

How Do You Teach Content in Adult Education?

An Annotated Bibliography

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INTRODUCTION

In 2003, the National Center for the Study of Adult Learning and Literacy (NCSALL) published *Establishing an Evidenced-based Adult Education System*,¹ which described an approach to improving policy and practice. That monograph defined evidence-based practice as:

*The integration of professional wisdom with the best available empirical evidence in making decisions about how to deliver instruction.*²

Empirical evidence is the knowledge researchers develop through well-designed, rigorous studies. Professional wisdom is the knowledge practitioners develop as they work with students. Neither source of knowledge alone is sufficient to ensure effective policies and practice, but together they provide the best current advice.

Establishing an Evidenced-based Adult Education System also described steps that could lead to the establishment of an adult education system in which decisions were based on professional wisdom and empirical evidence. The proposed first step was a review of the available empirical evidence and professional wisdom in order to define program models appropriate for research, programs that meet minimum requirements for good practice. A program model describes what teachers, adult students, counselors, administrators, volunteers, and program partners (such as businesses, unions, health centers, and training programs) should do to provide effective instruction and the support services adults need to persist in their learning long enough to be successful. That program model was described in *An Evidence-based Adult Education Program Model Suitable for Research*,³ but this model did not include a description of evidence-based instruction for content such as language, literacy, numeracy, or the GED.

This document identifies existing sources that review research and professional wisdom on these content areas. This is not an exhaustive list but it does provide sources that are useful to the design of evidence-based instruction. This annotated bibliography is divided into seven subsections that focus on reading, writing, math and numeracy, English as a second language, GED, adult learning theory, and technology, along with a section on further reading. Each section presents adult education sources and then additional resources based on K–12 research, instruction, and professional development resources.

¹ This paper is available at: http://www.ncsall.net/fileadmin/resources/research/op_comings3.pdf

² This definition is available at: : [http://ies.ed.gov/director/doc/2002_10.ppt#540,3,What is EBE?](http://ies.ed.gov/director/doc/2002_10.ppt#540,3,What%20is%20EBE?)

³ This paper is available at: http://www.ncsall.net/fileadmin/resources/research/op_comings4.pdf

READING INSTRUCTION

RESOURCE: *Adult Literacy and Numeracy Interventions and Outcomes: A Review of Controlled Trials*

Authors: G. Brooks, C. Torgersen, J. Porhouse, M. Burton, A. Robinson, K. Wright, and I. Watt

Published by: National Research and Development Centre for adult literacy and numeracy (NRDC). (2004). (UK)

How to Access It:

Organization Web site: <http://www.nrdc.org.uk>

Resource link: http://www.nrdc.org.uk/publications_details.asp?ID=37

Description: This resource is a systematic review of experimental studies in adult literacy and numeracy in an effort to explore the following questions:

- What is known from research about effective pedagogy?
- What factors in teaching cause adult learners to make progress in adult literacy and numeracy?

Highlights: This review reveals that there are very few experimental studies exploring pedagogy in adult literacy and numeracy education and its relationship to learning gains in the adult classroom. The limited available evidence shows that adults who participate in adult literacy and numeracy programs do progress more quickly than those who do not participate. Additionally, experimental research has revealed the effectiveness of various types of instructional strategies, including reciprocal teaching and phonics training. Regular student attendance was also found to increase literacy and numeracy learning.

RESOURCE: *Teaching Reading to Adults: A Balanced Approach*

Author: P. Campbell

Published by: Grass Roots Press (Edmonton, Alberta). (2003). (Canada)

Recommended by: Literacy Assistance Center (New York, NY)

How to Access It: Electronic version not available. Contact publisher at: Grass Roots Press, P.O. Box 52192, Edmonton, Alberta, Canada, T6G 2T5, or (888) 303-3213. Web site: <http://www.literacyservices.com/>

Description: This resource is a six-chapter book discussing adult learning theory, adult literacy assessment, and adult literacy instruction.

RESOURCE: *The Role of Vocabulary Instruction in Adult Basic Education*

Author: M.E. Curtis

Published by: National Center for the Study of Adult Learning and Literacy (NCSALL) (Cambridge, MA). (2006). *Review of Adult Learning and Literacy*, Volume 6, Chapter 3. (USA)

How to Access It:

Organization Web site: <http://www.ncsall.net>

Resource link: http://www.ncsall.net/fileadmin/resources/ann_rev/comings_ch3.pdf

Description: This resource documents theory and practice in vocabulary instruction in adult literacy classrooms.

Highlights: This review reveals how vocabulary is intricately tied to reading comprehension. Because little adult education research is available documenting this phenomenon, the report analyzes K–12 and ESL research to examine the language acquisition process. The author presents four main theories concerning how vocabulary is linked with reading comprehension and how these theories relate to current vocabulary instructional practices. After examining how vocabulary acquisition occurs, she then focuses on effective approaches to vocabulary instruction. The report concludes with a set of recommendations for research, practice, and policy.

RESOURCE: *Teaching Adults to Read: A Summary of Scientifically Based Research Principles*

Authors: M. E. Curtis and J. Kruidenier

Published by: National Institute for Literacy (Washington, DC). (2005). (USA)

How to Access It:

Organization Web site: <http://www.nifl.gov>

Resource link: http://www.nifl.gov/partnershipforreading/publications/teach_adults.pdf

Description: This resource is a 13-page summary of the components of reading (alphabeticity, fluency, vocabulary, and reading comprehension).

Highlights: Each section of the document gives a definition of the component, how it is assessed, the importance of teaching this component, and implications for teachers.

RESOURCE: *Research-Based Principles for Adult Basic Education Reading Instruction*

Author: J. Kruidenier

Published by: National Institute for Literacy (Washington, DC). (2002). (USA)

How to Access It:

Organization Web site: <http://www.nifl.gov>

Resource link: http://www.nifl.gov/partnershipforreading/publications/html/adult_ed/adult_ed_1.html

Description: This resource identifies and evaluates research on adult reading instruction and develops principles and practices for adult literacy practitioners.

Highlights: Eighteen principles are identified based on adult basic education (ABE) research, and an additional 22 ideas based on K–12 research are identified to supplement these principles. The principles identified are designated as “emerging principles” because of the limited research available on adult literacy instruction. The major findings include:

- Adults may have difficulties with any of the components of reading (alphabets, fluency, vocabulary, or reading comprehension).
- Accurate assessment of adults’ skills is needed to identify learning needs.
- Adults can be taught word analysis (alphabets skills) and fluency skills.
- Developing phonemic awareness in adults with disabilities can be more difficult.
- Alphabets and fluency instruction leads to gains in other aspects of reading.
- Adults’ vocabulary knowledge is dependent on their reading ability.
- Interesting or engaging contexts are important for vocabulary instruction.
- Adults need to be taught specific reading comprehension strategies.
- Participation in ABE programs can lead to improved reading comprehension.
- Trends suggest that reading comprehension can be improved in most adult literacy settings (including workplace and family literacy settings) and by using adult-oriented materials and dealing with issues of motivation.

RESOURCE: *Applying Research in Reading Instruction for Adults: First Steps for Teachers*

Author: S. McShane

Published by: National Institute for Literacy (Washington, DC). (2005). (USA)

How to Access It:

Organization Web site: <http://www.nifl.gov>

Resource link: <http://www.nifl.gov/partnershipforreading/publications/html/mcshane/index.html>

Description: This resource is a nine-chapter book, which provides an introduction to research on the components of reading (alphabets, fluency, vocabulary, and reading comprehension) and instructional techniques for developing adult learners' skills in each of these areas.

Highlights: This resource is particularly accessible for practitioners as it provides instructional techniques that are directly related to research in reading instruction. Additionally, reading assessment and how assessment relates to instruction is discussed in depth, with specific ideas for how to organize initial assessments of learners' skills and plan reading instruction that is tailored to learners' specific needs.

Additional Reading Resources

Resources based on K–12 research: Some prominent adult literacy research institutes and agencies have also recommended instructional guides based on reading research in K–12 education.

RESOURCE: *Reading for Understanding: A Guide to Improving Reading in Middle and High School Classrooms*

Authors: R. Schoenbach, C. Greenleaf, C. Cziko, and L. Hurwitz

Published by: Jossey-Bass (San Francisco, CA). (1999). (USA)

Recommended by: Literacy Assistance Center (New York, NY)

How to Access It: Electronic version not available. Contact publisher at:
<http://www.josseybass.com/WileyCDA/>

Description: This resource is a guide for helping teachers implement “reading apprenticeships,” a model for working with struggling readers in middle and high school.

Highlights: This resource focuses primarily on reading comprehension and how background knowledge influences students' reading comprehension. It examines how to make reading an active process whereby teachers develop students' own awareness of how they read and their questioning, problem solving, summarizing, and predicting skills.

RESOURCE: *What Really Matters for Struggling Readers: Designing Research-Based Programs*

Author: R. Allington

Published by: Addison-Wesley (New York, NY). (2001). (USA)

Recommended by: Literacy Assistance Center

How to Access It: Electronic version not available. Contact publisher at:
<http://www.aw-bc.com/>

Description: This resources focuses on ways of increasing children's reading comprehension within the classroom setting.

