Belgium (Flemish Community)
Country Report on ICT in Education
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Contact: Jan De Craemer, Ministerie van de Vlaamse Gemeenschap
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1 THE EDUCATION CONTEXT

1.1 EDUCATION REFORM

The key aspects of the educational reform in Flanders are curriculum reform at almost all levels from primary to adult basic education. Fundamental structural reforms are currently being developed for special education (the reform aims at more inclusive school participation instead of separated education in SEN schools), secondary education (the reform aims at less distinction between VET, general and technical SE) and art education (aiming at broader participation through a new subjects system).

Since 2006 a major revision of the core curriculum has been made for cross-curricular objectives, ICT, mother tongue, foreign languages, science and technology. These key competences concern the basic education which aims to give people the right competences for their personal development and training throughout their entire life. The European framework for key competences for lifelong learning has been an evaluation instrument during the review process.

In 2008 a new Decree on compulsory education (i.e. pre-primary, primary and secondary education) adjusted the financial resources of the schools to reflect better the socio-economic profile of their pupils. Before, the funding of the schools by the Government was related to the type of network in which the schools were situated (e.g. the network of official schools or network of free subsidized schools). This Decree foresees an additional budget of € 85 million for primary education and € 41.3 million for secondary education. The philosophy underpinning this decree is that pre-primary, primary and secondary education lay out the foundations for lifelong learning and it is particularly important that disadvantaged groups are given the resources and opportunities to participate.

From September 2010 parents are obliged to send their children for at least one year (minimum 220 half days) to pre-primary education before entering primary education. This obligation has already had an impact on the participation of 5-year old children in the last year of pre-primary education since 1 September 2009. Because of this obligation children should have a better knowledge of Dutch language speaking when entering primary education. Evidence from research showed that children who do not participate long enough in Flemish pre-primary education have a considerable disadvantage in Dutch language proficiency at the start of primary education. This can also cause difficulties in other subjects, which is difficult to remedy during the following years.

A new Qualifications Framework

The Parliament Act on the Flemish qualifications structure was approved at the end of April 2009, according to the European Qualifications Framework (adopted by the European Parliament and Council in December 2007). The Flemish qualifications framework develops a classification of qualifications. A qualification is a comprehensive set of competences leading to a recognized certificate granted by the Flemish Community, indicating the competences relevant to exercising a profession or a social function or which are required for further education. The Flemish framework is split into eight levels, on the basis of the generic characteristics of competences. Each level describes the required knowledge and skills as well as the context, level of autonomy and responsibility which the competences imply. The Parliament Act also distinguishes professional and educational qualifications. An in-depth overview of levels of competences is provided in Annex 1.

Strategic Literacy Plan

The Strategic Literacy Plan 2005-2011 ("Strategisch Plan Geletterdheid") covers 35 actions in which a whole number of partners are involved. Key ICT topics are the revision of the training profile for ICT in Basic Adult Education and at a more general level the integration of ICT in all learning pathways for low-literate target groups.

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1 Basic adult education (BAE) is provided in Centres for Basic Education. BAE aims at providing basic skills to illiterate adults, migrants and/or dropouts. There are five or six courses in BAE: Dutch as a first language, Dutch as a second language, Maths, ICT, social skills. It is the level of competence that is equal in both types of education. The curriculum in BAE is based on the final objectives that are determined for compulsory education.

2 Basic education is from 6-14 (including the 1st grade of secondary education 12-14) and is part of compulsory education.

1.2 KEY CHALLENGES /PRIORITIES FOR EDUCATION

The Policy Note on Education & Training 2009-2014 mentions the following priorities:

- To prepare young people to develop open and strong personalities
- To provide chances for all children with respect for their individual talents, including the participation of education in closing the digital divide
- A strong focus on the learning of Dutch and foreign languages in order to facilitate children’s and youngsters' participation in a globalized world.
- To prepare pupils to make a successful start in the labour market
- To recognize teachers as key agents in the development of open and strong personalities
- To foster social interaction with local, regional and international networks
- To support schools in order to provide top quality education
- To invest in modern and sustainable infrastructure, including ICT-infrastructure

2. ICT POLICY

2.1. RESPONSIBILITIES

The Flemish Ministry of Education & Training is responsible for:

1. Funding schools (working resources, salaries, extra subsidies);
2. Developing educational targets (attainment targets);
3. Checking that attainment targets are reached (via the Inspectorate);
4. Developing and running specific projects according to contemporary policy and societal needs.

