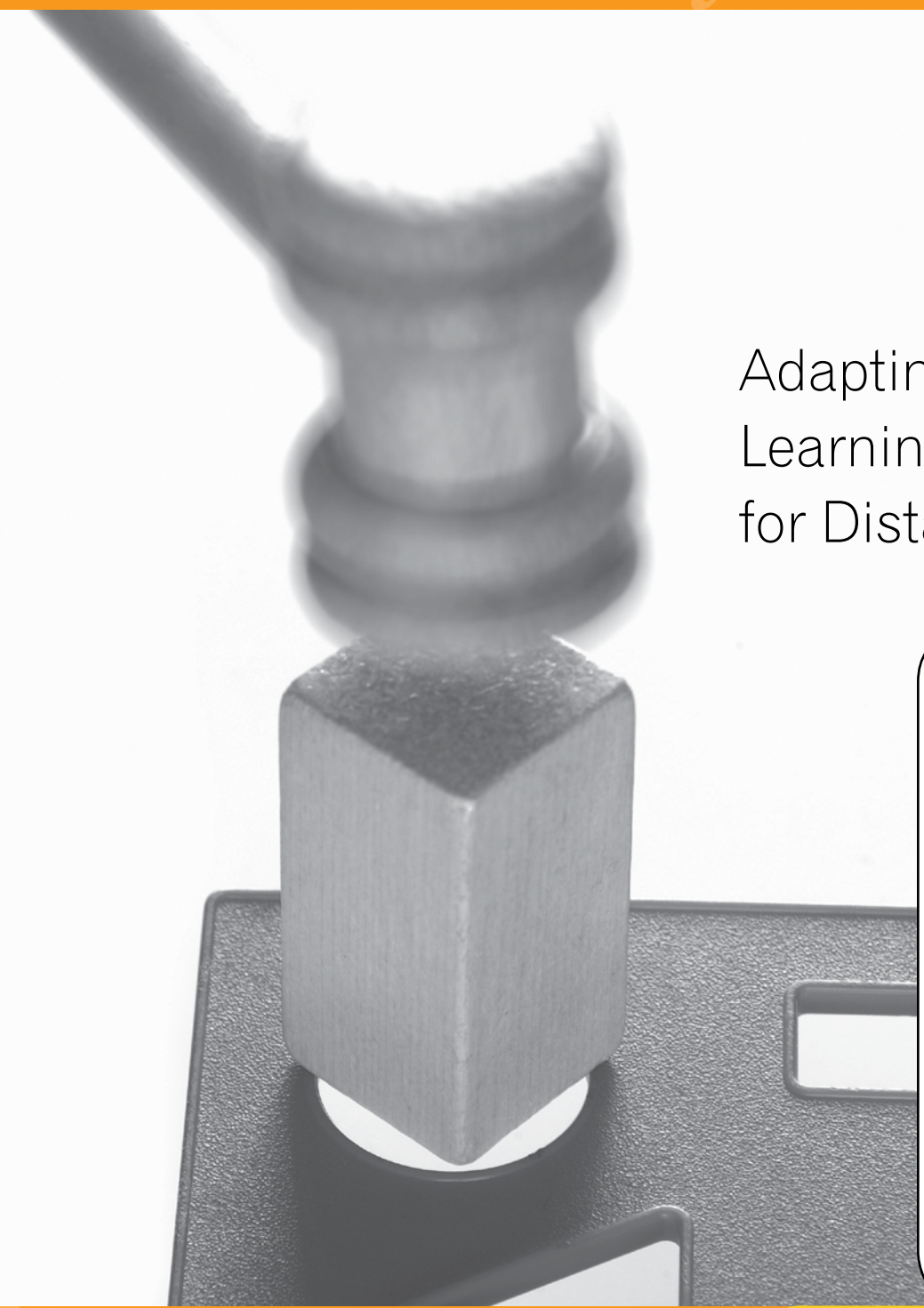

Adapting Learning Materials for Distance Learning

KNOWLEDGE SERIES

knowledge Series

A TOPICAL, START-UP GUIDE TO DISTANCE EDUCATION PRACTICE AND DELIVERY

Adapting courses for distance delivery requires the specific expertise of a course development team

WHY ADAPT LEARNING MATERIALS?

