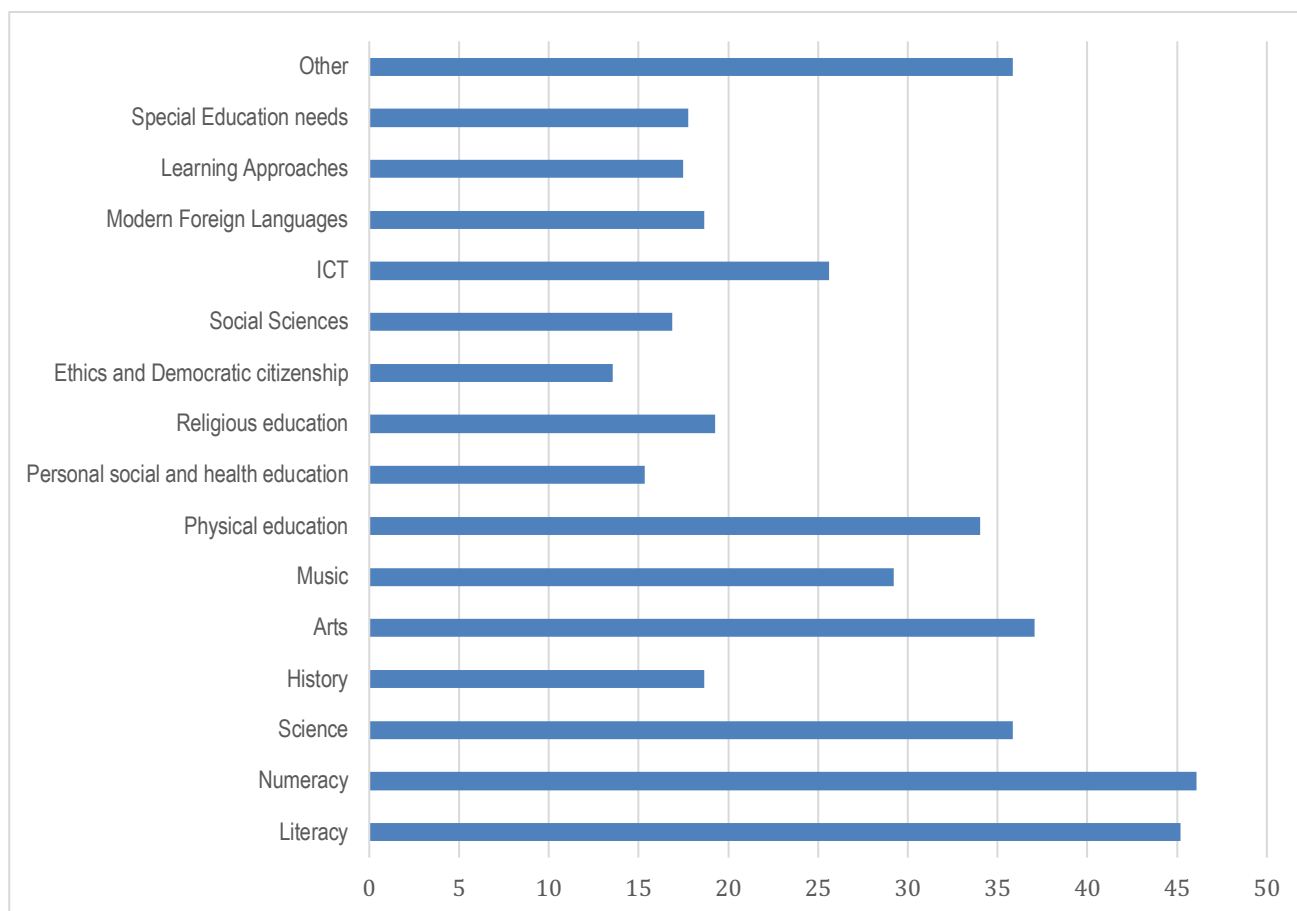(Teachers n = 332)

Chart 5 – Diciplines (%)

Majority of the respondents were in vacant employee and in time-limited employee were minority of respondents.