The educational school networks act as the representative associations of the governing bodies of the schools and take over some of the responsibilities of the governing bodies. They are in charge of pedagogical and organizational issues such as curriculum development, timetables, school support, etc. The four main educational networks are as follows:

- The Flemish Community Education Authority
- The Education Secretariat of the Association of Flemish Cities and Municipalities
- The Flemish Secretariat for Catholic Education
- The Flemish Provincial Authority Education Group

As far as teaching methods, teaching programmes, pupil evaluation and pedagogical projects are concerned, the various educational networks and schools are largely autonomous. Every organising body ('inrichtende macht') autonomously defines its pedagogical project or mission statement. Therefore, there is no government control as long as the projects do not contravene the democratic principles and the legal and statutory provisions upon which the Belgian State is based.

2.2. ICT POLICIES FOR SCHOOLS

The ICT curriculum provides the general quality framework for ICT integration. Education providers, curriculum designers and the schools themselves can decide how these competences are taught in practice to all pupils, course participants and students and what the principles of digital didactics should be.

The key system for rolling out basic ICT competences is to incorporate them into daily activities in the classroom. New cross-curricular final objectives and developmental ICT objectives were rolled out on 1 September 2007.

However, a number of key preconditions have to be met in order to implement the ICT-related final objectives. These preconditions refer to the policy-making capacity and the support of educational establishments, teacher training, infrastructure and teaching aids. In order to cater for this, the Government of Flanders applies a five-point implementation policy:

1. Strengthening the policy-making capacities of educational establishments at institutional level
2. Promoting the professionalism of educational staff
3. Providing a high-quality infrastructure
4. Developing a suitable teaching aid policy
5. Research and ICT monitoring

1. Strengthening the policy-making capacities of educational establishments at institutional level

ICT coordination
Government funds specific ICT-coordination time: earmarked hours within the total amount of human resources. The school communities within compulsory education represent the ideal level to take decisions about ICT support. The ICT coordination times are assigned to the school communities, while the Inspectorate’s assessments show that this approach is suited for maximising the effectiveness of the resources for ICT coordination.

Support projects for special education
Under the “ICT Zonder Beperkingen” (ICT without limits) programme, specific actions were set up to boost the use of ICT by children with special needs. The programme has various action lines: awareness-raising campaigns, development of learning material, project support and in-service training. Three specific ICT projects are worth mentioning. First of all, the Wai-Not Internet project where a learning environment and e-mail client has been developed for children with a mental disability. Then, the Bednet project enables sick children to take lessons at a distance via the appropriate technology and remain in contact with their school, teachers and classmates. Lastly, the Letop project seeks to raise awareness about pupils with learning problems (dyslexia, ADHD, etc.).

Local ICT strategy planning with PICTOS-software
PICTOS (Planning for ICT in Schools) is an online software tool developed to support school teams in the development of a local (school-based) ICT-strategy. It is used during one-day team-based in-service training. The team has to go through various steps towards an integrated ICT policy plan. In a first phase the teachers individually have to answer some questions regarding their teaching style. The computer then generates an overall view of the teaching styles in a particular school. In a second phase each teacher has to fill in how he works on each of the ICT curriculum items. When this is done the team has an overview of how far they are regarding the different curriculum aspects and where the gaps are, if any. In a following phase teachers have to discuss how they could improve their ICT activity. In a final phase they have to enter new actions and activities into the tool. At all stages the software can provide reports. Different versions of PICTOS exist for primary and secondary education⁴.

2. Promoting the professionalism of educational staff
The in-service training programme: staff training via the REN Vlaanderen expertise network
The regional expertise networks were set up in 2000: five networks are spread throughout Flanders for the purpose of offering large-scale further training in ICT at educational, technical and organisational level. Starting in the 2003-2004 school year, the various networks were incorporated into a single expertise network with a central overseeing system: “REN Vlaanderen”. A key operational change was the shift from supply- to demand-based ICT training. Teachers, head teachers, ICT coordinators from all educational levels and networks and teacher trainers represent REN Vlaanderen’s target group. In 2006, the method of operation was once again adjusted. In terms of content the focus has to be on the introduction of the ICT-related cross-curricular final objectives and developmental objectives. In addition to offering core opportunities for further training REN Vlaanderen also has a theme-specific focus. Every year a minimum of one and a maximum of three themes concerning specific measures are formulated, such as further training or material development.

Providing a high-quality infrastructure
The ICT-infrastructure Programme
This programme seeks to ensure that all educational establishments have a basic infrastructure. The programme provided a major incentive for deploying ICT in the daily environment, with particular attention to the specific needs in special primary and secondary education.

