CURRICULUM DESIGN FOR BLENDED LEARNING

IO1: TRANSNATIONAL NEEDS ANALYSIS REPORT
LITERATURE REVIEW AND SURVEY DATA

OUTPUT LEAD PARTNER: CARDET

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Introduction

This report is the compilation of the work of partners involved in the Erasmus+ project “Curriculum for Blended Learning” (Project Number 2015-1-LV01-KA201-0013406). The report contains data from Latvia, Cyprus, Austria, and the United Kingdom.

Definition of blended learning

Blended learning is a hybrid form of learning that involves a combination of face-to-face and online instruction. Blended learning is constantly being changed and advanced with influences that derive from various technological developments. Reviewing the literature, partners have come across different definitions of blended learning, which describe the term very similarly. Blended learning combines practices that involve both face-to-face and online modes of instruction. Depending on the learning objectives, educators can choose to replace particular parts of the face-to-face learning practices with online activities. Below is a collection of definitions of the term “blended learning”:

- Blended learning means a blend of online training and face-to-face, instructor-led sessions. In this method, various platforms and modes of delivery are used, designed to complement each other and work in tandem to achieve overall learning objectives and outcomes (ELECTRONIC Platform for Adult Learning in Europe – EPALE, 2015).
- Blended learning is the combination of face-to-face and online instruction in a way that one mode supports the other for the best outcome possible (Roony, 2003, p. 26; Ward & LaBranche, 2003, p. 22; Ginns & Ellis, 2007).
- “…combination of onsite (i.e. face-to-face) with online experiences in order to produce effective, efficient, and flexible learning.” (Stein J., Graham C.R., 2014, p.12)
- All learning/educational scenarios that are not executed exclusively face-to-face in classroom or online can be called blended learning or hybrid learning respectively a combination of virtual and non-virtual learning settings and methods. If levels of e-learning are distinguished by their level of virtualization than blended learning fits between face-to-face classes enriched with media and pure online learning.

Aim and Objectives of the Literature Review

Overall, the project aims at responding to the following priorities set by the EU: develop basic and transversal skills through innovative and learner-centered pedagogical approaches; and develop assessment and certification methods. In order to effectively respond to the particular objectives, it is necessary to evaluate the European context and identify the needs around blended learning. This evaluation is necessary in order to create the right affordances and tools to support the development of skills and methods for the effective application of blended learning.
The Needs Analysis Report aims at setting the grounds for creating a functional and effective blended learning toolkit. Specifically, it aims to achieve the following objectives:

1. Provide a literature review that describes the core ideas and concepts of blended learning
2. Identify the advantages of blended learning
3. Present existing EU policies related to the use of ICT in education and blended learning
4. Present existing policies on the use of ICT and blended learning in partners’ national contexts
5. Present indicators and good practices of blended learning in partners’ national contexts
6. Present data collected from partners’ national contexts around different topics of blended learning
7. Present the outcomes and conclusions that derive from the data collection
8. Identify and discuss the needs as derived from the analysis of the collected data and in relation to the EU policies and literature review

Methodology followed for the report

The Needs Analysis Report is the result of partners’ consistent work in reviewing the literature, collecting and analyzing the data from the survey. The methodology used for the report is based on a literature review, followed by quantitative data collection. For the data collection, a survey tool was used, which also contained fields for participants to provide explanations for their options, if they needed to. The analysis of the data was quantitative and includes data from all the collected questionnaires in all partner countries.

Partners set the deadlines and the process of work at the kick off meeting held in Cyprus. Partners have followed the same sequence of practices in order to ensure consistency in the overall process of identifying the needs for each partner country. A template was sent to partners by CARDET, with the different sections of the report. All partners had initially conducted literature reviews on topics around technology integration and policies in their national contexts. In the meantime, CARDET finalized the questions for the surveys.

After partners had provided feedback, CARDET finalized the surveys, which were all translated in partner languages. Partners then distributed the survey in schools and collected data, online and in paper form. The data that were collected through printed questionnaires were transferred online by each partner.

Data from the survey were analyzed by each partner separately and were sent to CARDET as part of the final version of the national report from each country. CARDET has also analyzed the data at a collective level on order to provide an overall picture of the state of the art.
Literature Review

Types of blended learning

The literature suggests different types of blended learning. In this report, we focus on the following models of blended learning which are mostly referred (Horn and Staker, 2014):

1. Rotation model
2. Flex model
3. A La Carte model
4. Enriched Virtual model

The models are presented below, with a description of their functionalities and advantages.

The **Rotation Model** is described as the common model of blended learning, during which students rotate to become involved with different activities, among which some are conducted online. The rotation can occur based on a predetermined schedule or under the supervision of a teacher. Students can do their assignments traditionally (on paper), do some online and small-group activities. Another option is the alternation of whole class and online activities. The Rotation model can take place in four ways:

i. **Station Rotation**: Students spend a part of their lesson performing activities online and employing a software or other coursework assigned by their teacher. Students mainly work privately during these activities. For the offline part of the lesson, students follow the teacher’s instructions and perform activities based on workbooks, paper tasks etc. The particular model provides an opportunity to teachers to work with small groups of students and provide more tailored instruction where needed. Project-based learning is also facilitated, as the technology component facilitated the process for searching and organizing information actively, and collaboratively.

![Figure 1. An illustration of the Station Rotation Model](image source: www.khanacademy.org)
ii. **Lab Rotation**: This model has many similarities with the Station rotation. The difference with Station Rotation is that in the Lab Rotation Model, students rotate from one location to another (classrooms in the school), based on a pre-determined schedule.

![Lab Rotation](image-source: www.khanacademy.org)

*Figure 2. An illustration of the Lab Rotation Model*

(iii. **Flipped Classroom**: The content of the lesson is taught outdoors (generally offsite), while students solely use the classroom to exercise with activities. With the Flipped Classroom Model, teachers can answer questions and support students’ activities, who have watched the lectures at home and work on their projects in the classroom. This model is also beneficial for students who are having difficulties doing their homework.

![Flipped Classroom](image-source: www.khanacademy.org)

*Figure 3. An illustration of the Flipped Classroom Model*

(Image source: www.khanacademy.org)
iv. Individual Rotation: According to their personal learning needs, students rotate individually. In this model, they do not have to move to all learning modalities, rather they are only involved with the activities that suit their needs best at that point.

![Figure 4. An illustration of the Individual Rotation Model](Image source: www.tes.com)

In the Flex Model online learning constitutes the base for this model, however students can be involved with offline activities regularly. There is not a strict predetermined schedule to be followed by the students. Each student follows an individual flexible schedule with the teacher in charge supervising all students. Teachers are also responsible for providing support when needed, via individual tutoring, small-group tutoring and group support. The Flex model might incorporate a lot of face-to-face assistance or a minimal one.
The **A La Carte Model** is employed in the case a student participating in an online course, whilst physically attending a school. This refers to be the common blended learning type used in secondary school. It is noteworthy that the online form of learning occurs after the face-to-face learning or otherwise, after attending the traditional school. However, this model is considered as a model of blended learning, since students are involved in both forms. The A La Carte Model is also known as “Self-Blend Model”.

**Figure 5. An illustration of the Flex Model**
(Image source: www.khanacademy.org)

**Figure 6. An illustration of the A La Carte Model**
(Image source: http://www.christenseninstitute.org/)
The *Enriched Virtual Model* demands a part of the instructional session to be delivered face-to-face while the rest of it can take place online at any location of the student’s choice.

![Enriched Virtual Model](image-source: http://charterschoolconference.com/)

**Figure 7. An Illustration of the Enriched Virtual Model**

*The advantages of blended learning*

Blended learning constitutes a good way for teachers to update their teaching method and be mainstreamed with the new digital generation (Dziuban, Moskal and Hartman, 2013). Blended learning has various advantages for the educational process, as it can support learning in active ways. This type of learning allows educators to incorporate online material in their lessons and adjust accordingly in order to become a continuation of the face-to-face activities. In addition, blended learning provides students with flexibility regarding the content of the sessions. Students act independently, while following their own pace towards learning. Teachers are also capable of monitoring students’ progress in a more systematic way than using a traditional classroom based method (Dziuban, Moskal and Hartman, 2013).

A principal element of blended learning is the fact that learners have the chance of studying and learning independently. This provides learners with an extra motivation to study from any place of their choice and thus, learning easily becomes a part of their everyday life (Dziuban et al, 2004). Moreover, learners are encouraged to experiment and through practice, they discover
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their own learning style and other sources which they think can benefit from. In addition, blended learning is time efficient for students, saving much time from other responsibilities of students and letting them concentrate completely on their learning (Ayock et al., 2002 and Young, 2002).

Another significant advantage of blended learning is referred as “maximised interaction”. It is argued that blended courses increase the level of interaction of students with the learning materials comparing to only attending face-to-face classes. Blended learning also enables students to better interact with other students via a variety of internet resources (Wingard, 2004; Waddoups and Howell, 2002). Furthermore, blended learning promotes collaboration among students and constitutes an innovative pedagogical strategy, since it has been argued it “address[es] varying learning styles, increase[s] interactivity, promote[s] community, and meet [s] the special needs of online students” (Story and Dielsi, 2003). Lastly, blended learning could encourage learners to think critically, as they act independently to learn and thus, have the control required to make their own choices regarding their learning (Osguthorpe and Graham, 2003).

Kose (2010) particularly refers to the following benefits of blended learning:

- Blended learning can improve students’ academic achievement
- Blended learning can serve multiple learning styles, and any cognitive level
- Blended learning can reduce educational costs
- It can retain students’ motivation and attention for longer time than traditional practices
- Blended learning makes education flexible, as knowledge and information are accessible at any time and from any place.

EU Policies

Learning with the use of ICT and blended learning

The use of ICT for finding solutions and creating roadmaps towards optimizing education, industry, communication, and society, is strongly supported within the European context. However, the need for pedagogical support, apart from support regarding infrastructure, at all levels is imperative. ICT can facilitate effective, efficient, innovative and creative practices for learning, through which participation is active and critical. As mentioned in the European Commission’s Digital Single Market for ICT in Education, “ICT provides everyone with flexible and accessible learning opportunities, in and outside the classroom.” The goal, according to the 2016-2017 Work Programme, is for ICT use to strengthen the opportunities for improving societies and markets in order to improve flexibility and the competencies for the future. Overall, the focus is on the use of ICT and the production of open educational resources to provide information that will be available and will enable students, educators and educational institutions to share and use knowledge anywhere and at any time.
The European Schoolnet’s Survey of Schools: ICT in Education (2013) provides data regarding the use of ICT in Education based on 190,000 responses. In particular, it is reported that teachers participate in professional development programmes mainly when they feel confident with the use of ICT. In parallel, students report high confidence in ICT skills. Based on the data, the report provides recommendations for policy-making. At a central and local level, the report suggests that the ICT skills need to be “boosted” both for students and for teachers, to use the Internet safely, social media effectively, and participate in teacher professional learning communities. Such practices can support efficient learning for all students and also facilitate the integration of ICT in the teaching process. Therefore, EU countries need to ensure, via relevant policies that support for ICT takes place at a national, regional and local level.

