# IZGLĪTOTĀJU DIGITĀLĀS KOMPETENCES NOVĒRTĒŠANAS RĪKI

**LU 76. ZINĀTNISKĀ KONFERENCE**

**DABASZINĀTŅU DIDAKTIKAS SEKCIJA**

**2018. gada 29. janvāris**

**Dr.phys. Inese Dudareva**

**LU Fizikas un matemātikas fakultāte**

# PREZENTĀCIJAS SATURS

- Digitālā kompetence
- ISTE standarti digitālās kompetences pilnveidošanai un attīstīšanai
- Eiropas izglītotāju digitālās kompetences ietvars
- Rubrika IKT lietošana mācību procesā
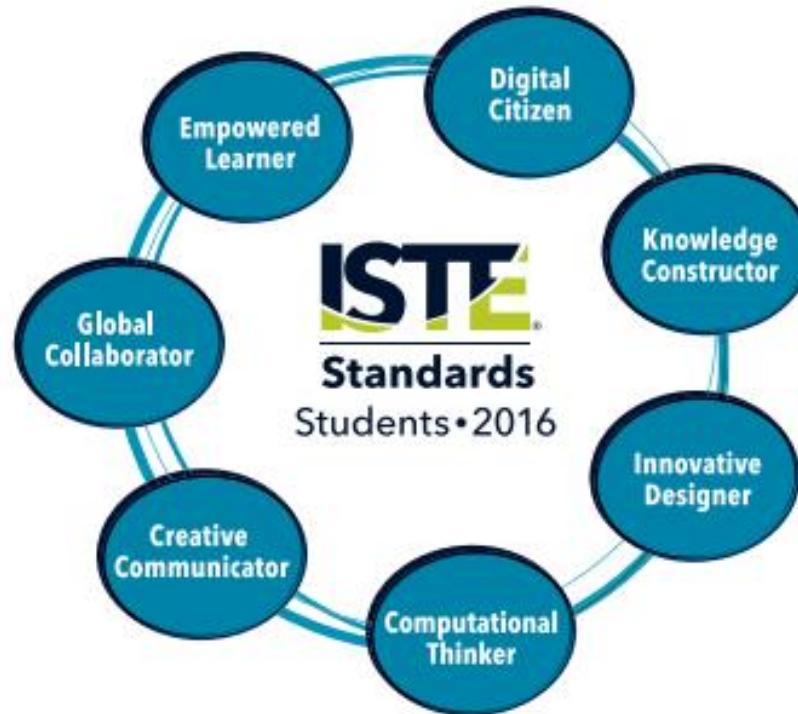- Digitālās kompetences pašvērtējuma rīks izglītotājiem TET – SAT