The (federal) I-line Programme
The federal I-line programme provides an inexpensive opportunity for educational establishments to have a broadband connection. All educational levels are tapping into this service. The federal Telecommunications Law provides for the continuation of this programme. The authorities are still striving to use the I-line action programme to hook up all educational establishments to the Internet via

⁴ http://pictos.ictbeleidstool.be/
broadband access. The aim is to bring about a transformation in the relevant broadband policy (in compulsory education): from Internet access for educational establishments to Internet access for classrooms.

4. Developing a suitable teaching aid policy

See section 4: Digital Learning Resources and Service

5. Research and ICT monitoring

Scientists from the Universities of Ghent and Leuven have developed a unique (web-based) monitoring instrument, MICTIVO, proving information about four types of indicators for policy assessment:

- ICT competences of pupils and teachers
- ICT infrastructure (computer/pupil ratios, PC & Internet/pupil ratios, type and age of PCs, Internet facilities, etc.),
- the use and integration of ICT in the learning environment (level and type of use of ICT, use of electronic learning environments, methods, etc.),
- relevant stakeholders’ perceptions of the educational use of ICT

The Government of Flanders set up a new interdisciplinary institute for broadband technology in 2005: the IBBT. This new research institute is focused on the development and exploitation of broadband services. The research centre’s main aim is to train highly-skilled human resources and conduct broadband technology research on behalf of the Flemish business community and the Flemish Government. The IBBT oversees 15 leading university research groups. Educational technology and e-learning also belong to the IBBT’s fields of activity (www.ibbt.be).

3. THE CURRICULUM AND ICT

3.1. THE CURRICULUM FRAMEWORK

Curricula are defined for compulsory education\(^5\) by the Ministry’s “Agency for Quality in Education & Training”. The principle of “learning outcomes” is very important

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\(^5\) Compulsory education is from the age of 6 to the age of 18 (primary level 6-12 years old; secondary level 12-18 years old)
in the Flemish educational administration. In Flanders there is a distinction between final objectives ("eindtermen") and developmental objectives ("ontwikkelingsdoelen"). Final objectives are minimum objectives with regard to knowledge, insight, skills and attitudes, which the educational government regards as necessary and attainable for compulsory education. Developmental objectives are minimum objectives which the educational government regards as desirable for special education. Final objectives and developmental objectives are used by the Flemish government for quality control. Both final and developmental objectives can be subject-related or cross-curricular. Subject-related objectives are stipulated at a certain stage for all pupils.

Cross-curricular final objectives are minimum objectives which do not specifically pertain to one area of learning but which can be aspired to by several areas of learning or educational projects. Schools are obliged to develop cross-curricular final objectives. Curricula are generally structured as follows:

**In primary:**

Subject-related final objectives: Physical education, Dutch, French, Environmental studies, Expressive arts, Mathematics. Cross-curricular Final objectives: ICT, Learning to learn, Social skills

**In secondary (first grade):**


### 3.2. ICT IN THE CURRICULUM

**Priorities for ICT-related cross-curricular final objectives and developmental objectives**

ICT is a separate subject in secondary education and not in primary education. The ICT-related cross-curricular final objectives and developmental objectives are designed to be deployed in primary education and/or the first level of secondary education. No separate objectives are defined for pre-school education. The aim is definitely not to create a separate subject in basic education, as a result of opting for cross-curricular final objectives. ICT provides opportunities within all subjects and fields of study.

Starting from the second level of secondary education, ICT is deployed in a more specific and subject-based way in the light of the type of education and educational level. Specific or more specialized components are then added in accordance with the training needs.

The focus in primary education and the first stage of secondary education is on social independence. The eight cross-curricular final objectives and developmental objectives for primary education and ten for the first stage of secondary education section of the compulsory education system form the basis for creating the ICT curriculum. Technical and instrumental knowledge and skills are not a part of the curriculum targets.

### 3.3. STUDENTS’ ICT COMPETENCE

The cross-curricular final objectives and developmental aims of ICT are as follows:

Normal **primary education** and special primary education, types 1, 2, 7, 8:

1. Pupils have a positive attitude towards ICT and are willing to use ICT in support of their learning.
2. Pupils use ICT in a safe, sensible and appropriate way.
3. Pupils are able to practise independently in an ICT-supported learning environment.
4. Pupils are able to learn independently in an ICT-supported learning environment.
5. Pupils are able to use ICT to express their own ideas in a creative way.

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6. Pupils can retrieve, process and save digital information that is appropriate for them by means of ICT.
7. Pupils are able to use ICT in presenting information to others.
8. Pupils are able to use ICT to communicate in a safe, sensible and appropriate way.