Highlights: The authors describe how allowing for more in-school reading time, providing students with materials at the appropriate readability levels, and direct instruction may increase students' reading comprehension skills.

Instructional and professional development resources: A number of adult literacy organizations and agencies have developed instructional and professional development guides for developing instructional practices from research-based principles. The following is a list of agencies with these guides and a sampling of the resources they provide.

National Center for the Study of Adult Learning and Literacy (USA)

How to Access It: All materials listed are accessible electronically from NCSALL's Web site: <http://www.ncsall.net>

Sample Resources:

- ***Creating Authentic Materials and Activities for the Adult Literacy Classroom.*** A handbook for teachers and program administrators on how to contextualize learning around the real and immediate needs of adult students. It provides background on the research that supports this practice and useful advice on how to employ this approach and assess its implementation.
- ***NCSALL Study Circle Guide: Research-based Adult Reading Instruction.*** A 10.5-hour study circle guide that helps program leaders facilitate an

exploration of different theories of the reading process, reading components and implications for teaching, development of reading' profiles for learners, and the Equipped for the Future (EFF) framework.

- ***NCSALL Study Circle Guide: Rethinking Instruction and Participation for Adult Basic Education.*** A 9-hour study circle guide that helps program leaders facilitate discussions of how to structure and organize instruction as well as how to broaden learning avenues for adults (so that classes aren't the only option).
- ***NCSALL Seminar Guide: Ideas for Teaching Reading: ABE.*** A 3-hour professional development guide that seeks to introduce adult education practitioners to evidence-based instructional practices in reading for ABE learners.
- ***NCSALL Seminar Guide: Reading Profiles.*** A 3-hour professional development guide that seeks to introduce adult education practitioners to the adult literacy reading profiles from the Adult Reading Components Study (ARCS).
- ***NCSALL Seminar Guide: Teaching Learners What Reading Is All About.*** A 4-hour professional development guide containing a set of 13 lessons to help adult literacy teachers learn how to introduce the components of reading to their adult learners.
- ***NCSALL Seminar Guide: Reading Difficulties.*** A 4-hour professional guide designed to introduce adult education practitioners to the risk factors associated with children's reading difficulties and how these characteristics relate to adult literacy students.

National Adult Literacy Database (NALD) (Canada)

How to Access It: All materials listed are accessible electronically from NALD's Web site: <http://library.nald.ca/> (keyword: reading instruction)

Sample Resources:

- ***Book Bridges: A Family Literacy Program.*** An 18-session classroom instructional guide aimed at developing students' reading comprehension through the teaching of specific reading comprehension strategies.
- ***An Approach to Integrating Computers into Learning Activities and Demonstrations.*** A multi-level, multi-lesson series aimed at introducing beginning readers to Microsoft Office programs (including Microsoft Word and Excel).

- ***Making Connections: Reading/Math Strategies.*** A 90-page instructional resource for helping students who have issues with reading comprehension and problem-solving skills.

WRITING INSTRUCTION

RESOURCE: *Research in Writing: Implications for Adult Literacy Education*

Author: M. K. Gillespie

Published by: National Center for the Study of Adult Learning and Literacy (NCSALL) (Cambridge, MA). (2001). *The Annual Review of Adult Learning and Literacy*, Volume 2, Chapter 3. (USA)

How to Access It:

Organization Web site: <http://www.ncsall.net>

Resource Link: <http://www.ncsall.net/?id=561>

Description: This resource reviews research into the writing process and writing instruction over the past 30 years.

Highlights: This resource discusses different models of the writing process and writing research with a variety of learners (K–12, college, ESL, and adult literacy learners). It examines how research in writing has transformed writing instruction in K–12 and college settings and how these changes are being integrated into adult literacy education. It follows specific instructional developments in adult literacy such as the Equipped for the Future (EFF) model and project-based instruction. It concludes with suggestions for improving adult literacy writing instruction.

RESOURCE: *Teaching and Learning Writing: A Review of Research and Practice*

Authors: S. Grief, S. Kelly, and L. Soundanayagam

Published by: National Resource and Development Centre for adult literacy and numeracy (NRDC). (2004). (UK)

How to Access It:

Organization Web site: <http://www.nrdc.org.uk>

Resource Link: http://www.nrdc.org.uk/publications_details.asp?ID=24

Description: This resource identifies the principles of effective instruction for adults learning to write. It is based on three types of reviews: (1) a narrative review examining how studies conceptualize of writing related to adults' writing development; (2) a systematic review to answer the question: 'What factors in adult literacy programs enable learners to develop effective writing skills?' and (3) a review of current practice in writing instruction in the U.K.

Highlights: The key findings in this resource include:

- Writing development should be seen as an interaction between the writer and what s/he has written as well as planning, writing, and revising a text.
- Writing is deeply connected to a writer's thinking process, feelings, and self identity.
- There is little evidence that adult programs in the U.K. effectively develop adults' writing skills (a need for more research).
- Use of authentic literacy practices is the only variable found to be related to positive changes in learners' literacy skills and practices.
- Teachers argue for the importance of being responsive to learners' needs and using a variety of tasks and approaches in writing instruction.
- Learners saw spelling, punctuation, and grammar as areas of great difficulty in writing and, therefore, high priorities for instruction.

RESOURCES: *Best Practices for Adult Literacy*
Best Practices in the Adult Setting

Author: J. B. Perry

Published by: National Adult Literacy Database (NALD) (Fredricton, New Brunswick). (2003). (Canada)

How to Access Them:

Organization Web site: <http://www.nald.ca/index.htm>

Resource link for *Best Practices for Adult Literacy*: <http://www.nb.literacy.ca/pubs/Best1/cover.htm>

Resource link for *Best Practices in the Adult Setting*: <http://www.nb.literacy.ca/pubs/best2/cover.htm>

Description: These resources are based on an extensive literature review and interviews with Canadian adult literacy organizations and provides a national (Canadian) and global perspective on the best practices in adult literacy education from both a policy and instructional perspective.

Highlights: The first resource, *Best Practices for Adult Literacy*, deals with best practices in adult literacy education from a policy perspective. It seeks to define the actual terms used and how best practices relate to the adult learning environment and different instructional approaches, from the perspective of program development and classroom management. The second resource, *Best Practices in the Adult Setting*, provides an instructional perspective. It provides an overview of different types of student learning styles while also relaying research-

based instructional techniques, methods, and exercises that have been tested in classroom settings. Resources and practical activities include activity-oriented learning exercises, icebreakers, creative writing, language arts, math, memory strategies, problem-solving group activities, reading strategies, social studies, science, study aids, and test-taking tips.

RESOURCE: Research in Spelling: Implications for Adult Basic Education

Authors: D. J. Sawyer and M. T. Joyce

Published by: National Center for the Study of Adult Learning and Literacy (NCSALL) (Cambridge, MA). (2006). *Review of Adult Learning and Literacy*, Volume 6, Chapter 4. (USA)

How to Access It:

Organization Web site: <http://www.ncsall.net>

Resource link: http://www.ncsall.net/fileadmin/resources/ann_rev/comings_ch4.pdf

Description: This resource examines research into spelling and its significance for adult education and instruction.

Highlights: This review begins with an examination of spelling instruction in the United States and theoretical perspectives on how spelling skills are developed and mastered. The report then reveals the dearth of research and policy on spelling in adult education even though numerous adult literacy students cite spelling as a major issue in their writing. The report moves on to examine spelling instruction with numerous types of learners, including learning disabled, hearing impaired, and ESL learners. The report concludes with recommendations and suggestions for research, practice, and policy.

Additional Writing Resources

Resources based on K–12 research: Some prominent adult literacy research institutes and agencies have also recommended instructional guides based on writing research in K–12 education.

RESOURCE: *The Art of Teaching Writing*

Author: L. Calkins.

Published by: Hienemann Publishers (Portsmouth, NH). (1994). (USA)

Recommended by: Literacy Assistance Center (New York, NY)

How to Access It: Not available electronically. Contact publisher at: P. O. Box 6926, Portsmouth, NH, 03802-6926, or (800) 225-5800. Web site: <http://www.heinemann.com/>

Description: This resource examines writing assessments, the relationship between reading and writing, and curriculum development. It is based on teachers' experiences teaching writing in New York City public schools, primarily with young children.

RESOURCE: *A Fresh Look at Writing*

Author: D. Graves

Published by: Heinemann Publishers (Portsmouth, NH). (1994). (USA)

Recommended by: Literacy Assistance Center (New York, NY)

How to Access It: Not available electronically. Contact publisher at: P. O. Box 6926, Portsmouth, NH, 03802-6926 or (800) 225-5800. Web site: <http://www.heinemann.com/>

Description: This resource examines multiple approaches to teaching writing, including portfolios, record keeping, and spelling. It seeks to develop writing skills using a variety of genres including fiction, poetry, and nonfiction. Instructional techniques are provided throughout the text for teachers' consideration of new methods of teaching.

