

# Towards an ICT-AT Competence framework

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## Background

One of the main problems ICT-AT trainers have in addressing the learning needs of the students with disabilities is to see these in the wider framework of competence development. In the European project ATLEC (LLL programme 2011-2013) an ICT-AT competence framework has been designed. The framework is a structured overview of learning outcomes allowing for the definition of learning programmes, levels and progress in learning. The ICT-AT competence framework lists ICT-AT related learning outcomes at four different levels subdividing them in categories of competence. Learning outcomes are the set of knowledge, skills and competencies an individual is expected to acquire after completion of a learning process. The learning outcomes of ICT-AT training can be described as facts and principles (knowledge and awareness) related to ICT-AT, practical ability (skills) to use assistive technologies effectively and meaningfully in personal and professional life and personal outcomes (competences) related to independence and participation in the knowledge and information/communication society.

## Activity Report

Partners of the ATLEC project in the UK, in Greece, in Belgium and in Italy (for a full list see [www.atlec-project.eu](http://www.atlec-project.eu)) have developed curricula in ICT-AT a tested them with groups of learners.

The framework is the outcome of the acquisition and systematically grouping of learning outcomes delivered in those curricula by the single partners with different groups of students.

As a guideline the European Qualification Framework (EQF) methodology has been adopted. The EQF describes generically levels in the development of knowledge, skills and competencies of a person. The framework can be applied to sector skills thus enabling learners to clearly see how competence levels relate to one another and progress in learning (12).

Within ATLEC we and our partners have developed a similar framework for ICT-AT skills for persons with disabilities. The different levels for learning in ICT-AT suggested are the following:

**Access level** This level is relevant for persons with disabilities (and their immediate support network: formal and informal carers, educators) who aim towards having awareness of the use of personal ICT-AT solutions and very basic skills in using them, where necessary with high levels of support.

**Foundation level**

This level is relevant for persons with disabilities who aim towards having basic knowledge of personal ICT-AT solutions and adequate skills in using them proficiently with little or no support.

**Intermediate level**

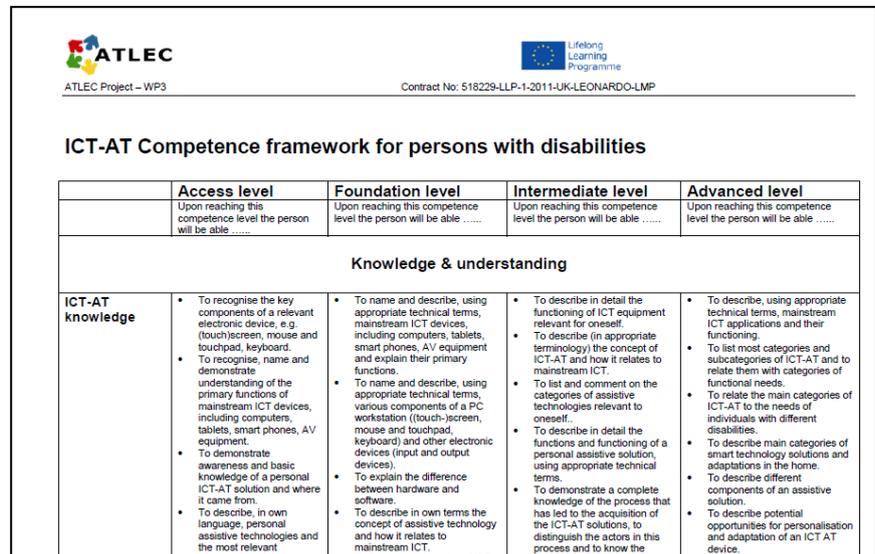
This level is relevant for persons with disabilities who aim towards having in-depth knowledge and critical awareness of personal ICT-AT solutions and proficient skills in using these independently to increase their level of activity and participation. This does not exclude support in setting up the ICT-AT solution.