What is your current employment status at the school?
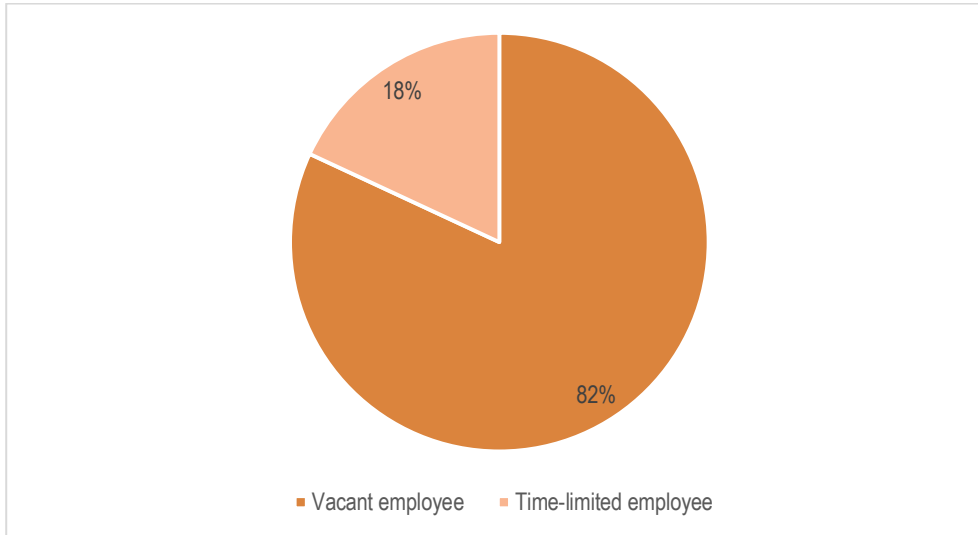(Teachers n = 332)

Chart 6 – Type of contract (%)

Almost all of the respondents have been in teaching role in last three years. Around fifth of respondents have been in leadership role and minority of respondents in administrative role.

Describe the roles which you have undertaken within the school over the past three years?
(Teachers n = 332)
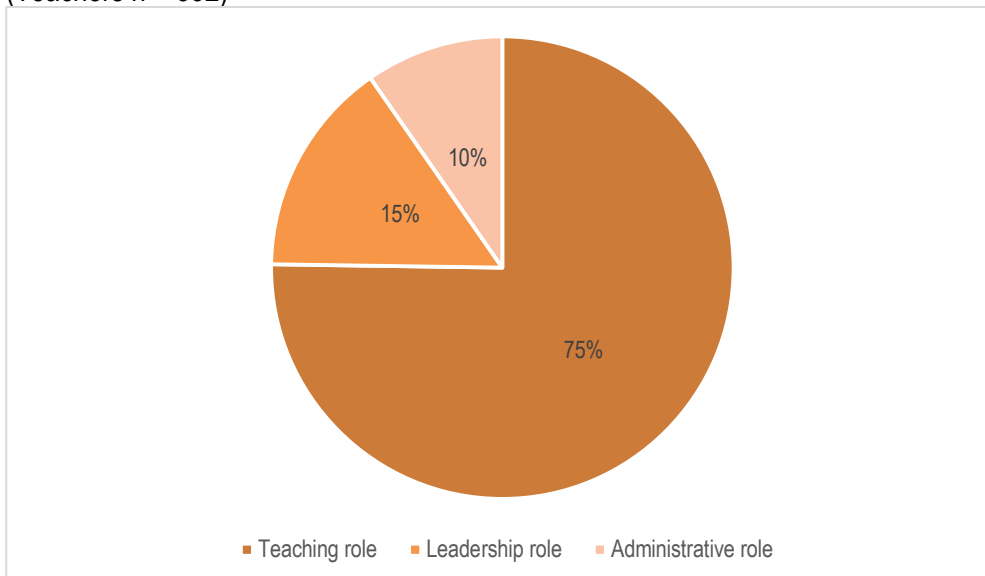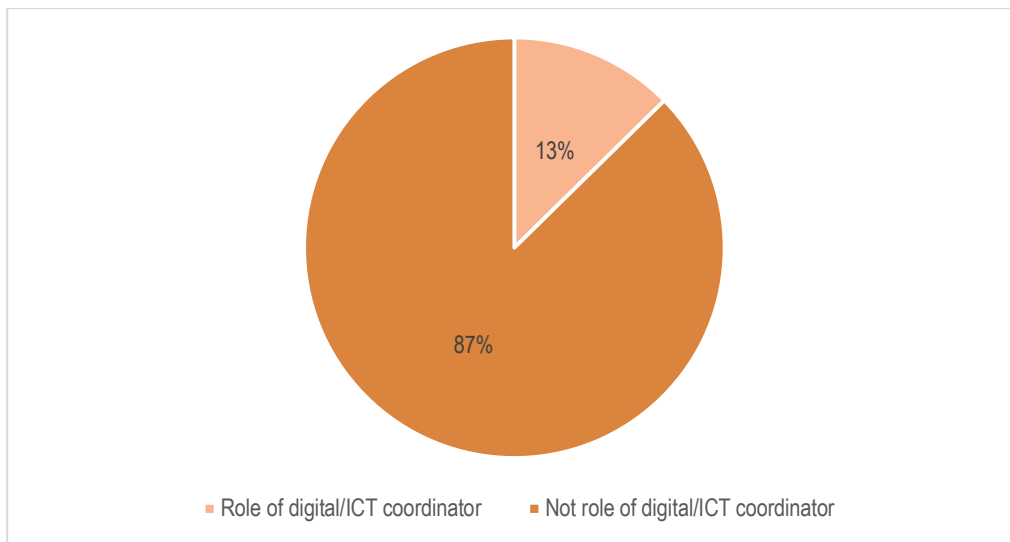

Chart 7 – Teaching role (%)

Most of the respondents weren´t in role of ICT/digital coordinator in their school and minority of respondents informed that they are.

