

### **Advantages**

Training methods involving discussion encourage learners to listen to and learn from their instructor and each other. Open-ended questions during guided discussion leads to concepts of risk management and ADM. The use of “What If?” during the discussion calls for high order thinking skills and exposes the learner to the decision-making process.

From the description of guided discussion, it is obvious this method works well in a group situation, but it can be modified for an interactive one-on-one learning situation. [Figure 5-11]



**Figure 5-11.** *As the learner grows in flight knowledge, he or she should be able to lead the postflight review while the instructor guides the discussion with targeted questions.*

### **Problem-Based Learning**

In 1966, the McMaster University School of Medicine in Canada pioneered a new approach to teaching and curriculum design called problem-based learning (PBL). In the intervening years, PBL has helped shift the focus of learning from an instructor-centered approach to a learner-centered approach. There are many definitions for PBL, but this handbook defines it as a learning environment where lessons involve learners with problems encountered in real life and that ask them to find real-world solutions.

PBL starts with a carefully constructed problem to which there is no single solution. The benefit of PBL lies in helping the learner gain a deeper understanding of the information and in improving his or her ability to recall the information.

When presenting material as an authentic problem in a situated environment, the learner may “make meaning” of the information based on past experience and personal interpretation. This problem type encourages the development of HOTS, which include cognitive processes such as problem solving and decision-making, as well as the cognitive skills of analysis, synthesis and evaluation.

Developing good problems that motivate, focus, and initiate learning are an important component of PBL. Effective problems:

1. Relate to the real-world so learners want to solve them.
2. Require learners to make decisions.
3. Are open-ended and not limited to one correct answer.
4. Are connected to previously learned knowledge as well as new knowledge.
5. Reflect lesson objective(s).
6. Challenge learners to think critically.

### **Teaching Higher Order Thinking Skills (HOTS)**

To teach the cognitive skills needed in making decisions and judgments effectively, an instructor should incorporate analysis, synthesis, and evaluation into lessons using PBL. HOTS should be taught throughout the curriculum from simple to complex and from concrete to abstract.