



NATIONAL CENTER ON ADULT LITERACY
UNIVERSITY OF PENNSYLVANIA

Connections

FALL/WINTER 1998

EDITORIAL

GED Testing: Past, Present, and Future

GED Testing, the focus of this issue of *Connections*, is designed to measure the academic outcomes traditionally acquired by the end of a typical high school program of study in individuals that do not have the traditional high school diploma. In our feature article, Joan Auchter, Executive Director of the GED Testing Service, reviews the history of GED test development. She then comments that the GED's success rests on "recognizing the utility of the credential as a passport for the individual." She believes that wide acceptance of the credential value of the GED Program by both academic and corporate organizations supports this success.

John Sabatini, a senior researcher at NCAL, provides a "devil's advocate" point of view. Sabatini, whose work deals with assessment issues, asks the question, "What if we could start over, knowing what we know now about learning, knowledge, and assessment?" He questions the effectiveness of the testing as a means of assessment. With findings from recent research, he offers interesting innovations and some future possibilities of assessment.

An event reflecting one of these future innovative possibilities is discussed in the article about the videoconference "Integrating Technology Into the ABE/GED Curriculum" by Noreen Lopez, Project Director of the LiteracyLink Project at the Public Broadcasting Service. The live videoconference offered video segments of classroom use of computers and the Internet as well as a panel discussion on the successes and challenges encountered by teachers that have integrated technology into their adult literacy instruction.

We hope that these articles on GED Testing and curriculum will provoke useful discussions and reflection on the part of our readers.

Janet C. Smith
Editor, NCAL

The Value of the GED Tests

by Joan Auchter, Executive Director, GED Testing Service

As the K-12 education standards debates rage globally, there is another debate occurring within the adult education community. In the current climate, the measure of success is frequently linked to economic gain. This climate highlights the tension surrounding this second debate between those who promote workplace skills and those who advocate further academic training. The GED Program rejects this bifurcation as misguided. Throughout its 55-year history, the GED Program has assessed a set of skills required for both the worlds of academia and work.

Historical Context

The GED Tests were created in response to a societal need that grew out of WWI, when many GIs returned home and entered college. At the time, postsecondary institutions recognized years of service as eligibility for entrance. In anticipation of veterans returning from WWII, the United States Armed Forces Institute commissioned the American Council on Education (ACE) to develop the GED Tests to assess the level of and help veterans meet their educational and vocational goals without returning to the high school classroom. After WWII, it became apparent that civilians who had not completed high school could also benefit from the GED Tests. With the introduction of a state-sponsored diploma program in 1947, New York transformed the GED from a national testing operation to a comprehensive high school credentialing program managed jointly

with the various jurisdictions. Over the next several decades, ACE forged a partnership with all 50 states and 11 Canadian provinces to award a high school credential based on passing the GED test battery.

The validity and credibility of the GED Testing Program depends on the periodic review of the GED Tests' goals and specifications. The fact that there have been only three generations of tests from 1942 through 1998 indicates the strength of the test specification and standard setting process. While the content areas of English, Science, Social Studies, Literature/Reading, and Mathematics have remained constant over the last half-century, the constructs by which individuals are assessed have evolved.

The first generation of tests, developed in 1942, reflected an industrial era, when high school education was sufficient for many jobs. Content knowledge was assessed in a traditional manner. The English test focused on the correctness and effectiveness of expression, while success in social studies, science, and literature depended on interpreting reading materials. By the time this series was retired in 1977, over 40% of the test takers took the tests for employment reasons—an indication that this level of education qualified people for many entry-level positions. During this same period, 37% indicated that they planned further study.

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Announcing PeerLit...a communication and evaluation tool for the adult education community

More than just another hot list of educational sites, this online tool includes peer reviews of WWW resources available for use with adult learners. Commentary by educational practitioners and those interested in lifelong learning is automatically posted via individual discussion boards attached to each review.

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LiteracyLink (<http://www.pbs.org/learn/literacy/index.html>) is a partnership of the Public Broadcasting System, the National Center on Adult Literacy, Kentucky Educational Television, and the Kentucky Department of Education.

For more information, visit online at the URLs above, call the PBS LitLink help line at 1-888-548-5432, or send email to literacy@pbs.org.

GED Tests...