At an institutional level, school leaders should support the policies on the integration of ICT by promoting participation in professional development programmes; in professional development communities; and allocating time for reflection, planning and communication among colleagues for improving ICT practice. Through testing and reflections, school leaders should promote and support the adaptation of practices to constantly improve educational practices within their institutions.

At a European level, each country’s policies should be aligned with the EU standards. Through large scale projects, the EU can receive evidence about what works best, enriching current frameworks of ICT use and increasing the quality of instruction at a European level. The initiatives taken at a European level should support all countries in creating tools and practices for building capacity, assessing performance, and enhancing competencies.

The EU does not provide any policies specific to blended learning. However, this particular learning approach is supported in documents and reports regarding the incorporation of ICT in education. The “Report to the European Commission On New Modes Of Learning And Teaching In Higher Education” (2014) refers to blended learning as a novel practice that is mainly used in higher educational institutions.
National education policies

Each European country’s education is distinguished by its educational system’s and policies’ characteristics. This part of the report consists of descriptions of the education systems and national education policies of Austria, Cyprus, Latvia, and the United Kingdom.

The educational system and policies in Austria

Educational policies in Austria

The origins of the Austrian school system go back to the reign of the Austrian Empress Maria Theresa (1740 to 1780). In Austria six years of primary school were compulsory from 1774, in 1869 these were extended to eight years (for children aged six to 14) and in 1962 to present-day duration of nine years. In recent years, educational policy has increasingly focused on participation in early education. Since 2011/12, at least one year of kindergarten attendance before entry into primary school has been obligatory. Since this reform, compulsory education has consisted of one year of early education plus nine years of school for children aged five to 15.

Within the secondary education system, general secondary schools are being replaced by middle schools. There is currently a fierce debate over whether the new middle school should also replace the academic secondary school in lower secondary education, and thus become a comprehensive school for all 10-14-year-olds.

Teacher education is also a topic that has generated considerable debate. The strict separation of teacher education at universities (for teachers of academic secondary schools and higher vocational colleges) and at university colleges of teacher education (for teachers of primary schools and general secondary schools or new middle schools respectively) is being restructured. Within the new system of teacher education, universities and university colleges of teacher education will cooperate closely.

In tertiary education, the most important new development in recent decades is likely the rise of universities of applied sciences. This form of tertiary education was established in 1994 in Austria. Just 20 years later, considerably more than 40,000 ordinary students are enrolled in universities of applied sciences (43,593 in winter semester 2013/14, cp. Statistics Austria 2014b). Nevertheless, tertiary education still largely takes place in traditional public universities. The growth in the number of students from both within and outside of Austria has been so great that public universities have had to abandon the principle of free access and limit study places in some fields. (Jaschinski/Sommer-Binder, 2016).
Organization of the Austrian educational system

This is a visual description of the Austrian educational system

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**Austrian Education System**

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ICT in formal education in Austria

In terms of equipment, Austrian students benefit from conditions better or at least comparable to the EU average situation concerning access to computers (except at grade 4), connectivity through fast broadband (except at grade 11 general), and connectedness measured through the existence of a school website or home page.

As for frequency of use of technology, it is only in vocational schools that students experience conditions where both teachers’ and their own use of ICT is above EU averages.
It is noticeable that teachers’ operational confidence in using ICT increases with the age of the students they teach, rising from slightly below the EU mean at grade 4 to well above at grade 11 vocational. Likewise, students’ confidence rises from slightly above the EU mean at grade 8 to well above at grade 11 vocational.

Time spent on professional development in ICT generally rises with the age of students taught. The percentage of students in schools where teachers have undergone one to three days’ training is consistently above the EU mean, but the percentage in schools where teachers have had more than six days’ training in two years is below the EU mean at all levels, the younger the students the less the training. At all grades percentages for participation in online communities are below the EU mean.

As for support measures for using ICT in teaching and learning, there are many more students in schools with ICT coordinators in Austria compared to the EU average (except at grade 4). Incentives of any type to reward teachers using ICT are rarely observed at grade 4 in Austria, a grade where very few measures for supporting ICT use at that grade are identified.

Overall, more focus seems to be dedicated in Austria to the ICT infrastructure and technical aspects compared to the use of ICT specifically in teaching and learning. There is a marked contrast between grade 4 where several values are below the EU mean and grade 11 vocational where most scores are above the EU average. (Survey of Schools, 2012, S. 29).

**The educational system and policies in Cyprus**

**Educational policies in Cyprus**

Information and Communications Technologies (ICT) have been integrated in Cyprus education since 1993, however they were actively integrated in all Cypriot primary schools during the academic year 2002-2003 (Kyriacou & Charalambous, 2006). A guide towards “Implementing ICT in learning and leadership process” was developed in Cyprus in order to provide clear guidelines and policies to the schools regarding the incorporation and implementation and of ICT in the Cypriot schools.

An “Intersegmental Committee” has been established in Cyprus in order to be responsible for incorporating ICT and for resolving any issues related to them in Cyprus education. In addition, ICT consultants are available to support schools in using ICT and fully incorporate them in the learning process. Furthermore, a Local ICT Coordinator has to be assigned by each school at the beginning of the academic year. The Local Coordinator’s role is to assist in using ICT in the most effective and beneficial way. The Ministry of Education and Culture Cyprus (MoEC) has also created a website to provide teachers with information on the effective incorporation of ICT in primary education. There are six relevant circulars developed by MoEC for ICT (online as 3077,
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3076, 2736, 2479, 1838, 391 and 270) and also a detailed presentation for incorporating ICT in each different school subject.

The MoEC supports Cypriot schools by creating or assisting in creating and enriching the schools’ websites. Relevant websites are also available for the teachers to help them acquire all relevant information easily. Some of these websites are the following:

- http://www.schools.ac.cy/protypa_istoselidon.html
- http://www.schools.ac.cy/step1_webpage_get_simple.html
- http://www.schools.ac.cy/istoselides_voithimata.html

The MoEC has also established a “Code of Conduct for Internet Use”, that all teachers are required to study carefully. In this framework, the MoEC requires all parents/guardians to provide a written consent form for publishing any photos or videos in which a child is presented”. This is obligatory to be signed by all parents/guardians of students in school.

The existing school equipment can also be accessed online at https://www.dias.ac.cy/el/ylikotexniki/Pages/michanografikos.aspx. Clear guidelines are provided to the schools regarding the protection of ICT equipment during the holiday period (Circular 3791) and all staff members are obliged to follow them.

The Pedagogical Institute (PI) in Cyprus also provides schools with support in effective ICT implementation. PI offers seminars in order to equip teachers with all the necessary skills to use ICT and produce educational movies. The seminars are provided by the PI both in a synchronous and an asynchronous form. Library maintenance with the use of an educational application, provision of technical support, monitoring of equipment and many more are responsibilities of the PI regarding ICT in Cypriot education.

Organization of the Cyprus educational system

The Cyprus educational system is highly centralised. The Ministry of Education and Culture Cyprus (MoEC) is in charge of supervising private Cypriot schools and administering public Cypriot schools of all levels (pre-primary, primary and secondary level). The MoEC is also responsible of supervising all educational institutions, such as Tertiary Level, Post-Secondary and universities. All educational policies and drafted and formulated by the MoEC, and are then reviewed and earn an approval by the Council of Ministers. In addition, the MoEC is responsible of enforcing all educational laws (World Bank, 2014). Teachers’ policies, such as transfers, promotions and appointments, are managed by a committee (Educational Service Commission), established by the Council of Ministers. Noticeably, teachers possess good power over negotiating their working conditions, evaluation and pay, through their trade unions. The school boards take responsibility of constructing, equipping and maintaining school, however do not have the power of contributing in matters of educational importance.

As shown in Figure 9, the Cyprus education system consists of five stages:
1. **Kindergarten**: children attend kindergarten from the age of three (3) to five years and eight months (5 and 8 months)

2. **Primary school**: children attend primary school from the age of five (5) years and eight months to twelve (12) years

3. **Lower Secondary School** (Gymnasium): twelve (12) to fifteen (15) years

4. **Upper Secondary School** (Lyceum): fifteen (15) to eighteen (18)

5. **Higher education institutions and Universities**: over the age of eighteen (18)

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**Figure 9. The structure of the education system in Cyprus**

**ICT in formal education in Cyprus**

ICT was officially introduced in Cyprus education in 1991 (Karagiorgi, 2005, p.21) and after that, five changing phases followed. Currently, the great majority of Cypriot teachers (approximately 95%) have attended a program to be educated regarding basic ICT skills. In addition, specialised seminars are provided to schools and teachers for the effective incorporation of ICT tools in different subjects. More than 100 educators are well equipped to provide the necessary help to
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schools in order to have a smooth ICT implementation. Furthermore, an “Online School” called «ΔΙΑΣ» has been set up to promote the effective and constructive collaboration among teachers. Relevant training is also provided by the Pedagogical Institute in Cyprus in order to equip teachers with ICT skills and assist them feel comfortable with technology, however the seminars are not compulsory. The great majority of schools are equipped with interactive blackboards and have provision for wireless networks. In addition, a “Data Centre” has been created in order for the LMS and SMS digital applications to function (POED et al, 2010 and MoEC, 2012).

All schools in Cyprus have a specific number of hardware devices. Specifically, the ratio of computers per students in primary schools is 1:4, in secondary schools 1:2, 5 and in tertiary schools 2:3 (MOEC, 2012). A financial grant is also provided to some students attending secondary school (and almost aged 13-14) in order to help them purchase a laptop. Furthermore, the Ministry of Education and Culture plans to replace school computers every five years. Moreover, all schools are currently equipped with printers and digital cameras.

A study conducted in 2009 to identify the beliefs of physics teachers regarding ICT, indicated that physics teachers felt uncomfortable with the progress of introducing ICT in education. They expressed their concerns of the plan being disorganised and not consistent: they feel that they are not supported enough and not adequately trained to incorporate ICT in their teaching. However, the majority stated that ICT tools constitute a good way of capturing students’ interest and that it is a crucial agent to help their lessons become more effective.

The educational system and policies in Latvia

Educational policies in Latvia

"National education plan 2020" define the education cornerstones of an education system that will shape the development of the future citizen and foster success in the labour market. It comprises intensive acquirement of the Latvian language, foreign languages and information and communication technologies. It promulgates defined skills that should be combined in order to successfully communicate in the on-line environment thereby improving students’ knowledge and enabling them to be active ICT era citizens.

