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**INFORMATION TECHNOLOGY IN A GLOBAL SOCIETY  
HIGHER LEVEL AND STANDARD LEVEL  
PAPER 2**

Wednesday 15 May 2013 (morning)

1 hour 15 minutes

**ARTICLE**

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INSTRUCTIONS TO CANDIDATES

- Do not open this booklet until instructed to do so.
- This booklet contains the article required for information technology in a global society higher level and standard level paper 2.

### Theme: Education and training

#### IT system: using cloud computing services, synchronization of information between portable systems, desktop systems, servers and web-based services

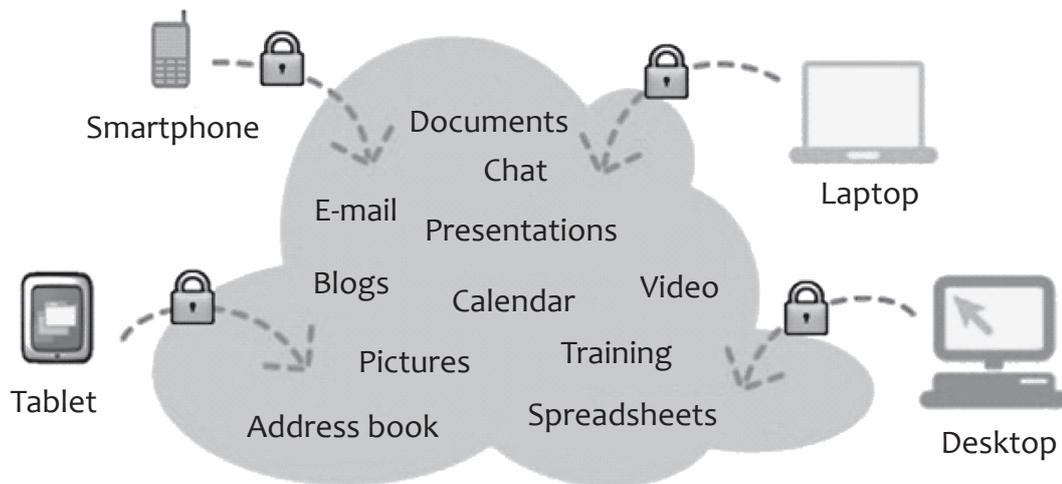
Shannon Academy, a small school in remote south-west Ireland, has become the first school in the local area to require students to use cloud computing services for storing, accessing and sharing files.

The students share files for collaborative projects and teachers can access these files to give advice or award marks. Many students are already using cloud computing amongst themselves to share resources and to ask for advice and help.

Cleo O’Byrne, network manager at Shannon Academy, says cloud computing provides many technical and educational benefits for the school, teachers and students. For example, the school does not need to:

- recruit as many highly qualified technical staff to maintain the school IT systems
- continually purchase and update software because most software is freely available online and runs via a browser
- continually purchase additional hardware such as storage devices
- perform back-ups.

However, cloud computing requires students to have constant internet access.



## Cloud Computing

Having secure access to all your applications and data from any network device

[Source: [http://en.wikipedia.org/wiki/File:Cloud\\_applications.jpg](http://en.wikipedia.org/wiki/File:Cloud_applications.jpg), 04 July 2011]