RESOURCE: *In the Middle: Writing, Reading and Learning with Adolescents*

Author: N. Atwell

Published by: Heinemann Publishers (Portsmouth, NH). (1987). (USA)

Recommended by: Literacy Assistance Center (New York, NY)

How to Access It: Not available electronically. Contact publisher at: P. O. Box 6926, Portsmouth, NH, 03802-6926, or (800) 225-5800. Web site: <http://www.heinemann.com/>

Description: This resource describes the collaborative writing and reading process between a teacher and her eighth grade students. It examines how adolescents learn and gives practical methods for developing a writing and reading workshop model with the classroom.

Instructional and professional development resources: A number of adult literacy organizations and agencies have developed instructional and professional development guides for developing instructional practices from research-based principles. The following is a list of agencies with these guides and a sampling of the resources they provide.

National Center for the Study of Adult Learning and Literacy (NCSALL) (USA)

How to Access It: All materials listed are accessible electronically from NCSALL's Web site: <http://www.ncsall.net>

Sample Resource:

- ***Focus on Basics: Writing Instruction***, Volume 3, Issue B, December 1999. A *Focus on Basics* issue devoted to exploring writing instruction. It includes seven articles on different instructional approaches for students at a variety of levels.

National Adult Literacy Database (NALD) (Canada)

How to Access It: All materials listed are accessible electronically from NALD's Web site: <http://library.nald.ca/> (keyword: writing instruction)

Sample Resources:

- ***Best Practices in the Adult Setting***. (See above.)
- ***Guide to Writing*** (Newfoundland and Labrador Rabbittown Learners' Program, St. John's). A two-part book that focuses both on grammatical structure and free writing. The grammatical section focuses on sentence and paragraph development while the free writing section provides aids for encouraging students to engage in free writing.
- ***Academic Studies English—Writing Longer Essays***. A workbook focused on helping students develop their academic writing skills such as writing a five-paragraph essay and developing skills in revision and proofreading.

Adult Literacy and Numeracy Australian Research Consortium (ALNARC) (Australia)

How to Access It: ALNARC Web site: <http://www.staff.vu.edu.au/alnarc>

Sample Resources: ALNARC has developed a series of studies into how literacy training can be integrated with workplace training and development. Some of these publications include:

- ***The Literacy Factor: Adding Value to Training: Investigation of the Inclusion of Literacy in Training Packages in the Food Processing Industry*** by L. Sanguinetti. (2000).
- ***Talking about Training. Literacy and Numeracy Training Practices in Industry: A Comparative Study Across Five Industries*** by R. Trenerry. (2002).

MATH AND NUMERACY INSTRUCTION

RESOURCE: *Numeracy for Adults*

Authors: M. E. Curtis, M. J. Schmit, and L. Ginsberg

Published by: National Center for the Study of Adult Learning and Literacy (NCSALL) (Cambridge, MA). (2006). (USA)

How to Access It:

Organization Web site: <http://www.ncsall.net>

Resource link: Will be up on the Web site by the end of 2006

Description: A systematic review of the international, U.S., and state adult numeracy and mathematics frameworks

Highlights: This review describes the components of numeracy instruction under three major components: Context, Content, and Cognitive and Affective.

RESOURCE: *Adult Literacy and Numeracy Interventions and Outcomes: A Review of Controlled Trials*

Authors: G. Brooks, C. Torgersen, J. Porhouse, M. Burton, A. Robinson, K. Wright, and I. Watt.

Published by: National Research and Development Centre for adult literacy and numeracy (NRDC). (2004). (UK)

How to Access It:

Organization Web site: <http://www.nrdc.org.uk>

Resource link: http://www.nrdc.org.uk/publications_details.asp?ID=37

Description: A systematic review of experimental studies in adult literacy and numeracy to explore the questions:

- What is known from research about effective pedagogy?
- What factors in teaching cause adult learners to make progress in adult literacy and numeracy?

Highlights: This review reveals that there are very few experimental studies exploring pedagogy in adult literacy and numeracy education and its relationship to learning gains in the adult classroom. The limited available evidence shows that adults who participate in adult literacy and numeracy programs do progress more quickly than those who do not participate. Additionally, experimental research has

revealed the effectiveness of various types of numeracy instructional strategies, including the modified numeracy approach. Regular student attendance was also found to increase literacy and numeracy learning.

RESOURCE: *Math for Learning, Math for Life: An Annotated Bibliography*

Author: The Centre for Literacy of Quebec.

Published by: The Centre for Literacy of Quebec. (2002). (Canada)

Recommended by: National Adult Literacy Database (NALD).

How to Access It:

Organization Web site: <http://www.centreforliteracy.qc.ca>

Resource link: <http://www.centreforliteracy.qc.ca/publications/mathlife/cover.htm>

This resource can also be accessed through the NALD library Web site:
<http://library.nald.ca/>

Description: This resource is a 34-page, annotated bibliography developed for the Centre for Literacy's 2002 Summer Institute: Math for Learning, Math for Life. It analyzes research and resources in adult numeracy teaching and learning.

Highlights: This resource references numerous aspects of adult numeracy instruction, including:

- Differing theoretical perspectives (e.g. Freirian, math as a socio-political practice)
- New numeracy demands in a technological society
- Connection between numeracy and reading
- Evaluation of numeracy assessments
- Development of standards to define mathematical literacy and numeracy instruction
- Professional development strategies for math instructors and guidelines for producing numeracy materials
- International (e.g. U.K., Australia, US, Massachusetts Curriculum Frameworks) policies and strategies to meet adults with basic literacy and numeracy needs

RESOURCE: *Adult Numeracy: Review of Research and Related Literature*

Author: D. Coben

Published by: National Research and Development Centre for adult literacy and numeracy (NRDC). (2003). (UK)

How to Access It:

Organization Web site: <http://www.nrdc.org.uk>

Resource link: http://www.nrdc.org.uk/publications_details.asp?ID=35

Description: This resource is a review of international and British research on adult numeracy learning and instruction.

Highlights: This resource focuses primarily on:

- Conceptual issues in adult numeracy (numeracy as a research domain, review of literature on adults' numeracy skills)
- Numeracy in context, including its context and transfer, use in everyday life, and the connection to employment and financial literacy
- Learning and teaching in adult numeracy, which examines U.K. policy
- How factors of affective learning (e.g. math anxiety, dyscalculia, brain function) affect math learning

RESOURCE: *Instructional Strategies for Teaching Adult Numeracy Skills*. NCAL Technical Report TR96 02. [Electronic version].

Authors: L. Ginsburg and I. Gal.

Published by: National Center on Adult Literacy (NCAL) (Philadelphia, PA). (1996). (USA)

Recommended by: National Research and Development Centre for adult literacy and numeracy (NRDC). (UK)

How to Access It:

Organization Web site: <http://www.literacy.org/ncal.html>

Resource link: <http://www.literacy.org/products/ncal/pdf/TR9602.pdf>

Description: This resource documents 13 instructional strategies based on research into adult cognitive processes. Instructional strategies include assessment as well as the development of numerical ability and problem-solving skills.

RESOURCE: The Inclusion of Numeracy in Adult Basic Education

Authors: D. Tout and M. J. Schmitt

Published by: National Center for the Study of Adult Learning and Literacy (NCSALL) (Cambridge, MA). (2002). *The Annual Review of Adult Learning and Literacy*, Volume 3, Chapter 5. (USA)

How to Access It:

Organization Web site: <http://www.ncsall.net>

Resource link: <http://www.ncsall.net/?id=573>

Description: This resource reviews adult numeracy education research, both in the U.S. and internationally. While focused on adult numeracy instruction, this review also examines K–12 research and policy developments, which have been influential in adult numeracy education in the U.S.

Highlights: This resource focuses on a variety of different aspects of adult numeracy research and instruction. It begins with a definition of terminology (mathematics versus numeracy) and continues by examining adult numeracy education in the U.S. Upon concluding that little research exists on adult numeracy instruction, it examines professional wisdom and practices in adult math classes and how policy is affecting adult numeracy curricula. It then reviews K–12 and international research, including different instructional/pedagogical models (constructivist, gender, ethnomathematics) and international numeracy initiatives in adult education (e.g. Australia, Netherlands, and U.K.). Finally, it concludes with suggestions for research, instruction, and policy.

Additional Math Resources

Resources based on K–12 research: Some prominent adult literacy research institutes and agencies have also recommended instructional guides based on numeracy research in K–12 education.

RESOURCE: *Principles and Standards for School Mathematics*

Author: National Council of Teachers of Mathematics

Published by: National Council of Teachers of Mathematics. (USA)

Recommended by: National Research and Development Centre for adult literacy and numeracy (NRDC). (UK)

How to Access It:

Resource link: <http://standards.nctm.org/document/index.htm>

Description: This resource sets out the National Council of Teachers of Mathematics' recommendations for math instruction for pre-K through 12. It provides mathematics instructional guidelines and information for teachers, material developers, program directors, professional development leaders, researchers, and policymakers.

Instructional and professional development resources: A number of adult literacy organizations and agencies have developed instructional and professional development guides for developing instructional practices from research-based principles. The following is a list of agencies with these guides and a sampling of the resources they provide.

