Deep Learning and Technology Integration
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"Unless teachers start out with specific technology goals that support their vision of learning, technology will most likely be used to reinforce the status quo." (Cohen, 1988; Cuban, 1986)

"Simply stated, deep learning involves the critical analysis of new ideas, linking them to already known concepts and principles, and leads to understanding and long-term retention of concepts so that they can be used for problem solving in unfamiliar contexts. Deep learning promotes understanding and application for life." (Deep and Surface Learning, December 4, 2009. http://www.engsc.ac.uk/er/theory/learning.asp) More and more, aren't we seeing computers used to reinforce surface learning? Skill-drill games and even many webquests and other "technology" infused projects being done in our schools constitute surface learning.

Before technology is even brought into the picture, we need to consider what deep learning is, how we can make it happen more in our classrooms. Once strong planning is achieved, begin to integrate digital tools into the learning process.

One way to strengthen planning is by the backwards design model. This way of planning requires that the teacher take a look at the big picture first and put end goals in mind, including assessment, before planning learning experiences. If you aren't familiar with the backwards design model, it has three stages:
1. Identify the desired results. Overall, what is the enduring understanding your students should gain?
2. Determine the evidence required to show the enduring understanding. What could students produce that would show understanding?
3. Plan learning experiences and instruction. What teaching and learning experiences will promote understanding?
Here is a website, [Digital]Literacy, that provides a backwards design planning template: http://digitalliteracy.mwg.org/curriculum/template.html

When planning in this model, stages two and three would invite use of digital tools.

How will you assess student understanding of the big idea? At this level, students would be synthesizing and evaluating all of the content learned. Digital rubric planners would be useful here. Additionally, students could use various tools from basics (like word processing, concept mapping, or presentation software), to the more in-depth such as communication tools to collaborate with other students, or creative tools such as video editing, graphics and animation, and audio editing software.

How will you assess content knowledge as you go along? Digital assessment tools (quiz makers or online quizzes) can be helpful to you as the teacher. Additionally, tools like blogs, wikis, and concept mapping applications can provide mediums for assessment.

On a basic level, there are many websites out there that can provide that outer level of ancillary knowledge though interactive activities and games, as well as reinforce basic content knowledge and comprehension.

For your planning of activities to develop the content knowledge, consider using online lesson plan collections or all-inclusive websites that provide not only lesson plans, but a reference collection, interactive activities, and other resources that are included in the lessons (like Jason.org, National Geographic Education, and Discovery Education).

<table>
<thead>
<tr>
<th>Digital Tools for Planning Deep Learning</th>
<th>Critical Thinking</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Activities</strong></td>
<td></td>
</tr>
<tr>
<td>Discovery Education (Builder, Thematic Units, etc.)</td>
<td><a href="http://www.thinkingblocks.com/">http://www.thinkingblocks.com/</a></td>
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<td><a href="http://rubistar.4teachers.org/">http://rubistar.4teachers.org/</a></td>
<td></td>
</tr>
</tbody>
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Reflection and Iteration

In order for deep learning to reach its full extent, we have to allow for reflection and iteration. Students need to take time and reflect. We need to reiterate their learning. We need to encourage them to take time and draw connections and develop a meta-awareness of their acquired knowledge.

Luckily, there’s some great digital tools to help.

Traditionally, reflection brings about the idea to use a journal. Here are some resources:
Google Docs
Open Office
for mac Journler
iDailyDiary

Want to try a different approach to journaling? Why not do a video diary? Unfortunately, if you don’t have a web cam and microphone already, this could set you back 10-20 bucks. But, there’s free video editing software out there:
Hyperengine-AV
Microsoft Movie Maker

Blogs are a great way to rehash past topics and get kids to make connections by keeping discussion going in a blog topic. Or, try micro-blogging or a Ning.
http://www.blogger.com
http://www.edublogs.org
http://www.twitter.com
http://www.edmodo.com
http://www.ning.com

How about a visually-oriented reflection? These are some digital options:
Nota
Glogster
bubbl.us
Freemind
Keep that knowledge fresh with an occasional review survey, and make a Google Form. If you have Discovery Education, they also have a great assessment tool.