



**Austria**

**Country Report on ICT in Education**

Available on <http://insight.eun.org>

Contact: Reinhold Hawle, Karl Lehner,  
Bundesministerium für Unterricht, Kunst und Kultur

2009/2010

## TABLE OF CONTENTS

<b>1 THE EDUCATION CONTEXT</b> .....	2
1.1 Education Reform.....	2
1.2 Key challenges /priorities for education.....	2
<b>2. ICT POLICY</b> .....	2
2.1. Responsibilities .....	2
2.2. ICT policies for schools .....	3
2.3. ICT priorities.....	4
2.4. National characteristics (optional) .....	4
<b>3. THE CURRICULUM AND ICT</b> .....	5
3.1. The curriculum framework.....	5
3.2. ICT in the curriculum .....	5
3.3. Students' ICT competence .....	5
3.4. Assessment scheme .....	5
3.5. ICT based assessment.....	5
3.6. Quality assurance of the use of ICT in schools .....	5
<b>4. DIGITAL LEARNING RESOURCES AND SERVICE</b> .....	5
4.1. Content development strategies.....	5
4.2. E-content development .....	6
4.3. User - generated content.....	6
4.4. Web 2.0.....	6
4.5. Content sharing .....	6
4.6. Learning Platforms .....	6
<b>5. TEACHER EDUCATION FOR ICT</b> .....	6
5.1. ICT competence targets .....	6
5.2. Assessment Schemes.....	6
5.3. ICT in teacher education .....	6
5.4. Training the Teacher Trainers .....	6
5.5. Incentives .....	6



## 1. THE EDUCATION CONTEXT

### 1.1. EDUCATION REFORM

The “new secondary school” reform targets secondary pupils from age 10 to 14. Its necessity and purpose lie in the challenge of an educational policy which is a mirror of contemporary society. It is above all a matter of communicating key competences such as autonomy, responsibility, creativity, flexibility, the ability to communicate, to solve conflicts and to work in teams as well as social learning. All these categories call for a rethinking in the academic organisation process.

Changes like increasing globalisation, the fast-paced development in the realm of media and technologies, dramatic evolution in the employment sector and in the age structure of society, an increasing individualisation of the way of life, multicultural circumstances and changing family models as well as the changing world of children, constitute an additional challenge for the Austrian educational system.

We are moving away from a place of pure “indoctrination” to a meeting place of self-responsible, self-organised, cooperative learning bringing together all members of school institutions.

The “new secondary school” will first open up possibilities in pilot schools and model regions. Its goal is to educate, train and encourage pupils with different skills and social origins, in accordance with their capabilities and inclinations. At the same time, the new reform aims at avoiding a premature fixation on certain study directions by providing differentiated performance requirements, choices and supportive pedagogical measures.

### 1.2. KEY CHALLENGES /PRIORITIES FOR EDUCATION

Introducing national educational standards into the general education system: since the 90s, the trend towards more autonomy has boosted the self-reliance of teachers, teaching teams and schools in Austria as regards methodology and didactics. Comparisons of developments at regional, national and European level in line with the prevailing international trend (cf. PISA, TIMSS) must be complemented with a strategy for the planning of classroom work and school development. As part of this strategy, standards for core compe-

tences must be devised on which to base the definition of an up-to-date general education system, its translation into practice and its critical appraisal. Educational standards will reveal to what extent schools perform their key task of imparting skills that are generally recognised as indispensable. They are intended to set out a framework of reference and to reinforce responsibility by providing yardsticks.

There is no inconsistency between the functional tasks of educational standards and the objectives of an up-to-date general education system. It is a complementary relationship, although the mandate of school education covers a broader field and is targeted at personal development and world orientation as the outcome of encounters with core subjects of our culture.

An amendment of the School Instruction Act of August 2008 provided the legal basis for the introduction of educational standards<sup>1</sup>.

The pertinent statutory regulation sets out the subject-specific proficiency that pupils/students are expected to acquire upon completion of the 4th and the 8th grades. The standards were introduced in primary and general-secondary (level I) schools, when the statutory regulation enters into force on 1/1/2009<sup>2</sup>.