**First stage of secondary education** A and B streams and first stage of special secondary education – education type 3:

1. Pupils have a positive attitude towards ICT and are willing to use ICT in support of their learning.
2. Pupils use ICT in a safe, sensible and appropriate way.
3. Pupils are able to practise independently in an ICT-supported learning environment.
4. Pupils are able to learn independently in an ICT-supported learning environment.
5. Pupils are able to use ICT to express their own ideas in a creative way.
6. Pupils can retrieve, process and save digital information by means of ICT.
7. Pupils are able to use ICT in presenting information to others.
8. Pupils are able to use ICT to communicate in a safe, sensible and appropriate way.
9. Pupils are able to make an adequate choice among different ICT applications depending on the objective to be reached.
10. Pupils are willing to adjust their actions based on reflection upon the use of ICT by themselves or others.

For upper secondary education, ICT targets are developed within the different subjects. For comments about each cross-curricular final objective and developmental aim of ICT see Annex 2.

### 3.4. **ASSESSMENT SCHEME**

Pupils are examined by their class or subject teacher. After the examinations it is the so-called “class team council” that decides if a student passes to the next year or grade. Pupils are assessed by means of tests and examinations, organized by the individual specialist teacher under the ultimate responsibility of the school’s “inrichtende macht” (organizing body).

The final objectives are certified solely via the usual compulsory education channels: apart from the basic primary certificate, the secondary education diploma (general secondary education, secondary education in the arts, technical secondary education) or the study certificate (vocational secondary education) there is no separate certificate to confirm that pupils in the compulsory education section have acquired ICT competences. This is a very important aspect of our educational system. We wanted to avoid any alternative certification such as the ECDL.

In secondary education, the “klassenraad” (class council) acts as the central assessment body. The klassenraad is responsible for guidance and deliberation and consists of the principal or his/her representative and all the members of the teaching staff who teach a particular pupil in a particular grade (these persons are entitled to vote).

### 3.5. **ICT BASED ASSESSMENT**

Programmes for ICT-based assessment are not incorporated in compulsory education.

### 3.6. **QUALITY ASSURANCE OF THE USE OF ICT IN SCHOOLS**

At present the Inspectorate uses an instrument for assessment that was developed in partnership with the Department for Educational Development. It is an instrument for audit that encompasses the observations and data within what is known as the CIPO model. In this model the indicators of context, input data, process and output are given a place and can be viewed in relation to one another. In the near future the principle of proportionality and risk-based inspection will be introduced. The Inspectorate will then no longer inspect all results and operational aspects as during an integral inspection process. During the differentiated inspection process only a selection or a specific focus will be inspected more thoroughly. The inspectorate takes the final objectives of the core curriculum into account during the school audits.
4. DIGITAL LEARNING RESOURCES AND SERVICE

4.1. CONTENT DEVELOPMENT STRATEGIES

Key principles of the policy on development of software and digital learning objects:

- It is first of all up to the educational publishers to develop the learning objects required to flesh out the curricula.
- The government may take action to develop learning objects in particular areas where there is a lack of content. This has been the case for special needs education (www.ichtelp.be) and media education (www.ingebeeld.be).
- The government encourages teachers to develop teaching aids themselves. The educational portal (www.klascement.net) supports teachers in sharing and delivering learning objects.
- Arts centres, heritage organisations, museums, radio and TV archives, etc. have huge collections of information which are all potential learning objects. Their digital accessibility for educational purposes may offer a tremendous added value for educational establishments. This potential is harnessed as much as possible.
- Both commercial software and open-source software have a role to play in education. Educational establishments have to be at liberty to choose on the basis of their needs and requirements.
- The government is keen to encourage the maximum use of open standards.

The above-mentioned points are the aims, the policy priorities. Concrete projects are listed below under point 4.2

4.2. E-CONTENT DEVELOPMENT

Accessing learning objects via an educational portal site

One of the key projects is the creation of an educational portal site serving as a multipurpose electronic knowledge centre. Firstly, the portal site acts as a central access point for educational information and support. This involves developing and offering information, examples of good practice and thematic files to various target groups. These may be general or specific themes (such as dimensions involved in the integration of ICT, learning participation, lifelong learning, special needs education, etc.). The portal site also has to offer the opportunities for effective digital teaching aids (e-learning opportunities) in an accessible and structured way. Consequently, a framework has to be developed allowing individual teachers and also publishers to publicise their software, examples and curricula online so as to reach out to a wider target group (www.klascement.net).

Standardising learning objects

The Flemish Ministry of Education was a key partner in the Users’ Commission for the IWT-Tetraproject “PUBELO”. The project agreed on an educational standard (LOM metadata profile) and deploying it within a large group of relevant stakeholders (such as publishers or managers of portal sites or electronic learning environments). The government input is providing incentives for the creation and recognition of open standards (www.pubelo.be).