In face-to-face education, instructors are present to guide the instructional/learning process. In distance education (DE) instructors and students are separated and instructors have limited opportunity to observe, challenge, motivate and provide corrective feedback. DE materials must address these missing instructional functions. For example, to use a traditional classroom handout for DE you must supplement it with information about student objectives, provide practice activities and identify additional learning resources.

If you cannot find an existing DE course that meets the needs of your students and your institution, you must decide to:

- Develop a new course
- Adopt an existing DE course
- Adapt or modify existing DE or traditional classroom learning materials.

You may adapt parts of courses, lecture notes, handouts, resource material, assignments, case studies, student projects, lab manuals, tests and examinations. Adapting materials can save time and resources which can then be used to focus on providing quality learning support rather than on course production.

HOW WILL YOU DELIVER THE COURSE?

Different students learn in different ways:

Linguistic learners are adept at using words, both written and oral.

Logically-minded learners think conceptually and look for patterns and relationships among words, concepts and visual elements.

Kinesthetic learners favour hands-on activities.

Interpersonal learners enjoy discussions and co-operative activities.

Intrapersonal learners prefer to work independently.

Visual learners learn by viewing and creating images.

There is no "best" way to deliver adapted learning materials that will meet the varied needs of your learners. Select several delivery modes for your DE course to effectively achieve desired learning outcomes. Consider these points:

Print materials: Relatively simple to prepare and readily accepted by students, but learners must be literate. Consider supplementing with multimedia components such as audiocassettes, videocassettes and compact discs (CDs).

Audiocassettes: Can be used to distribute lectures; permits students to prepare case studies and discussions. Gradually being replaced by digital audio clips stored on CDs and digital audio devices such as MP3 players or uploaded to mobile phones and portable digital assistants (PDAs).

Videocassettes: Suitable for learning topics that need to show processes or physical skills such as work sites or clinical conditions. Being replaced by digital visual media such as CDs, digital video discs (DVD) and video CDs (VCD).

CDs, DVDs or VCDs: Provide all the learning benefits of audiocassettes and videocassettes; copies are made and distributed easily. It can take considerable skill to produce interactive CD and DVD programs, and not all students may have access to disc players.

Personal computers (PC): PCs can store a large amount of learning material and can access a variety of digital media, including CDs and DVDs. When combined with Internet access, PC software tools enable users to share files and software synchronously, establishing an interactive online teaching and learning environment suitable for learning simulations and science-related subjects. Students can conduct Internet-based research and receive feedback. Consider technological accessibility, support, training and costs. Students also may need to print the material shown on-screen, or receive printed material by mail. Development time for quality software can be as high as 200 hours for each hour of instruction. Consider using open-source software, such as ATutor and Sakai, as it is not costly to purchase and does not require large annual user fees. For example, Moodle, a course management and delivery system is used by the African Virtual University, the British Open University and Athabasca University in Canada. Print material combined with Internet-connected PCs is the most widely used DE delivery method.

Adapting materials can save time an focus on providing quality learning s

PDAs and mobile phones: Best for storing and organising a limited amount of information and for voice communication. Relatively affordable, extremely portable and widely available. Mobile learning (mLearning) course material must be modified for very small screens and users may find it difficult to enter large amounts of data. Wireless transmission costs can be expensive.

Audioconferencing: Enables synchronous, interactive learning that can be enhanced with video and text material. Significantly less expensive to purchase and operate than videoconferencing systems. Users may not be able to connect at the same time and long distance calls can be expensive. If used through the Internet, long distance charges may not apply but Internet access is needed.

Videoconferencing: Provides all the benefits of audioconferencing plus full motion images of the participants and visual displays. Can replicate some classroom activities. Many software-based systems enable application sharing. Videoconferencing is expensive but recent technological advances have significantly lowered costs.

Radio: Inexpensive and portable. Recent models use a built-in hand crank to generate power. Can reach a large audience or a wide geographical area. Relatively simple to create and distribute learning programmes. Affords one-way communication unless supported by other media such as short-wave radio or mobile phones.

Television: Simple and familiar for students to use. Similar benefits to videocassettes and can transmit messages in real time. Potentially reaches a very large audience. Provides one-way communication unless combined with a facsimile machine, telephone or PC. Programmes can be time consuming and costly to prepare; viewing times may be limited, and broadcasts may require significant government telecommunications co-operation.