# DIGITĀLĀ KOMPETENCE



(Ferrari, 2012)
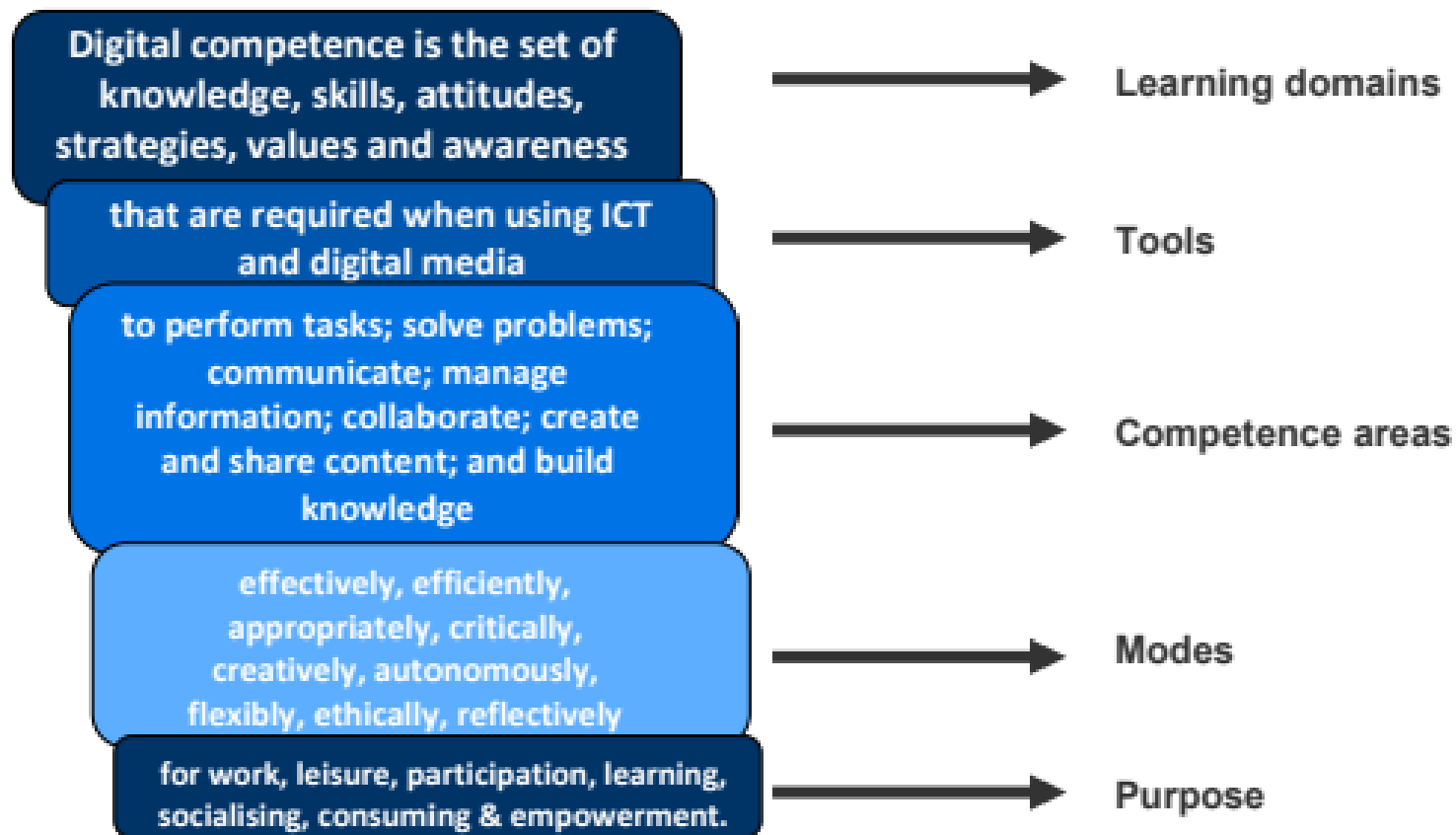
# DIGITĀLĀ KOMPETENCE

- IKT lietošanas pamatprasmes
- Mediju pratība
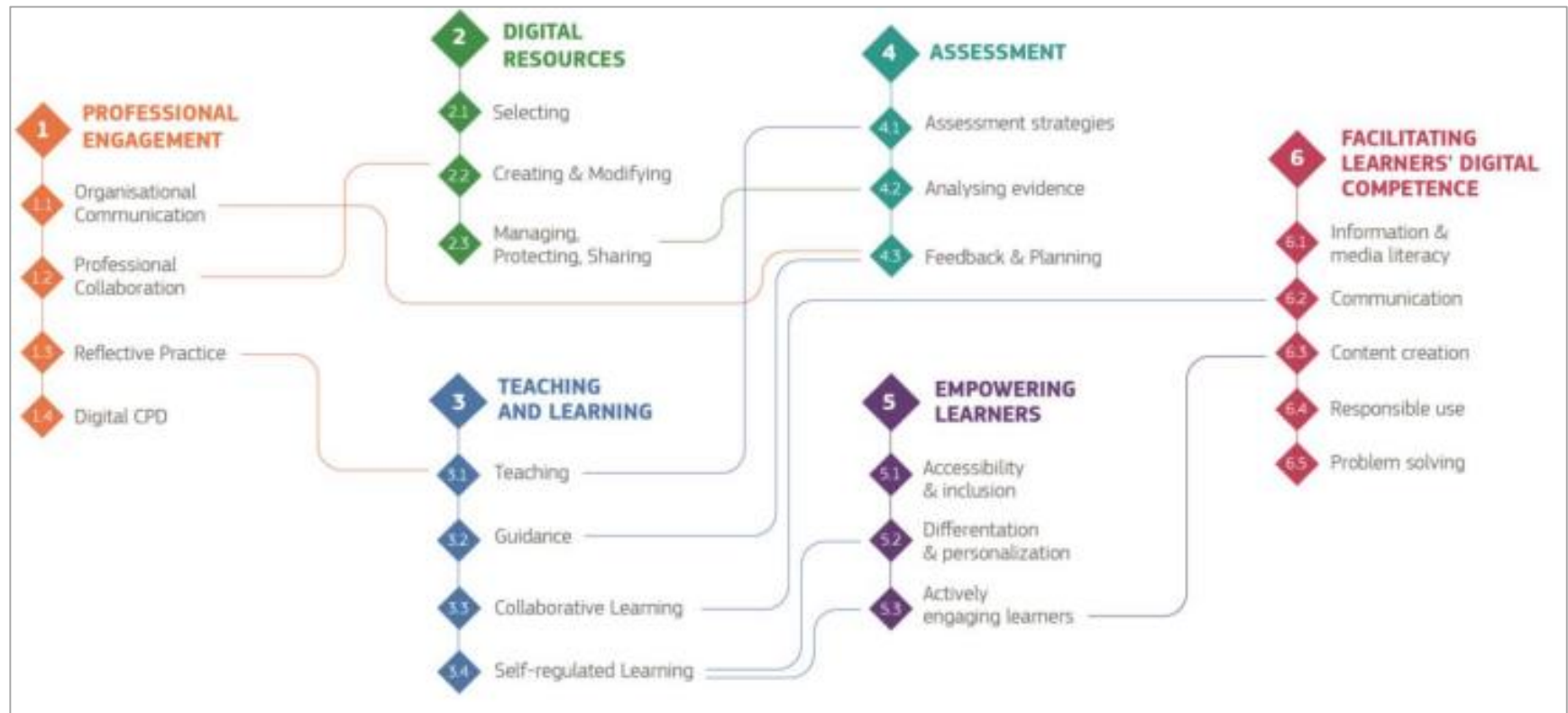- Informācijas pratība
- Algoritmiskā domāšana

(Kennisnet Trend Report, 2016/2017)

# ISTE STANDARTI DIGITĀLĀS KOMPETENCES ATTĪSTĪŠANAI UN PILNVEIDOŠANAI



ISTE – International Society for Technology in Education, 2016

# ISTE STANDARTI DIGITĀLĀS KOMPETENCES ATTĪSTĪŠANAI UN PILNVEIDOŠANAI



ISTE – International Society for Technology in Education, 2017

# EIROPAS IZGLĪTOTĀJU DIGITĀLĀS KOMPETENCES IETVARS



(European Commision, DigCompEdu, 2017)