The direction "Development of competencies" (275§) name competencies necessary for every person in order to be able to take care of him/herself and actively participate in the development of the country: understanding and use of ICT, communication and collaboration skills, creativity, critical thinking, risk assessment and problem solving.

The first action point in the direction "Development of competencies" (290) is to develop innovative curriculum (content) and education forms promoting implementation of creativity and entrepreneurial skills in basic and secondary education by working in the digital environment. The switch from the physical environment of printing and blackboards to on-line
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or digital environment demands a change in teacher working environments, teaching methodology, teacher skills and competences. It is planned to virtualize the school environment and to use ICT more in learning and teaching processes; change the forms and methods of teaching; and modify content and approaches by 2020. 168§ talks about stimulating innovation culture to foster business investments in education and research to develop ICT industry.

“Guidelines for the Development of Education for 2014-2020” is a medium term policy document that determines education development. The document has releases three main objectives: 1) to raise the educational quality through curriculum development and the development of appropriate infrastructure; 2) to promote individual’s social and professional skills for life and competitiveness; 3) to improve resource management efficiency and the development of institutional excellence. Analysed through the perspective of virtualization it outlines the crucial role of ICT to ensure wellbeing of citizens and spurt of economic growth through the integration ICT in education. It is planned to create 5 ICT methodology centres and to channel 14, 23 million euros for their development, thereby increasing education quality and promoting a new methodology of teaching.

In order to improve the teachers’ ICT and foreign language skills, it is supposed that 20% of all schools will use an eTwinning platform to collaborate with other European schools. Both general and professional education in 2020 is characterized by the development of ICT skills and active participating students.

The state’s main strategy document "Sustainable development strategy of Latvia until 2030" defines the benefits of virtualization of the education process and a supporting action plan. The document suggests that by using the benefits of decentralization offered by the use of technology, it is possible to offer an exciting and interactive curriculum of good quality in the digital environment. This would ensure the differentiation of student needs and introduce new forms of education -- for example part of lessons to be held on-site and part in a virtual environment, utilising Internet resources, and on-line communication with other schools or countries.

There are defined 3 aims in the context of virtualization of the education process:

1. To develop an e-lesson concept in order to implement distance learning programmes alongside the traditional model;
2. To virtualize all text-books to be available in virtual environment (until 2020);
3. The digitalization of Latvian schools and libraries will be necessary to implement modern education processes including the use of ICT.

Organization of the Latvian educational system

The education system is administered at three levels - national, municipal and institutional. The Parliament (Saeima), the Cabinet of Ministers and the Ministry of Education and Science are the
main decision-making bodies at national level. The Ministry of Education and Science is the education policy development and implementation institution that oversees the national network of education institutions, sets educational standards and determines teacher training content and procedures.

Figure 10. The structure of the educational system in Latvia
**Basic education (ISCED-P-2011 level 1 and 2)**

9-year single structure basic education (primary and lower secondary education according to ISCED) is compulsory for all children from the age of 7 and is generally completed till the age of 16, but may continue till the age of 18. The National Basic Education Standard determines the objectives and tasks, compulsory curriculum and the principles and procedures for assessment of basic education. The aim of basic education is to provide opportunities for acquiring basic knowledge and skills required for community and personal life; to lay the foundation for continuing education; to promote the learner’s harmonious development; and to foster a responsible attitude toward one’s self, family, society, the environment and the state.

**Secondary education (ISCED-P-2011 level 2, 3 or 4)**

There are two types of programmes at the secondary education level: academic secondary education programmes and vocational secondary education and training programmes. The main task of academic secondary education programmes is to prepare for further studies at university, while vocational secondary programmes are more aimed at acquiring a vocational qualification, i.e. for entering the labour market and/or continuing education. When admitting students to secondary level educational programmes, schools are free to hold entrance examinations according to the basic compulsory education standard, except in those subjects for which students have already received assessments reflected in the basic compulsory education certificate.

**Academic secondary education programmes (ISCED-P-2011 level 3)**

The National General Secondary Education Standard determines the compulsory curriculum of academic secondary education programmes, which are available in the following profiles:

- A general education profile which includes educational programmes without specifically emphasized subjects;
- A humanities and social sciences profile which includes educational programmes with special emphasis on subjects in the humanities and social sciences;
- A mathematics, natural science and technical profile, which includes educational programmes with special emphasis on mathematics, natural science and technical subjects;
- A vocational preparation profile which includes educational programmes with special emphasis on specific vocational/ professional areas (for example, in arts, music, business, and sports).

The National Standard requires that academic secondary education programmes of all profiles offered through full-time education contain 11 compulsory subjects. Each profile has its specific 2-3 compulsory subjects in addition. A secondary school may offer 9 other compulsory options and 2 free options. General secondary education programmes offered at evening schools and
via distance learning contain 9 compulsory subjects and offer 9 compulsory options and 4 free options, moving the subjects “third foreign language” and “sport” from the set of compulsory subjects to the set of free options.

**ICT in formal education in Latvia**

The use of ICT in formal education is explored by analysis of “Guidelines for the Development of Education for 2014-2020”, as well as in National Standards of Basic and Secondary education.

Guidelines for the Development of Education, based on "**Information society development guidelines for 2014-2020**" (accepted by Cabinet of Ministers), declare necessity to provide chance to use benefits of ICT for everyone, to develop knowledge based economy and improve the overall quality of life by contributing increase of public administration efficiency and state competitiveness, increase of economic growth and creating job vacancies. The document says that ICT education and e-skills will be promoted to achieve this goal.

National Standards of basic and secondary education determine compulsory and optional education content in 4 profiles: language; science and technologies; social sciences and humanities; and arts.

Computer Science is one of the subjects in the profile of “science and technologies”. It is compulsory subject taught from the 5th till the 7th school year of primary education (and it is 1.2 % out of the total amount of lessons in primary curriculum) as well as in secondary education (3% out of total amount of lessons of secondary curriculum). Programming is an optional course in the secondary curriculum, which could be chosen at the same amount as Computer Science (3% out of the total amount of lessons).

**The educational system and policies in the UK**

**Educational policies in the UK**

The UK is in fact a grouping of four countries: England (by far the largest with 53 million people); Scotland (5.35 million); Wales (3.1 million) and Northern Ireland (1.81 million). In recent years central government policy from Westminster has been to devolve powers and money to the governments of these nations in an attempt to provide greater devolution and to head off challenges of secession. The latter was seen most clearly in 2014 with the vote by Scottish voters to decide whether to secede from the United Kingdom and establish an independent state. The vote was defeated by 53 percent to 47 percent but the threat of secession has not receded. On the back of this more revenues and responsibilities are being devolved along with tax raising powers.

The consequence of these policies has been that education has been devolved to individual countries within the Union and there is an increasing disparity of approach. For this exercise...
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we have focused on English policies with regard to blended learning although a swift reconnaissance of the government education departments for Northern Ireland, Wales and Scotland revealed a dearth of policy on blended learning in schools.

In general terms English education policy can be seen as having three objectives: increasing school autonomy by the development of academy status which establishes schools as independent from local government control; raising standards by setting national targets and enforcing these through inspection via the Office for Standards in Education; and restoring international competitiveness by introducing a progressively more difficult and rigorous examination system at secondary level.

**Increasing autonomy:** the Conservative-Liberal coalition government of 2010 introduced the idea of ‘free schools’. This enabled anyone to apply to set up and receive funding for a school anywhere in England. These schools currently educate some 200,000 students and there is a plan to launch 500 more within this category by 2020.

Existing primary and secondary schools have been encouraged to apply for ‘academy’ status and to date there are now over 5,000 such schools including those designated by the previous administration under a different policy aimed at improving education for children living in areas of deprivation. Academy policy is well summarized here: http://researchbriefings.parliament.uk/ResearchBriefing/Summary/SN07059

**Raising achievement:** the accountability framework for schools has been tightened. Sixty five percent of ten and eleven year olds are expected to achieve the required standard in reading, writing and maths. This is assessed via externally set and marked national exams. At secondary level, all schools are expected to achieve a sixty percent higher pass rate (ie A* to C grades) at GCSE at 16. This system is being further refined with the introduction of ‘Progress 8’ measures from 2016 with further adjustments in 2017. The measure is quite technically complex and designed to ensure progress of all children, not just those on the grade C/D border. See here for a guide: https://www.gov.uk/government/publications/progress-8-school-performance-measure

The school inspection system operated by Ofsted (Office for Standards in Education) enforces these standards by frequent (sometimes unannounced) inspections. The inspection framework has also been sharpened. All schools are expected to be at least ‘good.’ Failure to meet national standards automatically leads to a school inspection judgment of either ‘requires improvement’ or ‘inadequate’. In these circumstances schools can expect further inspections every term or so to ensure that their categorisation is replaced by ‘good’ or ‘outstanding’ within a short period of time, typically 18 months to two years. Legislation currently being considered by parliament will enable the secretary of state for education to order schools with poor inspection ratings to become academies, or if they are already academies, to join a larger group of schools known as academy chains.
Exam system: This has ended modularity, course work and early entry for high stakes GCSE exams. The system has also switched away from criterion referencing to norm referencing. The latter means that the spread of grades at GCSE is determined by aggregated pupil achievement at the end of primary school. This changes year by year.

The combined impact of these policies has been to focus schools almost exclusively on compliance with the government agenda. In a market model headteacher jobs are now more susceptible to being terminated if results dip. The consequence has been fewer headteacher candidates and fewer graduates wanting to become teachers. Funding pressures have also made innovation more difficult as schools have struggled to balance their budgets by reducing costs and staffing. Beyond this English governments have expressed concern that poorer pupils do not make sufficient progress and as a consequence rates of social mobility are being negatively impacted. Targeted funding of pupils from poorer background has been introduced but it is too soon to judge its impact.

Organization of the UK educational system

England and Wales: In England and Wales, children are required to attend school between the ages of 5 and 15, though of course they can attend outside these age ranges. The two main types of schools are Primary and Secondary, which can sometime be split into different types. Below is a list with all the different key stages for the British Education system:

Primary: Age 5 - 11 years: Many primary age schools are split up into Infant (Key Stage 1) and Junior (Key Stage 2) schools. Before attending a primary school, many children attend a Nursery school. Nursery schools can take in children between the ages of 3 and 5 years and may or may not be attached to a state infant/primary school. The primary age year groups are as follows:

- Reception/Year R (age 4-5) - Foundation
- Year 1 (age 5-6), Year 2 (age 6-7) - Key Stage 1
- Year 3 (age 7-8), Year 4 (age 8-9), Year 5 (age 9-10), Year 6 (age 10-11) - Key Stage 2

Secondary: Age 11 - 15 years: Most Secondary schools are known as Comprehensives, but in some towns there are Grammar Schools where admission is based on a successful selection test (11+). Some secondary schools do not have a Sixth form, so children leave at the end of their fifth year. Those secondary schools that do have a sixth form have children who stage at school until their eighteenth year. The Secondary age year groups are as follows:-

- Year 7 (age 11-12), Year 8 (age 12-13), Year 9 (age 13-14) - Key Stage 3
- Year 10 (age 14-15), Year 11 (age 15-16) - Key Stage 4
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- Schools with a sixth from have two more year groups: Year 12 (ages 16-17), Year 13 (ages 17-18). (These latter two year groups are sometimes called the lower and upper sixth forms).