Are you currently a designated ICT/Digital Coordinator at your school?

(Teachers n = 332)

13%

87%

- Role of digital/ICT coordinator   - Not role of digital/ICT coordinator

Chart 8 – Digital coordinator role (%)

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2. Teachers' personal views regarding using digital technologies

Overall respondents saw that digital teaching tools are useful in teaching. They mainly agreed or strongly agreed for presented statements. Exception was to statement "Digital technology don´t improve teaching processes, learning, etc." when respondents mostly disagreed, which also supported teachers views for benefits of digital teaching tools.

Please indicate how strongly you agree or disagree with the following list of statements?
(Teachers n = 189)

Table. 1. Benefits of digital teaching tools					
	Strongly disagree	Disagree	Agree	Strongly agree	a.v.
The use of digital technologies helps when designing and organising educational materials	0,53%	5,82%	63,49%	30,16%	189
The use of digital technologies promotes the development of basic skills (reading, writing, comprehension)	4,23%	25,93%	57,14%	12,70%	189
The use of digital technologies promotes the development of responsible media and digital skills	1,06%	11,11%	66,67%	21,16%	189
The use of digital technologies creates positive learning outcomes by influencing how learners behave	3,17%	23,28%	64,55%	8,99%	189
The use of digital technologies should not replace traditional teaching methods	1,06%	7,41%	53,44%	38,10%	189
The use of digital technologies encourages self - assessment among students	3,70%	38,10%	50,79%	7,41%	189
The use of digital technologies increases the level of cyberbullying	4,76%	43,39%	43,92%	7,94%	189
The use of digital technologies is a distraction for students	9,52%	58,20%	29,10%	3,17%	189
Digital technologies do not improve education processes, learning, etc.	14,81%	58,73%	23,28%	3,17%	189
It is necessary to integrate e-learning into teaching activities, alongside traditional classroom-based teaching methods	1,06%	11,64%	65,61%	21,69%	189
Daily use of technology in the classroom is not enough, students need to learn how to use books	1,06%	18,52%	54,50%	25,93%	189

Majority of respondents reported they use all the presented digital instruments often or sometimes and never was reported by very few respondents. Little bit over a fifth of respondents answered they use digital instruments always for leisure.

How often do you use digital technologies for the following scenarios?
(Teachers n = 189)
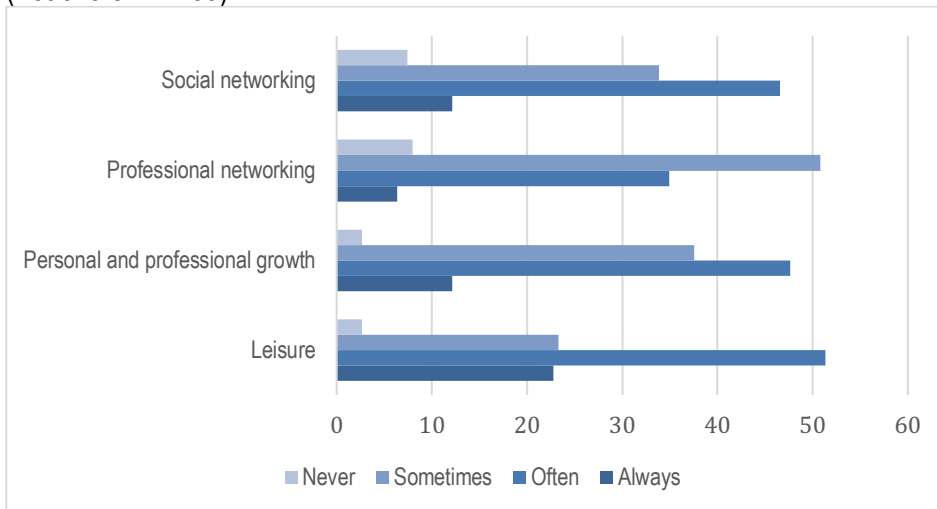
Chart 9 – Digital technologies use (%)

What comes to support of digital tools in teaching and learning respondents' answers were divided mostly between partially-average-useful sector and numbers around third and quarter of the answers. Exception was considering last statement "Link school activities with work experience placements" when answers were divided between not at all- partially-average.