So-called baseline surveys were planned to be conducted in spring 2009 (8<sup>th</sup> grade) and/or 2010 (4<sup>th</sup> grade). The Austrian Ministry of Education has assigned this task as well as the future testing of standards to BIFIE – Bundesinstitut für Bildungsforschung, Innovation und Entwicklung des österreichischen Schulwesens (Federal Institute for Educational Research, Innovation and Development of the Austrian School System), set up early in 2008: <http://www.bifie.at>

## 2. ICT POLICY

### 2.1. RESPONSIBILITIES

The Federal authorities have exclusive responsibility over legislation and implementation in the entire field of

<sup>1</sup> [http://www.bmukk.gv.at/schulen/recht/erk/novelle\\_schug.xml](http://www.bmukk.gv.at/schulen/recht/erk/novelle_schug.xml)

<sup>2</sup> [http://www.bmukk.gv.at/schulen/recht/erk/vo\\_bildungsstandards.xml](http://www.bmukk.gv.at/schulen/recht/erk/vo_bildungsstandards.xml)

general upper secondary education, intermediate and upper secondary technical and vocational education and training for kindergarten teaching staff and non-teaching supervisory staff, and with regard to the conditions of service and staff representation rights of teachers at these schools/colleges.

The Federal Parliament is responsible for basic legislation and the Länder are responsible for issuing and implementing laws with regard to the organisational structure of federal education authorities in the Länder and the external organisation of public sector schools which form part of compulsory education. External organisation includes development, construction, maintenance and approval of schools, but also the establishment of pupil numbers per class and teaching periods. All basic legislation has a framework character and is expressed through implementing laws promulgated by the Landtage, the legislative bodies at Länder level.

The Länder are responsible for legislation and implementation, for example with regard to nursery schools (Kindergarten). The Austrian system of administration is characterised by a two-tier hierarchy. Provincial School Boards have designated jurisdiction in matters referred to a District School Board, while the Federal Ministry of Education, Arts and Culture (BMUKK) deals with cases referred to Provincial School Boards in the first instance.

In general, the Federal Government introduces draft laws, known as government bills, in the National Council. The draft produced by the Federal Ministry of Education, Arts and Culture will be first submitted to a number of relevant authorities (Collegiate Councils in the District and Provincial School Boards, provincial governments, various interest groups, etc.) for an expert opinion. Basic laws enacted by the Federal Parliament will normally prescribe a deadline by which the Länder must issue pertinent implementing laws (within six months to one year). More detailed provisions are drafted in the individual constitutions of the Länder.

## 2.2. ICT POLICIES FOR SCHOOLS

### **eFit Initiative:**

Between 2000 and 2006 the Ministry of Education took an initiative of consolidating and specifically funding the implementation of new media in education and

culture with the eFit initiative. An important basis for eFit Austria was special funding by the federal government which financed significant improvements, particularly in the IT infrastructure for the education system. Under the auspices of eFit Austria, the Ministry has activated the enormous potential of those involved in the fields of education and culture and has helped to launch innovative ideas and projects. Numerous eFit targets, e.g. the comprehensive internet connectivity of Austrian schools, were achieved.

### **eContent Initiative**

Within the scope of the Austrian ICT policy, teaching/learning software and e-learning materials are being developed specifically for teaching and are being offered via provider structures such as education servers in the federal provinces but also via independent subject servers and school servers (eContent clusters). Subject portals allow online access according to subject matter.

### **Future Learning**

In 2007 the Ministry of Education launched the *Futur(e)Learning* initiative to support new forms of teaching and learning using ICT in education. *Futur(e)Learning* supports modern approaches to learning, moving away from the traditional teacher-centred classroom and promoting individual learning pathways. In order to allow schools to concentrate on pedagogy rather than technology, central services were provided, such as education portals, central services for learning platforms (Moodle, dotLRN, Ilias) and the collation and distribution of resources and software (both commercial and open source). The development of the "Edumoodle" programme, the central service to provide a free Moodle instance for all school locations, has shown that such offers are in great demand at the school locations. In the Länder of Vorarlberg and Burgenland there are similar successes with the learning platforms ILIAS and dotLRN. Overall in Austria there are 1,200 school locations earmarked for offers of central learning platforms (LM/CM-systems).

### **IWB –Evaluation in Schools**

One aspect of the *Futur(e)Learning* initiative in 2007 was tracking and documenting lessons in school and education generally. One suggested solution was the Interactive White Board (IWB). Depending upon the nature of a school's network, the IWB can be connected to the internet and the school server and has the potential to be the blackboard of the third millen-



nium. Already widespread in North America, Britain and Scandinavia, the IWB has found its way into everyday classes in many Austrian schools. According to a survey undertaken in 2007-8, 21.3% of Federal schools (schools funded and supervised by the State) were equipped with IWBs (primarily from vendors such as SMART and Promethean).

