

9. BYOD guidelines and recommendations

Representatives of European Ministries of Education who are members of the Interactive Classroom Working Group (ICWG) are working with EUN researchers to explore the current extent and future potential of BYOD and to identify and share good practice. ICWG members proposed interviewees at national, regional and school levels and shared information about policy development in their own countries.





The following case studies draw on the interviews carried out to date and further case studies will be added as the ICWG's work on BYOD continues. Additional case studies

will be added periodically to the online version of this guide as the ICWG continues its investigation into BYOD strategies.



9.1. National initiatives help to kick start BYOD in schools in Austria

This case study looks at how one school is introducing BYOD in the context of a series of government initiatives which are helping to drive eLearning and mobile learning in Austria.

	Secondary, upper secondary		Urban and rural
	Mobile phones, tablets, laptops		Mixed catchment

Background, context and drivers

Two national initiatives are helping to drive eLearning, mobile learning and BYOD in Austria. About one third of Austrian upper secondary schools (160) belong to the Austrian eLearning Cluster and about a quarter of these have adopted BYOD. Mobile Learning Tutors (MLT) is a network of schools coordinated by the Federal Ministry for Education and Women's Affairs since 2009/10. This project, inspired by the Government's eFit21 initiative, aims to:

- enable innovative teaching and learning by using mobile devices
- develop students' digital competences, media literacy, social competence and self-organisational skills

Participating schools experiment with 1:1 pedagogy using mobile devices. Initially all the schools purchased these devices but in recent years they are increasingly implementing a BYOD approach.

BYOD drivers for MLT schools are:

- A desire to enlarge the MLT network to include schools previously deterred by the cost of providing a device for each student.
- Students' and parents' dissatisfaction with the laptops initially provided/specified by schools.
- An objective to enable new forms of innovative pedagogy involving students' use of more than one type of mobile device to support their learning.

Klosterneuburg is a lower and upper secondary school and one of the largest schools in Lower Austria with 1,200 students and 130 teachers. The school is situated in Klosterneuburg a small city near Vienna. The region is one of the wealthiest in Austria. Most families enjoy a high income and many parents work in Vienna. Around 98% of students come from these families and the majority have smartphones that are brought to schools. The drivers for BYOD at Klosterneuburg are demand from students and the principal's plan to introduce ePortfolios.



The mobile devices

MLT schools use a variety of mobile devices including laptops, smartphones and tablets. In some schools parents pay for a laptop specified by and provided by the school with links to industry helping to obtain the best purchasing prices. Most of the Klosterneuburg students have smartphones and bring these to school. Laptops are mostly provided by the school with student BYOD laptops being about 5% of the laptops used.

Funding arrangements

For many years it has been possible for parents in participating Austrian schools to enrol their children in laptop classes from the second year of upper secondary with the school specifying the type of laptop parents should purchase. Links to industry ensure parents obtain the best purchase prices. Around 638 of the total 5,000 classes from the 160 general & vocational education schools (around 13%) are laptop classes. Advantages of the laptop approach include all students having the same device with the same versions of software used. This simplifies for teachers the process of becoming familiar with devices and supporting students.

The more recent, and increasingly common approach of allowing students to bring in devices already owned by themselves or family members is seen as helpful in addressing the issue of affordability. However, it increases the diversity of devices being used.

In Klosterneuburg students are allowed to bring in their own mobile devices, paid for by parents. The school provides mobile devices for use in school for students who do not have their own device.

Participation in BYOD

Approximately 1,000 Klosterneuburg students bring in and use their own devices in school. However, they are estimated to use these for pedagogical purposes only once or twice a week and only 40 teachers actively exploit students' BYOD devices for learning.

Teachers can decide whether to use ICT in their teaching, if their students can use their smartphones and how and when these are used. Students' mobile devices are used most in science subjects for simulations and in language classes.



Advice, staff training and incentives

The Ministry regularly publishes guidelines for schools taking part in the MLT project including advice on using mobile devices:

- To create documents, presentations, databases and software.
- To communicate, access VLE's and carry out Internet research.
- As a tool for different ways of teaching and learning, including individual and collaborative work.
- As a way of creating flexible learning spaces and times for learning both in and outside the classroom and at home.

