

Developing Effective On-Line Educational Resources in the Geosciences



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John McDaris and Cathryn Manduca, Science Education Resource Center, Carleton College

The On the Cutting Edge website *Developing Effective On-Line Learning Resources in the Geosciences* uses research from experts in the fields of educational design, website construction, and resource reusability to address many critical issues in designing new online resources or adapting traditional materials to use on the web.

A Four-Part Site for Faculty and Educators

Where to Start – Before you begin.

- **Search** – The website lists several tools that search specifically for educational materials (DLESE, MERLOT, ENC, NSDL) as well as general search engines (Google, Dogpile, Altavista).
- Think about what your **Learning Goals** are for the resource you want to create. The website provides help in determining what your goals are and how to implement them.
- Determine whether your new resource will be used in a **traditional classroom with network capabilities or via web-based distance learning**. Several special issues are discussed for web-based distance learning.

Reusing Resources – Reduce, Reuse, Recycle.

- See how reuse of educational resources can **reduce the duplication of effort** in developing new materials.
- Read about the **different situations involving reuse**: reusing someone else's resource, recreating your own resources online, and creating a new resource from.
- Learn about **issues that can hinder or promote reuse**: location of materials, comprehension of materials, modification of materials, and sharing of new materials.
- Start thinking about **designing new resources with future reuse in mind**.

Educational Design – Good practices.

- **Fostering Critical Thinking** is an important goal for educational resources of any kind. The website gives tips for making new resources that address critical thinking and inquiry rather than just recreating a lecture on the computer.
- **Scaffolding** learning online helps students learn by adjusting the amount of help they get based on how much they need that help. The site presents characteristics of good online scaffolding.
- **Online Assessment of Student Learning** begins with understanding good assessment practice in general. Here we present the work of various research groups into Classroom Assessment Techniques that can easily be implemented with or without technology.

Website Design and Construction – HTML et al.

The website provides tips on:

- **Overarching Issues** – Audience, Resources Needed/Available, Skills Needed/Available, Intellectual Property.
- **Learning How to Write Web Pages** - Books, tutorials, institutional resources.
- Making your resource **Useable** - Structure and format shouldn't be an obstacle to learning.
- **Accessible design as good design**.
- Deciding what technologies to use. **Using the latest advances is not necessarily in the interest of improving educational practice.**

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