To what extent do digital tools and technologies support the following?
(Teachers n = 255)

Table. 2. To what extent do digital tools and technologies support the following	Not at all	Partially	Average	Useful	Very useful	a.v.
Make students more autonomous	7,06%	28,63%	20,39%	36,47%	7,45%	255
Empower students in their own education	6,27%	27,84%	21,18%	36,47%	8,24%	255
Make the learning process more meaningful for the student	3,92%	17,25%	25,10%	39,61%	14,12%	255
Make the learning process more effective (students achieving higher results than expected)	10,59%	29,80%	34,51%	20,00%	5,10%	255
Make the learning process more efficient (achievements with less effort and/or lower costs)	12,94%	28,24%	28,63%	21,57%	8,63%	255
Integrate formal, non-formal and informal learning	7,84%	24,31%	32,55%	28,24%	7,06%	255
Involve other actors in the learning process	7,06%	19,22%	24,71%	39,22%	9,80%	255
Improve communication, collaboration and coordination between colleagues, students and institutions	10,59%	22,75%	22,75%	30,98%	12,94%	255
Improve teacher CDP	4,31%	18,82%	26,67%	35,69%	14,51%	255
Link school activities with work experience placements	27,45%	27,45%	22,35%	17,25%	5,49%	255

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3. Teaching practice in ICT

Use of digital tools and technologies

Respondents answered their frequency of use of digital resources in the classroom for teaching activities. Most of the respondents use defined resources at least sometimes except Resources for creating/editing audio/video content and graphics, Resources for creating blogs, websites etc and Coding - Computational thinking. For these questions most of the respondents described they use these resources never or sometimes.

How often do you use the following digital tools and technologies in your teaching activities?
(Teacher n = 255)

Table 3. Use of digital tools and technologies in teaching activities					
	Never	Sometimes	Often	Always	a.v.
Office and similar packages	12,16	20,78	35,69	31,37	255
Software for downloading audio/video files	16,47	48,24	30,20	5,10	255
Search tools	4,31	16,47	53,33	25,88	255
Resources for creating/editing audio/video content and graphics	43,53	40,39	13,33	2,75	255
Resources for creating blogs, websites etc	56,86	32,16	9,41	1,57	255
Digital environments for learning, sharing, communication and collaborating	9,02	33,33	39,22	18,43	255
Digital Educational Content and OER (Open Educational Resources)	20,78	49,41	23,14	6,67	255
Multimedia programs relevant for your discipline	21,18	50,59	24,31	3,92	255
Coding - Computational thinking	62,35	27,84	7,45	2,35	255

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Over a half of the respondents answered they use collaborative learning, project base learning and problem based learning in their teaching practices. Little bit less than half of the respondents were aware of case based learning even minority of them use it for teaching method. Over a half of the respondents informed they are not even aware of active methodologies (such as flipped classroom).

Please indicate which of the following digital teaching methods you use/ are aware of?
(Teachers n = 255)
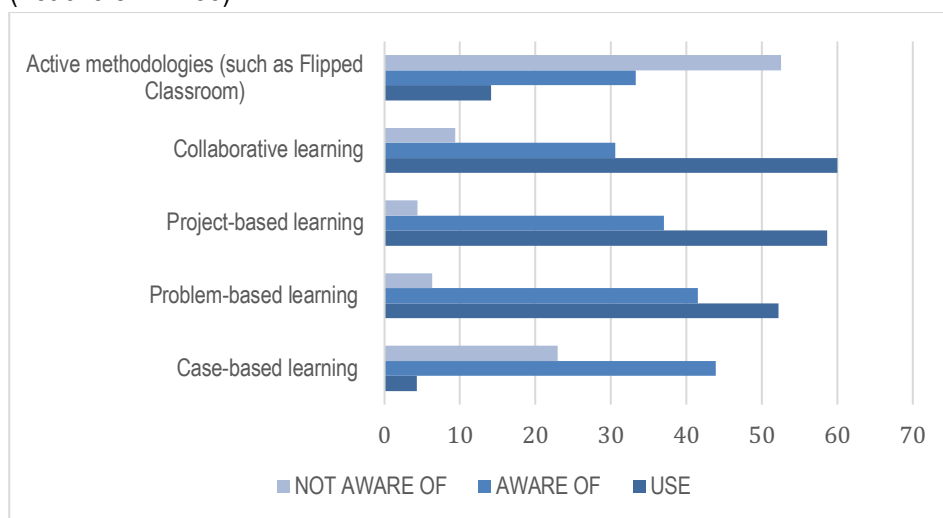
Chart 10– Digital teaching methods (%)

Respondents were asked to answer for which assessment methods they use digital technology. Over half of the respondents used digital technology for self and peer assessment. Some of the respondents used it for portfolios, for nothing or for conceptual maps. Minority used digital technology for other assessment purposes and rubrics. Respondents described other assessment purposes what they use are assessment of skills demonstrations, exams, essays and reports, tests and spot checks with Google forms and Abitti platforms, all assessment work during and after a course, documenting assessment, evaluating and observing children learning, Bee-bot and Scratch Jr for programming assessment and early childhood education plan.

