IPAD IN EDUCATION: TEACHER'S EFFECTIVE TOOL IN FRONTAL EDUCATION

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In recent years, the ICT market has seen a massive shift of users toward mobile devices. While a few years ago a classic computer was the only work device, today it can be easily replaced with a portable laptop. We are now experiencing a similar situation, a shift of users toward the even more mobile devices – tablets. Teacher's work must reflect the trend. Does a tablet offer anything new and different to the teacher? In my paper I focus on the possibilities of the use of the iPad tablet with the iOS operating system from the point of view of the teacher.

Since the iPad is designed as a personal device, its use in school is divided into parts – as a teacher's tool and as a student's direct tool (which is commonly referred to as the 1:1 model). Moreover, many schools use the mobile classroom model with shared iPads (like computers in the computer classroom). In my paper I focus on the use of the iPad as a teacher's tool for it is a teacher's personal iPad that is often the first such device in the entire school.

One of the most frequently used methods of education is frontal (collective) education. Frontal education is based on the teacher working collectively with all students in the classroom in one form and with the same content of activities. As a result, the classroom is arranged accordingly (Průcha, Walterová, Mareš 2001). Frontal education consists not only of the teacher's instruction but also of the tasks assigned and managed by the teacher, collective revision of homework or class work tasks, discussion between the teacher and students, the summary of the curriculum, providing feedback and evaluation of students. Because of negative connotations, the term frontal education is sometimes replaced by the term direct education.

According to the CSI (Czech School Inspectorate) annual report, in the 2011/12 academic year teachers used ICT in education in 27-40% of classes (according to the type of school). On the other hand, ICT was actively used by students in only 4.1-6.3% of classes. The results show that ICT tools are used mainly by the teacher as a presentation tool. We can assume that a classroom with a projector (interactive board) and one central point with a computer or laptop is a typical model of the use of a computer as a presentation tool. The teacher operates the computer either from the central point or uses auxiliary tools such as a presenter or another type of remote control. However, this model can be easily changed through the use of a touchscreen device. A touchscreen device enables the teacher to move around the classroom

while a wireless network secures a permanent connection to a projector and the Internet. Moreover, a touchscreen device makes it possible to move a presentation point in front of the student. In the original model, on the other hand, the student had to stand in front of the classroom.

A tablet makes it possible to change the established way of frontal education. Because of the possibility to move a presentation point to any place in the classroom, every student can be immediately actively involved in the education process.

Application

In contrast to similar devices or laptops, an enormous number of education applications for iPad are being developed. There are more than 90 thousand applications from all areas of education. Thanks to those applications the iPad can be a geography atlas, the periodic table of elements, a 3D model of human body, an interactive board or a graphic calculator. Those applications are often free or cheap. The popularity of iPads gave rise to a large number of Internet forums where teachers share their experience and tips on interesting applications.

As far as developers are concerned, the iOS operating system is a closed system. It means that only applications that have been tested and approved by a third party (Apple, Inc. – the iPad designer) can be run on the iPad. Even though this limitation appears to be a problem, the common user actually benefits from it as it reduces the risk of being attacked by a virus or malware. As a result, the teacher does not have to worry about the technical aspects of the device and can use the iPad as a work device with tested and approved applications.

The installation of applications can be carried out from one place only – the AppStore. No installation packages need to be downloaded and no installation location needs to be set. As a result, the installation can be carried out even by a computer layman.

Connecting the iPad to a screen

In order to make a full use of the iPad in the classroom, it is necessary to connect it to a projector. This can be done through a simple VGA adapter or through a wireless transfer of the picture using the AirPlay technology. It is the wireless transfer of the picture that teachers appreciate the most. It enables the teacher to move around the classroom so they no longer have to be "chained" to one point. The iPad can be placed in front of any student who can then work as if they were at the blackboard. It is not important where in the classroom the computer is as the projection can be made from anywhere.

In order to obtain picture reception, the classroom needs to have Apple TV which needs to be connected to a wireless network. The wireless network is necessary for the iPad to work properly. Both devices, the iPad and Apple TV, need to be connected to the wireless network. Apple TV is connected to the projector through the HDMI interface which transmits both picture and sound. Unfortunately, the older projectors used in our schools do not have the HDMI interface. However, this problem can be solved through a simple HDMI to VGA reduction.

Frontal education support

Frontal education is often considered one of the least effective methods of education. Its low effectiveness is caused by the low active participation of students in classes and the prevailing activity of the teacher. As far as at the typical frontal education class from the point of view of the possible use of the tablet is concerned, there are several crucial ways to improve the effectiveness of frontal education.

A presentation is a commonly used tool for the support of frontal education. In the common model it means the use of a computer and a projector. The teacher usually sits at the computer and in so doing they lose natural contact with their students. As a result, communication with all students a large classroom may become problematic. If a tablet with a wireless connection to a projector is used for a presentation, the teacher can move around the classroom and actively talk with students in their own personal space. As a result, students need to pay attention to the teacher all the time and be prepared for their additional questions.

A tablet's built-in camera is another support tool. Together with a wireless projection a tablet can be used as a portable visualizer. A chemical experiment from a different part of the classroom or students working in their workspace can be displayed on the projection screen. If an experiment is a part of the class, it can be effectively presented to students. Moreover, the iPad captures an instant video recording and the recording can immediately be posted on popular social networks. Therefore, the student can revise the experiment during their home preparation.

Mobility is an important feature of the iPad. As far as frontal education is concerned, mobility improves students' active participation in the class. If we need to receive feedback, students have to be actively involved in the class, which can be achieved by asking them additional questions. Through the use of a proper application the tablet can be placed in front of students who do not have to only verbally answer but can also work with the tablet with their answer being displayed on the projection screen. This also increases the participation of all students. Moreover, the tablet's mobility makes it possible for the teacher to ask the student a question without their having to move to the blackboard or the central computer.

Examples of applications for the support of frontal education

Microsoft PowerPoint is one of the classic presentation programs. Its free version enables the use of the existing iPad applications. Another application is a non-linear presentation program Prezi, which has its own online storage service. Moreover, there is an application designed specifically for the iPad – Keynote.

Another group of applications makes the iPad screen an interactive area that is transferred to the projector. As a result, the iPad behaves like a mobile interactive board. Examples of such applications are Explain Everything, Show Me or Stage Whiteboard. All of the applications can capture a video recording.

Applications for the evaluation of feedback are often linked to web applications. This allows students in frontal education to participate using their own devices so the teacher's tablet is used for the evaluation of answers. The most frequently used applications are Socrates and Nearpod.

Conclusion

Mobile touchscreen devices bring new elements to the work of teachers which can help make the classic frontal model of education more effective. Connecting the tablet with the projector enables the teacher to move around the classroom and improves the teacher's contact with their students. The use of proper applications enables the addition of practical examples and experiments to frontal education. Web applications help the teacher to receive feedback which they can immediately evaluate in the class.

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