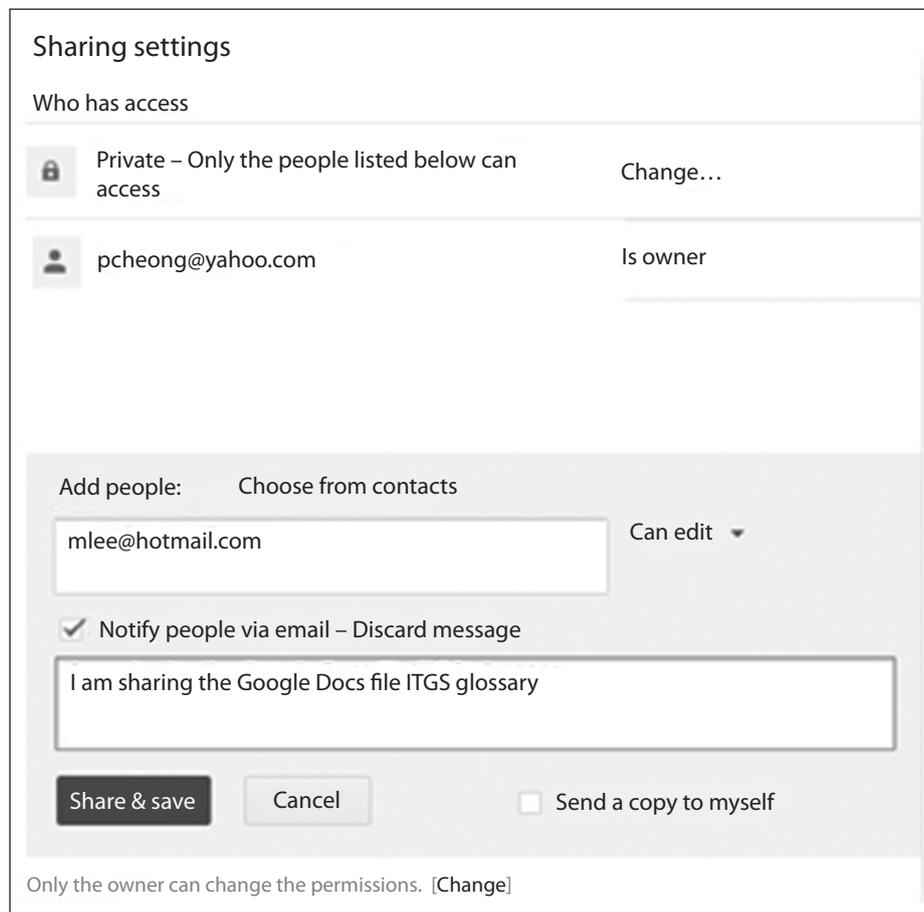
Ms O’Byrne said that some applications the students can use are *Google Docs* and *Dropbox* which provide facilities for storage and sharing of digital content.

Students can access their *Google Docs* files in the school computer lab, at home or in an internet cafe by logging on to *Google* and choosing “Documents”.

If a student chooses to use *Google Docs* “Share” they can allow another person to access a file and add information if they are collaborating on a project. This is done by entering a person’s email address into the list of people with permission to access the file (*see diagram 1*).

The diagram below shows part of the step-by-step process for storing files, setting access permissions and sharing files using *Google Docs*.

**Diagram 1: Sharing files in *Google Docs***



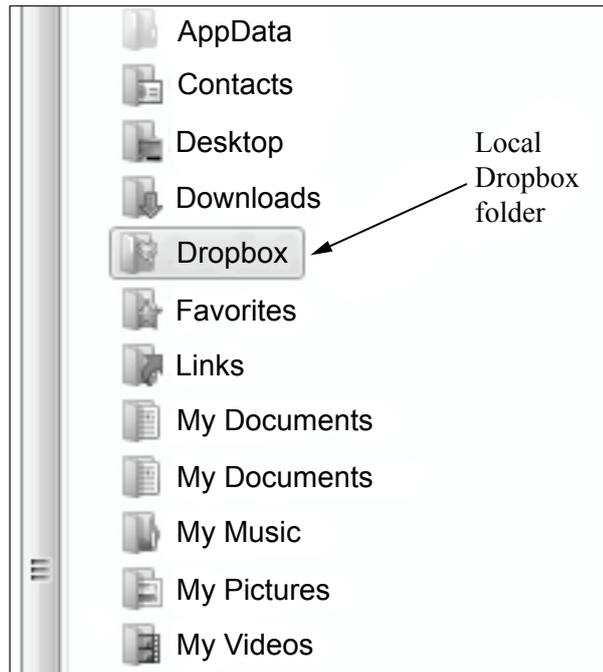
[Source: <https://docs.google.com>, 11 October 2011]

Ms O’Byrne has also suggested that students can use services such as *Dropbox* which allows digital content to be automatically synchronized across a number of devices.

Unlike *Google Docs*, the student will need to download software which sets up a folder called *Dropbox* on their desktop computer or mobile device (*see diagram 2*).

The diagrams below show part of the step-by-step process for storing, synchronizing and sharing files using *Dropbox*.