Please indicate which assessment methods you use digital technologies for?
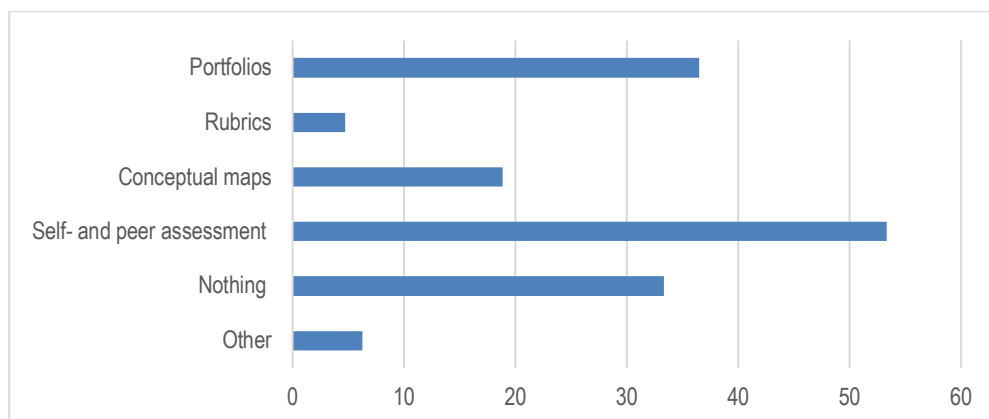(Teachers n = 255)

Chart 11 – Assessment methods for digital use (%)

Respondents answered frequency of their activities as part of teaching. Answers divided very much but focusing on line never-sometimes-often factor. Regular contact with students and online student assessment was carried out the most often always.

Please indicate how often you have carried out the following activities as part of your teaching in the past two years?
(Teachers n = 255)

Table. 4. Frequency of activities as part of teaching	Never	Sometimes	Often	Always	a.v.
Regular contact with my students through online communication (email, forums, blogs etc.) to continue the learning process outside the classroom	30,20%	21,18%	21,57%	27,06%	255
Ask students to document online what they have learnt	36,47%	27,45%	24,71%	11,37%	255
Involve students in collaborative online work	40,39%	38,43%	17,25%	3,92%	255
Online student assessment	27,45%	31,37%	22,75%	18,43%	255
Creative work using online applications	34,90%	43,53%	16,86%	4,71%	255
Encourage interdisciplinary projects through the use of online technologies	49,41%	35,29%	11,37%	3,92%	255

4. Training needs of teachers

4.1 Training and updating

Non formal and informal learning as well as face to face learning were implemented the most according to respondents, followed by formal and blended learning. Fully online learning was rare among respondents.

Please indicate the types of training you have attended around using digital technologies in education?
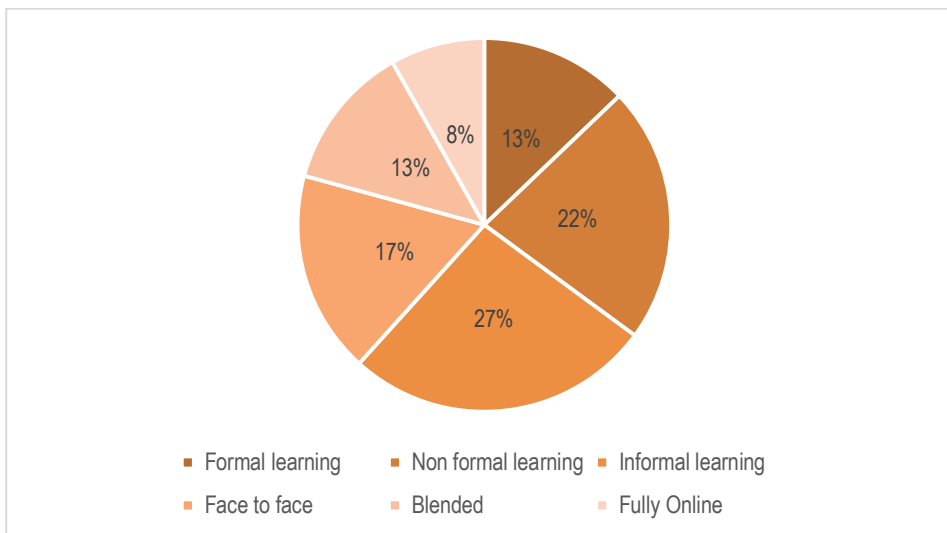
(Teachers n = 248)

Chart 12 - Training attended around using digital technologies in education (%)

4.2 Self-assessment of digital skills of teachers according to DigCompEdu

This section aims to evaluate the digital competency level of teachers. Respondents was ask to answer *how would they rate your knowledge of digital technology for the following scenarios?*

Most of the respondents answered their knowledge is in excellent or in good level. Excellent knowledge was reported by around third of respondents considering statements organizational communication, reflective practice and CDP. Good level was reported as well by around third of respondents but considering professional collaboration. Other knowledge levels were answered around sixth and under of respondents.