Learning objects for adult distance education

The Flemish Ministry of Education and Training has funded the development of online learning materials for distance adult learning. These learning materials comprise over 3,500 reusable electronic teaching packages for learning languages (French, English, German, Italian, Spanish, and Dutch as a second language) each lasting roughly 30 minutes. Each learning object is described according to a standardised set of metadata (such as level of language proficiency, competence taught, etc.) and made available via an online platform so teachers may use the lessons or even entire courses in their own educational environment. The learning materials are well suited for self-study or may be deployed for remedial or complementary purposes in other learning contexts (www.klascement.net/bis).

E-culture and education

Projects such as “Ingebeeld” are a first step towards a more efficient system of (multi) media use in education. An investigation is also due to be made to see how far government funded or subsidised cultural establishments – including the Flemish Television and Radio archives – may allow access to their material...
and what should be the best metadata and technical tools to use for this so as to streamline accessibility in the educational environment. Versions of “Ingebeeld” are up and running for pre-primary, primary and secondary education (www.ingebeeld.be).

**Content development for Special (Needs) Education**

Under the “ICT Zonder Beperkingen” (ICT without limits) programme, specific actions were set up to boost the use of ICT by children with special needs. One of the programme lines was content development. Several tools were developed: maths methods for deaf children using Flemish sign language; development of new pictograms, a DVD to help teachers create and use visualisations, a manual for using digital whiteboards in special needs education. Within the autism project several tools were developed to foster the alignment between education and the labour market such as the development of an autism-specific portfolio (Wai-Pass, [http://www.wai-pass.be/](http://www.wai-pass.be/)).

**4.3. USER - GENERATED CONTENT**

**Web 2.0 as a specific theme in-in-service training**

In 2007-2008 one of the priorities of the in-service training via the REN Vlaanderen expertise centre in their theme-specific training offer was the didactical use of Web 2.0. Under this programme, content in the form of technical and didactical guidelines was developed. Extensive in-service training was provided and two conferences were organised. The materials and more information (in Dutch) can be found here: [www2.renvlaanderen.be/web2](http://www2.renvlaanderen.be/web2).

**Educational portal Klascement and Web 2.0 applications**

The educational portal “Klascement” has for several years been at the forefront of educational Web 2.0 use. First of all Klascement is a Web 2 application in itself. Smartschool (https://elov.vvkso.be) is a free blog service where teachers and classes can receive free blog space and hosting.

**4.4. WEB 2.0**

See 4.3.

**4.5. CONTENT SHARING**

See information on the [www.klascement.net](http://www.klascement.net) portal in the section e-content development.

In order to make Flemish content available for international use (and vice versa), Flemish partners participate in European Schoolnet projects such as Calibrate, Melt, Aspect and EQNet projects.

**4.6. LEARNING PLATFORMS**

Smartschool is the most widely used platform in Flemish schools. It is a local commercial tool. The heart of the tool consists of 16 modules: news, links, assignments, web links, tests, learning paths, agenda, exercises, documents, an upload section, reports, questionnaires, forum, a collaboration zone, classmates and subject areas. Extra optional tools are “skore”, a follow up system for pupils, communication tools and specific administration tools such as registration and reservation modules, picture storage and lesson schedules (www.smartschool.be).

EloV is used by some Catholic Schools in Flanders. EloV is a localised version of Blackboard and was rolled out by the Flemish Secretariat of Catholic Education (https://elov.vvkso.be).

Open source products as Moodle and Dokeos are also used by some schools to a lesser extent.

**5. TEACHER EDUCATION FOR ICT**

**5.1. ICT COMPETENCE TARGETS**

The learning outcomes of teacher education are described as basic competences. By this we mean the knowledge, skills and attitudes a recently graduated teacher needs to start teaching. There are three groups and ten subgroups of basic competences:

Responsibilities with respect to the learner:
1. The teacher as a guide of learning- and development processes
2. The teacher as an educator
3. The teacher as a (subject - content) expert
4. The teacher as an organiser
5. The teacher as an innovator / researcher

Responsibility towards the school / the educational community:

6. The teacher as a partner of parents
7. The teacher as a partner of the school team
8. The teacher as a partner of the external community
9. The teacher as a member of the educational community

Responsibility with respect to society:

10. The teacher as a participant in the cultural community:
   - Socio-cultural field
   - Socio-economic field
   - Philosophical field
   - Cultural-aesthetic field
   - Cultural-scientific field

ICT (and media literacy) are integrated in several of the subgroups.

5.4. TRAINING THE TEACHER TRAINERS

There are no specific programmes for teacher trainers.

5.5. INCENTIVES

There are no specific incentives.