Lab kit: Can be made with small equipment and inexpensive material. Provides learners with hands-on experience and helps develop application and problem-solving skills. Can be time-consuming and costly to select, assemble and package materials and equipment for shipping.

WHAT EXPERTISE IS REQUIRED TO ADAPT MATERIALS?

Adapting traditional classroom materials for distance delivery requires the specific expertise of a course development team.

Project co-ordinator: Provides overall project management. Frequently, the course developer or the instructional designer takes on this role.

Advisory committee: Oversees project planning, validates the course and evaluates project outcomes, especially if the program in which the courses will be used is new to the institution.

Course developer: Converts existing course materials for DE, including research, sourcing, development and writing of course content, activities, evaluations and media material. Ideally, the course developer is a content expert familiar with learners and instructional methods.

Instructional designer: Assists course developers with developing the course and identifying delivery methods based on learning and instructional needs. Checks that the course adheres to a specified standard or meets required criteria.

Course reviewer: Verifies academic content and methodology. Frequently an external reviewer is appointed but the reviewer may be an in-house instructor or chairperson familiar with programme content and the intended learners.

Clerical personnel: Help the course developer with word processing and formatting course materials; frequently the course developer takes on this role.

Intellectual property officer: Obtains clearances for copyrighted material.

Editor: Checks course material for meaning, organisation, grammar, style, bias and accuracy.

Media personnel: Help produce required media course components, such as illustrations, photographs and streaming Internet video.

Course evaluator: Develops and analyses student and tutor questionnaires and recommends course material changes.

HOW MUCH TIME WILL IT TAKE?

Variables in adapting learning materials include the quantity and quality of material available; the expertise of those adapting the material; the course delivery format and length; and whether the material has been sourced from another region. According to Phil Race in the *Open Learning Handbook*, writing a course could take ten hours for each hour of instruction.

In 2003, this author conducted a Canada-based survey that found the cost of preparing an online distance course based on lecture-based material was about one-third less than preparing the course from scratch, and that it took six to nine months to produce a distance course by adapting existing materials. Using interactive learning objects from a learning object repository (LOR) reduced course development time, yet produced an interactive and engaging course. If there was extensive media use, such as video, animations and simulations, it took up to two years to produce a quality course. The less media material involved, the shorter the adaptation time, but the resulting course material had less interactivity—a key ingredient of quality courses.

HOW DO YOU ADAPT MATERIALS?

First, consider whether a course should be adapted for DE. Account for student and institutional needs and constraints; student and employer demand for a DE version of the course; and whether the course is suitable for distance delivery.

Define institutional objectives and clarify specific student learning and course material needs through surveying learners' entry characteristics, analysing potential learning tasks and finding material suitable for adaptation. Draft a course blueprint containing course objectives, content topics, learner activities, and a description of course evaluation methods. Identify course development concerns, particularly those related to finding resources, copyright permissions, and adapting material from another region or culture.

ADAPTING GOALS AND OBJECTIVES

In DE you must clearly define course goals and objectives for students and develop ways to determine whether they have accomplished them. In stating learning objectives, instead of using words or phrases such as *understand* and *be aware of*, use terms describing activities that can be observed or measured—such as *list, construct, organise* and *plan.* Objectives should specify learning outcomes related to knowledge, skills, competencies, behaviours and/or attitudes. At their best, objectives promote critical thinking, problem solving and creativity.

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ADAPTING CONTENT

Course content should be directly related to the learning objectives and the learners' characteristics, knowledge, skills and experiences. To facilitate learning, break the content down into small, incremental steps presented in a logical sequence. The content should be accurate and current, with examples and case studies. Include an introduction that places the material in context and explains why it is important, and conclude with a summary that highlights the key points of each topic, unit, lesson or module and indicates how to apply the knowledge and skills learned.

ADAPTING ACTIVITIES

Provide a variety of course activities relevant to students' ages, cultural backgrounds and experiences, with clear and detailed instructions. Most important, the activities must be realistic and achievable within a given timeframe using available resources. The activities must be engaging, presented in order of increasing difficulty, and must encourage problem solving and practical knowledge and skills transfer. If learners are able to interact with others, include opportunities for discussions and collaborative assignments. Provide constructive feedback options, including review questions with suggested answers, to reinforce the learning process and help students retain information.

ADAPTING RESOURCES AND MEDIA

Learning resources must be accessible and accurate. You are likely to achieve greater success if you select materials relevant to students' interests, abilities and learning styles.