National Center for the Study of Adult Learning and Literacy (NCSALL) (USA)

How to Access It: All materials listed are accessible electronically from NCSALL's Web site: <http://www.ncsall.net>

Sample Resource:

- ***Focus on Basics: Math Instruction***, Volume 4, Issue B, September 2000. A *Focus on Basics* issue devoted to exploring math and numeracy instruction. It includes eight articles on different instructional approaches for students at a variety of levels.

National Adult Literacy Database (NALD) (Canada)

How to Access It: All materials listed are accessible electronically from NALD's Web site: <http://library.nald.ca/> (keywords: numeracy instruction, math instruction)

Sample Resources:

- ***Math for Learning, Math for Life***. (See above.) This research analysis also contains a separate section on instruction, with links to numerous types of math and numeracy projects throughout the world.
- ***Catalogue of Recommended Resources for Teachers of Adult Numeracy*** by L. Hagerdorn. (2000). A listing of books, binders, manipulables, computer software, videos, Web sites, resource centers, and professional development resources for instruction in numeracy. Direct Web link: <http://www.nald.ca/fulltext/ottawa/catalogue/Catalogue.pdf>

EMPower/Adult Numeracy @ TERC (USA)

Description: Developed with a grant from the National Science Foundation, EMPower is a comprehensive mathematics curriculum for ABE, pre-GED, GED, and

transitional courses based on recent math reform and consistent with the math curricula suggested by EFF Content Standards.

How to Access It: The curriculum and a series of workbooks can be accessed through:
<http://adultnumeracy.terc.edu/>

Sample Resources:

- ***EMPower Curriculum.*** EMPower reformulates a traditional curriculum by: (1) redesigning content around the skills adults need in contemporary society; (2) creating a new sequence of learning where algebraic, statistical, and geometrical ideas develop along with or before numerical ones; (3) revamping classroom pedagogy to be based on learning communities where learners share strategies and results; and 4) increased focus on teacher support.
- ***EMPower Books.*** A series of seven workbooks, which are aligned with the EMPower goals and curriculum.
- ***Professional Development Workshops.*** Five workshops, which are consistent with the EMPower curriculum, are offered for adult education teachers in Algebraic Thinking, Data and Graphs, Geometry and Measurement, Proportional Reasoning, and (soon) Fractions, Decimals and Percent.

Teachers Investigating Adult Numeracy (TIAN) (USA)

Description: With a grant from the National Science foundation, this agency, in collaboration with TERC and the Center for Literacy Studies at the University of Tennessee, is in the process of developing, piloting, and field-testing an in-service professional development program for adult literacy educators. Their Web site discusses how their professional development system will use current professional development models, such as teacher inquiry and reflective learning, to help integrate content standards within the adult math classroom.

How to Access It: http://adultnumeracy.terc.edu/TIAN_home.html

Sample Resources: No resources are currently available, but this will be a useful professional development resource in the future.

Supporting Adult and Applied Learning and Teaching (SAALT) (Australia)

Description: SAALT supports an Adult Education Resource and Information Service (ARIS) with many resources for adult math and numeracy instruction.

How to Access It: <http://www.saalt.com.au/>

Sample Resources:

- ***Strength in Numbers: A Resource Book for Teaching Adult Numeracy*** by R. Goddard, B. Marr, and J. Martin. (1996). A resource book for classroom instruction with low-level learners.
- ***Adult Numeracy Teaching: Making Meaning in Mathematics*** by D. Tout and B. Johnston. (1995). An 84-hour professional development system designed to train adult educators in math theory and methodologies appropriate for adult learners.

National Institute for Literacy (Institute) Special Collection: Science and Numeracy (USA)

Description: The Institute's Special Collection: Science and Numeracy provides annotated links to Internet resources for teaching and learning in science and math. Numeracy resources and links are divided into categories including: Numbers and Number Sense; Problem Solving: Reasoning and Decision Making; Data Analysis, Probability and Statistics, Graphing; Geometry: Spatial Sense and Measuring; and Algebra: Patterns and Functions.

How to Access It: <http://literacynet.org/sciencelincs/>

Sample Resources:

- **Math Forum @ Drexel.** Math-related resources, advice, and activities as well as research and discussion groups. (Direct Web link: <http://mathforum.org>)
- **Mrs. Glosser's Math Goodies.** Over 400 pages of interactive math lessons and activities. (Direct Web link: <http://www.mathgoodies.com>)
- **Project Interactive.** Interactive lessons, discussions, and activities in numbers, probability and statistics, algebra, and geometry. (Direct Web link: <http://www.shodor.org/interactivate/>)

National Research and Development Centre for adult literacy and numeracy (NRDC) (UK)

How to Access It: All materials are accessible through the NRDC Web site:
<http://www.nrdc.org.uk>

Sample Resources:

- **Maths4Life.** An interactive Web site with numerous resources, including a recently published Math4Life Fractions workbook. (Direct Web link: <http://www.maths4life.org/>)
- ***Measurement Was Not Taught When They Built the Pyramids—Was It?*** by A. Tomlin, D. Coben, M. Baxter, T. Wresniwiro, E. Leddy, and L. Richards.

(2006). An instructional guide to teaching measurement in the classroom.
(Direct Web link: http://www.nrdc.org.uk/publications_details.asp?ID=38)

Adult Literacy and Numeracy Australian Research Consortium (ALNARC) (Australia)

Description: ALNARC has several publications discussing the successes of integrating numeracy education with vocational education training.

How to Access It: <http://www.staff.vu.edu.au/alnarc/publications1.html>

Sample Resource:

- ***Building Literacy and Numeracy into Training: A Synthesis of Recent Research into the Effects of Integrating Literacy and Numeracy into Training Packages*** by J. Sanguinetti and R. Hartley. (2000).

ENGLISH AS A SECOND LANGUAGE (ESL) INSTRUCTION

RESOURCE: *Issues in Teaching Speaking Skills to Adult ESOL Learners*

Author: K. Bailey

Published by: National Center for the Study of Adult Learning and Literacy (NCSALL) (Cambridge, MA). (2006). *Review of Adult Learning and Literacy*, Volume 6, Chapter 5. (USA)

How to Access It:

Organization Web site: <http://www.ncsall.net>

Direct link: http://www.ncsall.net/fileadmin/resources/ann_rev/comings_ch5.pdf

Description: This resource provides an overview of the research in teaching English speaking to English for Speakers of Other Languages (ESOL) learners over the past 60 years.

Highlights: This resource begins with an overview of speech patterns and discusses the three main methods that have dominated language teaching in the U.S. over the past 60 years. It continues with a review of successful methods for teaching speaking skills and developing standards related to the teaching of speaking to adult ESOL learners. It then discusses the different types of curricula that have been used in ESOL teaching (e.g. content-based curricula and English for special purposes). It concludes with implications for practice, for research, and for policy.

RESOURCE: *What Works for Adult ESL Literacy Students*

Authors: L. Condelli, H. Wrigley, K. Yoon, M. Seburn, and S. Cronen

Published by: U.S. Department of Education (Washington, D.C.). (2003).

Recommended by: The National Center for the Study of Adult Learning and Literacy (NCSALL)

How to Access It: The full report is still under review at the Department of Education. News brief can be accessed at: <http://www.ncsall.net/?id=189>

Description: This resource identifies effective instructional practices for improving the literacy skills of adult ESL students who are new to English and have had little schooling (less than six years) in their native language (and low literacy skills in their native language).

Highlights: Based on visits with over 600 adult education classes, programs, and students, this study is one of the few studies that has empirical evidence to show the relationship between adult ESL instructional practices and ESL students' learning. In particular, this study found the following:

- ESL students learned more when teachers made a connection between the classroom and life outside the classroom (e.g. field trips, bringing in newspapers, using materials from everyday life in literacy activities).
- There were higher gains in classes where the teacher and students spoke the students' native language.
- There were higher gains in classes where the teacher used the students' native language occasionally.
- Students who had a variety of literacy activities and more practice had higher learning gains.
- The percentage of time spent in class mattered to learning gains (e.g. regular attendance in a shorter amount of time resulted in more learning than attending sporadically for a longer period of time).
- A rich and varied curriculum, including some sub-skill instruction in a larger curriculum, is more effective.

RESOURCE: *Adult English Language Instruction in the 21st Century*

Author: National Center for ESL Literacy Education

Published by: Center for Applied Linguistics (Washington, DC). (2002). (USA)

How to Access It: Not available electronically. Contact the publisher at: Center for Applied Linguistics, 4646 40th Street NW, Washington DC, 20016-1859, or (202) 362-0700. Web site: <http://www.cal.org/>

Description: This resource provides a brief overview of the trends and issues in adult ESL instruction in the United States.

Highlights: This overview includes elementary through post-secondary and adult education, as well as a brief discussion of adult English language learners. It then discusses specific aspects of adult ESOL education in the U.S, including program design and instructional practice; assessment; teacher training and professional development; the integration of research and practice; and technology. An overview of current practices and challenges is given for each of these topics.