Professional engagement
(Teachers n = 231)

Chart 13 - Professional engagement (%)

Respondents answered they have very limited knowledge managing, protecting and sharing digital resources as well as creating and modifying resources. Selecting data resources was reported in level functional knowledge the most. Overall expert, excellent and good knowledge in digital resources were answered least and around/under 10% of respondents.
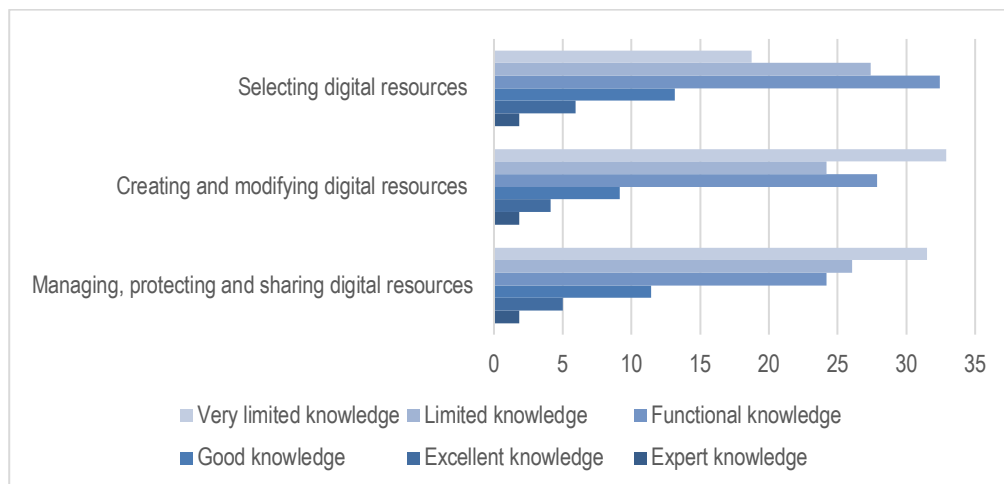
Digital resources

(Teachers n = 219)

Chart 14 – Digital resources (%)

Respondents informed their knowledge level varied mostly between very limited knowledge- limited knowledge- functional knowledge in all the digital teaching and learning areas: teaching, guidance, collaborative learning and self-regulated learning. Trend of knowledge was obviously downward towards good, excellent and expert knowledge level.
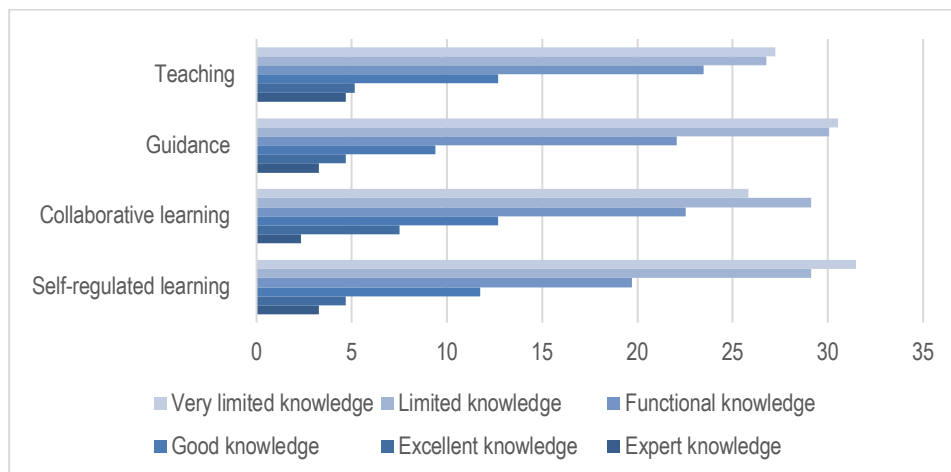
Teaching and learning

(Teachers n = 213)

Chart 15 - Teaching and learning (%)

Respondents evaluated mostly they have very limited knowledge in all the digital assessment strategies. The trend was downward towards expert knowledge level and only very few respondents answered they have achieve it.

Digital assessment

(Teachers n = 211)

Chart 16 - Digital Assessment (%)

The biggest percentages in empowering learners digitally were divided between very limited-, limited- and functional knowledge. Only sixth and under of respondents recognize they have good, excellent or expert level in empowering learners digitally area.

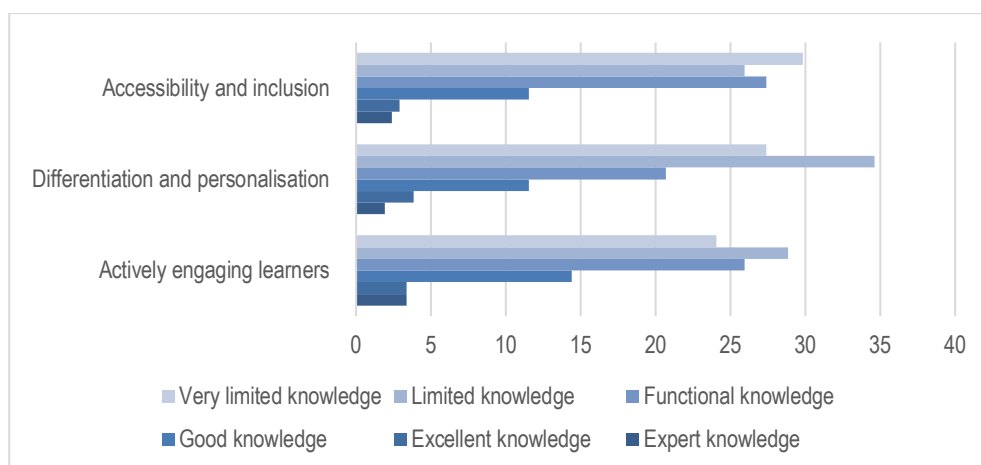*Empowering learners*

(Teachers n = 208)