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5.2. ASSESSMENT SCHEMES

There is no general assessment scheme for ICT competence. ICT competence assessment can differ from institution to institution.

Quality control in colleges of higher education and universities is carried out in three steps:

1. Internal quality control, which results in self-evaluation
2. External visitation, which results in a public report
3. Accreditation, which results in the recognition that a course meets the international minimum quality standards and is allowed to carry the Bachelor or Master label.

5.3. ICT IN TEACHER EDUCATION

No recent information available. A new evaluation of Initial Teacher Training is currently planned.
## ANNEX 1

### The new Qualification Framework

<table>
<thead>
<tr>
<th>VKS level</th>
<th>Knowledge Skills</th>
<th>Context Autonomy Responsibility</th>
</tr>
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| **VKS 1** | - recognizing materials, concise, unambiguous information and simple, concrete basic concepts and rules of a part of a specific area  
- applying one or more of the following skills:  
  • cognitive skills: retrieving information from one’s memory, remembering and applying it  
  • motorical skills: using automatisms and imitating practical actions  
- performing repetitive and recognizable actions in routine tasks | - acting in a stable, familiar, simple and well-structured context, in which time pressure is of little importance  
- acting with non-delicate objects  
- functioning under direct supervision  
- showing personal effectiveness |
| **VKS 2** | - understanding information, concrete concepts and standard procedures within a specific area  
- applying one or more of the following skills:  
  • cognitive skills: analyzing information by distinguishing and relating elements  
  • motorical skills: transforming sensory perceptions into motorical actions, performing acquired practical-technical actions  
- applying a selected number of standard procedures when performing tasks; applying prescribed strategies to solve a limited number of concrete, recognisable problems | - acting in a limited number of comparable, simple, familiar contexts  
- acting with delicate, passive objects  
- functioning under supervision with limited autonomy  
- take limited executive responsibility for one’s work |
| **VKS 3** | - understanding a number of abstract concepts, laws, formulas and methods within a specific area; distinguishing between major and minor issues in information  
- applying one or more of the following skills:  
  • cognitive skills: analyzing information using deduction and induction  
  • synthesizing information  
  • motorical skills: making constructions based on a plan  
- performing actions which require tactical and strategic insight | - acting in comparable contexts in which a number of factors change  
- acting with delicate, active objects  
- functioning with certain autonomy within a well-defined set of tasks  
- taking limited organizational responsibility for one’s work |
| VKS 4 | - interpreting concrete and abstract data (information and concepts) within a specific area  
- applying reflective cognitive and motorical skills  
- evaluating and integrating data and developing strategies to perform diverse tasks and solve diverse, concrete, non-familiar (but subject-specific) problems | - acting in a combination of changing contexts  
- functioning autonomously with some initiative  
- taking complete responsibility for one’s work;  
- evaluating and correcting one’s functioning with a view to obtaining collective results |
| --- | --- | --- |
| VKS 5 | - expanding the information in a specific area with concrete and abstract data, or completing it with missing data; using conceptual frameworks; being aware of the scope of subject-specific knowledge  
- applying integrated cognitive and motorical skills  
- transferring knowledge and applying procedures flexibly and inventively for the performance of tasks and for the strategic solution of concrete and abstract problems | - acting in a range of new, complex contexts  
- functioning autonomously with initiative  
- taking responsibility for the achievement of personal outcomes and the stimulation of collective results |
| VKS 6 | - critically evaluating and combining knowledge and insights from a specific area  
- applying complex specialized skills, linked to research results  
- gathering and interpreting relevant data and making innovative use of selected methods and resources to solve non-familiar complex problems | - acting in complex and specialized contexts  
- functioning with complete autonomy and considerable initiative  
- taking shared responsibility for the definition of collective results |
| VKS 7 | - integrating and reformulating knowledge and insights from a specific area or at the interface between different areas  
- applying complex new skills, linked to autonomous, standardized research  
- critically evaluating and applying complex, advanced and/or innovative problem-solving techniques and methods | - acting in unpredictable, complex and specialized contexts  
- functioning with complete autonomy and a right of decision  
- taking final responsibility for the definition of collective outcomes |
| VKS 8 | - expanding and/or redefining existing knowledge from a substantial part of a specific area or at the interface between different areas  
- interpreting and creating new knowledge through original research or advanced scientific study  
- designing and executing projects which expand and redefine existing procedural knowledge, aimed at the development of new skills, techniques, applications, practices and/or materials | - acting in very complex contexts with far-reaching, innovative implications  
- taking responsibility for the development of professional practice or scientific research with a highly critical attitude and steering capacity |
ANNEX 2

