

Guideline ICT competence of teachers

Why is ICT competence so important?

The use of ICT has become part and parcel of everyday life in our society. It has become important in people's lives, their work, and how they learn. Almost everyone agrees with the use of ICT in education, and they acknowledge its usefulness and necessity. The teacher has a key role in this field. Pupils achieve better results, are more motivated and have more pleasure in learning if the teacher uses ICT and digital learning materials. Of social importance: teachers ensure that ICT becomes accessible to every pupil, independently of the home situation.

What makes it difficult, what are the obstacles?

Thanks to the [Four in Balance model](#), we can identify which factors are important when using ICT. Good and effective use always goes together with a suitable balance of attention to vision, expertise, digital learning materials and ICT infrastructure.

And yet many schools wrestle with the question as to how to translate the use of ICT into policy and practice. The latest [Four in Balance monitor](#) confirms this picture. There appear to be various reasons why ICT competence is a difficult topic for school leaders and governors:

- There is a big difference between the ICT ambitions of governors, school leaders and the teacher's daily practice.
- There are strong differences in teachers per team in the use of ICT applications and in their competence in this area.
- The importance of technology in education is a constant topic of discussion, and is a subject for further research. Consider digital literacy and a curriculum that is to be newly developed. This makes it tricky to define which competences you want to develop.

[School leaders and governors regularly want to implement the biggest changes with ICT applications, while these are used least in practice.](#)

Building blocks for policy: get to work with four ICT competence areas

With these obstacles in mind, how can school leaders and governors formulate policy for promoting teachers' ICT competence? To know which particular competences you need to deploy, you need an insight into what exactly ICT competence is in the different contexts in which teachers work.



You use these four ICT competence areas as a tool:

1. **Digital literacy:** Which competences do teachers need to support pupils/students on their way to citizenship and to narrow the digital divide?
2. **Learning situation:** Which choices does the teacher make from the learning situation? Which didactics and ICT resources are suitable for optimal learning?
3. **Professionalisation:** What kind of professionalisation policy is needed to enable teachers to use ICT effectively, both individually and collectively?
4. **Organisation:** **The organisation gives teachers tasks in the field of ICT competence.** How do you ensure that this is implemented uniformly, based on a consistent policy and in accordance with rules and regulations?



Digital literacy

Every teacher has the basic skills for working pedagogically responsibly in a digital world

- *Basic ICT skills*
- *Information skills*
- *Media literacy*
- *Computational thinking*

Learning situation

The teacher knows the relationship between a vision on education, the context and the right choice of ICT applications

- *Didactic reasoning*
- *Know what works*
- *Apply variation*

Organisation

Every teacher is competent in the secure and responsible use of ICT for management and communication

- *Registration*
- *Monitoring and accountability*
- *Communication*

Professionalisation

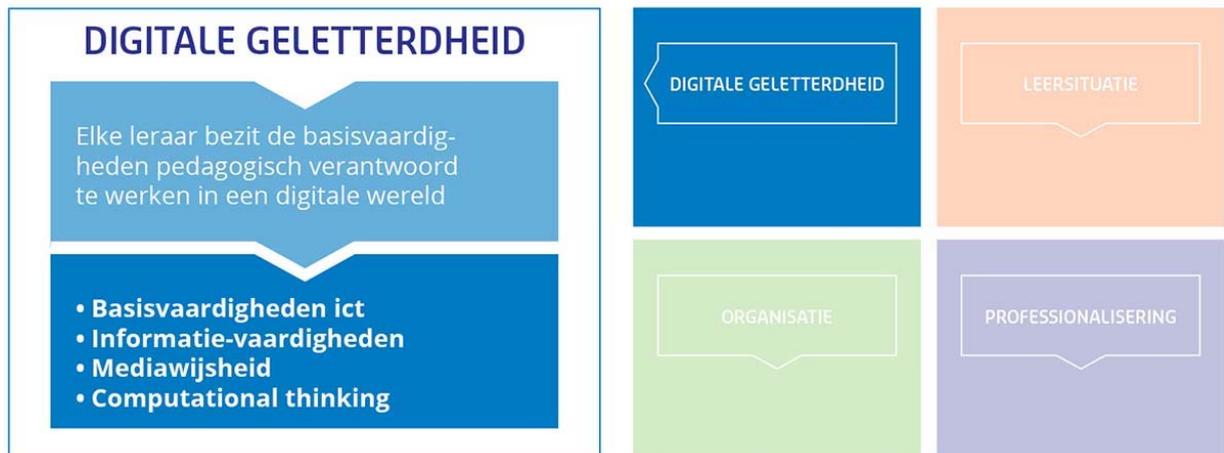
The teacher is and remains qualified in the use of ICT applications

- *Reasoning together*
- *Feedback*
- *Networking*

The four ICT competence areas are strongly interconnected. They strengthen each other on parts and forms, and taken together, they are four crucial building blocks for policy. They are

also the minimum requirements for the ICT competences that are applicable to every teacher. But this does not mean that all teachers have to possess *all* competences to the same degree. Various different educational contexts each require their own approach and expertise.