Does the material meet your instructional objectives and student learning needs? Do you expect students to acquire new knowledge, to apply new skills and/or to change their attitudes? Select material that meets your educational intent, adapt the material to your students' level and attributes, and ensure that the materials are up to your institution's standards.

Can you access it/get permission to use it in a reasonable amount of time? Obtaining permission for material sourced internally at your institution should take a minimum amount of time. Seeking permission from a regional or international source may take up to three to four months.

Is it in a local language or must it be translated? Translation may not be a problem if you know someone who can accomplish the job well, but otherwise allow time to find a suitable translator. Do not rely on electronic or online translators as they do not account for the context in which statements are presented. Consider having two human translators working on complex material as interpretations may differ.

Is the technology compatible? Different electronic and imaging standards are used throughout the world; for example, local videocassette players may be unable to play an instructional videocassette from another region that you plan to use in your course. Do you have the resources to convert the material internally, or to outsource the job?

Will students have access to the technology? Be aware of the resources available to students. During student registration, clearly specify the equipment and the required software versions as students may not have the version they need. Software companies can produce new versions of their software that are incompatible with older versions.

Can you provide instructional and technological support? Instructors and students frequently request institutionally-provided support, not only during regular institutional hours but also during the evening and on weekends.

What will it cost to obtain, distribute and maintain course resources? Always review the total cost of implementing resources beforehand. The purchase price of equipment is only a portion of the true cost of ownership. Be aware of the availability and limits to the mail, transportation and telecommunications infrastructures that may be used to deliver your course. Adapt the material to a format suitable for the projected type of delivery.

ADAPTING ASSESSMENTS

Student evaluation must be feasible, relevant and compatible with course objectives, content and learning activities. Inform students of your expectations. They need to know how many assessments are required, the types of assessments, their due dates, grading criteria, the value of each assessment relative to the final mark and when they can expect feedback. Specify any institutional evaluative policies. Take care not to overload learners with too many assignments; they should receive meaningful and corrective feedback on each assignment before completing the next. To partially address this need, provide a number of self-tests that allow students to assess their own progress and build their self-confidence. Inform students about the consequences of plagiarism, and emphasise the importance of identifying any copyrighted material they use.

ORGANISING THE COURSE

You may need to write three documents for your distance course:

- A student manual that contains general information about the programme and the institution, and directions for proceeding through the course
- A course manual that contains or guides students through the learning materials
- A tutor's or instructor's manual.

These manuals could be available in one or more formats, such as print or on CD. Consider using the following headings when organising the course manual: Introduction, Objectives, Directions, Content (divided into topics), Practice Activities, Self-Tests, Self-Test Feedback, References, Further Readings and Assignments.

SUPPORTING THE COURSE

Suzanne Levy notes that students may not achieve the success you envisioned unless an appropriate, effective and efficient support structure is in place and is monitored frequently. Syvia R. Teare, Arlene Ponting recommend that you:

- Design administrative support systems that meet the specific needs of DE students. For example, provide a contact person at the institution who is familiar with DE and make several options available for registration and fee payment
- Establish a process to help distance learners obtain textbooks and other resources, such as access to computers and software

MATERIALS

- Provide trained, qualified DE instructors to guide students through their learning experience
- Provide helpful support staff such as librarians, to help students find the resources they need, and academic advisors to assist learners with course selection and ensure students fulfill the necessary requirements for obtaining certification
- Assign personnel to help students use information and communications technology (ICT) and to troubleshoot technical difficulties as they occur
- Provide students with help about how to learn at a distance, for example, by providing information about how to study, conduct research and write an examination.

PILOTING AND REVISIONS

Take the time to pilot the adapted course. First, ask colleagues to review it. Next, have a few potential students try out all components of the new course and the support mechanisms. Finally, carefully assess the outcomes of the pilot and make any necessary revisions. Have an expert proofread the final version. This process will minimise the frustrations often experienced by students, tutors and support personnel, and ultimately reduce the student attrition rate.