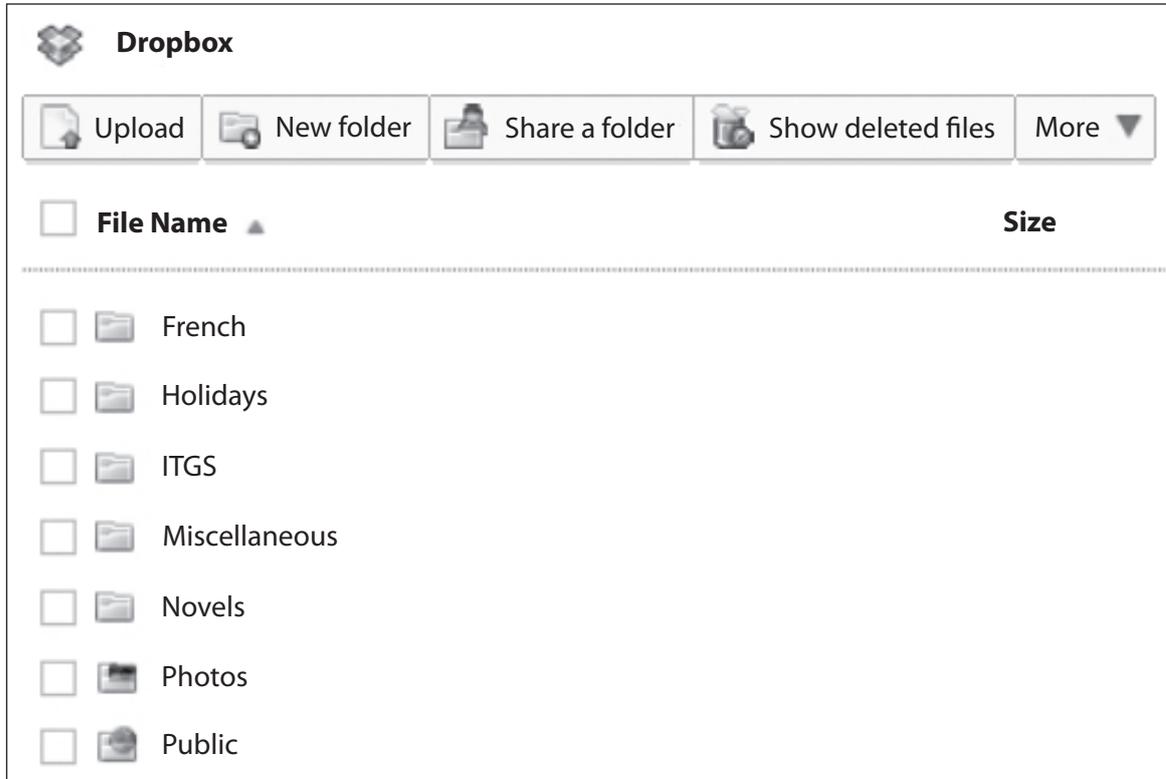
**Diagram 2: Location of the *Dropbox* folder**



[Source: <https://www.dropbox.com>, 04 July 2011. Used with permission]

Files and folders intended for storage in the cloud are stored (drag and drop) in the local *Dropbox* folder (see diagram 3).