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By the mid-1970s, changes in secondary curricula and attitudes toward education among the general public necessitated a review of the GED test specifications. This review resulted in the development of the second generation of tests, introduced in 1978. The definition of the skills and the release of the tests were on the closing cusp of the industrial age. The changes shifted the emphasis from reading materials in science and social studies to a reading test and introduced the transition from "recall" or factual knowledge to concept items in these subjects. The items assumed that examinees had prior knowledge that they could apply—giving rise to the application and evaluation items on the GED Tests. The tests maintained the emphasis on demonstrating the designated high school outcomes, but introduced life-like contexts into many of the test items. They also introduced many reading materials likely to be encountered in an adult's daily life, such as schedules and newspaper articles.

As societal needs have continued to change, so have the GED Tests. With the release of John Naisbitt's *Megatrends* in 1982, there was a heightened awareness of the shift from an industrial to an information-based society. These trends included the move to the commonplace use of technology, to a global awareness, and to a participatory democracy. As these changes were affecting adults, the GED staff initiated a five-year review process, combining the efforts of people throughout the adult and secondary educational communities. While they affirmed that the academic content areas of GED Tests were appropriate, they recommended five changes. These

changes were incorporated in the current test series released in 1988 and included (a) a direct writing sample; (b) the increased emphasis on the critical thinking and problem-solving skills; (c) an increased reflection of the diversity of roles adults play in society; (d) a greater emphasis on understanding the sources of change in society; and (e) an increase in the contextual settings relevant to adults.

The Value of the Credential

Control Your Destiny or Someone Else Will, the story of how one man is remaking a Fortune 500 company to be the most competitive corporation in the world, was released in 1993. Although few of the more than 800,000 GED candidates who take tests each year probably read the book, they embody its spirit. More than 90% of them take the tests to gain the opportunity to further their educational or occupational goals. The remaining 10% take the exam for personal satisfaction.

The GED Testing Service (GEDTS) reported that in 1997 about 70% of the candidates took the tests to continue their education, almost double the 37% of the 1970s. Whether or not the candidates are aware of the research, they probably have an intuitive sense that economic success and higher levels of education are positively and strongly correlated. More than 90% of colleges and universities in the United States have policies to admit GED graduates. To examine the predictive validity of the GED diploma, several research studies have examined the success in college of GED graduates as compared with regular high school graduates. In 1993 Baldwin presented a synthesis of research findings comparing GED diploma and high school recipients on postsecondary educational outcomes. No significant differences were reported between

grade point averages or ratios of credit hours passed to credit hours attempted. Others have reported similar findings.

An additional 26% of the 1997 candidates indicated that they took the tests for employment reasons. This is a significant decline from the 40% of the 1970s, reflecting the changing nature of work in our information society. While the GED Tests were not specifically designed to measure workplace readiness, a study was conducted to compare these skills with those measured by the GED Tests. This comparison by Webb in 1991 showed that almost all of the basic skills that employers value—as documented by the SCANS report—are measured by the current GED Tests, except for the affective or functional skills (e.g., leadership, speaking, etc.), which are not easily testable on a large-scale, high stakes test. This study further demonstrates the overlap between workplace skills and GED Test content.

For the final 10% of examinees, the value of passing the test is a personal one. Well after founder and CEO Dave Thomas was a household name through his Wendy's commercials, he publicly acknowledged that he had recently passed the GED Tests. Some, such as Thomas, may be seeking an opportunity to go back to the place of unfinished business and finish it. Still others may take the test to promote the value of education to their children or grandchildren. Whatever the reason for taking the test, for more than 50 years, the GED has provided a meaningful credential for both the individual who is seeking a high school diploma and the institutions that require them.

Comparative Research

Organizations often conduct studies to calibrate their measures with external ones to enhance both validity and value. GEDTS participated in two such studies, both comparing the performance of GED graduates with high school graduates on external measures and leading to the revision of the passing score.

