# EVALUATING IT RESOURCES IN CHEMISTRY

**Raymond Tsoi Mun Fie**
**Email: mfrtsoi@nie.edu.sg**

The increasing trend towards using computer technology in education as part of the emerging learning technologies is exemplified by the growing number of "IT (Information Technology) enabled" classrooms. IT resources such as the Internet and multimedia educational software or courseware are also rapidly moving into the mainstream of teaching in Singapore. Therefore, there is a need to evaluate such resources so that relevant and appropriate IT resources could be used effectively to facilitate the teaching and learning process.

However, it is also equally important to take into account the teaching/learning strategies that are to be incorporated in the instructional design or instructional planning of the IT-based lesson. As such, this would involve a three-stage process:

1. Plan
2. Prepare
3. Position

The first stage involves determining the prior knowledge of the learners including their experiences and needs; defining the specific instructional objectives to be appropriate, achievable and measurable; and defining the skills such as process/thinking and social.

The second stage requires determining the instructional strategies including the rationale and suitability. One could also visualise oneself in using the various teaching/learning strategies, for example, demonstration, guided discovery, inquiry approach, and cooperative learning.

The final stage calls for selecting the appropriate IT resources. This would mean having to review the IT resources bearing in mind the first two stages as well. For example, one may make use of the IT resources as a resource material for:

- Information as part of a demonstration or expository teaching
- Information that will help solve a problem or answer a question
- Information where students can summarise, interpret, infer, and analyse
- Information to support conclusions

As such, "positioning" implies as to which suitable part of the instructional planning that one could incorporate the relevant IT resources for the educational goal(s) of the lesson, be it psychomotor, cognitive or affective. Such resources need to be evaluated for the reliability and quality of the information obtained, i.e. the content; user-interface attributes such as navigation, layout and colour; and technical attributes such as specifications of the software, requirements such as plug-ins and Internet access.

In summary, one needs to be guided by the three-stage process (Plan, Prepare, and Position) in the evaluation of IT resources. Also, there is the need for incorporation of effective classroom management strategies.

**The following websites are for the evaluation of CD-Roms:**

1. http://ericir.syr.edu/ithome/digests/software.html ERIC Digest (1995). Seven steps to responsible software selection.

2. http://seamonkey.ed.asu.edu/emc300/software/evalform.html Software evaluation form.
3. http://science.uniserve.edu.au/reviews/softeval.html Software review form.
4. http://www.ucc.uconn.edu/~wwwpcse/wcform.html Way cool software reviews project (1997). Software evaluation form.
5. http://www.techlearning.com/review.html Searchable software reviews.
6. http://clearinghouse.k12.ca.us/Instructional Technology Clearinghouse.


**The following websites are for the evaluation of Internet Resources:**

1. http://itech1.coe.uga.edu/Faculty/Gwilkinson/criteria.html Evaluation criteria.
2. http://www.library.ucla.edu/libraries/college/instruct/web/critical.htm Thinking critically about world wide web resources.
3. http://www.siec.k12.in.us/~west/online/eval.htm Web evaluation for secondary grades.
4. http://www.wlma.org/libint/evalweb.htm Evaluating web sites.
5. http://www.duke.edu/~del/evaluate.html Web evaluation worksheet.
6. http://fromnowon.org/jun97/eval.html Comparing & evaluating web information.


**The following websites are for instructional planning:**

1. http://ww.enm.maine.edu/Instructional Development/TeachLearn.html
   Teaching/Learning Strategies.
2. http://www.moe.edu.sg/iteducation/resources/welcome.htm MOE Internet Resources.
3. http://www.funderstanding.com/theories3.html Design of learning.
4. http://www.ceap.wcu.edu/Houghton/learner/think/bloomsTaxonomy.html Bloom's Taxonomy.
5. http://www.edusite.com/tech/htm Technology & learning resources.
6. http://schmidel.com/hub/chem.htm The chemistry guide.


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**Mr Raymond Tsoi Mun Fie** is a teaching fellow of the Science and Technoloy Education Academic Group at the National Institute of Education, Nanyang Technological University.