**Diagram 3: *Dropbox* folders in the cloud**



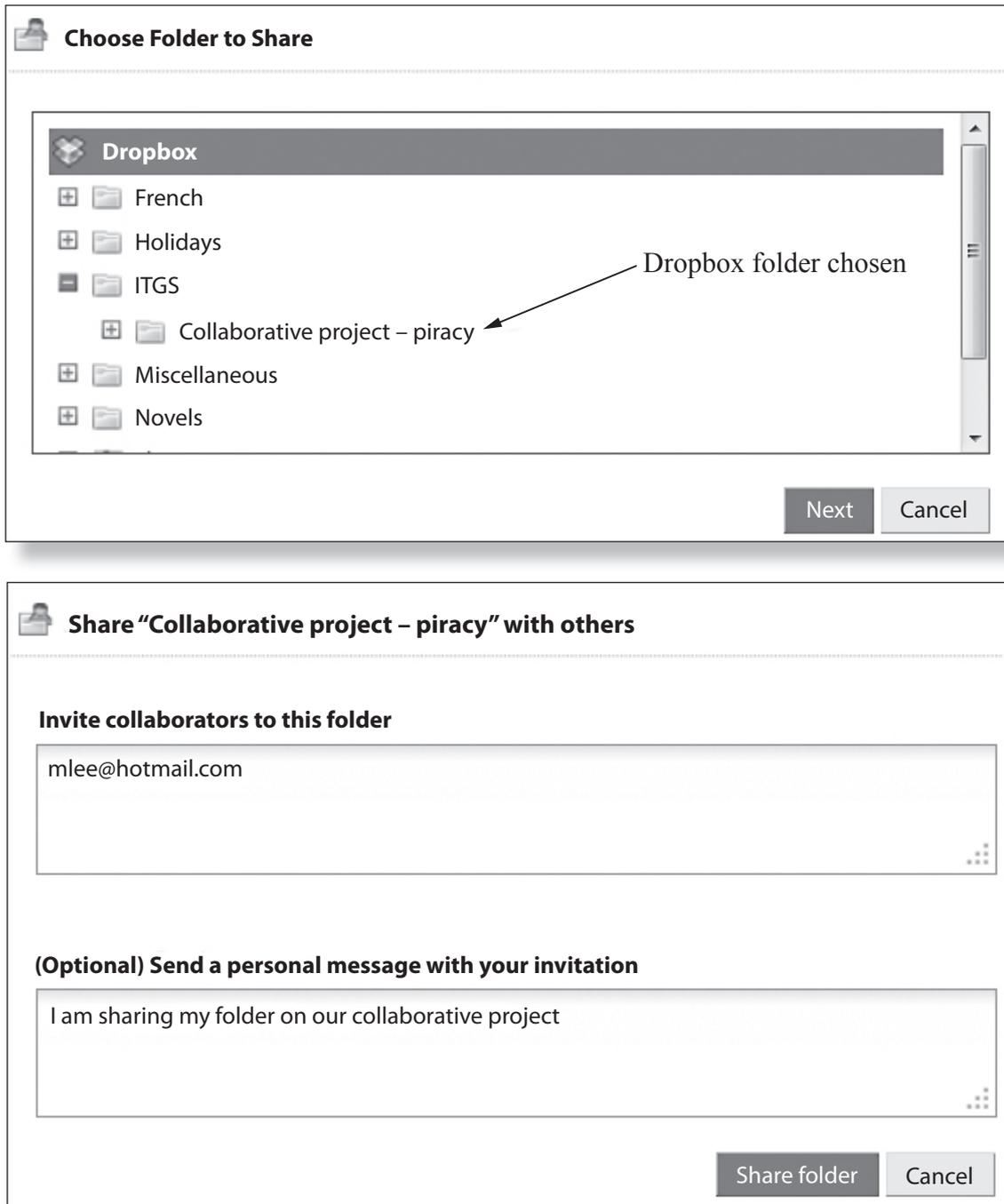
[Source: <https://www.dropbox.com>, 04 July 2011. Used with permission]

Any changes (additions, deletions) to the local *Dropbox* folder will be automatically synchronized to the *Dropbox* in the cloud and all the other devices synchronized with that *Dropbox* account. Students can complete homework then drag the file to their *Dropbox* folder.

In a school computer laboratory or in an internet cafe, students can access their *Dropbox* files by logging on to the *Dropbox*. Changes made to their folders in the cloud during lessons will be synchronized with their desktop or mobile device *Dropbox* folders at home.

When students want to “Share” a folder, they can enter a person’s email address and this will allow that person to access that specific folder and also add files to it (*see diagram 4*).

**Diagram 4: Sharing *Dropbox* folders**



[Source: <https://www.dropbox.com>, 04 July 2011. Used with permission]

Ms O’Byrne also said, “Many students have become frequent users of the free collaborative online tools that are based in the cloud, but we may need to issue warnings and introduce specific policies about how they use them since there have been some problems occurring.”

She added, “Also since the problems appeared the school is considering forming a closer relationship with a cloud service provider. I think with any cloud computing service to get the best result it is important that the provider build a trusted relationship with those people using the service.”

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