Comments about each cross-curricular final objective and developmental aim of ICT

Normal primary education and special primary education, types 1, 2, 7, 8:

1. Pupils have a positive attitude towards ICT and are willing to use ICT in support of their learning.
2. Pupils use ICT in a safe, sensible and appropriate way.
3. Pupils are able to practise independently in an ICT-supported learning environment.
4. Pupils are able to learn independently in an ICT-supported learning environment.
5. Pupils are able to use ICT to express their own ideas in a creative way.
6. Pupils can retrieve, process and save digital information that is appropriate for them by means of ICT.
7. Pupils are able to use ICT in presenting information to others.
8. Pupils are able to use ICT to communicate in a safe, sensible and appropriate way.

First stage of secondary education A and B streams and first stage of special secondary education – education type 3:

1. Pupils have a positive attitude towards ICT and are willing to use ICT in support of their learning.
2. Pupils use ICT in a safe, sensible and appropriate way.
3. Pupils are able to practice independently in an ICT supported learning environment.
4. Pupils are able to learn independently in an ICT supported learning environment.
5. Pupils are able to use ICT to express their own ideas in a creative way.
6. Pupils can retrieve process and save digital information by means of ICT.
7. Pupils are able to use ICT in presenting information to others.
8. Pupils are able to use ICT to communicate in a safe, sensible and appropriate way.
9. Pupils are able to make an adequate choice out of different ICT applications depending on the objective to be reached.
10. Pupils are willing to adjust their actions based on reflection upon the use of ICT by themselves or others.

Comments about each cross-curricular final objective and developmental aim of ICT

1. The Pupils have a positive attitude towards ICT and are willing to use ICT in support of their learning.

In the learning environment, ICT has to compensate for skills and attitudes that are not acquired spontaneously or much less at home. This is why the positive attitude is complemented in this case with a willingness to use ICT as a teaching aid.

2. The Pupils use ICT in a safe, sensible and appropriate way.

This involves a wide range of competences and attitudes, such as working in a rigorous and careful way, taking care of equipment and software, vigilance about harmful or discriminatory content and reporting this to a teacher, supervisor, competent department, where necessary, being aware of viruses, spam, pop-ups, ... and recognizing unusual and unreliable messages, dealing cautiously with personal or confidential information, rejecting any abuse of ICT resources (such as harassing other people, bullying, sending unethical messages,…, working ergonomically with a computer, using ICT solely where meaningful (for example, making a realistic assessment of the time the ICT is used and monitoring this), respecting intellectual property when using information and software and taking account of the financial and ecological dimension of the use of ICT.

3. The Pupils are able to practice independently in an ICT supported learning environment.
Once new learning content has been acquired, there have to be sufficient opportunities for exercises and a computer may be a useful tool under this heading. Examples are the widespread exercise programs for elementary mathematics. The added advantage of this type of ICT integration may take various forms such as: variation (in the types of exercises, catering for various learning styles ...), differentiation (in terms of the pace and level), customized feedback, saving time during the assessment.

4. The Pupils are able to learn independently in an ICT supported learning environment.

Unassisted learning means pupils may acquire and process new learning content with the computer taking over the role of the teacher so to speak. An example of this is the ‘Webquest’ method where the pupil is gradually led towards sites where information is available and has to process this information on the basis of goal-oriented tasks. Pupils may also carry out a simulation, for example, in the light of an appropriate educational programme and draw conclusions from this. An increasing number of secondary education establishments use open learning centres to teach pupils to work unassisted. Suitable programmes are also available for pupils with low cognitive abilities, plus all kinds of distance learning, supervised or otherwise.

5. The Pupils are able to use ICT to express their own ideas in a creative way.

ICT may facilitate the creative process, so that learners can adopt a creative approach to dealing with images, words and sound. Examples are producing an attractive poster with words and images, illustrating an improvised text, making an electronic ‘collage’, the use of digital photography, making film clips and the use of drawing software for designing buildings. Learners may avail themselves of the basic capabilities offered by all kinds of text, image and drawing programs. Pupils who are good at coming up with ideas but are less good at drawing can rely on ICT to provide them with further opportunities for realizing their ideas.

Attempts to develop the visual faculty in education are seen to be almost non-existent, although sufficient facilities are available. In spite of the huge amount of visual material children and young people have to process every day, the ability to look is often intuitive and superficial. As for the reason for using these audiovisual aids, documentaries, films, news, picture recordings, soaps and video clips are mainly used to illustrate lessons, to motivate pupils to analyse what the lessons contain. In the case of animation films, the relaxation factor is important as well as the need to catch the children's attention, as in the case of pre-school education, for example. When visual material is used, the idea is mainly to underpin the lessons, so the function is purely instrumental. Visual material is rarely considered as a teaching aid in its own right, in the light of media education, for example, as underscored in the IAK/Canon research into audiovisual training in Flemish education (Goergebuer, 2004).