First and Middle Schools: In some counties of Britain, instead of primary schools, they have First and Middle schools. For example the counties of Suffolk and Dorest have this school system. First schools take in children between the ages of 5 and 9, whilst middle schools take in children between the ages of 9 and 12. After this the children then go on to attend a secondary school.

Welsh Schools: Children in Wales follow more or less the same model as the English system, though there are some notable differences. For example, children first start primary school in the term after their fifth birthday, and Welsh as a subject is compulsory in all Welsh state schools. Testing at Key Stage 1 is no longer compulsory and this is being extended to Key Stage 2 and 3 by the year 2007-8. For more information on Welsh schools.

Scottish Schools: Children in Scotland usually start school in the year when they reach age five. They spend seven years at primary school before going on to secondary school around the age of 12 years old. The year groups in Scottish primary schools are called P1, P2, etc, whilst those in Scottish secondary schools are called S1, S2, etc. Pupils will follow a wide curriculum for the first two years, before going on to study less subjects in more detail for the next two years. At the end of S4 pupils will sit examinations in either Standard Grade or Intermediate. In their fifth year they study a smaller number of subjects, usually at Higher (although they might still study Standard Grade or Intermediate). In their sixth year they progress to Advanced Higher.

Northern Ireland Schools: Children in Northern Ireland follow a similar system to England and Wales with primary and secondary schools, though until recently all primary children took the 11 Plus exam for possible entrance to grammar schools. This exam is no longer compulsory in Northern Ireland, though the majority of children do still take this exam. For more information on schools and education in Northern Ireland.

School leaving age

School leaving age depends on where people live.

England: Individuals can leave school on the last Friday in June if you’ll be 16 by the end of the summer holidays. They must then do one of the following until they are 18:

- stay in full-time education, e.g. at a college
- start an apprenticeship or traineeship
- work or volunteer (for 20 hours or more a week) while in part-time education or training

Scotland: Individuals that turn 16 between 1 March and 30 September can leave school after 31 May of that year. If they turn 16 between 1 October and the end of February, they can leave at the start of the Christmas holidays in that school year.
Wales: Individuals can leave school on the last Friday in June, as long as you’ll be 16 by the end of that school year’s summer holidays.

Northern Ireland: Individuals that turn 16 during the school year (between 1 September and 1 July) can leave school after 30 June. If they turn 16 between 2 July and 31 August they can not leave school until 30 June the following year. Information on school leaving ages from: https://www.gov.uk/know-when-you-can-leave-school

ICT in formal education in the UK


Simply put, the area has been overhauled within the last five years to introduce pupils to programming. This has replaced previous approaches which favoured training in how to use ‘Office’ type programs. Significantly perhaps, ICT is not included in the emergent English Baccalaureate which will be form a part of the Progress 8 school measurement system. See here: https://www.gov.uk/government/publications/english-baccalaureate-ebacc/english-baccalaureate-ebacc

Wales: Following the Donaldson Report the Welsh government is working on a Digital Competence Framework due to be released in 2016.

Scotland: ICT forms a component of the Scottish Curriculum for Excellence and is seen as pervading all aspects of the curriculum.

Northern Ireland: ICT is a requirement of the curriculum from age five onwards.
Indicators and good practices of blended learning in the educational system

In this part of the report, the indicators of successful learning with technology are presented for each partner country. Several good practices of learning with technologies are also presented for Austria, Cyprus, Latvia, and the United Kingdom.

Indicators of successful learning in Austria

Peres/Lima/Lima (2016) report on “B-Learning Quality” but their brief scientific paper mostly refers to e-learning (in HEI context). There are international (ISO/IEC 19796) and national (e.g. Germany, Portugal, Spain, UK) quality standards for education that also frame the practice in blended learning they say. Based on six models for assessing quality in (e-)education (developed by academia and professional organisations) the authors count down following criteria/(sub)indicators that they identify as most common:

- Institutional aspects: Education and technology research, External providers, Teams with peers review, Learning outcomes, Promotional and administrative activities, Information available;
- Program and course design: Learning methods, Learning objectives, Assessment and test, Curriculum, Learning influence factors, Learning activities, Learning process and eTutoring, Learning materials/resources;
- Media design: Accessibility, Usability, Navigation, Printable, Copyright, Download
- Technology: Server and applications, Security and performance, Support;

The paper presented above is one of very few resources that refer in depth to blended learning (with limitations briefly presented). Therefore the above indicators are presented as a benchmark for national indicators presented further below.

Another scientific paper entitled with blended learning and written by Austrian authors Himpsl-Guttermann et al., (2011), sees blended learning as one of the “success factors” for learning (of adults at their higher education institution). These factors are:

- Modulation and introduction of performance points
- Focusing on competence, learning outcomes and assessment
- Blended learning arrangements
- Focusing on target groups
- Quality assurance through evaluation
- Assigning roles in blended learning concept (see good practice for further details)
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No national indicators that would refer specifically to blended learning could be found. We found several national projects respectively initiatives or networks, launched by the Austrian Ministry of Education and Women, that present indicators in context of advanced use of ICT respectively digital competences and e-learning. As indicators above also these refer to the whole spectrum of educational management (i.e. institutional) and do not focus only on learning (and teaching). Projects are listed due to the spectrum of their impact, i.e. educational levels they address.

The initiative “eFit21 – Digital Education” stresses and implements ICT in Austrian educational institutions. It aims to:

- Raise quality - with implementation of ICT the quality of teaching and learning should be raised and education enriched with innovative learning scenarios;
- Transfer digital and media competences - to young and adult learners corresponding digital and media competences for professional success and social inclusion should be transferred;
- Enhance success in the labour market - ICT training in schools should transfer relevant qualifications for labour market as well as general and profession specific e-skills;
- Higher efficiency - implementation of ICT in school administration should sustainably improve efficiency and generate a modern organisation.
- Inclusion and social integration - access to ICT and digital media should be improved and barriers in use should be omitted to enable access of all persons to the potentials of ICT and digital media and by that improve social integration and inclusion;
- Enhance digital school - with integrative, systematic and strategic implementation of ICT on all levels the institution school should be empowered and innovative education institutions introduced.

The project “digi.komp – Digital Competences Informatics Education” aims at setting up orientation for teachers/schools what competences their learners should achieve in a certain class/year respectively in certain school/educational model (what does this mean?) (e.g. digi.komp 4 is for primary schools, digi.komp8 for first level secondary school and new middle schools, digi.komp12 for second level secondary school). The competences are structured as follows:

- Information technology, people and society
  - Importance of IT in society
  - Responsibility in their use of IT
  - Data protection and data safety
  - Developments and career prospects
- Computer science systems
  - Technical components and their use
  - Design and use of personal IS
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- Data exchange in networks
- Human-machine interface

- Applications
  - Documentation, publication and presentation
  - Calculation and visualization
  - Search, selection and organization of information
  - Communication and Cooperation

- Concepts
  - Presentation of information
  - Organization of Data
  - Automation of instructions
  - Coordination and control of processes

Lörnie-Awards are competitions for schools (all levels up to tertiary education) run by Ministry for Education and Women to “search and award self-developed web-based learning resources from the Austrian education landscape: from very small learning impulses to complex lessons; produced by individuals, teams of teachers or teams of teachers and students.” In short they can be summarized as “e-learning awards for school teachers”. The website contains an archive of former awards (since the start in 2004) which can be used as first information on best practices in e-learning in Austrian schools (but not necessarily in blended learning). Awarded products have to be produced according to following 10 indicators “that are to be interpreted and valued due to the respective educational setting” (Lörnie-Awards 2016):

- Correctness (i.e. accurate and up-to date)
- Structured (i.e. clear in structure)
- Emotional (i.e. motivate by contents and design)
- Adaptive (i.e. due to pre-knowledge, interests of learners)
- Interactive
- Communicative (i.e. foster communication between learners and with teachers)
- Reflexive (i.e. include self-assessment and motivate to analytical/critical thought)
- Explorative (i.e. include discovery, external sources etc.)
- Standardized (i.e. technically)
- In line with legal requirements (e.g. copyright issues)

In 2002 the Ministry with four schools for students aged 10 to 15 years started a three-year pilot project E-Learning - a part of regular school life (eLearning im Schull-Alltag – eLSA). Afterwards it turned into eLSA-school initiative and network that by 2011 included 130 schools and currently there are 60 schools. The following 8 objectives are declared by “eLSA-Modelschools”:

- Each learner can test e-learning during classes.
- All teachers have gained experience with e-learning sequences in own field of expertise and have transferred this experience to all colleagues.
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- Expert groups and groups of teacher test in coordinated manner the opportunities, possibilities and limitations of e-learning in the classroom.
- The model schools develop together concrete models for the testing of eLearning sequences in class and make their experience available to all.
- The school program (short and medium-school targets and implementation measures) applies the findings on eLearning continuously into the design of the daily school life.
- The school management is important to the testing of eLearning in the classroom. The project is a high priority in everyday school life.
- There is a steering group that coordinates the eLearning content development and testing in class and votes each other and ensures the project’s progress.

At least one offer of additional voluntary achievable degrees / certificates with external qualification in IT or e-learning area (e.g. ECDL Advanced, CCNA, CCNP, MCP, MCSE, SAP users, LINUX-power users, JAVA Programmer, detectable knowledge with a learning platform or other).

Indicators of successful learning in Cyprus

The purpose of ICT in Cyprus education is “students to possess the highest possible level of pivotal attributes, abilities and skills required in the 21st century society, which include […] excellent, probationary and wise use of information and communication technologies” (MoEC, 2008, p. 20)

The ICT goals in Cyprus are distinguished in three main categories:

1. **Promotion of intellectual, moral, social and cultural development of students via ICT:**
   This category mainly refers to the contribution of ICT and how they can affect students in fully developing social and moral skills of students within the framework of humanitarian education. Some of these skills are the following:
   - Intellectual development: development of positive attitudes towards ICT regarding lifelong learning and creativity
   - Moral development: responsible use of ICT and all systems, as well as understanding the moral issues which may arise from an irresponsible use of ICT
   - Social development: development of positive attitudes towards ICT and understanding of the social effect ICT have to people’s everyday life, work and social relationships
   - Cultural development: understanding of ICT’s contribution in connecting societies at a local, national and international level, as well as getting to know other cultures via internet.
2. **Development of students’ skills via ICT**: This second category has two aspects, which focus on the learning procedure and techniques that arise via ICT development

- Communication skills: reading and selecting information from different sources, design, write and adjust texts which have a different form and purpose, exploitation of telecommunications to promote collaboration and communication with a variety of audiences (parents, fellow students etc.) and use of different means of communication to transmit information
- Skills of inquiry and managing information
- Collaboration: conversation, expressing and exchanging ideas
- Creativity skills: increase of productivity
- Problem solving and metacognitive skills
- Research skills
- Programme management skills

3. **The promotion of the aims of subjects of the curriculum through the exploitation of ICT tools**: ICT tools should be used by the students as:

- tools for thought, expression and construction of knowledge
- tools for critical and content analysis
- tools for learning and development of interdisciplinary projects (Angeli et al., 2006, p. 4-6).