RESOURCE: *English for Speakers of Other Languages (ESOL)—Case Studies of Provision, Learners’ Needs and Resources*

Authors: C. Roberts, P. Chopra, R. Hodge, M. Baynham, M. Cooke, K. Pitt, P. Schellenkens, C. Wallace, and S. Whitfield

Published by: National Research and Development Centre (NRDC) for adult literacy and numeracy. (2004). (UK)

How to Access It:

Organization Web site: <http://www.nrdc.org.uk>

Resource link: http://www.nrdc.org.uk/publications_details.asp?ID=19

Description: This resource identifies effective instructional strategies through an analysis of five case study classrooms.

Highlights: The key findings of this study include.

- Individualized teaching does not support ESOL learners as well as group interaction and opportunities to speak and listen.
- Effective teachers utilize multiple strategies to support ESOL learners’ needs;
- Use of culturally-specific situations to contextualize math problems may be a barrier to learning.
- ESOL learners use their native language knowledge concretely in their English learning.
- Planning and reviewing of learning should only be done with ESOL learners who have developed language and linguistic awareness skills.

RESOURCE: *Standards for Adult Education ESL Programs*

Author: Teachers of English for Speakers of Other Languages (TESOL)

Published by: TESOL (Alexandria, Virginia). (USA)

Recommended by: National Center for the Study of Adult Learning and Literacy (NCSALL)

How to Access It: Not available electronically. Contact publisher at: TESOL Publications, PO Box 753, Waldorf, MD, 20604-0753.

Description: This resource identifies the key characteristics of an organized ESL curriculum, including curriculum components and learning objectives.

Highlights: While primarily a guide for program staff to analyze the effectiveness of their program in meeting the needs of ESL learners, this guide may also be useful

for evaluating instruction in ESL classrooms. This resource provides specific measures, sample evidence, scoring, and action plan/next steps processes across nine dimensions, including:

- Program structure, administration, and planning
- Curriculum and instructional materials
- Instruction
- Learner recruitment, intake, and orientation
- Learner retention and transition
- Assessment and learner gains
- Employment conditions and staffing
- Professional development and staff evaluation
- Support services

RESOURCE: *Adult ESOL Pedagogy: A Review of Research, an Annotated Bibliography and Recommendations for Future Research*

Authors: D. Barton and K. Pitt

Published by: National Research and Development Centre for adult literacy and numeracy. (UK)

How to Access It:

Organization Web site: <http://www.nrdc.org.uk>

Direct Web link: http://www.nrdc.org.uk/publications_details.asp?ID=7

Description: This resource reviews research documenting ESOL students' English learning in classroom settings.

Highlights: Included in this review are specific sections on the process of language learning (Learners and Learning), relationships between teaching and learning (Teachers, Classrooms and Tasks), teaching and learning of the written language (ESOL Literacy), and issues of policy, intensity, language support, and workplace issues (Organization of Provision).

RESOURCE: *Approaches to Adult ESL Literacy Instruction*

Authors: J. Crandall and J. K. Peyton (eds.)

Published by: Center for Applied Linguistics and Delta Systems Co., Inc. (McHenry, Illinois). (1993). (USA)

Recommended by: Literacy Assistance Center (New York, NY)

How to Access It: Not available electronically. Contact publisher at: Center for Applied Linguistics, 4646 40th Street NW, Washington, DC, 20016-1859, or (202) 362-0700. Web site: <http://www.cal.org/>

Description: This resource is a collection of essays documenting a multitude of different approaches to ESL instruction.

Highlights: This resource reviews five different approaches to ESL instruction and focuses primarily on their theoretical and philosophical underpinnings and applications within a classroom setting. The approaches documented include:

- Competency-based educational approach, which focuses on the development of life skills
- Whole language approach, providing both a theoretical and a practical foundation
- Language experience approach, a whole language approach that promotes reading and writing by having students document their own experiences
- Publishing of students' writing, which promotes students' writing and also provides reading sources for other students. (Implementation steps are also given.)
- Freirean approach (Spener), which discusses the philosophical content of language learning and can be paired with other methodologies

RESOURCE: *Literature Review of ESOL for Learners with Learning Difficulties and/or Disabilities*

Authors: V. Hethcote and D. Armstrong

Published by: National Research and Development Centre (NRDC). (UK)

How to Access It:

Organization Web site: <http://www.nrdc.org.uk>

Resource link: http://www.nrdc.org.uk/publications_details.asp?ID=13

Description: This resource reviews research on ESOL instruction for students with learning disabilities.

Highlights: This resource documents the dearth of information on adult ESOL learners and learning difficulties (such as dyslexia) and lack of instructor knowledge and/or training on these issues. It presents recommendations and suggestions for future research and instruction with ESOL learners who have learning disabilities.

RESOURCE: Perspectives on Assessment in Adult ESOL Instruction

Authors: C. H. Van Duzer and R. Berdan

Published by: National Center for the Study of Adult Learning and Literacy (NCSALL) (Cambridge, MA). (1999). *The Annual Review of Adult Learning and Literacy*, Volume 1, Chapter 6. (USA)

How to Access It:

Organization Web site: <http://www.ncsall.net>

Resource link: <http://www.ncsall.net/?id=521>

Description: This resource reviews the proliferation and validity of assessments in adult ESOL programs in the United States, with a discussion of the strengths and weaknesses of assessments currently available to ESOL programs.

Highlights: This resource begins with a discussion of the Workforce Investment Act of 1998 and the implementation of a National Reporting System in the U.S. to track student progress. The authors then examine the strengths and weaknesses of a variety of ESOL assessments, including the Adult Basic Learning Examination (ABLE), the Test of Adult Basic Education (TABE), the Adult Language Assessment Scales (A-LAS), the Comprehensive Adult Student Assessment System (CASAS), the Basic English Skills Test (BEST), and the New York State Placement Test for English as a Second Language Adult Students (NYS Place). The authors then review assessment system reforms in K–12 and adult education in the U.S. and other countries, such as the U.K., Canada, and Australia, for insights about how recent adult education reforms may be handled. The authors conclude that assessment reforms should be related to the development of content standards for curriculum, instruction, and assessment in adult education programs.

Additional ESL Resources

Resources based on K–12 research: Some prominent adult literacy research institutes and agencies have also recommended instructional guides based on ESOL research in K–12 education.

RESOURCE: *Principles of Language Learning and Teaching*, 3rd edition

Author: H. D. Brown

Published by: Prentice Hall Regents (Englewood Cliff, NJ). (1994). (USA)

Recommended by: Literacy Assistance Center (New York, NY)

How to Access It: Not available electronically. Contact publisher at:
<http://vig.prenhall.com/>

Description: This resource provides a review of research on the multiple factors affecting language learning and teaching.

Highlights: This resource provides a more theoretical perspective of the language learning process. It analyzes the relationship between the nature of and the teaching of language and how psychological and social factors affect the learning process. It also reviews theories about native and second language acquisition, how language learning differs from other types of human learning, and different approaches to language learning. Additionally, there is a chapter devoted to an analysis of the validity and practicality of language assessments.

Instructional and professional development resources: A number of adult literacy organizations and agencies have developed instructional and professional development guides for developing instructional practices from research-based principles. The following is a list of agencies with these guides and a sampling of the resources they provide.

National Center for the Study of Adult Learning and Literacy (NCSALL) (USA)

How to Access It: All materials listed are accessible electronically from NCSALL's Web site: <http://www.ncsall.net>

Sample Resource:

- ***NCSALL Seminar Guide: Ideas for Teaching Reading: ESOL.*** A 3-hour professional development guide to introduce adult education practitioners to evidence-based instruction in reading for ESOL learners.

Center for Applied Linguistics (CAL)/Center for Adult English Language Acquisition (CAELA)

How to Access It: All materials listed are accessible electronically from CAL's and CAELA's Web sites: <http://www.cal.org/> and <http://www.cal.org/caela/>.

Sample Resources:

- ***Using Software in the Adult ESL Classroom.*** (Direct Link: http://www.cal.org/caela/esl_resources/digests/SwareQA.html)
- ***Numeracy in the Adult ESL Classroom.*** (Direct link: http://www.cal.org/caela/esl_resources/digests/Ciancone.html)

- ***Practitioner Toolkit***. National Center for Family Literacy, & National Center for ESL Literacy Education at the Center for Applied Linguistics (2004). Retrieved July 14, 2006, from http://www.cal.org/caela/tools/program_development/CombinedFiles1.pdf

Teachers of English for Speakers of Other Languages (TESOL)

How to Access It:

Organization Web site: http://www.tesol.org/s_tesol/index.asp

Direct Web link to adult resources: http://www.tesol.org/s_tesol/seccss.asp?CID=28&DID=33

Sample Resources:

- ***PACE Yourself: A Handbook for ESL Tutors*** by T. Dalle and L. Young. (2003). (Note: Not available online; order from TESOL directly)
- ***New Ways in Teaching Adults***, by M. Lewis. (1997). (Note: Not available online; order from TESOL directly)

National Institute for Literacy (Institute) Special Collections: English as a Second Language (USA)

Description: The Institute has an ESL support Web site, which has discussions, lesson ideas, and materials for ESL learners, teachers, tutors, and administrators.