In 1992, the GEDTS partnered with the Educational Testing Service (ETS) in a comparison study designed to use an external measure—the National Adult Literacy Survey Scales (NALS)—to describe the English-language literacy skills of individuals who passed the GED Tests and those who did not. Implications from this study indicated that (a) passing the GED Tests signifies, on average, the attainment of at least a moderate (level 3) level of prose, document, and quantitative literacy; and (b)

NCAL Partnership to Bring Technology Training to Illinois

The National Center on Adult Literacy (NCAL), in partnership with the Central Illinois Adult Education Service Center (CIAESC) and the Lawrence Education Center, will provide technology training and planning initiatives for adult education instructors and administrators in Illinois beginning this fall. The project will involve the following:

- *Engaged Learning and Technology Applications in Adult Education*: workshops for instructors on the potential role of technology in creating suitable and engaging learning environments for adult learners.
- *Developing a Technology Plan to Meet Individual Program Needs*: workshops for administrators addressing a number of program-specific technology planning issues, including how to evaluate and implement technologies, and how to develop goals, budgets, evaluations, and timelines.

NCAL facilitators will conduct the workshops, customize materials for the participants, and establish online activities, communications resources, and support. For more information, contact CIAESC at 1-800-572-9033.

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higher scores on the GED correspond to higher scores on the NALS.

The 1994 National Education Goals Panel reported that “although adults who score below Level 3 in prose literacy do have some limited literacy skills, they are not likely to be able to perform the range of complex literacy tasks that the panel considers important for competing successfully in a global economy and exercising fully the rights and responsibilities of citizenship.” To assure both the individual candidate as well as the organization that rely on the credential as an indicator of the GED graduate’s performance level, the passing score was revised to strengthen the correlation with a level three literacy rating.

In 1993 Auchter and Skaggs conducted a second study which compared percentages of 1993 graduating seniors at specified letter-grade levels with those who achieved selected GED standard scores. The results of this study indicated that (a) GED scores correlate strongly and positively with high school grades; (b) significant percentages of graduating seniors with C or lower grades would not pass the GED test; and (c) more years of instruction and certain course taking patterns are associated with higher GED scores in the respective content area. This study substantiated the need for the GED Program to raise its minimum passing score to better discriminate among students with reported letter grades differing from A through F.

The results of these studies led to raising the standard for passing the GED Test battery, effective January 1997. This move was in concert with the secondary schools’ requirement to raise standards. Based on the 1996 norming study that evaluated the performance of a stratified random sample of graduating high school seniors, the new standard is one that only 66% of graduating high school seniors can meet. Previously, the minimum passing standard was one that 75% of graduating seniors met. Preliminary results from the first full year of implementation indicate a 12% drop in the overall number of GED candidates meeting the revised score requirement.

A number of studies conducted to determine the value of the GED credential compare GED graduates with traditional high school graduates and dropouts, in both educational and workplace settings. Although these comparative studies are critical in determining the GED’s value, they must be augmented by longitudinal studies in which the GED credential is assessed in terms of the candidates’ stated goals. Because candidates take the test for differ-

ent reasons, the value of the GED should also be assessed on an individual basis. Did the individual achieve the established goal? Is there an increase in value based on achieving that goal?

Future Value of the GED

Even though debates are raging about new educational standards and the value of the high school diploma as a valid indicator of performance in further education or the workplace, the high school diploma is still the bill of trade. Colleges and universities continue to admit students based on Carnegie Unit requirements, rank in class, and successful completion of a high school program of study. Many entry level jobs still rely on the high school diploma as a level of academic achievement. While the demand for the high school diploma remains, so does the value of the high school diploma as a means to access a higher goal. The GED Tests continue to assess the major and lasting academic outcomes in the core academic subjects that graduating high school seniors should know in the year 2000 and beyond.

However, academic subjects are intended to prepare students to enter both the workforce and college as knowledgeable and skilled participants. As noted earlier, it appears that the requirements of higher education and the workplace are coalescing in a way that reveals a false dichotomy: it is not an either/or situation, rather it’s one of both/and. GEDTS must integrate the spheres of school and work.

Content standards developed at both the national and state level are the basis for the proposed changes. As a first step, GED staff analyzed the various national educational initiatives, identifying their commonalities. Following the manner in which GED diplomas are awarded, the GED staff then analyzed and synthesized the major content standards reported among several states. Further, they compared those states that had adopted standards to identify the alignment with the national standards. As the state and national standards were largely in agreement, they served as a foundation for specifications for the GED 2000 test series.

