Digital Learning Technologies in the Geography Classroom

When discussing the use of digital technologies in the Geography classroom it is important to have an awareness of the vision contained within the *Digital Learning Framework for Post-Primary Schools (DES) (2018)*. (Click link for access to the document).

In this document, it is stated that there should be a clear understanding of “*what it means to embed digital technologies using constructivist principles for teaching and learning.*” (DES, 2018, p. 3).

This idea is further developed when it mentions that, “*Underpinned by constructivist principles, the Framework will support high quality education mediated by digital technologies promoting active learner participation and engagement in a wide range of learning activities.*” (DES, 2018, p. 1)

It is hoped that the Digital Learning Framework for Post-Primary Schools will assist teachers and schools to develop a “*commitment to effective and highly effective use of digital technologies in teaching and learning.*” (DES, 2018, p. 4)

In summary, when integrating the use of digital technologies within our Geography classrooms, it is vital that these technologies are being used for the right reason, with the students’ learning being placed at the center. In other words, the technology should be used to develop and accelerate the students’ learning. The form of technology to be used should be chosen by the geography teacher based on the learning needs of the class and/or student at a particular moment in time.

Accordingly, it is worth reading the following article from *Cambridge International Examinations* (Click link for access to the document), entitled ‘*Digital Technologies in the Classroom*’ (Education Brief No. 5, November 2015). This article provides clarity around the key terminology of digital technology and outlines the benefits and challenges of using of digital technologies in the classroom.
How the Digital Learning Framework relates to the Geography Classroom

1. Digital device

Each school will need to have a clear policy in this regard. Some schools will provide the digital device or facilitate the student acquiring one e.g. i-Pads, laptops or android devices. In other schools, it may be at the discretion of the teacher and options may be more limited. What is important here, is to be aware that not all schools will be at the same level of digital readiness.

2. Virtual Learning Environment (VLE)

VLEs such as Google classroom, SharePoint, Schoology or Edmodo can be used by geography teachers to provides access to subject material, assessments, homework, and links to additional resources.

3. Personal Learning Network (PLN)

This is when links with other people/students or resources are made. The aim is to facilitate an exchange of ideas that supports learning. Twitter would provide an example here. However, it should be noted that there are risks here relating to data and online security and accuracy of information. You should consult with your school’s ‘Acceptable Usage Policy’ (AUP).

4. E-portfolios

This is an electronic catalogue of work that tracks a student’s learning journey. It is usually stored online but can be saved on a hard drive. It allows the opportunity to use multimedia files. E-portfolios can be useful because they provide a mechanism of enabling a wide variety of material in differing formats and can include details of the process undertaken. A good option here would be to use Google Sites, but other software options to create e portfolios include; Evernote, WordPress and Weebly. Padlet is also a very useful way of putting and storing all relevant resources relating to geographical topics in one central place that can be accessed by the students/teachers and utilised when required.

5. Flipped classroom

This method allows students to discover new content at home before their geography lesson using features such as online videos, PopwerPoints, teachers’ electronic notes, etc, and then applying this knowledge in more detail and personalised work in the classroom. For example, learners watch a video at home about how sedimentary rocks are transformed into metamorphic rocks. In class, they work in groups to collaboratively create a diagram explaining this process of transformation. The main benefit of this approach is that it allows more time in class for activities that promote deeper understanding and individual student reflection. Here video clips can be recommended to students to watch on platforms such as, YouTube, PowToon, National Geographic, or Teacher tube. This should encourage deeper engagement by the students on the topic in the following class as well as providing the platform for the geography teacher to use a wide range of formative assessment practices.
6. Mapping

As geographers, mapping is a vital resource in developing student understanding as well as encouraging students to become more geoliterate. There are a wide variety of resources that can be used here including Scoilnet Maps, OSI Map Viewer, Google Maps and Bing Maps.

7. Assessment

Digital learning technologies can be used in a variety of ways for both formative and summative assessment practices. Examples of technologies that can be used for assessment purposes include; Mentimeter, Formative, Socrative, Kahoot! and Quizlet.

8. Worksheets

Worksheets can be either completed by the students in a digital format or can be created by teachers on digital platforms and students may complete them on hard copies. A useful resource for geography teachers for creating worksheets is Puzzlemaker on discoveryeducation.com.

9. Games

These can be both a fun and useful way of checking in on student learning and understanding. A variety of websites and digital platforms exist online. Some such as classtools.net allow the teacher to create their own geography games which can then be used in class. Kahoot! can also be used for this purpose. Others such as World Geography Games has already created a range of interactive games using maps and diagrams These interactive games appear on the website under a variety of geographical headings and are ready to be used straight away.

10. Classroom strategies

Added to the above is a wide range of classroom strategies such as, Placemat, PMI, KWL, Mind Maps, and Jigsaw, each of which can be adapted using Digital Technologies such as Piktochart.

Digital Learning Technologies in the Geography Classroom
Some Software and Hardware considerations...

Google Classroom, Edmodo, i-Pads, Laptops and/or Android Devices, Twitter, Google Sites, Evernote, WordPress, Weebly, Padlet, YouTube, PowToon, National Geographic, Teacher Tube, Scoilnet Maps, OSI Map Viewer, Google Maps, Bing Maps, Mentimeter, Goformative.com, Socrative, Quizlet, Puzzlemaker, Classtools.net, Kahoot!, World Geography Games and Piktochart.
Looking at our Schools (LAOS) and The Digital Learning Framework

The Digital Learning Framework is used as the key instrument for both internal and external evaluation of how digital technologies are embedded across all aspects of schools including the geography classroom. Accordingly, there are four domains that geography teachers, both individually and collectively need to reflect upon to ensure highly effective practice in using digital technologies in their classrooms. They are:

<table>
<thead>
<tr>
<th>Standards</th>
<th>DOMAIN 1 Learner Outcomes</th>
<th>DOMAIN 2 Learner Experiences</th>
<th>DOMAIN 3 Teachers’ Individual Practice</th>
<th>DOMAIN 4 Teachers’ Collective/Collaborative Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Students enjoy their learning, are motivated to learn and expect to achieve as learners</td>
<td>Students engage purposefully in meaningful learning activities</td>
<td>The teacher has the requisite subject knowledge, pedagogical knowledge and classroom management skills</td>
<td>Teachers value and engage in professional development and professional collaboration</td>
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<tr>
<td>2.</td>
<td>Students have the necessary knowledge, skills and attitudes required to understand themselves and their relationships</td>
<td>Students grow as learners through respectful interactions and experiences that are challenging and supportive</td>
<td>The teacher selects and uses planning, preparation and assessment practices that progress students’ learning</td>
<td>Teachers work together to devise learning opportunities for students across and beyond the curriculum</td>
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<td>3.</td>
<td>Students demonstrate the knowledge, skills and understanding required by the post primary curriculum</td>
<td>Students reflect on their progress as learners and develop a sense of ownership of and responsibility for their learning</td>
<td>The teacher selects and uses teaching approaches appropriate to the learning objective and to students’ learning needs</td>
<td>Teachers collectively develop and implement consistent and dependable formative and summative assessment practices</td>
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<td>4.</td>
<td>Students attain the stated learning outcomes for each subject, course and programme</td>
<td>Students experience opportunities to develop the skills and attitudes necessary for lifelong learning</td>
<td>The teacher responds to individual learning needs and differentiates teaching and learning activities as necessary</td>
<td>Teachers contribute to building whole-staff capacity by sharing their expertise</td>
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