Audiovisual images cannot be confined to after-school recreational activities, but rarely receive any attention in education in practice. On the basis of the final objectives, there nonetheless has to be a focus on being able to interact with image and sound. A new competence has to be created within the context of ICT competences.

6. The Pupils can retrieve process and save digital information that is appropriate for them, by means of ICT.

(Normal primary education and special primary education, types 1, 2, 7, 8)

The Pupils can retrieve process and save digital information by means of ICT. (Secondary education A and B streams and special secondary education – education type 3)

Searching for information partly involves the ‘electronic libraries’ available on CD-ROMs, servers or the Internet. Examples are electronic encyclopedias, DVDs, bilingual dictionaries, databases, educational CD-Roms with text, image, sound, animation and, of course, web pages. Pupils will find the part intended for them in the actual library more appealing; and teachers can define a ‘platform’ here with information intended for or specifically targeted upon them. Teachers may also allow their pupils to work with search engines especially developed for educational purposes.
Information processing involves various activities such as establishing what is interesting in the context of their goal or tasks, using the information to find solutions for a request or a task, arranging this information so as to be able present it to others, representing the information in other forms, such as an informative text, a dialogue, a diagram, a model, a presentation, a poster …

The digital information concept needs to be broadly interpreted so it also covers the conversion of information into an electronic medium, such as the use of photographs or newspaper articles that have been scanned.

In terms of content, the scope of this final objective is restricted by the context of the learning content for the relevant level, in terms of difficulty by the final objectives/developmental objectives defining these contexts. For example, in the case of information processing, the restrictions the final objectives/developmental objectives set for interpretation in primary education also apply to the processing level, distance level and the types of texts. In the first level, the final objectives no longer restrict the texts used as ‘intended for them’. This means that this final objective also implies that learners gradually learn to use criteria to assess a digital source in the light of its content-related quality. For (less qualified) adults this may involve information acquisition and processing within the continuum of self-reliance to social participation.

7. The Pupils are able to use ICT in presenting information to others.

This involves the presentation process itself: pupils who are able, unassisted or in cooperation with others, to share or show information with the support of multimedia, for example, an infant on a Monday morning telling the class about his/her weekend with the support of a few electronic photographs. A third level pupil gives a ‘lecture’, using moving electronic images. A pupil from training type 3 uses digital photographs to offer a mood shot of his/her course.

8. The Pupils are able to use ICT to communicate in a safe, sensible and appropriate way.

Communicate means pupils being able to use the facilities ICT offers (in the form of words, images, sounds) to provide information or seek it from third parties. This refers to the opportunities for contributing to the learning process, such as: arranging meetings by e-mail, sending electronic documents along with e-mail messages, making contacts and collecting information for an educational visit, live chats with pupils from another school, using Internet fora, blogging and videoconferencing.

The words “safely, responsibly” refer to the basic rules and ways of interacting in the context of ICT communication and to specific guidelines for chatting and using e-mails safely. Responsibly means, for example, that the medium’s anonymity is not abused for the purposes of bullying other people. Effectively implies the pupils asking themselves what is the best means of communication, in the light of their goals.

9. The Pupils are able to make an adequate choice out of different ICT applications depending on the objective to be reached.

The characteristics of an ICT competent person point to someone who, when faced with a problem or goals, is able to choose from a wide range of programs, applications or instruments, electronic or otherwise. It is in contrast to a one-by-one approach in education, where one program is used for one goal. This is why it is important for pupils to discover there are several ways of processing texts, photographs, diagrams and the like, making calculations, lending support to a presentation, charting the way to the course venue. These choices have to be appropriate and goal-oriented. Attention should also be paid to the availability of open-source software.

This all applies not only to the use of software but also to use of means of communication. As we said earlier on, pupils, course participants and students may choose the means of communication that fit in most effectively with their goals, in the light of their knowledge and experience with the characteristic of this system (such as speed, cost and user-friendliness).
10. The Pupils are willing to adjust their actions based on reflection upon the use of ICT by themselves or others.

Reflection is the result of effectively learning how to choose. Considering the resources used and comparing the outcomes teaches pupils the various characteristics, the advantages and disadvantages of the resources, programs and applications deployed. Hence this is an ICT competence, too, and it is useful to allow learners to experiment with various resources when problem-solving. The products and process may then be compared with each other. This method will offer them the experience they need to benefit from during a subsequent assignment, so becoming competent ICT users.