5 Star Instructional Design Rating

M. David Merrill
Utah State University

The rating system consists of five stars, one each for Problem, Activation, Demonstration, Application, and Integration. Each star has three levels bronze, silver, or gold depending on whether detailed criteria are met for each category[1].

Does the instruction teach kinds-of, how-to or what-happens?

Five star rating is not appropriate for reference material or isolated facts and may be inappropriate for psychomotor skill courseware.

Is the instructional architecture tutorial or experiential?

Five star rating is most appropriate for tutorial or experiential (simulation) courseware. It may not be appropriate for receptive or exploratory courseware[2]. A lecture is a typical receptive architecture. In receptive courseware information is provided but no effort is made to make sure learners acquire the information. Receptive courseware is sometimes called "spray-and-pray" instruction. Unstructured problem solving is typical exploratory courseware. Learners are given a problem to solve and provided with a rich variety of resources but little guidance. Exploratory courseware is sometimes called "sink-or-swim" instruction.

Is the courseware TELL-&-ASK (T&A) instruction?

Many contemporary courses can be characterized as Tell-&-Ask (T&A) instruction. That is, information is presented and a few multiple-choice, true-false, or short-answer, remember-information-that-was-presented questions are tacked onto the end of a module or the course. This type of course is information-only and it does not meet the basic requirements for certification. There is no need to apply the other criterion. T&A instruction gets no stars.

1. **Is the courseware presented in the context of real world problems?**

    a. Does the courseware show learners the task they will be able to do or the problem they will be able to solve as a result of completing a module or course?
    b. Are students engaged at the problem or task level not just the operation or action levels?
    c. Does the courseware involve a progression of problems rather than a single problem?

2. **Does the courseware attempt to activate relevant prior knowledge or experience?**

    a. Does the courseware direct learners to recall, relate, describe, or apply knowledge from relevant past experience that can be used as a foundation for new knowledge?

    b. Does the courseware provide relevant experience that can be used as a foundation for the new knowledge?

    c. If learners already know some of the content are they given an opportunity to demonstrate their previously acquired knowledge or skill.

---

[1] The author is from Utah, home for the 2002 Winter Olympics. The rating system has no doubt been influenced by this event.

[2] For a more detailed discussion of instructional architectures see Ruth Clark (1998), *Building Expertise: Cognitive Methods for Training and Performance Improvement.* International Society for Performance Improvement.

3. **Does the courseware demonstrate (show examples) of what is to be learned rather than merely tell information about what is to be learned?[3]**

   a. Are the demonstrations (examples) consistent with the content being taught?

      (1) Examples and non-examples for concepts?
      (2) Demonstrations for procedures?
      (3) Visualizations for processes?
      (4) Modeling for behavior?

   b. Are at least some of the following learner guidance techniques employed?

      (1) Learners are directed to relevant information?
      (2) Multiple representations are used for the demonstrations?
      (3) Multiple demonstrations are explicitly compared?

   c. Is media relevant to the content and used to enhance learning?

4. **Do learners have an opportunity to practice and apply their newly acquired knowledge or skill?**

   a. Are the application (practice) and the posttest consistent with the stated or implied objectives?[4]

      (1) Information-about practice requires learners to recall or recognize information.
      (2) Parts-of practice requires the learners to locate, name, and/or describe each part.
      (3) Kinds-of practice requires learners to identify new examples of each kind.
      (4) How-to practice requires learners to do the procedure.
      (5) What-happens practice requires learners to predict a consequence of a process given conditions, or to find faulted conditions given an unexpected consequence.

   b. Does the courseware require learners to use new knowledge or skill to solve a varied sequence of problems and do learners receive corrective feedback on their performance?

   c. In most application or practice activities, are learners able to access context sensitive help or guidance when having difficulty with the instructional materials? Is this coaching gradually diminished as the instruction progresses?

5. **Does the courseware provide techniques that encourage learners to integrate (transfer) the new knowledge or skill into their everyday life?**

   a. Does the courseware provide an opportunity for learners to publicly demonstrate their new knowledge or skill?

   b. Does the courseware provide an opportunity for learners to reflect-on, discuss, and defend their new knowledge or skill?

   c. Does the courseware provide an opportunity for learners to create, invent, or explore new and personal ways to use their new knowledge or skill?

---

[3] The consistency criterion should be applied first. If demonstrations are inconsistent then it doesn't matter if there is learner guidance or if the media is relevant. If demonstrations are consistent then additional credit should be awarded for guidance and/or relevant media.

[4] The consistency requirement should be applied first. If the practice and/or test are inconsistent then a sequence of problems is irrelevant and guidance is irrelevant. If the practice and test is consistent then progression and guidance should receive additional credit.