Digital literacy



Digital literacy

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- Basic ICT skills
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digital literacy

learning situation

organisation

professionalisation

Teachers strive for a safe and pedagogically responsible learning climate. This also applies to working in a digital world. It is therefore important for the teacher to have basic skills in the field of:

- Basic ICT skills;
- Information skills;
- Media literacy;
- Computational thinking.

A part of this is an open and interested attitude towards the digital social environment of pupils. For example, a teacher can enter into a discussion with pupils about what they do on line and how they treat each other on line.

Only teachers with basic digital literacy skills are able to really help pupils further in learning digital skills. This is very important, because research (OESO 2015) has shown that digital skills do not develop on their own. There are big differences between pupils, among other things because of their social backgrounds. Digitally literate teachers can therefore play a big role in bridging this divide.

Learning situation



*digital literacy
learning situation
organisation
professionalisation*

Learning situation

The teacher knows the relationship between a vision on education, the context and the right choice of ICT applications

- *Didactic reasoning*
- *Know what works*
- *Apply variation*

Didactic actions are at the heart of the teaching profession. This is how the teacher ensures that the pupil learns and thus gains knowledge and skills. The skills in the *learning situation* competence area are therefore crucial.

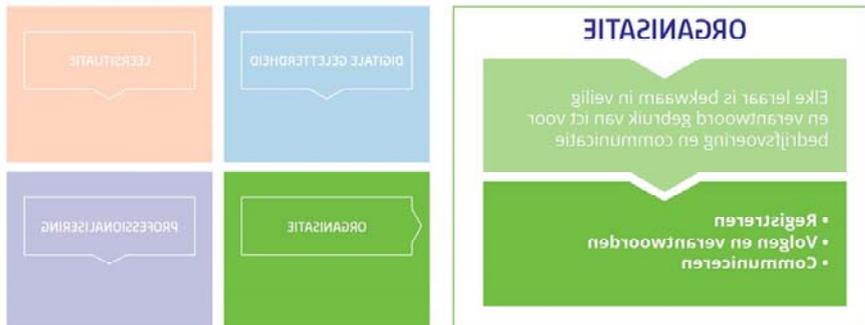
How can you as a teacher know which ICT application is the most suitable in any given learning situation from a transparent vision of education and with knowledge of didactic strategies? An important factor in the effective implementation of ICT is finding the right mixture in each learning situation that is appropriate to the context. That is one of the findings of the Four in Balance Monitor.

Four factors are important in each learning situation:

- the pupil;
- the teacher;
- the educational content;
- an appropriate ICT tool.

Thanks to research, we know more and more about the interaction between these four factors. If a teacher understands and commands this interaction, then he will be better able to provide variation with ICT tools. This means that a teacher consciously uses research to use ICT effectively, resulting in higher learning efficiency for each child.

Organisation



Teachers' effective use of ICT also demands attention for the *organisation* competence area. After all, teachers have an important part in the organisation's management and communication. They organise and account for their activities using digital resources. This concerns:

- digitally recording, managing and sharing administrative information;
- following and recording pupils' progress;
- communicating with all those concerned in and around the school.

It is therefore important that all teachers can safely and responsibly learn to work with the different registration and communications systems, taking account of privacy legislation.

Professionalisation



digital literacy
learning situation
organisation
professionalisation

Professionalisation

The teacher is and remains qualified in the use of ICT applications

- Reasoning together
- Feedback
- Networking

Employees in a professional organisation are qualified to use ICT applications in the most effective way. Of course, this also applies to educational institutions. Teachers need to know which use of ICT matches a particular situation best. This demands further professionalisation.

Professionalisation is important at an individual level, but also at team level. This is because teams make each other stronger and better. For example, teachers' teams can consult with each other in defining the best solution for a problem. They can also provide feedback on each other's working method.

As a part of professionalisation, it is also important for teachers' teams to develop themselves further. This can take place e.g. in networks inside and outside the school board context, such as professional learning communities.

Policy recommendations



Link 1
Urgent: not without obligation - arrange collectively

Link 2
Embedded in teaching activities: teacher-pupil relationship

Link 3

Very dependent on the context for the teacher

Link 4

Character of the organisation and staff management

The four ICT competence areas are strongly interconnected. On specific parts, there is even only one method for implementing policy. We would like to give you some recommendations to help with this:

Link 1: organisation and digital literacy

The two areas on the left-hand side of the model are very important. The development of these skills should be managed centrally. The necessity of rules and regulations is important in the context of privacy and security. For example, it should no longer be possible that teachers do not know how to deal with a photo on social media, or to communicate in their own way with parents and pupils via digital media. Central agreements about how communication is conducted with parents and pupils via digital media are therefore very important.