How to Access It: <http://literacynet.org/esl/>

Sample Resources:

- ***Arlington Education and Employment Program (REEP) ESL Curricula***. An online ESL instructional system which helps students at different skill levels learn to navigate U.S. systems in English while also learning the English language. (Direct Web link: http://www.arlington.k12.va.us/instruct/ctae/adult_ed/REEP/reepcurriculum/)
- ***The Change Agent: Immigration Issue***. A group of articles and classroom activities centered around immigration in the U.S. (Direct Web link: <http://www.nelrc.org/changeagent/pdf/issue11webversion.pdf>)
- ***ESL Activities Online***. A set of grammar and language activities, including interactive, online quizzes. (Direct Web link: <http://www.tcet.com/eaonline/>)

GENERAL EDUCATIONAL DEVELOPMENT (GED) INSTRUCTION

[**Note:** The resources listed below are geared directly towards GED assessment and instruction. There are very few resources directed specifically at GED instruction. For this reason, we recommend that instructors refer to the Reading Instruction, Writing Instruction, and Math and Numeracy Instruction sections above for further resources that may be useful in the GED classroom.]

RESOURCE: *Tests of General Educational Development. Bibliography.*

Author: American Council on Education (ACE), GED Testing Service.

Published by: American Council on Education (ACE), GED Testing Service
(Washington, DC). (1997). (USA)

How to Access It: This document is available via ERIC (Educational Resources Information Center) (ERIC Document Number: ED416334) ERIC Web link:
<http://www.eric.ed.gov>

Description: This resource is a bibliography of 549 resources for learning and teaching to the GED exam. The bibliography includes issues such as GED test outcomes, adult education, teaching style and learning, teaching methods, GED test-taking strategies, economic returns of the GED, college entry and placement for GED graduates, history of adult basic education, and workplace skills of GED graduates.

Highlights: This bibliography does not group articles by subject, only by author's last name. Therefore, individuals must search through the titles to find information relevant to their interests.

RESOURCE: *Basics for Successful GED Instruction: Working with Adult Learners. Quality Professional Development Project. Professional Development Manual V*

Author: Florida Community College.

Published by: Florida Community College (Jacksonville, FL). (1998). (USA)

How to Access It: This document is available via ERIC (Educational Resources Information Center) (ERIC Document Number: ED430102). ERIC Web link:
<http://www.eric.ed.gov>

Description: This resource seeks to assist GED instructors in setting up and teaching a GED class.

Highlights: This resource was developed by experienced GED instructors and provides six different units on developing a GED classroom. These units consist of: (1) an introduction to the GED tests, (2) useful assessments for documenting students' skills, (3) appropriate curricula for a GED program and/or classroom, with performance standards for each skill set, (4) pedagogical approaches and teaching strategies, (5) classroom management techniques, and (6) state and national accountability systems and tracking student progress.

RESOURCE: GED Teaching and Adult Learning Theory

Author: K. Loughlin

Published by: *Adult Learning*, Volume 6, Issue 2, pp. 13–15. (1994). *Adult Learning* is a publication of the American Association for Adult and Continuing Education (AAACE).

How to Access It:

Organization Web site (AAACE): <http://www.aaace.org/>

Direct link (via the WilsonWeb Journal Directory):

[http://vnweb.hwwilsonweb.com/hww/Journals/getIssues.jhtml?
sid=HWW:EDUFT&issn=1045-1595](http://vnweb.hwwilsonweb.com/hww/Journals/getIssues.jhtml?sid=HWW:EDUFT&issn=1045-1595)

Description: This resource explores the connection between adult learning and teaching to the GED test.

Highlights: This resource recommends the creation of a connected learning environment, which integrates individual disciplines into a holistic learning model within the GED classroom. The author found that this approach increased learners' motivation to be lifelong learners.

RESOURCE: *A Study to Determine the Effect of Skill-Focused Curriculum and Instruction on Student Achievement as Evidenced by GED & ACT Pre/Post Scores*

Author: S. Hinterer

Published by: ERIC Document (Thesis presented to the Faculty of the Master of Arts Degree Program, Salem International University, Salem, WV). (2002). (USA)

How to Access It: This document is available via ERIC (Educational Resources Information Center) (ERIC Document Number: ED474905). ERIC Web link: <http://www.eric.ed.gov>

Description: This study examines the effects of a skill-based curriculum on the GED and ACT scores of incarcerated youth.

Highlights: This study revealed that a skills-based curriculum made a statistically significant, positive impact on students' GED scores. The skill-based curricula were based on Bloom's Taxonomy in which students are taught critical thinking skills. The null hypothesis was that the curriculum would not improve students' achievement on the ACT and GED tests. While the null hypothesis was rejected, it must be noted that there was no control group for this study by which to compare the results of this particular curriculum versus other types of curriculum.

RESOURCE: The General Educational Development (GED) Credential: History, Current Research, and Directions for Policy and Practice

Author: J. Tyler

Published by: National Center for the Study of Adult Learning and Literacy. (Cambridge, MA). (2004). *Review of Adult Learning and Literacy*, Volume 5, Chapter 3. (USA)

How to Access It:

Organization Web site: <http://www.ncsall.net>

Resource link: http://www.ncsall.net/fileadmin/resources/ann_rev/rall_v5_ch3.pdf

Description: This resource gives a general overview of the GED, its history, and its development.

Highlights: This resource is primarily a history of the GED and its effect on labor market and postsecondary educational outcomes rather than an article about instruction. However, the document concludes with two pages of implications and suggestions for program practice and classroom instruction.

RESOURCE: *Adult Education Resource Guide and Learning Standards*

Authors: State University of New York (SUNY) and the New York State Education Department

Published by: Hudson River Center for Program Development (Glenmont, NY). (1998). (USA)

Recommended by: National Adult Literacy Database (NALD) (Canada)

How to Access It: This resource is available through NALD and the Hudson River Center for Program Development.

NALD: Organization Web site: <http://www.nald.ca>

Resource link: http://www.nald.ca/fulltext/hudson/adult_ed/cover.htm

Hudson River Center for Program Development Organization Web site:
<http://www.hudrivctr.org>

Resource link: <http://www.hudrivctr.org/documents/adedres.pdf>

Description: This resource discusses the adult education standards for New York state, with a section specifically devoted to GED and adult education goals for writing, social studies, science, literature, and math, as well as test-taking strategies.

Highlights: While this document is focused on the state of New York, its documentation of GED standards along with learning objectives for students at multiple skill levels are useful for any GED program. This document also contains a rich base of instructional resources.

Instructional and professional development resources: A number of adult literacy organizations and agencies have developed instructional and professional development guides for developing instructional practices from research-based principles. The following is a list of agencies with these guides and a sampling of the resources they provide.

National Center for the Study of Adult Learning and Literacy (NCSALL) (USA)

How to Access It: All materials listed are accessible electronically from NCSALL's Web site: <http://www.ncsall.net>

Sample Resources:

- ***Focus on Basics: The GED***, Volume 2, Issue B, June 1998. A *Focus on Basics* issue devoted to exploring the GED. It includes seven articles concerning issues surrounding the GED, with three articles specifically devoted to GED instructional approaches.
- ***Beyond the GED: Making Conscious Choices About the GED and Your Future*** by S. Fass and B. Garner and updated by E. Barry. (2006). A three-unit, eight-lesson guide for GED teachers to use in their classrooms to introduce students to the benefits and limitations of the GED credential.

National Adult Literacy Database (NALD) (Canada)

How to Access It: All materials listed are accessible electronically from NALD's Web site: <http://library.nald.ca/> (keyword: GED instruction)

Sample Resources:

- ***Writing Demons (Software Evaluation Project)***. A computer software program that helps students become familiar with recognizing grammar mistakes using multiple-choice questions (much like the grammar section of the GED writing test). (Direct link: <http://www.nald.ca/software/details.asp?userID=3>)
- ***The Next Step: Mathematics Applications for Adults. Teacher's Manual***. A teacher's manual for an adult education math series. One section is devoted to GED issues, including an introduction to the GED and test-taking tips. (Direct link: <http://www.nald.ca/CLR/nextstep/manual/cover.htm>)

Workforce Improvement Network (James Madison University, Harrisonburg, VA). (2003) (USA)

How to Access It: This resource is available via ERIC (Educational Resources Information Center). ERIC Web link: <http://www.eric.ed.gov>

Sample Resources:

- ***GED as Project: Pathways to Passing the GED. Volume 4: Language Arts, Writing. (2003)***. A lesson guide which provides writing-focused learning projects and inquiry activities to aid students in passing the GED language arts/writing test 2002.
- ***GED as Project: Pathways to Passing the GED. Volume 3: Reading.*** Harrisonburg, VA: Workforce Improvement Network. A lesson guide which gives reading-focused learning projects and inquiry activities to aid students in passing the GED language arts/reading GED Test 2002.

Publishers. Numerous publishers print GED resources and workbooks for use in the GED and pre-GED classroom. The following are a list of a few of the publishers with available resources.

American Council on Education (ACE), GED Testing Service

Description: ACE is the agency responsible for developing and publishing the GED tests. While providing only limited practice resources, ACE does provide a small bank of GED sample questions (See below.).