Following inquiries from schools concerning the technical functionalities of different boards and how these could be matched to school requirements, BMUKK launched a number of evaluation projects focused on IWBs and similar interactive solutions. These evaluations involved a range of different subjects and school types and included different types of boards. In particular, learning materials and learning sequences designed for use in classes with interactive whiteboards are being created and evaluated. It is also planned that follow-up lessons will be developed as extensions of the learning sequences. A further focus of these IWB projects is the extent to which IWBs can help document lessons. An assessment will also be made in terms of the different technical solutions and content on offer from different IWB vendors. All these national evaluation projects are being carried out in close cooperation with schools, independent research establishments and education-related institutions.

### 2.3. ICT PRIORITIES

No information available.

### 2.4. NATIONAL CHARACTERISTICS (OPTIONAL)

#### **eLearning Cluster Austria:**

Cluster schools are working in networks and offer their students (and teachers) additional certified qualifications in IT and e-learning skills and knowledge (basic IT-Skills like the ECDL; alternative operating systems like LINUX; technical networking like CISCO-certificates; JAVA programmer; network operating systems like MCSE; specific ERP software like SAP/R3; operating and co-ordinated e-learning content with learning platforms).

The school must offer non-mandatory promotion of advanced information technology skills for students and didactic approaches to the teachers. It could be a programme for talented students and could aim at integrating occupational reality in schools. Typical IT

certificates like Advanced ECDL, network academy, ERP systems, open source knowledge (LINUX, learning platforms), networking operation systems or script languages should be offered.

#### **eLSA eLearning Project:**

This is a project by the Federal Ministry of Education for students aged 10-15 (middle school, school levels 5-8) as part of the e-Learning Cluster of Austria. eLSA Schools have an innovative reputation (seen by school partners, such as parents, school environment) and schools' equipment is always up to date and there is a certain interest in a functioning infrastructure.

This can be found among teachers and students. Teachers' new media competence has grown considerably due to the project. Students appreciate new methods of learning, they are motivated and see their knowledge grow concerning new media as an important part of their future vocational development. eLearning benefits (such as being able to study whenever and wherever) are seen and accepted by students and teachers. eLSA supports collaboration in teams among teachers and strengthens students' ability to study under their own responsibility.

#### **The Virtual School Austria ([www.virtuelleschule.at](http://www.virtuelleschule.at))**

The project was initially established as an intermediary (interface) between Austria and the European Schoolnet (EUN). As part of this initial phase, pages of the Virtual School (bm:ukk dept. V/3) were set up nationally to present via the Internet an overview of the Austrian educational contribution and its involvement with ICT projects. Goals of ViS:AT:

- Further develop ViS:AT as a centre for interdisciplinary IT projects nationwide by disseminating information about EU initiatives and possible cooperation partners.
- That ViS:AT further contributes to e-content development and classification and takes an active and leading role in the development of the Austrian educational content pool.
- Continue ViS:AT role in collecting, developing and presenting quality IT applications in education. Part of this role will also see ViS:AT initiate and enable projects with a thematic focus. These projects are designed to show how interdisciplinary teaching with the use of ICT can be implemented in class as well as in open learning environments.



### 3. THE CURRICULUM AND ICT

#### 3.1. THE CURRICULUM FRAMEWORK

The Federal Ministry of Education, Arts and Culture promulgates curricula on the basis of the School Organisation Act. The spadework for curricular development is entrusted to working groups of teachers which have been set up to cover most subject areas. All curricula provide for areas of school autonomy, which schools may but are not required use.

As in the case of all other provisions of school law, any draft curricula must be submitted to the provincial governments, provincial school boards, social partners, parents' associations or other public institutions for their respective opinions (decision-making process). Curricula come into force by decree of the Federal Minister of Education, Arts and Culture.

#### 3.2. ICT IN THE CURRICULUM

##### Post compulsory secondary education

In all three types of schools as well as in the *Oberstufenrealgymnasium*, there are elective compulsory subjects accounting for six lessons per week in Gymnasium (*Oberstufenrealgymnasium*), eight in Realgymnasium and ten in *Wirtschaftskundliches* Realgymnasium, which have to be chosen in years 6, 7 and 8. Computer science is taught as a compulsory subject (two weekly lessons) in the fifth year in all types of schools. Upper secondary technical and vocational colleges provide general and vocational education (double qualification) and equip students with a specific craft as well as allowing them to pursue studies in higher education institutions subject to university entrance examinations (matriculation and diploma examination). Education is full-time and lasts five years. According to European Council Directive 95/43/EC of 20 July 1995, education at upper secondary technical vocational colleges and special forms of these schools is equivalent to education leading to a diploma and therefore postsecondary education in other EU Member States. The curriculum is divided into three equal parts: general education, vocational theory and vocational practice.

#### 3.3. STUDENTS' ICT COMPETENCE

No information available.