**Indicators of successful learning in Latvia**

The National Standards of basic and secondary education provide the indicators for the Computer Science (concepts, practical skills, responsible use of ICT, ecology of the use of ICT, etc.), as well as detailed description of skills that students are expected to acquire (for instance, 80 indicators in primary curriculum). The use of ICT in basic education standard is mentioned in:

1. the general description as one of the main goals for the area of science and technologies: “to foster the basics of research work by observing phenomena and processes of nature, by using math models and ICT; and
2. describing the aspect of learning and practice as “... a skill of using modern technologies” ([http://likumi.lv/doc.php?id=268342#piel24&pd=1](http://likumi.lv/doc.php?id=268342#piel24&pd=1)).

Nevertheless, only a few (4 out of 19) other subject descriptions for primary education contains indications for the necessity of the use of ICT: physics and chemistry (“...students use contemporary technologies for obtaining knowledge”), geography (“...students realize national traditions and ethnographic peculiarities of Latvian regions, and are able to describe them using different information technologies”), and craft (“...students are familiar with the ways of
gathering information, including the use of ICT…”).

Similar conclusions apply for the standard of secondary education - one of the main goals mentioned in the general description is “...to improve the modern ICT usage skills (http://likumi.lv/doc.php?id=257229). The use of ICT is mentioned in:

a) Foreign language standard (“...students use latest ICT” and “... students use contemporary tools of ICT for solving communicative tasks…”);

b) Mathematics (“... use ICT for gathering, structuring, transformation of information and calculation...” and “...use ICT for gathering and presentation of information”;

c) Sciences (including Physics, Chemistry, Biology: “...use ICT for visualisation of processes and obtaining data” and “...use ICT for testing hypothesis and functional relations”);

d) Philosophy (“...understand contemporary philosophical problems related to the ICT”).

The analysis of the documents shows that students have to learn the necessary technical skills how to use ICT but not skills to use ICT within the learning process.

The only place, where the use of on-line studies is indicated in Standards, is in the Distance learning program (secondary curriculum). However, the online environment is mainly proposed for exchange of information, but not studying. So, Standards determine skills that students are supposed to acquire in the lessons of Computer Science, but this document says nothing about the indicators for use of ICT in organizing teaching-learning process.

Research “Media competences in the target groups of students and teachers”, done by Baltic Institute of Social Sciences, illustrates the conclusion that teachers lack understanding of meaningful use of technology in teaching/learning process: teachers claim that they use ICT but students say that technology hasn’t been used during the lessons; (http://maciunmacies.valoda.lv/images/Maci/Par_latviesu_valodas_apguvi/Petijums_Mediju_lietosas_kompetence_skolenu_un_skolotaju_merka_grupa.pdf)

The administration of the education system in Latvia is digitized (for instance, www.viis.lv, as well as 2 kind of LMS), and often teachers’ responses about the use of ICT are related to the use of digital administration tools. However the site is not used to consider the teaching/learning process that involves students’ active participation.

Although there are several private initiatives (LATSTE, Microsoft, Samsung) for fostering the study and use of ICT they affect rather particular schools involved in projects, rather than forming a systemic input. The same refers to CPD for teachers and school leaders that is organized at municipality level.

Indicators of successful learning in the United Kingdom

There are no government policies on ICT on the English Department for Education website. The last inspection of ICT provision in English schools was in 2011.
The report’s recommendations were fairly anodyne: The Department for Education should: “embed the report’s findings in its review of the National Curriculum,” set out clearly the pivotal role of ICT in school improvement and in preparing young people for higher education and for skilled work. “Review equivalences in performance measures for schools between vocational coursework-assessed qualifications and more traditional GCSEs and GCEs. Secondary schools and primary schools should: ICT in schools 2008–11 December 2011, No. 110134 7 “improve the use of assessment of pupils’ progress in ICT, ensuring that pupils know how well they are doing and what they should do to move on to the next level,” ensure that pupils receive their complete entitlement to all areas of the ICT curriculum and that the ICT curriculum is engaging and relevant to pupils’ needs within and beyond the classroom,” provide subject-specific support and professional development to improve teachers’ confidence and expertise, enabling them to teach ICT more effectively,” evaluate the costs and benefits of establishing collaborative specialist services for ICT commissioning and procurement,” continue to make e-safety a priority in the curriculum, in staff training and in support for parents. Secondary schools should: “provide a range of ICT courses in Key Stage 4 that are suitably matched to students’ needs and relevant to a life of continuing education, training or employment in a technological age,” build into Key Stage 4 programmes opportunities for students to engage with IT use in business,” ensure that girls are encouraged to continue studying ICT beyond the ages of 14 and 16,” ensure that all students are able to benefit from the use of appropriate ICT tools and applications across all subjects. (P7; https://www.gov.uk/government/publications/ict-in-schools-2008-to-2011)

In 2012 the government carried out a consultation to disapply existing regulations with regard to ICT programmes of study in school. It pointed to recent (2011) Ofsted evidence that twenty percent of ICT teaching was inadequate and there was a belief that current schemes were no longer ‘fit for purpose.’ The schemes were duly disapplied following consultation as the government noted that schools were tackling ICT on their own and with the help of private business.

The 2014-15 Ofsted annual report makes no comment on ICT skills. See here:


Likewise there is no specific guidance on the inspection of ICT; see here:


It would appear that there is no centralized understanding of the extent of use of ICT in English schools; its recent development or future trajectory. The embedding of a more traditional curriculum combined with budget cutbacks has seen it effectively dropped. At the time of writing (December 2015) the most recent pronouncement by the English Secretary of State for
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Even more recently, the fear of Islamic radicalization via school computer systems has prompted calls for closer monitoring or even less usage: [http://www.bbc.co.uk/news/uk-35157910](http://www.bbc.co.uk/news/uk-35157910)


Good practices in Austria

Blended learning is very present on websites of education and training institutions. It is referred to as the modern method in use yet behind the in vogue term there is little online content. There are very few accessible descriptions of learning and teaching with regard to blended learning in Austrian schools. Descriptions only for the higher education area could be found (mostly in scientific papers).

i. Concept of Blended Learning Arrangements at Danube University Krems

The most insight into practice of blended learning in Austria is offered by Himpsl-Guterman et al. (2011) in their scientific paper “Blended Learning in University Continuous Education - Success factors of adult education at Danube University Krems” that blends practice of the institution with general practice and theory. On websites of the respective university (Donau Universität Krems 2016) a brief display of the practice is given and presents the following:

Department of Media-Supported and Individualized Learning developed (within a project with the same title as above) a blended learning model wherein cognitive learning (remembering, understanding, applying, analyzing, evaluating, creating / producing) is initiated in six stages:

- In the online preliminary phase, the first three dimensions - remembering, understanding, applying – are implemented by:
  - Activation of prior knowledge on the subject
  - Discussion of the theoretical foundations of the topic
- At the attendance day (“Präsenztag”), following after the students have gained first knowledge in the preliminary phase; the basic knowledge is expanded with new inputs
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by the lecturer and – e.g. in the form of group work - reaches the application and analysis level.

- In the subsequent phase students take on acquired knowledge and implement it for their subject by developing a "learning product" ("Modulabschluss").

The online phases are done on a learning platform that serves as organizational "switchboard" for course management. For each module didactic-methodical concepts are elaborated that best match the presented content and the objectives of the module. In the following sketch a prototypic module is presented with indication of learning hours (h) by months ("Monat"): 

Figure 11. Indication of learning hours by months, in the Austrian educational system

ii. Blended learning courses for teachers at Virtuelle PH and Medical University of Vienna

The course “Learn to Individualise” was organised by Virtuelle PH (Virtual University of Applied Educational Sciences), a service by the Ministry of Education and Women targeted at all Austrian teachers and all universities of teacher education (PH). The course was done in blended learning modus to bridge the gap that longer, more intense courses in continuous education face: they are highly valued but little attended. The course was executed in 4 modules and dealt with capacity of e-learning and social media tools for individualisation (i.e. personalisation, customisation) and differentiation for different teaching settings. The target group was Austrian teachers of all school types, levels and regions who were interested into the topic. Aim of the course was to facilitate better understanding of the concept of individualization with the goal of making lessons more efficient for learners but also for teachers. Individualisation was in this course defined as follows: in the center of didactical interest is the learner who by that also bears part of the responsibility in learning processes. Therefore a competent teacher first tries to understand and “feel” the uniqueness and inviolability of every learner/child and only then tries to transfer knowledge and its didactically-methodical (what does this mean?) competencies to it. Teacher is therefore a companion or coach, a promoter of learning processes. Stimulating learning opportunities need to be created as well as a safe atmosphere and opportunities to learn in the community.

The 4 modules were on following topics:

- Teaching and coaching (giving constructive feedback, reflect on own role, communication with new media)
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- Reflect, personalize and integrate (online and offline differentiation and co-operation methods and possibilities)
- Self-design and jointly produce (web 2.0 tools presented and used)
- Promote and evaluate performance (alternative performance evaluation).

In each module two online phases are between the starting and final face-to-face phase. Both online phases took altogether 22 units a 45 minutes, first stretching over two to three weeks and the second over three to four weeks. In the first online phase learners got acquainted with tools for “active and interactive online learning”. Learners were working individually but had a chance to discuss in groups on the institutional Moodle platform. In the second online phase acquired knowledge and competencies were tested in practice and documented. In the final face-to-face phase of 4 units a 45 minutes the executed projects were presented, discussed and reflected with a special focus on possibilities on further implementations. Presentation forms did vary from module to module to point to alternatives respectively individualisation and differentiation. The course was also a subject to extensive research which is presented further in the cited paper (Gabriel 2014).

iii. Medical University of Vienna

The university offers to its employees the course “Next Generation – Blended Learning Scenarios in Education” which is itself implemented in a blended learning scenario. There are two face-to-face phases lasting 5 hours each and twice the learners have to access the e-learning platform (“using Moodle” is the only requirement for entering this course for teachers). The course has a simple structure: First face-to-face training is dedicated to presentation of following content:

- How to prepare students for training? Optimal instructional design of e-learning elements and their use in face-to-face training.
  - Create a case study in Moodle and transition of routine documentation into a case study.
  - Work research- and theory-based and clinically-oriented.
- What is the result? Reflect on the potential of new media and support your findings with evidence-based didactic/research literature.