How to Access It: <http://www.acenet.edu/AM/Template.cfm?Section=GEDTS>

Sample Resource:

- **GED Sample Test Questions.** The GED Testing Service provides free access to a bank of test questions from the GED exam. (Direct link: <http://www.acenet.edu/AM/Template.cfm?Section=TestTakersInfo&TEMPLATE=/CM/ContentDisplay.cfm&CONTENTID=5691>)

New Readers Press (Division of ProLiteracy Worldwide)

How to Access It: Resources not available electronically. Contact publisher at:
<http://newreaderspress.com>

Sample Resources:

- **GED Practice 1120 CD-ROM.** Provides practice with 1,100 questions in all five GED subject areas and 20 essay prompts for the GED writing sample.
- **GED Scoreboost.** Workbooks for developing strategies in three primary areas: math, writing, and critical thinking skills and graphics.
- **GED Skill Workbooks.** Workbooks providing core content review in four subjects, including Language Arts, Writing, and Reading; Social Studies; Math; and Science.

Steck-Vaughn Publishers

How to Access It: Resources not available electronically. Contact publisher at:
<http://steckvaughn.harcourtachieve.com/en-US/steckvaughn.htm>

Sample Resources:

- **Building Strategies for GED Success.** Provides ABE learners at the 4th- 6th grade reading level with strategies and practice to build their skills in preparation for taking the GED.
- **Official GED Practice Tests.** Practice tests which were normed with the official GED exams can help predict learners' score range.
- **Complete GED Preparation.** A comprehensive GED workbook covering content and skills in all five subject areas (math, language arts, social studies, science, and writing).

Contemporary McGraw Hill

How to Access It: Resources not available electronically. Contact publisher at:
http://www.mhcontemporary.com/scripts/cont_home.php

Sample Resources:

- ***Assessment Program for the GED.*** Full-length practice GED tests that can be administered to a class of students.
- ***GED Complete Preparation.*** A combination of computerized and print materials for all five GED content areas (math, language arts, social studies, writing, and science).
- ***MHC Interactive: GED.*** An interactive, computerized GED program that provides instruction in the five content areas and allows separate access for students, teachers, and administrators.

ADULT LEARNING THEORY AND ADULT EDUCATION INSTRUCTION

[**Note:** This section includes articles and reports that discuss the connection between adult learning theory and adult education instruction in each of the above subject areas (reading, writing, math and numeracy, ESL, and the GED). These resources are focused less on the actual techniques of instruction and more on the connection between adult learning, learning theory, and adults' development of varying literacy and numeracy skills.]

RESOURCE: **The Changing Landscape of Adult Learning Theory**

Author: S. B. Merriam

Published by: National Center for the Study of Adult Learning and Literacy
(Cambridge, MA). (2003). *Review of Adult Learning and Literacy*. Volume 4,
Chapter 6. (USA)

How to Access It:

Organization Web site: <http://www.ncsall.net>

Resource Link: <http://www.ncsall.net/?id=579>

Description: This resource examines three major periods in the study of adult learning, with a specific eye towards key concepts and beliefs in the field and how they developed.

Highlights: This resource begins by reviewing the early history of adult learning theory, which explored whether or not adults could learn and how the learning process might be structured. The author then continues by examining the key developmental period of the adult learning theory during which key concepts such as andragogy, self-directed learning, and transformational learning were developed. She then focuses on new developments in the field, such as the focus on emotions in learning, the body, and spirituality in learning.

RESOURCE: **Applying Constructive-Developmental Theories of Adult Development to ABE and ESOL Practices**

Authors: D. Helsing, E. Drago-Severson, and R. Kegan

Published by: National Center for the Study of Adult Learning and Literacy
(Cambridge, MA). (2003). *Review of Adult Learning and Literacy*. Volume 4,
Chapter 5. (USA)

How to Access It:

Organization Web site: <http://www.ncsall.net>

Resource Link: http://www.ncsall.net/fileadmin/resources/ann_rev/rall_v4_ch5.pdf

Description: This resource reviews the relationship between constructive-developmental theories of adult development and ABE and ESOL instruction.

Highlights: This resource introduces constructive-developmental theory and the four levels of adult development as generally defined by theorists in the field, with a focus on how learning occurs at among these different levels in the adult literacy classroom. Each level expands individuals' capacity for organizing and reflecting on their experience. The authors then discuss how to foster growth and learning at each successive level. The authors conclude with recommendations and suggestions for future research, practice, and policy.

RESOURCE: Making Sense of Critical Pedagogy in Adult Literacy Education

Author: S. C. Degener

Published by: National Center for the Study of Adult Learning and Literacy (Cambridge, MA). (2001). *The Annual Review of Adult Learning and Literacy*. Volume 2, Chapter 2. (USA)

How to Access It:

Organization Web site: <http://www.ncsall.net>

Resource Link: <http://www.ncsall.net/?id=562>

Description: This resource provides an introduction to and review of critical theory and its relationship and application in adult literacy classrooms.

Highlights: This report begins with an overview of critical theory and the contributions of important theorists such as Freire, Dewey, and Horton. The author then continues by examining the important role that politics, language, and critical perspective has in education and adult thinking. She then reveals how critical theory can be applied to six different aspects of adult literacy programs, including philosophy and goals, program structure, curriculum and materials, teacher development, teacher-student relationships, and evaluation. She concludes with an analysis of adult literacy centers' placement on the critical theory spectrum, arguing that few ABE programs could be classified as strictly critical or not critical due to their limited resources and constraints.

RESOURCE: Metacognition, Cognitive Strategy Instruction, and Reading in Adult Literacy

Author: J. G. Cromley

Published by: National Center for the Study of Adult Learning and Literacy (Cambridge, MA). (2005). *Review of Adult Learning and Literacy*. Volume 5, Chapter 7. (USA)

How to Access It:

Organization Web site: <http://www.ncsall.net>

Resource link: http://www.ncsall.net/fileadmin/resources/ann_rev/rall_v5_ch7_supp.pdf

Description: This resource reviews and examines theories of metacognitive skills in reading and its application to reading comprehension and reading instruction.

Highlights: This resource begins by introducing the importance of metacognitive skills in reading and examines causes of low metacognitive skills, including such issues as poor decoding, low motivation, and limited strategy use. The author then reviews K–12 and adult education research on assessing metacognitive monitoring in reading and strategies for overcoming issues with reading comprehension. She then examines effective instructional practices that increase metacognitive monitoring and, as a result, reading comprehension. She concludes with suggestions for research, practice, and policy.

TECHNOLOGY IN ADULT EDUCATION INSTRUCTION

[**Note:** The following resources provide information and guides for implementing technology in adult education classrooms. In addition, please see the instructional and professional development resources sections under the Reading, Writing, Math and Numeracy, ESL, and GED sections as many instructional aides listed in this section are technologically-based.]

RESOURCE: **Using Electronic Technology in Adult Literacy Education**

Author: D. J. Rosen

Published by: National Center for the Study of Adult Learning and Literacy (Cambridge, MA). (1999). *The Annual Review of Adult Learning and Literacy*. Volume 1, Chapter 8. (USA)

How to Access It:

Organization Web site: <http://www.ncsall.net>

Resource Link: <http://www.ncsall.net/?id=519>

Description: This resource examines the use of electronic technology within adult literacy classrooms and the difference between two approaches (instructivist versus constructivist) in technology instruction.

Highlights: This article begins by examining the difference between an instructivist approach to the use of technology, in which learners use computer-assisted instruction to acquire skills and knowledge, and constructivist approaches, in which learners use technological tools to gain knowledge about a subject of interest. The author gives examples of each of these approaches and available technology programs. The author then examines the difficulties in implementing technology within adult education classrooms. He cites issues of access, policy, and training as concerns for implementing technology in adult education.

RESOURCE: **Implications of New Learning Technologies for Adult Literacy and Learning**

Author: R. Stites

Published by: National Center for the Study of Adult Learning and Literacy (Cambridge, MA). (2003). *Review of Adult Learning and Literacy*. Volume 4, Chapter 4. (USA)

How to Access It:

Organization Web site: <http://www.ncsall.net>

Resource Link: <http://www.ncsall.net/?id=581>

Description: This resource is a review of current research on new learning technologies, with a focus on the effectiveness of technology initiatives and a discussion of access to such technology.

Highlights: This report examines numerous meta-analyses of new learning technologies, documenting the positive impact that technology has had on learning in adult education. The report reveals four main characteristics believed to be important in improved learning through technology, including learner engagement, group participation, frequent feedback, and real-world situations. The author then examines access to technology in adult education programs, noting its increased use within adult programs despite the numerous challenges to its implementation. The author concludes with recommendations and suggestions for research, practice, and policy.

RESOURCE: Resources on the Use of Electronic Technology in Adult Literacy Education

Authors: J. Carter and L. Wollrab

Published by: National Center for the Study of Adult Learning and Literacy (NCSALL) (Cambridge, MA). (2006). *The Annual Review of Adult Learning and Literacy*, Volume 1, Chapter 9. (USA)

How to Access It:

Organization Web site: <http://www.ncsall.net>

Resource link: <http://www.ncsall.net/?id=518>

Description: This resource is an annotated bibliography of technological resources and programs available for instruction in the adult literacy classroom.