CASE STUDIES

AFRICAN MEDICAL AND RESEARCH FOUNDATION (AMREF), KENYA

AMREF's mission is to improve the health of disadvantaged people. According to Stephanie Nduba, regional training coordinator, AMREF develops its own health-related materials and also adopts or adapts them from other countries. When adapting materials, AMREF considers:

- The intended audience in terms of its level of education, profession and ability to understand English
- The environment in which the materials will be used
- The politics and culture of the countries in which the materials will be used
- The use of local terminologies, standards, policies, structures and systems, as materials must be adapted to particular countries
- Whether the drugs, equipment or materials outlined in the course under consideration are available locally, the availability of alternatives and the directions that must be given if alternatives are unavailable
- The use of examples and illustrations which must be locally identifiable and understood
- Other teaching aids or facilities that may be more appropriate
- The length of the course.

CURTIN UNIVERSITY, AUSTRALIA AND THE AFRICAN VIRTUAL UNIVERSITY (AVU)

Curtin University of Technology works with the AVU to provide education and training programmes to students and professionals in Africa. One of the major challenges is adapting lecture-based and online course materials developed in an affluent Western context to Africa's educational environment. Dr. Lou Siragusa, a Curtin University lecturer, states that the process of converting materials for the AVU accounts for:

- Cultural, social, political and religious sensitivities
- English language abilities
- Technical facilities
- Participating students' learning styles
- Available financial and human resources
- The unreliability of online connectivity
- The inaccessibility of online learning resources
- The unreliability of live satellite broadcasts
- AVU students' inability to purchase textbooks
- The role of the facilitators/tutors in the learning process.

It can take up to four months to contextualise or transform lecture-based materials used in Australia to a form that can be used in Africa. Then, these materials must be adapted for distance delivery. Successfully adapted material balances Australian, international and African perspectives, allowing students to reflect on the knowledge in their own countries and enabling them to draw on expertise and experience from other countries.

ATHABASCA UNIVERSITY, CANADA

Athabasca University delivers DE to students internationally. According to Cathy Conroy, course materials editor, the university occasionally adapts courses from other institutions to save time and money. Although the content of a particular course may be appropriate, the following factors are considered before undertaking an adaptation:

- Differences in course standards employed by the institution that developed the course material and the institution that will use it
- The intended audience
- Course prerequisites as these will differ between institutions
- Biases in content that may be unacceptable to the receiving institution
- Inappropriate examples
- The time and expense of obtaining third-party copyright clearances for items often included in course materials (e.g., text reprints, illustrations, articles, media resources and examinations which the originating institution has permission to use but the receiving institution may not)
- Joint ownership issues, especially the conditions under which the course material can be altered.

REFERENCES

Levy, S. 2003. "Six Factors to Consider when Planning Online Distance Learning Programs in Higher Education." *Online Journal of Distance Learning Administration,* 6(1). *www.westga.edu/~distance/ojdla/spring61/levy61.htm*

Race, P. 1995. *Open Learning Handbook: Selecting, Designing, and Supporting Open Learning Materials*. London: Kogan Page.

Teare, S. R. and Ponting, A. 2000. *Distance Education: Adapting Your Course*. Edmonton, Canada: Grant MacEwan College and Northern Alberta Institute of Technology.

RESOURCES

PUBLICATIONS AND PRESENTATIONS

Bates, A. W. 1995. *Technology, Open Learning and Distance Education*. London: Routledge.

Carliner, S. 2002. *Designing e-Learning*. Alexandria, VA: American Society for Training and Development.

Christiansen, J. A. and Anderson, T. 2004. Feasibility of Course Development Based on Learning Objects: Research Analysis of Three Case Studies. *International Journal of Instructional Technology and Distance Learning, 1*(3). *www.itdl.org/journal/Mar_04/article02.htm*

Davis, H. and Smith. A. 1996. Changing apples into pears: Transforming existing materials. *Open Learning*, Volume 11. 10-20.

Dhanarajan, G. 2001. Distance education: Promise, performance and potential. *Open Learning*, 16(1). 61-68.

Driscoll, M. M. 2002. *Web-based Training: Creating e-Learning Experiences*. San Francisco: Jossey-Bass.

Dunn, P. and Marinetti, A. 2004. Cultural adaptation: Necessity for global elearning. Learning in the New Economy. *www.linezine.com/7.2/articles/pdamca.htm*

Freeman, R. 2005. *Creating Learning Materials for Open and Distance Learning: A Handbook for Authors and Instructional Designers*. Vancouver, BC: Commonwealth of Learning.

Horton, W. and Horton, K. 2003. *E-Learning Tools and Technologies.* Indiana, Indianapolis: Wiley.