Chart 17 – Empowering learners (%)

In facilitating learners digital competence the trend is very similar compared to previous digcomp edu -questions presented for respondents: biggest respond numbers in very limited, limited and functional knowledge and smallest numbers in good, excellent and expert knowledge levels. According to answers responsible use and information and media literacy were known the best and digital problem solving the worst.

Facilitating Learners´ digital competence

(Teacher n = 199)
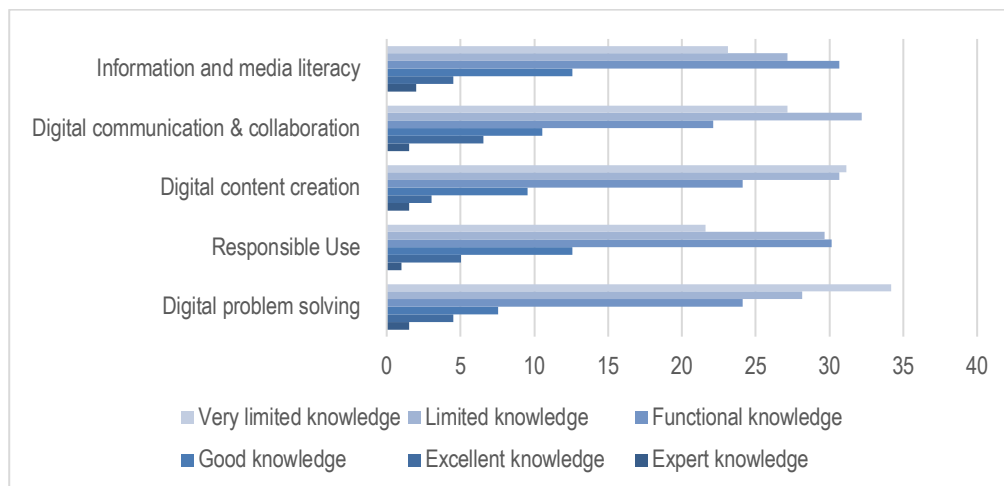
Chart 20 - Facilitating Learners' Digital Competence (%)

4.3 ICT Training Needs

Well over half and most of respondents experienced they need further training for professional training. Almost half of the respondents felt they need digital training for communication and collaboration. Over fifth of the respondents need training for organization and management of educational spaces and resources and for design, planning and classroom delivery. Les than fifth informed they need training for digital ethics, basic uses of ICT and other purposes. Other reported purposes were pedagogy in all mentioned areas before and get familiar with programs and apps. Two of respondents informed they can use all necessary digital technologies and they don´t need any training.

Where do you feel that you need further training to be able to use digital technologies effectively in the classroom? (Teachers n = 196)
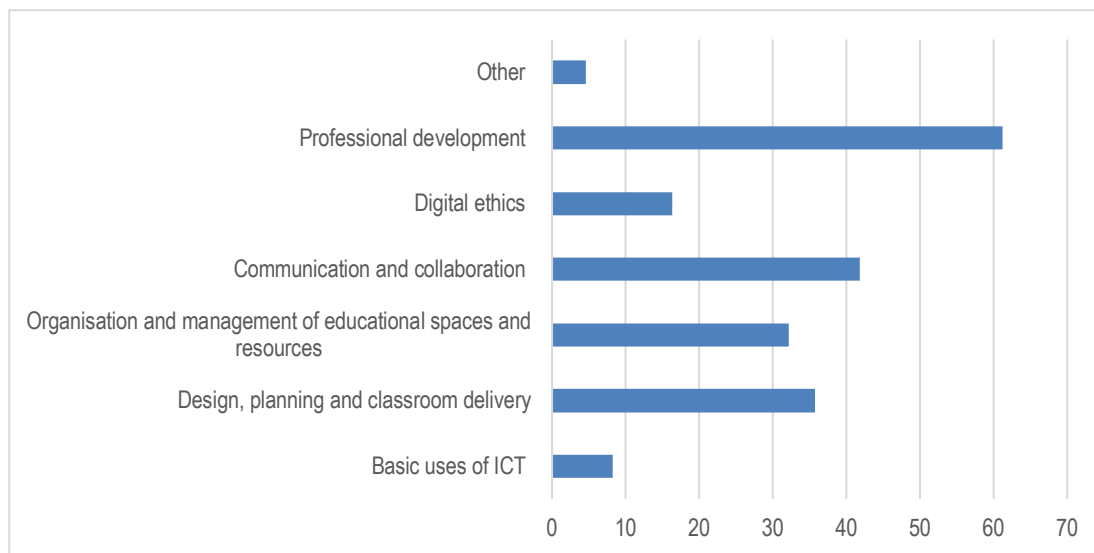
Chart 21 – Teachers need for further training (%)