Than learners have to hand in a presentation paper and after that a face-to-face group discussion (on didactics and interdisciplinary questions) follows. In the end learners have to hand in feedback. (Medizinische Universität Wien 2016)

iv. Two cases of blended learning understood as production of digital content
Making use of an e-learning platform after and between face-to-face training units, as in above case, is the most common understanding of blended learning. Another, quite popular in higher education, is to equate blended learning with the production of “digital learning objects,” including digital content made for self-directed learning. Such cases are presented in detail in a scientific paper by teachers of Department for Farm Animals and Veterinary Public Health at University of Veterinary Medicine Vienna (Bernkopf et al. 2010) Another case like this can be observed at the Department of Social and Cultural Anthropology at University of Vienna. The latter presents blended learning as an important part of their training, and it devoted a distinct homepage to it (Institut für Kultur- und Sozialanthropologie 2016). There three blended learning projects in which interactive digital content was developed are listed alongside a team of teachers helping students in blended learning settings. Yet from the descriptions mentioned blended learning at this department is understood as production of “didactically developed hypermedia content” for self-directed learning that are then published on their own or the University of Vienna’s learning platform. However there are no references on how the implementation is done and whether the produced content is part of face-to-face courses or is it a complete/closed unit for itself (and by that just e-learning).

Good practices in Cyprus

In Cyprus, there are different types of good practices of learning with technology. The major ones are summarized in this section.

Classroom Level

Within the framework of the PREATY project (2014), ePortfolios were suggested to be effective tools for assessing students’ learning. In simple words, ePortfolios constitute an electronic version of what is widely known as a traditional portfolio. This means that students’ work is saved in a digital form (Subrahmanyam et al., 2012). This process is beneficial for students, since different ways of approaching subjects and creating work samples are required, thus students are involved in a plethora of different processes and have the opportunity of developing new skills. The benefits of this tool are outlined as follows: ePortfolio assists students to focus on working in their own way and progress; supports students to develop numerous ICT and other skills (such as communicating, writing and thinking critically); helps students to undertake the responsibility of learning in their own way and stimulates them to concentrate and assess what they know already rather than focus on what they do not know (Coric et al., 2011).

Barret (2011) has summarised the 3 main aims of using an ePortfolio (Figure 11):

1. Storage: The main aim of an ePortfolio is to store the work collected and present it to different audiences. This ensures the existence of several pieces of work to be assessed in the end.
2. Workspace: The ePortfolios are transformed in a workspace due to the fact that there is a constant learning process with all the students’ work accumulated. In addition,
collaboration and peer assessment are encouraged when ePortfolios are used as workspaces.

3. Showcase: Students have the ability to demonstrate the progress of their work, as well as their achievements, using the ePortfolios. In this way, students are able to receive feedback by their teachers and peers.

![Diagram](image.png)

*Figure 12. Purposes of ePortfolio (Barret, 2011)*

Within the framework of the PREATY project (2014), peer and online assessment tools have been identified as good practices of blended learning. Specifically, peer assessment refers to the process which students have to assess their peers’ performance (Strijbos and Sluijmans, 2010). Research indicated that peer assessment constitutes a meaningful process of learning actively and reflecting the individual’s work (Dziedzic et al., 2008). In addition, peer assessment has been contended (introduced?) to stimulate critical thinking and skills of meta-cognitive nature (Sitthiworachart and Joy, 2008). Incorporating ICT tools in peer assessment procedures is contributing to the provision of a quality and time-efficient feedback regarding more challenging activities, which students can handle with the use of computer programs (Paré and Joordens, 2008). Furthermore, wikis and also other tools seem to promote effective and quality peer assessment (Xiao and Lucking, 2008).

Some good examples of peer assessment tools are **WebCEF** and **CEFcult**. Firstly, WebCEF is an online tool for peer, expert and self-evaluation of oral skills in seven different European languages. Students and teachers of many different levels of education can benefit from this online tool. Teachers have the ability to upload existing material, create an assessment tool and assess them in collaboration with other teachers from other European countries. Teachers who participate in such a community, as shown below, are able to practice their skills with many different people from around Europe.
Moreover, CEFcult constitutes a virtual environment for assessing oral skills and people’s competences regarding professional communication. Students have the opportunity of performing a variety of communication tasks enriched with multi-media use and scenarios in order to acquire a clear idea of their level of competence and assess this in small groups, using different applications.
Another good practice for blended learning is the use of an ePortfolio (Brazdeikis and Valineviciene, 2015). In Cyprus, a pilot study was conducted in primary schools regarding ePortfolios and the results were encouraging (Nicolaidou, 2012). As a relatively recent concept with limited research, it is not extensively used in schools yet. An ePortfolio is constructed by the student and owned by him/her, while the student works in a virtual dynamic workspace. In addition, an ePortfolio promotes constant learning through the connection of both informal and formal learning experiences through all different backgrounds. Furthermore, ePortfolios are used by the students in order to be involved in a variety of different activities, such as recording, integrating and at last, evaluating themselves. Students also have the opportunity to monitor their ideas and learning, reflect on their work, establish goals and evaluate their achievements (Montes, 2013).

Barrett (2002) has stated that there are five steps towards the development of this effective ICT tools, ePortfolios. First, a careful selection process has to occur in order to make a decision of the materials that will be included in the portfolio. Second, the collection process refers to the collected material according to the portfolio’s aims and its intended use at a later stage. Third, the reflection process refers to the importance of each material collected. Fourth, the direction process concerns the review of the direction process in order to set clear goals for the future. Lastly, the connection process is focused in creating hypertext links to be able to provide feedback.

E-Portfolios could stimulate students to develop 21st century skills (Brazdeikis and Valineviciene, 2015). The JISC report sustained that “the future demands skilled, digitally-aware learners with
the capacity to participate in learning throughout their life, using technologies of their own choosing” (JISC, 2009). The 21\textsuperscript{st} century skills are depicted in Figure 14.

![Figure 15. Conceptual Structure of 21st century skills (Griffin, 2012)](image)

It is argued that incorporating 21\textsuperscript{st} century skills would be feasible by integrating ICT tools in the learning process (Griffin, 2012). Future schools are assumed to require students to identify and choose their own learning activities in order to correspond to their personal learning style. In this way, students will also monitor their progress and adjust their objects accordingly. An ePortfolio could assist both teachers and students in this process (Brazdeikis and Valineviciene, 2015). Learners benefit from this online environment and they construct their own learning at their own pace, following the constructivist theory. Employing numerous ICT tools to complete their activities, students develop a complete ePortfolio, which fully involves them in the learning process and maintains their engagement. It is contended that the portfolio practice, and especially the electronic one, constitutes a great way of developing students’ ideas. More specifically, the portfolio practice “seeks to encourage students to become dynamic participants in their own learning students are not merely the users of the system; they are, or should be, the authors of it” (Kimball, 2005, p.442).

Other projects that constitute good practices and that are mentioned on the Pedagogical Institute’s website are:

- Mentoring Technology Enhanced Pedagogy (MENTEP) (http://mentep.eun.org/)
- EU Classroom ePortfolio (EUfolio) (http://eufolio.eu/)
Good practices in Latvia

We evaluated good practices in 4 levels: municipality, private initiatives, school and individual teacher.

**Municipality level activities**

The Department of Education of Riga Municipality has provided the study environment, based on MOODLE, and it is available at schools in Riga. The core courses for class 7-12 in science studies and mathematics are developed in this e-learning platform and is open for teachers both for use in the study process as well as for modifying and supplementing them with their own materials. Regardless of wide accessibility, this opportunity is used only by some teachers. This site does not provide the opportunity for development of school e-learning profile, therefore schools do not have any motivation in systemic solutions for whole curriculum redesign by using these tools. This resource supports individual teachers, not the school in general.

**Private (business) initiatives**

The project "Ready for tomorrow!" financed by Microsoft Corp and Latvian mobile phone is one of a number of private initiatives to make a change in education in Latvia. The aim of the project is to implement principles of 21st century education at primary, secondary and high-school level by introducing 1:1 computing; to help students in different regions of Latvia to acquire new knowledge, providing a unique learning experience and introduce with the skills to use technology that will be useful throughout their life.

There are 6 classrooms (one in each school) in different regions equipped with Tablet PCs for implementing 1:1 learning model and teacher training and support provided. The idea of this pilot is to prove the value tablet pc use in schools for MoE, teacher and parents’ audience.

"Samsung future school" is another initiative to support Latvian schools and teachers financed by Samsung Inc. Their mission is to invest time and money to ensure that young people in whole Europe has appropriate digital skills for the labour market. The aim of the project is to help to create future opportunities for children and youth by offering programmes that provide broader access to technological skills. Within this project 5 schools have got 10K euros each to buy Samsung equipment for their schools, mainly Tablets (Android) and smart TVs or screens.

**School level activities**

**Ventspils Secondary Evening School**: BL approaches are used for grade 10-12 students in distance learning and part-time studies (about 150 students). The school has established their e-learning environment by using MOODLE, and courses are developed for all curriculum subjects. Initially every teacher has made their own course, but then collaboratively teachers have agreed on the same course structure. This is used in all subjects, and include the course requirements and assessment approach, study materials layout and task management system.
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Students can use 3 kinds of consultations: regular class consultations, group consultations with a teacher and individual online consultations. Part-time students use all the study courses in MOODLE but they have more contact teaching time than the others in their program.

3 teachers’ practices (using blended learning elements)

- **Teacher of physics at Ilksile Secondary school:** uses flipped learning model for teaching physics in grade 11.

  Students get a theoretical homework each week, which they have to acquire before the provided lesson. The homework consists of explanatory video on specific topic and a small check task. The aims are: to improve students’ independent learning skills, to increase the sense of responsibility about their own success, to maximize effectiveness of the lessons.

  The methods used: study videos are made with a smartphone and processed with the Microsoft Movie Maker. Video are uploaded on the Vimeo.com site. Collaboration among students and teacher is organized in Moodle (www.eduspace.lv), where students can find the homework video, descriptions and tasks of the course. Students can get the immediate feedback about the completed task. Microsoft Excel is used for the control of the progress where the accomplishment of student’s homework is summarized.

- **Teacher of music in Riga Secondary School No.47:** uses station rotation and flipped learning model in 4-th grade music classes (by doing action research for her Master’s degree) by providing a set of 16 classes and evaluating the changes in students’ academic results and attitude to learning.

  The classroom is equipped with a computer and a projector and students work with ICT (class computer and mobile phones) in groups, but they mainly do their individual computer work at home or in school library.