#### 3.4. ASSESSMENT SCHEME

ECDL; Competence Centres for Information Technology - *Koordinationsstelle für IT-Zertifikate an Schulen*: <http://www.ccit.at>

#### 3.5. ICT BASED ASSESSMENT

No information available.

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

No information available.

### 4. DIGITAL LEARNING RESOURCES AND SERVICE

#### 4.1. CONTENT DEVELOPMENT STRATEGIES

##### eContent Initiative – Subject oriented Portals

Within the scope of the Austrian ICT policy, teaching/learning software and eLearning materials are being developed specifically for teaching and are being offered not only via provider structures such as education servers in the federal provinces but also via independent subject servers and school servers (eContent clusters). Subject portals allow online access according to subject matter. As a result, it is important to involve all authors from publishing houses, school locations and education server editors among others and develop teaching materials for a wide range of subjects. The e-Content initiative (2007) aimed to supply approximately half the classes in Austrian schools with e-learning material in all subjects by the end of 2010. The Salzburg Research study (Salzburg 2006) on the use of e-Content materials established that approximately 20% of classrooms used e-learning resources ([www.eduhi.at/gegenstand](http://www.eduhi.at/gegenstand)).

##### Bildungspool Austria

The Ministry's education portal ([www.bildung.at](http://www.bildung.at)) offers a one-stop-shop for all eLearning activities within the framework of the Ministry and it will undergo further development to become an eContent clearing house which offers an interesting range of quality web-based educational contents for Austria's teachers and pupils. A defined metadata specification is the base on which

the distributed commercial and non-commercial content-servers are consolidated to form a logical eLearning Education Pool for all available elementary learning objects and resources. Metadata and permission rights are stored in the central repository<sup>3</sup>.

#### 4.2. E-CONTENT DEVELOPMENT

See section 4.1.

#### 4.3. USER - GENERATED CONTENT

See section 4.1.

#### 4.4. WEB 2.0

In 2007, nine lower secondary schools (Hauptschulen) implemented Web 2.0. This project was supported by the Federal Ministry of Education, Arts and Culture, financed by Telekom, and evaluated by the University of Salzburg<sup>4</sup>.

#### 4.5. CONTENT SHARING

Participation in international eContent and Repository Projects:

ATLAS@CERN – Learning with ATLAS @ CERN  
COSMOS – Repository for Science Teaching and Learning, Astronomy  
INSPIRE – Innovative Science Pedagogy in Education  
Open Science Resources – Development of a Common Repository for Science Education  
Organic.Edunet – Learning Repositories, Biology  
LRE – Learning Resource Exchange for Schools

<sup>3</sup> <http://bildungspool.bildung.at>

<sup>4</sup> More detailed information on the project can be found at: <http://web20klasse.weblife.at/> or <http://unternehmen.telekom.at/Content.Node/verantwortung/sponsoring/projekte/web20klasse.php>

For the evaluation:

<http://unternehmen.telekom.at/Content.Node/verantwortung/sponsoring/projekte/web20klasse-evaluationsbericht.pdf>

#### 4.6. LEARNING PLATFORMS

The development of the “Edumoodle” programme, the central service to provide a free Moodle instance for all school locations, has shown that such offers are in great demand at the school locations. In the Länder of Vorarlberg and Burgenland there are similar successes with the learning platforms ILIAS and dotLRN. Overall in Austria there are 1,200 school locations earmarked for offers of central learning platforms (LM/CM-systems).

### 5. TEACHER EDUCATION FOR ICT

#### 5.1. ICT COMPETENCE TARGETS

No information available.

#### 5.2. ASSESSMENT SCHEMES

No information available.

#### 5.3. ICT IN TEACHER EDUCATION

In connection with the active institutions, an eLearning strategy group was successfully established; it was continued by the new university colleges of teacher education (*Pädagogische Hochschulen*) in 2007. This made it possible to introduce new forms of teacher education (eCoaching and EPICT as well as teacher education 2.0) throughout Austria. The Ministry has commissioned a working group and launched a series of pilot courses to investigate the concrete implementation of the European Pedagogical ICT Licence (EPICT) in Austria.

#### 5.4. TRAINING THE TEACHER TRAINERS

No information available.

#### 5.5. INCENTIVES

No information available.

**Publisher:** European Schoolnet (EUN)

**Author:** Reinhold Hawle, Karl Lehner,  
Bundesministerium für Unterricht, Kunst und Kultur

**Editors:** Anja Balanskat, Valentina Garoia (European Schoolnet)

**Coordinator:** Anja Balanskat (European Schoolnet)