**Advanced level**

This level is relevant for persons with disabilities who aim towards having wider knowledge on ICT-AT solutions for a wide range of other users in order to be able to support them appropriately.

For the moment these levels are not linked to specific levels of the EQF, although it is not difficult to imagine that the concerned range of EQF levels equals 1 to 4/5.

Progression in the framework is defined by the level of autonomy in the use of ICT-AT, the level of knowledge and understanding, the ability to apply skills in different contexts and the outcomes in terms of independence and participation. Most single learning outcomes have been piloted, but not the entire framework as part of a single learning programme.



	Access level	Foundation level	Intermediate level	Advanced level
	Upon reaching this competence level the person will be able .....	Upon reaching this competence level the person will be able .....	Upon reaching this competence level the person will be able .....	Upon reaching this competence level the person will be able .....
<b>Knowledge &amp; understanding</b>				
<b>ICT-AT knowledge</b>	<ul style="list-style-type: none"> <li>To recognise the key components of a relevant electronic device, e.g. (touch)screen, mouse and touchpad, keyboard.</li> <li>To recognise, name and demonstrate understanding of the primary functions of mainstream ICT devices, including computers, tablets, smart phones, AV equipment.</li> <li>To demonstrate awareness and basic knowledge of a personal ICT-AT solution and where it came from.</li> <li>To describe, in own language, personal assistive technologies and the most relevant</li> </ul>	<ul style="list-style-type: none"> <li>To name and describe, using appropriate technical terms, mainstream ICT devices, including computers, tablets, smart phones, AV equipment and explain their primary functions.</li> <li>To name and describe, using appropriate technical terms, various components of a PC workstation (touch)screen, mouse and touchpad, keyboard) and other electronic devices (input and output devices).</li> <li>To explain the difference between hardware and software.</li> <li>To describe in own terms the concept of assistive technology and how it relates to mainstream ICT.</li> </ul>	<ul style="list-style-type: none"> <li>To describe in detail the functioning of ICT equipment relevant for oneself.</li> <li>To describe (in appropriate terminology) the concept of ICT-AT and how it relates to mainstream ICT.</li> <li>To list and comment on the categories of assistive technologies relevant to oneself.</li> <li>To describe in detail the functions and functioning of a personal assistive solution, using appropriate technical terms.</li> <li>To demonstrate a complete knowledge of the process that has led to the acquisition of the ICT-AT solutions, to distinguish the actors in this process and to know the</li> </ul>	<ul style="list-style-type: none"> <li>To describe, using appropriate technical terms, mainstream ICT applications and their functioning.</li> <li>To list most categories and subcategories of ICT-AT and to relate them with categories of functional needs.</li> <li>To relate the main categories of ICT-AT to the needs of individuals with different disabilities.</li> <li>To describe main categories of smart technology solutions and adaptations in the home.</li> <li>To describe different components of an assistive solution.</li> <li>To describe potential opportunities for personalisation and adaptation of an ICT AT device.</li> </ul>

Figure 1 Part of the ICT-AT competence frame work of the ATLEC project

## Conclusions

The relationship between learning and ICT-AT has different dimensions: learning *in* ICT-AT, learning *with* ICT-AT and learning *through* ICT-AT. These dimensions are closely linked to each other as part of an upward spiral of development and empowerment. It is important that efforts in supporting children and adolescents with disabilities include in an early stage the use of technology as a powerful and “mainstream” way of developing autonomy. Where there is a lot experience of learning with ICT-AT and learning through ICT-AT much materials are available to guide and support Learning in ICT-AT. The ATLEC framework is apparently a useable “navigator” for those involved in ICT-AT competence development. Nevertheless further pilots are needed to assess its overall completeness and validity.

## References

The ICT-AT competence framework is part of the ATLEC Curriculum and Handbook. Download link:

<http://atlec-project.eu/download/>

More information on the European Qualifications Framework and its descriptors can be found at:

<http://ec.europa.eu/ploteus/content/descriptors-page>

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