- **Teacher of history in Sigulda basic school:** Tablets or PCs are widely used during his lessons and overall in learning process. Students get homework in their e-mails, they vary in scale and scope depending on the aim of the lesson or knowledge to be obtained. Every homework or project has concrete aim, tasks and criteria.

  The aims: 1) to increase students’ interest of the subject or topic and thereby improving the learning outcomes; 2) improve ICT skills and 3) develop soft skills, like collaboration skills, creativity, critical thinking and problem solving.

  The methods used: Creating videos (Interpretation of historical episodes; making social advertisement about hot topics or painful issues); creating 3D models (eg of medieval town); Tweeting in the name of a historical person; creating the content for Wikipedia (instead of copy-paste from it);

  Process: videos are made with the smartphones or tablet pc and processed with Microsoft Movie Maker. Videos are uploaded in YouTube or Vimeo. Collaboration amongst students and
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teachers is organized via e-class, e-mail or O365 where students can find the homework assignments, descriptions and tasks of the course. Students can get the immediate feedback about the completed task.

Good practices in the United Kingdom

Good practices in the UK: Speaking at the Westminster Education Forum in June 2012 Vanessa Pittard, head of the technology unit for the Department of Education, commented: ‘the Government is less in charge of ICT than it ever has been.... It’s a really good time for us.’ She added: ‘the government isn’t going to specify it. Let’s do the brave thing and say: ‘Schools, it is up to you. Do it, and then let the best happen.’

In the years since there have been no official statements with regards to ICT let alone blended learning in schools. The reduction in government size and scope has meant that the central collection of information with regards to ICT provision has stopped. Ofsted has not undertaken any thematic review of ICT teaching and development. The last survey that I could find was a DFE small scale study of 15 secondary schools in 2012. The conclusions were bland: the use of technology thrived in schools where senior leaders – including the headteacher – showed a commitment to their use. Such schools had undertaken staff training and employed technicians.

The only document related to blended learning that I could locate for the UK was published in December 2015 by the National Endowment for Science Technology and the Arts (Nesta). This relates to a small scale study where Nesta and the National Foundation for Educational Research (NFER) conducted small scale trials in nine UK schools introducing a four to six week unit of flipped learning for maths amongst Key Stage 3 students (11 to 14 years old). Findings are tentative rather than strategic: schools need to undertake training of teachers; ensure access to technology; manage homework ‘culture’; and pay attention to students’ ability to study for themselves.

The state of play of ICT in UK schools remains largely unknown at the time of writing. What is clear is that schools are mandated to manage their development of ICT and related approaches to learning on their own. There is anecdotal evidence that the eighty five per cent cutback in small capital grant provision to schools in 2011 has had a deleterious impact on ICT purchases. If there is significant work going on in English schools, or indeed in UK schools more generally, it is not being reported.
Needs analysis methodology

Austria

This report/needs analysis was done as desk research of online sources only. No field work was performed. Due to this methodology in our opinion better reflection of blended learning in Austria is given. E.g. on definition/theory of blended learning many sources were found that could be put into this report. When it came to descriptions of practice only scientific papers and expert journals contained appropriate information (and were used for this report). On some websites with general information on blended learning there were links to (external) pages with blended learning cases/practice but when these links were accessed the pages did not exist.

In the end one can conclude that blended learning is much more frequently discussed than actually implemented. Mostly blended learning begins and stops with the introduction of a learning platform that enables distance education via up- and downloading of digital material and simple communication forms (e.g. teacher announcements).

Cyprus

The review of the literature was based on articles and resources from government and academic institutions. Particularly, CARDET used the resources from the Ministry of Education and Culture in order to describe the educational system, provide indicators, as well as describe different policies around ICT in education and blended learning practices. All resources were collected online and are listed in the references. The reason is because, since the concept of blended and online learning in formal education is rather new, all the required information were available online.

For the part of the data collection, CARDET distributed the survey online and in paper form. Initially, various teachers were contacted individually and messages were sent to schools. The online survey was also posted in different groups of teachers, e.g. the Facebook groups of “Educational materials”, etc. where a large number of teachers visit. The collected data were analyzed based on descriptive statistics, to provide an overview of the needs, as recorded from the teachers’ input.

Latvia

Our literature analysis was based on qualitative research in which experts’ discussion and document analysis were held. At first information about the existing policy documents was gathered. During the experts’ discussion the ones that rule and influence the education process in Latvia were filtered and then analyzed during more detailed research. Analysis and the extract
of information from the perspective of ICT integration and components of Blended learning in teaching/learning process were made by the researcher.

**United Kingdom**

I undertook an internet search for general articles together with a search of national education department websites. I also looked at relevant technology sites for the UK.
Data from national contexts as collected through the survey

This section provides an overview of the results from the surveys implemented in Austria, Cyprus, Latvia, and the United Kingdom. The survey was developed in printed and in an online form and was translated in all partner languages.

Austria

In Austria a total of 29 surveys were collected in the education sector among teachers and school leaders. The following charts illustrate the main results of the field research. In Austria knowledge around blended learning is still low and its use is still expandable, having 25 educators highlighted that don’t know any formal training programme for blended learning in Austria. Additionally it is clear that the integrated use of new media in the trainings and methods like video lectures and video conferencing are being edged out.

Most of the respondents (i.e. 23 of 29), are familiar with the meaning of the blended learning, however 17 educators mentioned that blended learning methods are not used in Austria. Among those who answered yes, “work in groups” and “social networking” were the mostly selected examples (i.e., 7 and 6 answers, respectively), following “e-learning” and “others” (with 4 answers each).

Figure 16. Austrian participants' responses for knowledge and use of blended learning
During the methods used in the lessons in Austria schools, Figure 17 shows that “social networking”, “online activities” and “online communications” are the most often chosen (average values above 3). On the other hand, “broadcasting”, “video lectures”, “video conferencing”, “scenarios” and “live eLearning” are more rarely used by the Austrian educators (average values below 2). All other listed methods are in average used times to times in daily practices.

![Figure 17. Austrian participants’ responses for the use of technology practices in lessons]

When comparing with the frequency of blended learning practices in teaching, the scenario changes considerable and average results are much lower. “Face-to-face workshops”, “inviting experts” and “teaching and managing a face-to-face classroom” are the most often methods (average values above 2). Among the less selected practices are “broadcasting”, “video conference”, “simulations”, “video lectures”, “web quests” and “online mentoring” (average below 1).
In general, Austrian educators consider that the most important practices for effective learning are both, “teaching and managing a face-to-face classroom” and “inviting experts for lecture” (average value of 3), followed by “social networking” and “online activities” (average values of 2.8 and 2.7 respectively). Once again “broadcasting” is one of the less popular methods (average value 0.7), together with “video conferencing”, “online mentoring” and “web quests” (average value of 1.2).
Cyprus

In Cyprus, 68 questionnaires were collected, from various schools in the country. In particular, out of 68 questionnaires, 10 were from school leader team members and 58 from teachers. A total of 63% reported that they are not familiar with the meaning of blended learning, and 66% reported that they do not know any blended learning practices being applied in the Cyprus educational context (Figures 19 and 20).
Aligned with the results of the literature review for Cyprus, are the results from the question regarding formal training programmes for blended learning. The vast majority reported that there are not any such programmes. Those who have reported that there are, referred to some activities conducted by their schools, which are not part of formal training.

Despite the fact that not all educators are familiar with the meaning of blended learning, they seem to be familiar with the use of different technological tools for their lessons. Evaluating their skills for applying different technological tools and practices, the 68 participants reported on their competencies as reflected on Figure 22. Social networking tools, online communication tools, digital games, scenarios, animations, as well as face-to-face teaching and workshops are some categories that educators have marked with high skills. Video lectures, online
management tools, simulations, invited expert lectures, WebQuests, are some of the categories with average skills. Video conferencing, web seminars, broadcasting, virtual classrooms, online mentoring, etc. are categories where educators reported having the lowest skills.

**Figure 23. Self-assessment of existing skills by the Cypriot participants**

At the same time, educators believe that most if the blended learning practices in the survey are important for learning (see Figure 23). Based on the data, they acknowledge that both face-to-face and online practices are important for learning. Such indicators are significant for the partnership and their work in designing the blended learning curriculum. Online activities in general, digital games, invited lectures, WebQuests, are among the most highly reported practices by the educators.
Despite reporting on the importance of the different practices, educators in Cyprus appear to be using them less frequently (Figure 25). The most frequently practices are face-to-face, whereas online activities, animations, and digital games are the online practices that are applied the most.
Figure 26 presents a comparison between the skills educators report having (Figure 23), and the frequency of use of the same practices in their lessons (Figure 24). It seems that there is a big difference between the skills and the actual use of most practices. For example, the skills for using social networking tools is 3.4, however, the frequency of use is 1.5. Similarly, activities like WebQuests, screen sharing, videoconferencing, etc. are among the ones that educators have high skills, but they apply them quite rarely.

**Figure 26. Comparison between skills and frequency of use of blended learning practices by educators in Cyprus**

Attempting to find explanations regarding the large difference between skills and application in context, we have looked at educators’ assessment of the infrastructure in their institution. The assessment is rather average. Out of 5 (maximum), 3 is the largest degree in assessing the infrastructure. Internet access is scored 3 out of 5, with computers and hardware being scored with 2.7 out of 5.
Fig. 27. Assessment of infrastructure issues by Cypriot educators

Latvia

In Latvia survey was conducted in 15 schools (out of 825). Altogether 44 educators participated: 27 teachers and 17 members of school leadership team (e.g. head-master or deputy-headmaster).

More than half of the respondents (25 out of 44) answered that they are not familiar with the meaning of the blended learning. The same number of educators mentioned that blended learning practices are not applied in Latvia.

Fig. 28. Familiarity and application of blended learning in Latvia
89% of respondents highlighted that they don’t know any formal training programme for blended learning, others (5 educators) named different training programmes where blended learning method is used within training process of different courses or training programmes, but explanatory answers show that in reality the only way where BL is used in the formal education is distance learning and "evening schools".

Figure 29. Indication of formal training on blended learning in Latvia
However when asked about certain blended learning practices more than 50% of respondents have some kind of skills in all mentioned practices. More than 80% of educators mentioned that they have at least some level of skills in WebQuests, Social networking, Digital games and Animations (apart of Physical classrooms and Physical workshops).