# EIROPAS IZGLĪTOTĀJU DIGITĀLĀS KOMPETENCES IETVARS

| 1. Professional engagement | 2. Digital Resources | 3. Digital Pedagogy | 4. Digital Assessment | 5. Empowering Learners | 6. Facilitating Learners' Digital Competence |
|---|---|---|---|---|---|
| **1.1 Data management** To use digital tools to effectively and safely store, retrieve, analyse and share administrative and student-related data. To contribute to discussing and critically reflecting on data management strategies and policies at the organisational level. | **2.1 Selecting digital resources** To identify, assess and select digital resources for teaching and learning, understanding applicable copyright and accessibility requirements. | **3.1 Instruction** To implement digital devices and resources into the teaching process, so as to enhance the effectiveness of instructional practices. To appropriately scaffold, manage and orchestrate digital teaching interventions. To experiment with and develop new formats and pedagogical methods for instruction. | **4.1 Assessment formats** To use digital tools for formative and summative assessment. To enhance the diversity and suitability of assessment formats and approaches. | **5.1 Accessibility and inclusion** 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 tools. | **6.1 Information and media literacy** To incorporate learning activities, assignments and assessments which require learners to articulate information needs; to find information and resources in digital environments; to organise, process, analyse and interpret information; and to compare and critically evaluate the credibility and reliability of information and their sources. |
| **1.2 Organisational communication** To use digital technologies to enhance organisational communication with learners, parents and third parties. To contribute to collaboratively developing and improving organisational communication strategies. | **2.2 Organising, sharing and publishing digital resources** To organise digital resources for one's own current and future use and re-use, as well as for sharing them with others. To digitally publish learning resources and share them with learners, parents and other educators, respecting the rules of copyright. To understand the use and creation of open licences and open educational resources, including their proper attribution. | **3.2 Teacher-learner interaction** To use digital tools 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. | **4.2 Analysing evidence** To generate, select, critically analyse and interpret digital evidence on learner activity, performance and progress, in view of informing teaching and learning. | **5.2 Differentiation and personalisation** To use digital tools to address learners diverse learning needs, e.g. by allowing them to follow different learning pathways and goals, by offering alternative approaches and tools, and allowing learners to proceed at different speeds towards individual learning goals. | **6.2 Digital communication & collaboration** To incorporate learning activities, assignments and assessments which require learners to effectively and responsibly use digital tools for communication, collaboration and civic participation. |
| **1.3 Professional collaboration** To use digital technologies to engage in collaboration with other educators, sharing and exchanging knowledge and experience and collaboratively innovating pedagogic practices. To use professional collaborative networks as a source for one's own professional development. | **2.3 Creating and modifying digital resources** 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. | **3.3 Learner collaboration** To use digital technologies to foster and enhance collaborative learning strategies, e.g. as a basis for the collaborative exchange in the group, as a tool for conducting a collaborative assignment, or as a means of presenting results. | **4.3 Feedback and Planning** To use digital tools to provide targeted and timely feedback to learners. To adapt teaching strategies accordingly and to provide targeted support, based on the evidence generated by the digital tools used. To enable learners and parents to understand the evidence provided by digital tools and use it for decision-making. | **5.3 Actively engaging learners** To use digital tools to foster learners' active and creative engagement with a subject matter. | **6.3 Digital content creation** To incorporate learning activities, assignments and assessments which require learners to express themselves through digital means, and to modify and create digital content in different formats. To teach learners how copyright and licences apply to digital content, how to reference sources and attribute licenses. |
| **1.4 Reflective practice** To individually reflect on, critically assess and actively develop one's digital pedagogical practice. | | **3.4 Self-directed learning** To use digital technologies to support self-directed learning processes, i.e. to enable learners to plan, monitor and reflect on their own learning, evidence progress, share insights and come up with creative solutions. | | | **6.4. Wellbeing** To take measures to ensure learners' physical, psychological and social well-being while using digital technologies. To empower learners to manage risks and make use of digital technologies to support their own social, psychological and physical wellbeing. |
| **1.5 Digital Continuous Professional Development (CPD)** To use digital sources and resources for continuous professional development. | | | | | **6.5 Digital problem solving** To incorporate learning activities, assignments and assessments which require learners to identify and solve technical problems or to transfer technological knowledge creatively to new situations. |

Joint Research Centre

(European Commision, DigCompEdu, 2017)

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# RUBRIKA: IKT LIETOŠANA MĀCĪBU PROCESĀ

## 2. tabula. Rubrika: zināšanu konstruēšanas līmeņi lietojot IKT

| Līmenis | Piemēri |
|---|---|
| 1 | *Skolēniem nav iespējas izmantot IKT aktivitātes veikšanai.*<br>• Skolēns mācās par elektrostaciju veidiem, skatoties skolotāja demonstrēto animāciju/prezentāciju/video.<br>• Skolēns mācās par atšķirībām starp kristāliskām un amorfām vielām, veicot uzdevumus skolotāja izdrukātā darba lapā. |
| 2 | *Skolēni lieto IKT, lai apgūtu vai pilnveidotu **pamatprasmes** vai **reproducētu** informāciju. Skolēni nekonstruē zināšanas.*<br>• Skolēns mācās lietot temperatūras sensoru un datu uzkrājēju, veicot mērījumus, kā atdziest ūdens.<br>• Skolēns veido kopsavilkumu par sēņu daudzveidību, izmantojot kādu no prezentācijas programmām (MS PowerPoint, prezi.com u.c.). |
| 3 | *Skolēni lieto IKT zināšanu konstruēšanai, bet šīs pašas zināšanas var **konstruēt arī bez IKT** rīkiem.*<br>• Skolēns konstruē grafiku, kā mainās apgaismojums atkarībā no attāluma, izmantojot datu uzkrājēja programmatūru vai MS Excel.<br>• Skolēns pēta dažādu šķīdumu pH līmeni, lietojot datorsimulāciju. |