A panel of 29 experts representing the four academic disciplines of English Language Arts, mathematics, science, and social studies presented recommendations to determine the structure of the GED 2000 series tests. In keeping with the focus on adults who use the credential as a passport to both the workplace and postsecondary education, the 2000 series incorporates the following changes:

- *The addition of a new dimension of skills that are required for various settings.* Just as the current tests assess critical thinking skills across the academic tests, the GED 2000 specifications will be expanded to include the skills of communication and information processing. These three dimensions—critical thinking, communication, and information processing—will be reported on the score report in addition to the content areas. Communication skills include knowing how to develop a message for a variety of audiences and purposes, thus going beyond the traditional boundaries of English Language Arts to incorporate such skills as translating tables of numbers into pictographs or barcharts which present the same information in a user friendly fashion. Information processing includes knowing how to determine what information is needed, how to conduct a search for that information, how to synthesize information from diverse materials and in different media, and how to organize and present that information.

Beyond the transferability of common skills to the workplace, academic content is also important to the workplace. For example, knowledge about scientific principles, civics, mathematics, problem solving, and human behavior are relevant to strong workplace habits. Further, the content tests will also include different emphases. For example, the English Language Arts Test will reflect the National Assessment of Educational Progress (NAEP) framework and will require an additional section on informational texts. The math test will involve increased emphasis on data analysis, statistics, and probability.

- *The addition of a cross-disciplinary test.* A separate test that applies to all disciplines will be included in the test battery. The stimulus in this test will not be modified to exclude all but one content area. Rather, this test will use authentic stimulus, which will allow examinees to apply information processing skills from a variety of academic disciplines to interpret the material.
- *The use of the calculator on the mathematics test.* Examinees will be allowed to use a calculator for approximately 80% of the test so that the stimulus material may include authentic charts and numbers, which may require lengthy calculations. The other 20% will exclude the use of the calculator so that estimation skills and number sense can be demonstrated.

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GED Tests...

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- *The inclusion of alternate formats.* The tests will include constructed response items that can be objectively scored. This format removes the multiple selections without adding the expense of trained raters and the additional time required to generate the scores. The constructed responses will be limited to those that can be gridded on a machine-scorable answer sheet. For example, a math item would require a candidate to graph a slope or bubble-in a numeric response.

Conclusion

Unlike traditional K-12 programs, which educate youth to take their place in society, the GED Tests certify that adults possess the major and lasting outcomes of a high school program of study. Unlike traditional K-12 programs, where the high school diploma signifies the successful completion of a particular course of study, the GED diploma validates the academic knowledge and skills required for admission to further education or employment opportunities. Unlike traditional K-12 programs, where content knowledge is the measure of success, the GED Tests' performance standard is the understanding and application of concepts. In short, the GED's success rests not on replicating the K-12 experience, but on recognizing the utility of the credential as a passport for the individual and the acceptance of the credential by both academic and corporate organizations.

The challenge for GEDTS is to continue to develop an assessment instrument that is valid and reliable for the intended purpose—the award of high school level diploma. The 2000 series test must first align with the national, jurisdictional, and state standards and performance initiatives to ensure that jurisdictions will continue to award a high school equivalency diploma based on passing the battery of tests. Further, this diploma must have value both for the individual as a validation of academic skills, as well as to convey the value of those skills to various organizations, from colleges to corporations and from trade schools to trade unions.

What if...? Looking at and Beyond the GED 2000

by John Sabatini, Senior Researcher, NCAL

There is much positive to be said of the GED Testing Service (GEDTS) and the American Council on Education (ACE)—from the rigor shown in developing the GED tests to the care taken in managing the social contract that GED certification promises. GED certification gives adults an alternative or second chance to pursue further education or to qualify for jobs and promotions. Although it is my assigned role to be critical of the GED test, my point of view is that of an interested admirer, not an ideological opponent.

In considering how the GED test might change in the future, my first observation is that, in many ways, the GED test is a victim of its own success. So many lives, institutions, and commercial enterprises depend on the stability of the development, review, and revision processes established by the ACE, that any radical or fundamental change in the GED tests could have as much potential for harm as good. The GED test must continue to change with the times, but it also must and should be derivative of a general high school educational program, which is the culmination of a 12-, not 4-year educational development program. Monitoring and interpreting changes in the national high school curriculum, especially in a time of vigorous local, state, and national reform movements in standards, learning theories, and assessment, while still accommodating the needs of multiple adult audiences including aging and non-native adults, is a daunting task and responsibility in itself.