Figure 30. Self-evaluation of blended learning practices by Latvian participants
Analysing the average indicator of the level of skills among respondents in Latvia at each BL practice, results show the highest proficiency in Physical classroom (3,5), WebQuests (3,3), Physical workshop (2,9), Social networking (2,7) and Digital games (2,5). Whereas on-line activities like: On-line self-assessment (1,2), On-line workshops (1,3), On-line assessment (1,4) and On-line mentoring (1,5) as well as Simulations (1,2) and Scenarios (1,4) show the poorest skills.
Comparing the frequency of blended learning practices applied in teaching with the skills educators have, results are much lower. The biggest discrepancies appear for Video conferencing, Web seminars and Broadcasting. Among the practices used the most rarely by educators in Latvia are Broadcasting, Video conferencing, Web seminars, Simulations, On-line mentoring, On-line workshops, Live e-learning courses, Screen sharing, Scenarios and On-line self-assessment practices (average below 1). Several educators mention the lack of ICT skills as the main reason why BL is not used in schools.
Figure 33. Latvian educators’ perceptions on the importance of different tools and practices

Asked about the importance of all practices in the learning process, all indicators show relatively higher results as previously. Physical classroom (3.9), WebQuests (3.5), Physical workshops (3.2), Invited expert lectures (3.2), On-line self-assessment (3.0) and Digital games (3.0) educators consider as most important. Broadcasting is evaluated as the least efficient for learning process.
Regarding the infrastructure availability to support blended learning practices in schools, respondents were asked to evaluate and express their opinion by rating 4 components of infrastructure (0=insufficient... 4=excellent). Latvian educators value internet availability and speed with 2.9 points (out of 4 max), but the worst situation according to their opinion is with on-line education content.

United Kingdom

Twenty seven teachers completed the survey from four secondary schools. Four school leaders responded and one deputy head.
Are blended learning practices applied in your country (to your knowledge)?

Examples of blended learning practices include:

- For homework collection from students
- To provide out of hours learning in the university sector
- I am aware they are trying to introduce it in another school
- Through the use of videos in Computing at home and the selection
- It is hugely dependant on the school, and so it is not applied to the country but dependent on individual leaders
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- Videos on line; exercises on line; research on line
- Online revision materials are uploaded to specially created Google classrooms so that students preparing for public exams can revise alongside the preparation that is going on with teachers during lesson time.
- I upload (to Google classrooms) lesson-by-lesson catch-up materials for students that miss lessons so that they can avoid falling behind.
- Flipped learning is encouraged. Use of google classroom
- Kerboodle learning
- Doodle learning

![Figure 37. Self-assessment of skills related to blended learning by UK respondents](image-url)
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Figure 38. Blended learning practices in the UK

Figure 39. Application of different practices in the UK educational institutions
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Figure 40. Co-operation for training on blended learning in the UK

Figure 41. Perceptions of UK educators on the importance of different aspects of blended learning
General conclusions for blended learning

Austria

Blended learning is in Austria in educational context, particularly in schools, is a reality, however it is not embedded in daily practices and used in all formats and methods. Classical classroom methods are the more popular among educators, and only some distant/ virtual/ digital elements are effectively used, namely social networking, online activities and communications.

This scenario changes considerable in higher education, where blended learning is increasingly used. The reason for this is that there are more descriptions for blended learning for higher education. The survey results show that blended learning is not as present in school education as in higher education. Many of the educators know what blended learning is, but only a few know about how to efficiently use those methods in Austrian schools and daily practices.

Despite this, new media are being incorporated in general and in training. Blended learning needs to be incorporated more in school education, and teachers/school leaders must be trained and prepared for it. The traditional learning methods should be extended with new ones.

There are some good literature/references to blended learning, but it is mostly for higher education and training/adult education. Blended learning in all areas of education in Austria correctly and specifically requires a good curriculum and toolkit as foreseen in the European B-Learning project. The Austrian pilot project “eLSA-Modelschools” for students aged 10-15 years built a good start for further projects like this to implement eLearning more and more. It is mostly important to effectively integrate blended learning into face-to-face lessons and modernise education.

Cyprus

Blended learning in Cyprus does not occupy a particular part of the Cyprus educational system. It is only instantiated through the various ICT practices and activities educators conduct, either through various projects, or through their own initiatives. The Cyprus educational system includes some ICT objectives, policies and goals mainly at a general, theoretical level. Traditional educational practices are the most prominent in schools. However, many educators apply the use of technologies in their teaching practices, such as games and game applications, use of websites, social networking, etc.
It is also a fact that many educators lack technological skills and need to be trained in order to acquire the skills for implementing ICT practices in their educational practices. There are only a few training opportunities for training through the Ministry of Education and Culture, which take place throughout the school year, or at the beginning of each school year as part of the two-day training of the teachers. There is also an ICT department at the Cyprus Pedagogical Institute that supports various projects and initiatives related to technology and learning. However, there needs to be further support in this area, both in terms of maintaining the technological infrastructure and in terms of professional development and competency development in technological skills.

The data analysis from the survey for Cyprus indicates the need for advancing instruction with the incorporation of technologies in the learning process. It is imperative that teachers adopt practices that are close to their students’ habits and interests. Based on the analyzed data, teachers acknowledge the importance of using technology to enrich their lessons. Blended learning, as the general field of incorporating technology to enrich instruction seems to be attractive to educators, as they can have a large variety of resources, materials and activities that they can choose from to use in their class.

There are some projects conducted to support the incorporation of technology in schools, as well as initiatives taken by the educators themselves. It is generally acknowledged that the use of technologies in education can improve the learning experiences and enhance the learning outcomes, students’ motivation and performance.

**Latvia**

Blended learning is not part of education system in Latvia, neither theoretically nor widely used in schools, however, educators have some skills to apply blended learning methods in the education process. However, they don’t consistently use them in their daily teaching practice. It corresponds with the findings from the literature review that BL as a term or method is not present in the state education documents.

Classical classroom methods are the most popular among educators, and only some distant/virtual/digital elements are used, mainly WebQuests, Social networking and Digital games. The survey results show that the majority of educators don’t know what blended learning is and there is no formal education programmes available for blended learning.

There are some good cases of practicing blended learning in Latvia, but these are single initiatives by individual teachers. Field research shows understanding of the importance of blended learning practices in learning process, lack in skills to practice certain BL methods especially on-line activities and most of all real practice to improve the learning experience for students. Distance learning programmes are the only place where BL plays a role in formal education process and that corresponds with the findings in the literature review.
United Kingdom

The UK survey results reveal widespread ignorance of blended learning, a lack of skills with regards to delivery and – not surprisingly – a lack of any significant practice. School leaders did not demonstrate significantly greater knowledge and skill on this subject. All responders noted the lack of government inspired training or development programmes in this sphere. The dominant mode of learning remains ‘face to face’ teacher directed, and although there is a sense that blended learning might be of some moderate use in the realm of education, there is no sense of working in any directed way towards developing this. Education continues to be a domain of traditional teaching methods deployed by an artisan teaching profession.

It is governments that dictate what is important in schools across the UK. Whilst all share a commitment to preparing children for work in a digital economy the support for such developments at the curriculum level is both confused and weak. Different countries within the UK have different emphases. Some wish ICT to pervade the curriculum whilst others see it as a distinct curriculum element. England has recently put a renewed emphasis on children learning to code. None of the UK governments signpost blended learning as a route forward. No national programmes exist in this field and there are no national training programmes as a consequence. At the school level as the survey showed, knowledge amongst teachers is weak and confused. There is a varied belief that such approaches are worthwhile but no consensus on which paths might be more significant than others.

Throughout the UK constituent governments there is an emphasis on exam results using traditional assessment and based on a knowledge led curriculum. The rhetoric of supporting the growing digital economy via the education system remains that: rhetoric. What counts is school accountability as measured by a narrow set of performance indicators none of which include digital skills.

Gaps identified

The following lists consist of a summary of the gaps identified for each partner country in relation to blended learning.

Austria

There is some practices/resources identified in Austria but the most is limit for high education.
1. Blended learning must be opened for every educational area, and for this to happen a standardization of methodology is required. Therefore teachers and school leaders must be trained/coached in using blended learning.

2. The methods of blended learning must be planned in advance in annual schools and teaching plans. It is important to have a uniform curriculum, which makes the single methods and technologies useful for teaching.

3. In future blended learning will increasingly be necessary to be of use not only for practical reasons, but also for the new didactic challenges facing teachers and schools.

**Cyprus**

In Cyprus, the following needs are identified:

1. National policies do not sufficiently support blended learning in Cyprus
2. The idea of blended learning is not widely known and not applied often by educators
3. Educators need further support in applying blended learning in their practices
4. Blended learning must be adequately incorporated into schools’ practices, and applied strategically at a school base. Individual initiatives are harder to be taken because of the tight timelines for the curriculum.
5. Teachers need support in order to apply blended learning, such as tools, technological solutions and suggestions for different courses, as well as evaluation strategies and tools.
6. There needs to be a vision set from the beginning of a school year in order for the schools to invest time in applying blended learning to improve their lessons.
7. There is a need for training on how to apply blended learning, and how to use different tools to manage a classroom for blended learning, as well to teach.

**Latvia**

In Latvia, the following needs were identified:

1. ICT skills are not integrated in the National Standards of basic and secondary education
2. Within the education programmes ICT skills are supposed to be taught as separate subject but not the use of those skills throughout the education programmes
3. State regulations do not suppose BL (or ICT integration) as the part of teaching/learning process
4. Even in the Plan 2030 virtualization is foreseen apart of traditional schooling model
5. There is no clear understanding what BL is.
6. There is lack of systemic use BL models
7. Teachers lack skills and experience how to implement BL components in everyday work
8. Teachers lack resources and training
9. There is insufficient speed of the Internet at school and for students
10. Teachers mention that implementing BL components takes additional time
11. Need for training to use technology and on-line tools
12. Lack of skills and experience to plan the time properly

**United Kingdom**

The main gaps identified in the United Kingdom are:

1. Knowledge of the components of blended learning amongst teachers
2. Training programmes to support teacher development
3. ICT provision within schools – there is no common platform and provision varies greatly school by school
4. Funding to support all of the above
References

European context and general resources

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Curriculum Design for Blended Learning

Austria


Curriculum Design for Blended Learning


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Cyprus


Curriculum Design for Blended Learning


Curriculum Design for Blended Learning


Λατβία επίμετροι αξιοποίησης των τεχνολογιών πληροφορίας και επικοινωνιών στη δημοτική εκπαίδευση και προβλήματα που αντιμετωπίζουν οι εκπαιδευτικοί κατά την εισαγωγή και χρήση τους στις διαδικασίες διδασκαλίας και μάθησης. Διαδικτυακή πηγή.

**Latvia**


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Progress 8 measure in 2016 and 2017 Guide for maintained secondary schools, academies and free schools (Department for Education, 2015)

School Inspection Handbook (Ofsted, September 2015)
Curriculum Design for Blended Learning


Annex I – Survey tool

The survey tool for collecting data from partner countries is available in all partner languages, as well as in printed and in online form.

Please see attached documents for the survey tool in all partner languages.
Annex II – Data collected through the survey tool

All partners collected data in their countries. Data were collected through the online survey, as well as through the printed version. Data collected in printed version were transferred online.

Please see attached documents for the data collected by each partner.