(Adaptēts pēc Microsoft Partners in Learning, 21CLD Learning Activity Rubrics, 2017)

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# RUBRIKA: IKT LIETOŠANA MĀCĪBU PROCESĀ

| | |
|---|---|
| 4 | *Skolēni lieto IKT zināšanu konstruēšanai un IKT ir nepieciešams, lai konstruētu šīs zināšanas, bet skolēni nerada IKT produktu.*<br>• Skolēns mācās, kā veidojas zvaigznes, kā notiek kodolreakcijas, kā veidojas molekulas, lietojot datorsimulāciju.<br>• Skolēns meklē internetā informāciju par kādu notikumu no dažādu valstu informācijas avotiem un analizē kopīgo un atšķirīgo atrastajā informācijā. |
| 5 | *Skolēni lieto IKT zināšanu konstruēšanai un IKT ir nepieciešams, lai konstruētu šīs zināšanas, un skolēni rada IKT produktu.*<br>• Skolēns veido animāciju (filmu, infografiku, podkāstu utml.), ar kuras palīdzību citi skolēni var iemācīties kā darbojas vienkāršie mehānismi; kādos apstākļos notiek Saules un Mēness aptumsums utml.<br>• Skolēns veido mājas lapu (interaktīvas kartes, virtuālo sienu utml.), kurā citi var atrast sistematizētu informāciju par Latvijas vēstures notikumiem, par demonstrējumiem dabaszinātnēs, par bioloģisko daudzveidību skolas apkārtnē u.c.<br>• Skolēns veido modeļus un formas, 3D modelēšanas programmās (SketchUp[62], TinkerCAD[63], Blender[64] u.c.), kuras var izmantot animāciju veidošanai, reālu objektu 3D drukāšanai. |

(Adaptēts pēc Microsoft Partners in Learning, 21CLD Learning Activity Rubrics, 2017)

# DIGITĀLĀS KOMPETENCES PAŠVĒRTĒJUMA RĪKS IZGLĪTOTĀJIEM TET - SAT

(MENTEP – MENtoring Technology Enchanced Pedagogy,
TET – SAT: Technology-Enhanced Teaching Self Assesment Tool, 2017/2018)

# DIGITĀLĀS KOMPETENCES PAŠVĒRTĒJUMA RĪKS IZGLĪTOTĀJIEM TET - SAT



**TET-SAT**

Based on the answers you provided, your overall score is: **63%** (Compare with others)