Kanuka, H. and Conrad, D. 2003. "The name of the game: Why 'Distance Education' says it all." *The Quarterly Review of Distance Education,* 4(4). 385-393.

McBrien, K. 2005, May. Developing localization friendly e-learning. Learning Circuits. *www.learningcircuits.org/2005/may2005/mcbrien.htm*

McGreal, R. 2005. "Development Principles for Online Courses: A Baker's Dozen." *eLearn Magazine*. *www.elearnmag.org/subpage.cfm?section=best_practices&article=33-1*

Mortimer, L. 2001. "The Devil is in the Details: Converting Classroom Courses to E-learning." *Learning Circuits*. American Society for Training and Development (ASTD). *www.learningcircuits.org/2001/dec2001/elearn.html*

Perraton, H. 2000. *Open and Distance Learning in the Developing World*. London: Routledge.

Siragusa, L., Wright, F., Boase-Jelinek, D., and Kulski, T. 2004. *Making Ideals a Reality: Curtin's African Virtual University Experience.* Paper presented at the 18th IDP International Education Conference: The path to cultural understanding and development, Sydney, Australia.

Talbot, Christine 2003. *Studying at a Distance: A Guide for Students.* London: McGraw-Hill and Open University Press.

Wright, C. R. 2003. "Criteria for Evaluating the Quality of Online Courses." *Alberta Distance Education and Training Association*, October. *http://elearning.typepad.com/thelearnedman/ID/evaluatingcourses.pdf*

WEBSITES

DE and Instructional Design

Jones, R. 2004. Designing Adaptable Learning Resources with Learning Object Patterns. Journal of Digital Information, 6(1) Article No. 305, 2004-12-10. *http://jodi.tamu.edu/Articles/v06/i01/Jones*

Designing e-Learning, Australian Flexible Learning Framework. *www.flexiblelearning.net.au/designing*

Distance Education Clearinghouse—University of Wisconsin-Extension. *www.uwex.edu/disted*

Distance Education Reports and Abstracts, Instructional Technology Council. *www.itcnetwork.org/reports.htm*

Educator's Reference Desk. *www.eduref.org*

Gateway to 21st Century Skills. *www.thegateway.org*

Evaluating online courses. *http://zozonlinecourse.com/evaluatingonlinecourses*

United Nations Educational, Scientific and Cultural Organization (UNESCO), 2005. *Guidelines for Quality Provision in Cross-border Higher Education*. Paris: UNESCO. *www.unesco.org/education/guidelines_E.indd.pdf*

DE Educational Resources

ATutor: Learning Content Management System. *www.atutor.ca*

Open Learning Initiative, Carnegie Mellon University. *www.cmu.edu/oli*

Classic Reader: A free collection of classic books. *www.classicreader.com*

Connexions: A collection of free scholarly material and software. *http://cnx.org*

Discovery School: Provides teachers of all subjects with the tools to create their own learning materials. *http://school.discovery.com/teachingtools/teachingtools.html*

Free and Open Source Software for E-learning, UNESCO Virtual University. *www.unesco.org/iiep/virtualuniversity/forumsfiche.php?queryforumspages_id=9*

International Children's Digital Library. *http://icdlbooks.org*

Know Play?: Links to online thesaurus, rhyming dictionary, encyclopaedia, quotations, atlas and fine arts. *www.kplay.cc/reference.html*

Massachusetts Institute of Technology's (MIT) OpenCourseWare. *http://ocw.mit.edu*

Moodle Service Network: An open source course management system. *http://moodle.com*

Multimedia Educational Resource for Learning and Online Teaching (MERLOT). *www.merlot.org*

OpenCourseware Consortium Dashboard. *http://ohana.mit.edu/ocwc/homepage.action*

Project Gutenberg Online Book Catalog. *www.gutenberg.org*

Sites for Teachers: Links to hundreds of educational websites in reading, mathematics, science and social studies. *www.sitesforteachers.com*

Refdesk.com. *www.refdesk.com*

Sakai: Collaboration and Learning Environment for Education. *www.sakaiproject.org*

Teacher Planet: Resources for educators. *www.teacherplanet.com*

Free and Open Source Software Portal, UNESCO. *www.unesco.org/cgi-bin/webworld/portal_freesoftware/cgi/page.cgi?d=1*

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