Highlights: This resource is divided into three sections: (1) Books, Guidebooks, Handbooks, and Reports; (2) Journal Articles; and (3) Web Resources. These resources provide curriculum recommendations, reviews of software programs, interactive Web sites, and research-based rationales for providing technological access within the adult literacy classroom.

FURTHER READING

[**Note:** The following is a list of journals and regular publications for accessing more up-to-date research on adult literacy, numeracy, ESL, and GED instruction.]

Journal of Adolescent and Adult Literacy

How to Access It: <http://www.reading.org/publications/journals/jaal/>

Types of articles: Research on classroom-based instructional strategies, adult learning theory in adult reading instruction, the connection between K–12 education and adult literacy education, and math instruction with adolescents

Example articles:

Reading and Writing

- **Engaging Readers and Writers in Adult Education Contexts** by N. Padak and B. Bardine. (2004). Volume 48, Issue 2, pp. 126–137.
- **The Impact of Using Guided Reading to Teach Low-Literate Adults** by D. Massengill. (2004). Volume 47, Issue 7, pp. 588–602
- **“I Don’t Crave to Read”:** **School Reading and Adulthood** by A. Belzer. (2002). Volume 46, Issue 2, pp. 104–114.
- **Already Experts: Showing Students How Much They Know About Writing and Reading Arguments** by A. Petit and E. Soto. (2002). Volume 45, Issue 8, pp. 674–683.

Mathematics

- **Promoting and Studying Discussions in Math Classes** by M. L. Tanner and L. Casados. (1998). Volume 41, Issue 5, pp. 342–351.
- **A Read-Aloud for Mathematics** by J. S. Richardson and E. Gross. (1997). Volume 40, Issue 6, pp. 492–495.

ESL

- **Changing Lives: Teaching English and Literature to ESL Students** by G. Ernst-Slavit, M. Moore, and C. Maloney. (2002). Volume 46, Issue 2, pp. 116–129.
- **Dialogue Journals as an ESL Learning Strategy** by V. Holmes and M. R. Moulton. (1997). Volume 40, Issue 8, pp. 616–622.

GED (no articles found)

Adult Basic Education

How to Access It: <http://www.coabe.org/index.cfm?fuseaction=journal>

Types of articles: Instructional techniques in adult education; literature reviews; ESL, GED, and adult learning theory

Example articles:

Reading and Writing

- **Effectiveness of Computers in ALBE Classrooms: An Analytical Review of the Literature** by J. Berger. (2001). Volume 11, Issue 3, pp. 162–184.
- **Think-Aloud Protocol and Adult Learners** by J. Berne. (2004). Volume 14, Issue 3, pp. 153–173.
- **Guided Reading—An Instructional Framework for Adults** by D. Massengill. (2003). Volume 13, Issue 3, pp. 168–188.
- **Portfolio Assessment in Adult Basic Education: A Pilot Study** by E. Hayes. (1997). Volume 7, Issue 3, pp. 165–188.
- **Journal Writing: An Effective, Heuristic Method for Literacy Acquisition** by B. C. Palmer, M. C. Alexander, and C. Olson-Dinges. (1999). Volume 9, Issue 2, pp. 71–90.
- **Using Computers to Teach Writing in Adult Basic and Literacy Education Programs** by K. J. Freer and M. C. Alexander. (1996). Volume 6, Issue 2, pp. 55–69.

Math

- **Systemic Needs in Adult Numeracy Education** by G. Iddo. (2002). Volume 12, Issue 1, pp. 20–34.

ESL

- **A Community Within the Classroom: Dialogue Journal Writing of Adult ESL Learners** by K. Jungkang. (2005). Volume 15, Issue 1, pp. 21–32,

GED

- **The Adolescentizing of the GED** by J. R. Rachal and M. J. Bingham. (2004). Volume 14, Issue 1, pp. 32–44.

Adult Education Quarterly

How to Access It: <http://aeq.sagepub.com/>

Types of articles: Adult reading theory, critical theory, feminist theory, and adults' perspectives on education

Example articles:

Reading and Writing

- **Desirable Reading: The Relationship Between Women Students' Lives and Their Reading Practices** by C.A. Jarvis. (2003). Volume 53, Issue 4, pp. 261–277.

Math (no articles found)

ESL

- **Reading the World of Work: A Learner-Centered Approach to Workplace Literacy and ESL** by T. Lucas. (2005). Volume 55, Issue 4, pp. 316–318.

GED

- **“It’s Not Like Normal School”: The Role of Prior Learning Contexts in Adult Learning** by A. Belzer. (2004). Volume 55, Issue 1, pp. 41–59.

Adult Learning

How to Access It: (A publication of the American Association for Adult and Continuing Education)

Organization Web site: <http://www.aaace.org/>

Direct link (via the WilsonWeb Journal Directory):

<http://vnweb.hwwilsonweb.com/hww/Journals/getIssues.jhtml?sid=HWW:EDUFT&issn=1045-1595>

Types of articles: Adult literacy instruction, holistic instruction, and adult learning theory

Example articles:

Reading and Writing

- **Enhancing Learning for the Beginning Reader** by P. P. McCabe. (1992). Volume 3, Issue 4, pp. 19–21.

- **Using the Big Book Experience with Adult Literacy Students** by E. Wadlington and K. Hicks. (1995). Volume 6, Issue 5, pp. 14–17.
- **Literature, Whole Language, and Adult Literacy Instruction** by M. C. Weibel. (1994). Volume 6, Issue 2, pp. 9–13.
- **Using Writing Journals with Adult Literacy Students** by B. A. Bardine. (1996). Volume 7, Issue 4, pp. 13–16.

Math

- **Using Internet-Based Resources in Math Instruction** by S. K. Cowles. (1997/1998). Volume 9, Issue 2, pp. 20–22.
- **Holistic Mathematics Instruction** by B. Archambeault. (1993). Volume 5, Issue 1, pp. 21–24.
- **Expanding the Scope of Mathematics Instruction** by A. Rose, (1997/1998). Volume 9, Issue 2, pp. 7–9.

ESL

- **ESL in the Nineties.** (1993). Volume 4, Issue 3, p. 29.

GED

- **Rethinking the Five-Paragraph Essay as a Tool for Teaching the GED Writing Test** by K. Chuppa-Cornell. (1996). Volume 7, Issue 3, pp. 11–13.
- **Rethinking Math Teaching Strategies.** (1993). Volume 4, Issue 6, p. 30.
- **GED Teaching and Adult Learning Theory** by K. Loughlin. (1994). Volume 6, Issue 2, pp. 13–14.

TESOL Quarterly

How to Access It: <http://www.ingentaconnect.com/content/tesol/tq>

Types of articles: Reading, writing, speaking, and listening instruction with ESL learners; ESL math instruction; assessment; and research methods

Example articles:

- **The Effects of Listening Support on the Listening Performance of EFL Learners** by A. C. Chang and J. Read. (2006). Volume 41, Issue 2, pp. 375–397.
- **Contextual Influences on Instructional Practices: A Chinese Case for an Ecological Approach to ELT** by H. Guangwei. (2005). Volume 39, Issue 4, pp. 635–660.

- **The Role of Literacy Level in Second Language Acquisition: Doesn't Who We Study Determine What We Know?** by M. Bigelow and E. Tarone. (2004). Volume 38, Issue 4, pp. 689–710.



National Center for the Study of Adult Learning and Literacy

NCSALL's Mission

NCSALL's purpose is to improve practice in educational programs that serve adults with limited literacy and English language skills, and those without a high school diploma. NCSALL is meeting this purpose through basic and applied research, dissemination of research findings, and leadership within the field of adult learning and literacy.

NCSALL is a collaborative effort between the Harvard Graduate School of Education, World Education, The Center for Literacy Studies at The University of Tennessee, Rutgers University, and Portland State University. NCSALL is funded by the U.S. Department of Education through its Institute of Education Sciences (formerly Office of Educational Research and Improvement).

NCSALL's Research Projects

The goal of NCSALL's research is to provide information that is used to improve practice in programs that offer adult basic education, English for speakers of other languages, and adult secondary education services. In pursuit of this goal, NCSALL has undertaken research projects in four areas: (1) learner persistence, (2) instructional practice and the teaching/learning interaction, (3) professional development, and (4) assessment.

NCSALL's Dissemination Initiative

NCSALL's dissemination initiative focuses on ensuring that practitioners, administrators, policy makers, and scholars of adult education can access, understand, judge and use research findings. NCSALL publishes *Focus on Basics*, a quarterly magazine for practitioners; *Focus on Policy*, a twice-yearly magazine for policy makers; *Review of Adult Learning and Literacy*, an annual scholarly review of major issues, current research, and best practices; and *NCSALL Reports* and *Occasional Papers*, periodic publications of research reports and articles. In addition, NCSALL sponsors the Connecting Practice, Policy, and Research Initiative, designed to help practitioners and policy makers apply findings from research in their instructional settings and programs.

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