

# Mobile Phones



*After the teacher delivers a lesson on aspects of media studies, students are provided with access to an online newspaper service which delivers news alerts on particular stories, via school designated mobile phones. Students are given the homework assignment of compiling an up-to-date report on their chosen news story and presenting it to the class the next day.*

## What is a Mobile Phone?

A mobile phone is a handheld device that allows messages (text, voice and multimedia) to be sent to another phone or group of phones. The vast majority of mobile phones have the capacity to also store information, play games and use calculators. More advanced phones have the ability to send and receive email and access an environment similar to the Internet.

In general, mobile phones consist of a number of intricate components, such as a SIM (Subscriber Identification Module) card, circuit board, display screen, keyboard, microphone, speaker, battery and an antenna.

Sophisticated networks and protocols facilitate the communication of voice, text and multimedia data between mobile phones. Examples of these are as follows:

- (2G) Second Generation – Global System for Mobile Communications (GSM) is an example of a digital network which allows for data to be sent and received
- Wireless Access Protocol (WAP) – This is a protocol for enabling wireless access to the Internet. WAP phones have the capacity to browse specifically written Web pages on the Internet
- (2.5G) General Packet Radio Service (GPRS) – This technology allows faster data transmission and Internet access rates as it is “always on”, unlike WAP, which uses a dial-up connection
- Bluetooth – This enables wireless communication and data transfer between different types of hardware devices, for example, pc’s, PDA’s etc.,
- (3G) Third Generation – These systems are being implemented worldwide and will allow much faster connection speeds. They combine voice and data transmission and promise a wide range of advanced multimedia services to mobile users. They are similar in nature to the GPRS system in that they provide “always on” access to services such as video calling, which allow calling parties to see each other and video streaming, which allows users to view video clips. In addition to mobile phone use, a 3G data card connected to a laptop will provide mobile internet access. Coverage is currently variable across Ireland and the best coverage is in the principal towns.

## Possible Educational Uses

The use of mobile phones in education and learning is in its infancy, and depends entirely on their development and impact as an educational tool. Their main advantage is their portability, which enables them to be used for learning outside the classroom. In general, the educational uses of mobile phones are as follows:

- Enables curricular based learning activities, for example, interactive quizzes, puzzles, mathematical problems etc., to be sent to mobiles

- Promotes the use of voice, text and multimedia messaging among peer-to- peer mentors and study groups
- Tailors learning for students with special educational needs, for example, by providing learning material with text or audio for students with hearing impairments
- Improves literacy and numeracy levels among students by providing carefully designed lessons
- Facilitates collaborative and project based learning
- Provides the capacity to access Internet resources, for example, revision notes and news updates
- Converges with other technologies, for example laptops, PDA's (Personal Digital Assistants) MP3 players and data-loggers to transfer different types of data to a central database where it can be viewed live via a mobile phone
- Allows for the capture of images outside of the classroom which can then be sent back via Multi Media messaging (MMS), where the message can include not just text, but also sound, images and video
- Facilitates wireless access to the Internet when used with a laptop, hence providing Internet access to students and teachers from any location in the school

### **Technical and Purchasing Considerations**

Advanced features in mobile phone technology greatly influence cost. As a result prices tend to range from under €60 to over €400 depending on the model and capabilities. Additionally, the cost of some of the newer services can be prohibitive especially when a school is planning to purchase a large number of mobile phones for educational use. It is important to ensure that you see a demonstration of the services before choosing and, as with all technology for education, have a clear idea of how it will add to learning.

While the communication capabilities and multimedia applications are a deciding factor in purchasing a mobile phone, other key areas to consider are as follows:

- Usability – Is the handset easy to use and the display screen easy to read?
- Battery life – Is a re-charger included in the overall cost and what is the life span of the battery?
- Security – As mobile phone theft is an issue in many schools find out what recommendations and strategies are provided with regard to security
- Filtering capabilities – Ensure that illegal and harmful content is not accessible from any school designated mobile phone
- Monitoring – This is important if schools need to review if phones are being used for their intended purpose
- Additional software – The ability to converge with other hardware devices such as PDA's and desktops is becoming increasingly common and opens up much potential for learning activities. The design of learning activities specifically for transmission to students via mobile depends entirely on specialised software and its cost

### **Additional Considerations**

#### **Bullying Through Text Messaging**

As with many communication systems, mobile phones have the potential to be used in bullying. Students should be informed of what steps to take in the event of such actions and appropriate clauses should be included in the School's Acceptable Usage Policy.

**Health Considerations**

In March 2007 the Department of Communications, Marine and Natural resources published an expert group report "Health Effects of Electromagnetic Fields". They conclude "So far no adverse short or long-term health effects have been found from exposure to the radiofrequency (RF) signals produced by mobile phones and base station transmitters. RF signals have not been found to cause cancer." The report does however accept that more research is needed in the area and does recommend precautionary measures until more is known. Examples of such measures would include limiting the time used, keeping the phone away from the body and switching it off when not in use.

**Other Issues:**

The management of mobile phone use by students is a timely and important issue and must be incorporated into the schools ICT Plan and Acceptable Use Policy. Issues of concern to-date, relating to mobile phones include:

- Theft on school grounds
- Cheating in examinations
- Inappropriate adult contact
- Illegal use, for example, downloading pornographic images

**Relevant Web Sites**

Irish Cellular Industry Association

[www.icia.ie](http://www.icia.ie)

The ICIA is an alliance of the mobile phone operators in Ireland and prepares and publishes guidelines and standards for the industry. They publish the industry code of practice for mobile phone use and minors and "A Parent's Guide to Mobile Phones" which contains advice on bullying and malicious calls.

Schools Case Study

Mobile phones in the classroom

<http://news.bbc.co.uk/1/hi/technology/6215532.stm>

Lilian Baylis Technology School – 12 and 13 year old students used mobile phones and audio equipment to create their own newscasts for download.

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