Digital Libraries go to School
Problem-Based Learning (PBL) Cheat Sheet

1. Critical Components of PBL

- **Authentic Problems** – PBL problems should reflect real life as much as possible, and center around tasks that students would likely encounter as working professionals, or in the context of their current lives. As such, the problems are complex rather than constrained, and pull information from several different content areas. The problem is provided first, then students pursue and learn new material in their effort to solve it.

- **Student Centered** – After being presented with a problem, students take ownership in solving it. They list what they know and what they do not know to reveal their knowledge gaps, then take ownership in trying to fill them in.

- **Teachers act as Facilitators or Guides** – Facilitators do not lecture but instead prompt students to complete key aspects of the PBL process. For example, listing what they know and what they do not know, identifying likely sources of information, critiquing the information and it's usefulness in solving the problem. Facilitators engage in some shepherding, for instance they may ask student to elaborate on several of their initial ideas, making sure that one will lead them towards a problem solution.

- **Small groups** – Groups of 5-9 engage in cooperative behavior. After identifying their knowledge gaps, they make assignments to fill them—individually pursue the necessary information and then come back to share their knowledge and attempt a problem solution.

2. Typical PBL Process

- **Problem Presentation** - Present students with the problem, avoiding explicit mention of learning goals. Be as authentic as possible. Consider using a press release, a letter, or even a story to present the problem.

- **Initial Problem Statement** - Encourage students to create a problem statement, challenge them on whether or not it is supported by the initial information they are given.

- **Current Knowledge** - Manage discussions about what is known by the students. Question the relevance of the known information to the current problem statement.

- **Learning Needs** - Manage discussions about what students need to learn in order to solve the problem.

- **Information Sources** - Manage discussions about likely sources of information (you may provide them with a list of resources, but be careful to not focus on those centered around the intended solution).

- **Information Seeking** – Have group members fulfill assignments to find the information needed to solve the problem.

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- **Dissemination** – Students share what they have learned and critically examine the information (is it accurate? Free of bias? Authoritative? Does it help with solving the problem?)
- **Solution** – Students attempt to solve the problem using the information they have obtained.
- **Closing the Loop** – Ask students to revisit the initial problem presentation, knowing what they know now—what would they do differently? What other solutions paths are possible? Is one of them better than what they tried?

3. Consider Using A Work Flow Guide

- Since you can't keep track of all these PBL groups at the same time, consider formalizing the steps by writing them out for your students. Within the steps, ask the questions you would be asking as a facilitator. It can help to have them report back too. PBL is focused on process rather than the end product. As such, make part of their process something that they hand in (e.g. have them write out their early and revised problem statements, their list of knowns, unknowns, and sources of information. Then ask them to hand them in along with their problem solution).

4. PBL Is Like Writing Fiction

- Once you know the rules, you may decide that you have to break them. For instance, in this PBL based workshop, we don't select the problems (instructional needs in this case), you do. This was a tough decision, but if we chose instructional needs for you and your classroom authenticity would suffer as a whole. We also made the decision to use much smaller groups. Since technology skills are a focus here (learning the IA) we wanted to make sure everyone got a chance to use it directly—something that is tough to do with 5-9 people. You may find yourself making tough choices about what to include. The research findings favor closing the loop but you may not have time to complete this step.

5. Sample PBL Outline

- We have put up an Instruction Architect Project that has a useful shell for Problem-Based Learning. Feel free to copy it and then turn it into a project of your own: http://ia.usu.edu/viewproject.php?project=ia:6931

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