The guidelines describe organisational and pedagogical implementation as well as assessment practices with mobile devices.

The ministry supports peer-to-peer learning activities among teachers including two annual conferences for teachers: the eLearning Cluster conference and the eLearning Didactic conference (dealing with pedagogical issues). Teachers can also engage in local and regional clusters of different school types, e.g. primary and secondary.

At Klosterneuburg all teachers are required to check in electronically each day; they use ICT for lesson preparation and student organisation and each classroom has a computer and projector. However, there is no requirement to make use of mobile or BYOD devices and teachers are not incentivised to do so.

There is no specific mandatory staff development focussed on the pedagogical use of ICT. Instead there is an opt-in approach under which teachers can elect to join daily 45 minute peer-to-peer learning sessions and can also request individual assistance from the Quality Manager.

Technical support

The Ministry has funded infrastructure improvements at Klosterneuburg school. These include fast fibre optic broadband and a Wi-Fi network with special security providing instant connection without the student needing to log in.



The school ICT department developed a minimum specification for BYOD devices and carries out device testing. The head of the ICT department is also a teacher and provides both technical and pedagogical advice to other teachers.

Successes

The Ministry believes the introduction of BYOD has achieved greater use of mobile devices by students and that this is an important driver for developing the digital competence of students. However, because of the long education pathway and many contextual factors, the benefits are not yet measurable according to empirically valid criteria.

Many teachers at Klosterneuburg now work mostly electronically and some teachers no longer use books in their lessons. 60% of the activity on students' smartphones is accessing the Internet and other online information. Teachers report that, "students like the fact that they have faster access to information than the teacher". Greater use of ICT for formative assessment is demonstrated by the 30% of smartphone activity related to assessment, e.g. online quizzes.

Challenges

Christian Schrack, who is responsible for IT and e-learning in vocational education at the Ministry for Education and Women's Affairs, identifies the limited availability of e-learning resources as an issue. The Ministry are looking into new licensing models to create "etapas" (smaller e-learning units) to support teachers to start using ICT. A challenge with this is ensuring the quality of resources created in teacher communities. It is also estimated that nationally only about half of teachers currently participate in technology enhanced learning.

Teachers of geography and history at Klosterneuburg have been slower to use mobile devices than, for example, science and languages' teachers. These teachers say they prefer more traditional teaching methods and, as they are not required to use them, BYOD devices are underutilised in these subjects.

The ICT co-ordinator believes they are also not used enough for student reflection and in future plans to encourage more use of the *TeamUp* collaboration tool (developed in the iTEC project) to support this.

Some examinations are now being taken on laptops but these currently have to be school owned laptops.

As more examinations move online over the next few years, schools will need to revisit their policies and secure connectivity arrangements. These may include allowing access to the school intranet but not the public Internet during examinations.

Lessons learned

Klosterneuburg school have found that attaching QR (Quick Response) codes to textbooks, linking to online lesson plans and learning activities, provides a simple way for teachers to start adopting a blended learning approach. It also provides very fast access to relevant resources via students' BYOD devices.

Another lesson the school has learned is that it is important to keep parents involved. A parent representative can meet with the head every Monday to discuss any issues.

National level reflections

Christian Schrack believes the BYOD approach and using mobile devices, including tablets, needs to be framed by specific learning environments and learning scenarios based on competence development and problem based learning with students driving their own learning processes. This also solves the issue of distraction common in traditional didactic teaching scenarios.

He also says, "Now there should be a push for mainstreaming these approaches in all classrooms and schools. In upper secondary education they are already well advanced, in the lower secondary education tablets can be a driver."

A teacher's advice to other schools

Hermann Morgenbesser, teacher and ICT department co-ordinator at Klosterneuburg school advises:

- Do not allow students to bring in just any device, provide minimum specifications to allow smooth integration with existing school infrastructure, e.g. very cheap devices may not fulfil the requirements.
- Discuss your plans and devices with parents during information events. Advise parents that, "these devices are currently being used in the school; if you have a different device consult us before your child brings it in".
- When capturing and storing information be aware of privacy and copyright issues.