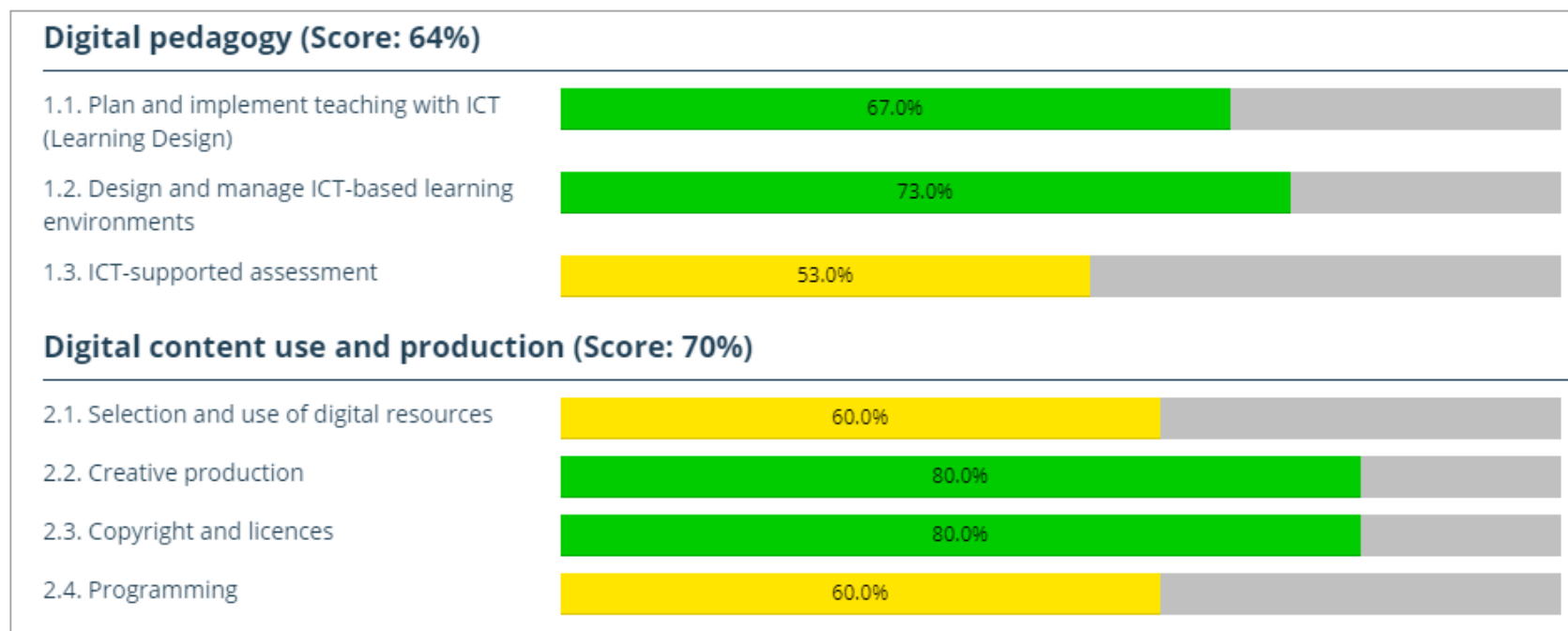|  63%  |  |

## What does your score mean ?

Congratulations! You have reached level 4 of digital competence. This suggests you already use ICT successfully to improve your pedagogical approaches to teaching and learning. You use ICT whenever it improves teaching and learning processes or outcomes for your students.

To progress further, consider trying out some innovative ideas and concepts to further improve, extend and vary your use of ICT, e.g. in collaborative or cross curricula projects. You could focus on systematic change based on continuous reflection.

### Legend

Starter (0-20%)
Beginner (21-40%)
Capable (41-60%)
Proficient (61-80%)
Expert (81-100%)

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(MENTEP – MENtoring Technology Enchanced Pedagogy,
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# DIGITĀLĀS KOMPETENCES PAŠVĒRTĒJUMA RĪKS IZGLĪTOTĀJIEM TET - SAT

(MENTEP – MENtoring Technology Enchanced Pedagogy,
TET – SAT: Technology-Enhanced Teaching Self Assesment Tool, 2017/2018)

# INFORMĀCIJAS AVOTI

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http://gse.buffalo.edu/fas/yerrick/UBScience/UB_Science_Education_Goes_to_School/Technology_Reform_files/10yrs%20of%20ACOT.pdf

Eiropas Komisija. (2007). *Mūžizglītības galvenās pamatprasmes. Eiropas pamatprincipu kopums.* Pieejams:
http://jaunatne.gov.lv/sites/default/files/web/Jaunatne_darbiba/Info_materiali/Brosuras/2012/kompetences.pdf

European Commision. (2017). *European Framework for the Digital Competence of Educators* (DigCompEdu). Pieejams: https://ec.europa.eu/jrc/en/digcompedu

Kennisnet Trend Report. (2016/2017). *Technology Compass for Education. How smart ICT prepeares our students for future.* Pieejams:
https://www.kennisnet.nl/fileadmin/kennisnet/corporate/algemeen/Kennisnet_Trendreport_2016_2017.pdf

MENTEP (**MEN**toring **T**echnology **E**nhanced **P**edagogy) Pieejams: http://mentep.eun.org/

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