Almost all the respondents reported they don´t have any kind of official certifications for digital skills qualifications. Very few of the respondents informed they have EDCL, CISCO, MICROSOFT MOUS, EIPASS and/or IC3 Global standard qualifications. Other reported qualifications were: Open Badges, DP-Training Program, Computer driver´s license, Master of business administration ICT, Finnish National Agency for Education provided digital training, Municipality provided ICT training for teachers, O365 for teachers, Computer technician Qualification, ICT or education technology minor subject at the University, engineer and Google educator level 1.

Please indicate if you have any digital skills qualifications?
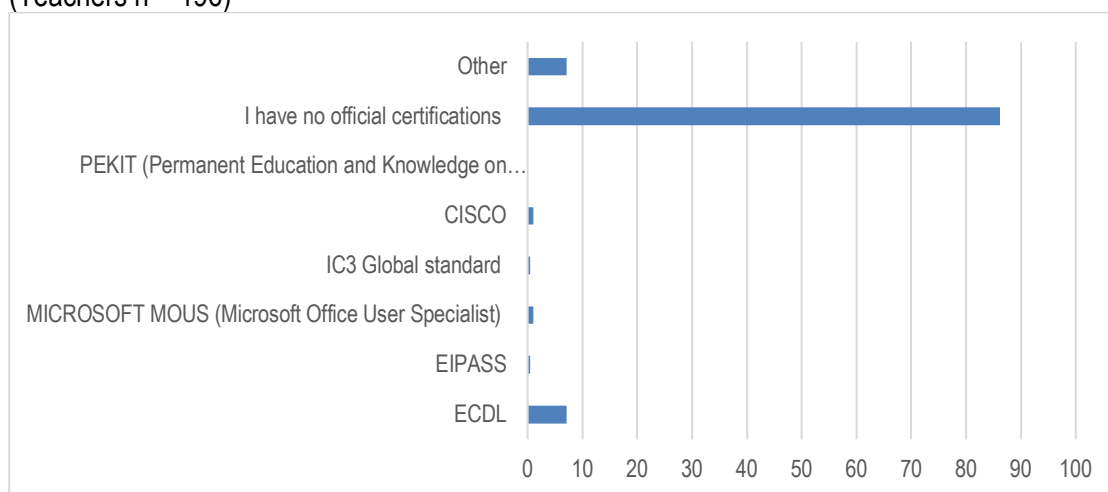(Teachers n = 196)

Chart 22 – Digital skills qualifications (%)

Conclusions

Respondents who took part in survey were teachers from all the education levels in Finland and they represented all the regions. Early childhood education, VET and Lapland province was very well represented. Surveys were sent equally to all education levels and provinces around Finland, so teachers in early childhood education, VET and Lapland province probably happened to be more motivated teachers answer to survey. In addition, educator managers from Lapland informed that their organizations will participate to survey. This information supports conclusion of their motivation.

According to survey results teachers had positive attitudes towards digitalization in education; they saw it mostly useful and used digital basic tools for many possible purposes. Although resources for creating/editing audio/video content and graphics, Resources for creating blogs, websites etc, Coding - Computational thinking were in use very rarely. Teachers knowledge was mostly limited according to themselves what comes to digital skills in DigCompEdu. Teachers experienced training needs for digital skills were obvious; they need training especially for their professional development. Teachers had very limited amount of official digital skills qualifications. Other previously reported surveys in Finland support and at a same time bring credibility for these national surveys results about teachers' attitudes, knowledge and use of digital resources. (https://tietokayttoon.fi/ajankohtaista/blogi/-/blogs/opettajien-ja-oppilaiden-digiosaaminen-karttuu-kokemuksesta, https://yle.fi/uutiset/3-9147003, http://www2.uta.fi/ajankohtaista/uutinen/opettajien-digitaidot-parantuivat)

What was surprising that majority of teachers wasn´t aware of active methodologies such as flipped classroom and how to benefit from it by using digital technologies in teaching. Other methodologies they were at least aware of even they wouldn´t use it. Self and peer assessment with digital technologies was popular among teachers.

Some of the teachers who finished survey (n = 18) gave feedback. They experienced the questionnaire was very difficult to answer; the questionnaire was too long, and questions were difficult to understand. There wasn´t appropriate or right kind of option for their answers as well. It is possible that these kinds of factors have effect on surveys reliability and made many of teachers leave unfinished the survey.

After all this survey helps Finnish DECODE partners understand current situation of Finnish teachers' digital skills and education needs. At a same time, it guides DECODE partners while planning a continuing education for teachers in all education levels.