Moreover, digital literacy is a very important factor in preventing the digital divide from growing. As described in the Monitor Jeugd en Media [Youth and Media Monitor], it is important that all teachers at school possess the (basic) skills that they need. For these competence areas, it holds that the policy applied results in a collective approach with training programmes and agreements.

Link 2: digital literacy and learning situation

With the competence areas *learning situation* and *digital literacy*, it is all about the teacher's pedagogical and didactic skills. The relationship between the pupil and the teacher is the central theme in this context. These skills are important in the primary process and they are related to what is being learnt.

There is an ongoing discussion as to whether it is better to offer the skills described with digital literacy separately, or incorporated in the subjects. This is an important topic that is also treated in the [Handboek Digitale Geletterdheid \[Digital Literacy Manual\]](#).

Link 3: professionalisation and learning situation

A different approach and policy is needed for the competence areas *professionalisation* and *learning situation*. Developing ICT competence depends very much on the context of the school, the team and the teacher.

We have already mentioned above the advantages of moving forward together and developing a learning organisation. An important part is reflecting as a team on the use of ICT in learning situations. Steering is done mainly by:

- making more time and space available;
- talking with each other more about the frameworks and targets that need to be achieved.

Link 4: professionalisation and organisation

With the competence areas *professionalisation* and *organisation*, it is all about how you include this in performance reviews. And how does professionalisation at management level relate to professionalisation activities in the school and in the class?

ICT competence is a challenging topic for inclusion in policy and in the school. This publication gives an insight into the required competences. With the links, it shows how policy can be developed on this.

Sources

Digital literacy

- OESO, Vier in balans-monitor (2015) [Four in Balance Monitor]. [Use and benefits of ICT in education](#) (2015, PDF).
Whoever lacks digital literacy, does not count in the 21st century. This is because the use of ICT is necessary for living, learning and working
- Weten Wat Werkt en Waarom [Know What Works and Why]. [Academic publication about the benefits and functioning of ICT in education](#). June, 2013 (PDF).
Pupils require support and instructions to become information competent. Brand-Gruwel and Walraven.
- ROCED (2016), Netherlands 2016: [Foundations for the Future, Reviews of National Policies for Education](#). (PDF).
Report on the growing digital divide.
- Weten Wat Werkt en Waarom (2013) [Know What Works and Why] [Academic publication about the benefits and functioning of ICT in education](#) (PDF).
Being handy with computers is not the same as knowing how to learn from computers. In this context, being dexterous with buttons is not the same as digital literacy.

Learning situation

- Voogt, J., Sligte, H., van der Beemt, A., van Braak, J., Aesaert, K. (2016). E-didactiek. Which ICT applications do teachers use, and why? Amsterdam: Kohnstamm Instituut.

- Richard Defourny, Devorah van den Berg, Cisca Joldersma and Ruud van der Aa (2016) [*Learning better according to convergent or divergent differentiation*](#) (Netherlands Initiative for Education Research).
About more customisation and differentiation based on pupil data. This has positive effects on pupils' learning.
- Diana Baas (2016) [*Effect of the e-portfolio in primary education*](#) (Netherlands Initiative for Education Research)
More is known about the positive effects of ICT in teacher-driven situations. In the right context, digital training programs can increase learning outcomes. In pupil-driven situations, completely different ICT applications come into their own right. This concerns the favourable effect of e-portfolios on writing skills, feedback skills and self-regulation skills.

Organisation

- Anne Luc van der Vegt (2016) [*Advantages and disadvantages of parent portals*](#) (Netherlands Initiative for Education Research)
Digital communication with horizontal accountability benefits the quality of education. This is because face-to-face contact becomes more intensive. The knowledge base that is built up by using parent portals, ensuring e.g. that more depth is applied in the 10-minute parent-teacher interviews and their quality increases.
- Ditte Lockhorst, Madeleine Hulsen and Luce Claessens (Oberon) Irma Heemskerk and Els Kuiper (Kohnstamm Instituut) (2014) [*Report: Where does academic education stand, and what does it want?*](#) (PDF)
The great achievement of information systems is that they bring data together, provide an overview (administration and support) and that they give an insight into learning results (registration and steering). Knowledge, insight and awareness are important benefits. Also, location managers find that education information systems help in gaining a better insight into teachers' ability to function.

Professionalisation

- John Hattie (2013) [*Understanding Learning: Lessons for learning, teaching and research*](#)(PDF)
Feedback is one of the most powerful tools for successful teaching and learning.
- McKinsey & Company. [*How the world's most improved school systems keep getting better*](#) (PDF)
About a professional learning community and creating a professional culture at schools in which you learn from and with each other. What countries and regions that take the step from good to excellent education have in common is that they invest in the quality of teachers. They do that by creating a culture in each school of 'each day a little better together'.
- ROCED (2016), Netherlands 2016: [*Foundations for the Future, Reviews of National Policies for Education.*](#)
About working in networks. The professionalism increases significantly if experienced teachers investigate teaching practice together and teachers are encouraged to become active in networks outside their own school.

Colophon

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