For all of us who would like to see the GED tests be something else, it is important that we remind ourselves that the success of the GED system can be largely attributed to ACE's dogged adherence to achieving a limited set of purposes and goals. It has become a dictum of assessment to note that "an assessment that attempts to perform too many functions... will inevitably do none well" (Linn & Herman, 1997). As is true of most successful testing constructs and systems (e.g., SAT, GRE, CASAS, NALS), the tests serve the public best when they are used for the purposes they were designed.

Below are some of the more interesting

innovations and future possibilities of assessment. However, it may be best that these possibilities evolve and are implemented in alternative instruments other than the GED test, where the stakes are lower, so as to preserve the social utility and validity of the GED as an alternative high school equivalency certification. Having thus disclaimed my statements: what if we could start over, knowing what we know now about learning, knowledge, and assessment?

Trappings of standardized test settings and formats

The first attribute of the GED tests to abolish would be the trappings of a mid-20th century bureaucratic and behavioristic approach to testing. A seven and one half hour test, relying almost exclusively (except for the writing essay) on multiple-choice items marked with number two pencils, should be recognized for what it is—a compromise for the sake of efficiency and cost at the expense of what we want to measure—individuals' expertise in performance. The reference to the mid-century is intentional. Formalized testing in the early part of the century was closer in look and feel to the performance assessment measures now being experimented with across the country (Madaus & Kelleghan, 1992).

Knowledgeable experts in the academic or applied fields covered by the GED Tests do not learn knowledge and procedures, solve problems, or otherwise apply their expertise under conditions such as those that are used to ensure standardized administration. Do the test-taking and preparation skills required to withstand seven hours of multiple-choice items transfer as generalizable, domain-specific learning or study strategies? Most educators and learning theorists would argue not.

Space does not permit a full discussion of the scope of social, technological, psychometric, psychological, and epistemic considerations that would be necessary before the trappings of standardized tests as we know them could be abolished from educational testing in the United States, but there is academic and field-based efforts along all of these fronts. The creation and

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evaluation of portfolios, the use of performance rubrics by expert scorers, the simulation of performance contexts including computer simulations, are all becoming accouterments of a new testing paradigm. These measurement innovations must also be reliable and valid to be trustworthy, but it is worth noting that the conceptual and theoretical definitions of reliability and validity are themselves being elaborated and adapted in the context of these new assessment possibilities (e.g., Messick, 1989; Moss, 1991). To keep us grounded in the familiar, high school Advanced Placement (AP) exams and the GED writing essays are tried and true examples of assessment formats that require applied knowledge construction, not merely inferred cognitive problem solving based on recognition of a correct multiple-choice answer. As other assessment innovations are tested, perfected, and become institutionalized nationally in the graduation requirements of secondary schools, they will become necessary components of the GED test as well.

Measuring Expertise

Expert knowledge and problem solving in a discipline is qualitatively and quantitatively different from novice problem solving (Chi, 1989). At best what we seek in a well-rounded high school student is evidence of the potential to learn and apply knowledge and procedures across disciplines, evidenced by the ability to learn to learn in different domains. In perhaps one or two of these domains, the learner may pursue expert knowledge enroute to a future career, civic role, or other personal commitment to that field. Even in this case, one could argue that there are significantly more differences in the expert knowledge domains among a lab technician, registered nurse, or genetics counselor than there are similarities in their science background knowledge. Imagine also the differences in application of science knowledge for a criminologist, environmental law advocate, or science journalist.

How do we measure expertise? In an extensive review of methods for measuring expert cognitive skills, Royer, Cisero, and Carlo (1993) caution their readers that most of the assessment procedures they discuss apply to the development of expert proficiency in specific domains of activity, rather than “broad-based educational activities, where the goals are to acquire knowledge, general problem solving procedures, and general learning strategies that can be gen-

eralized to potentially large and unspecified domains of activity” (p. 204). This conclusion bodes ill for cognitive assessment of expertise in a test of General Educational Development (GED). At present, the best judges of expert performance in such domains are experts. Again, the writing essay is a current model of standardizing judgments about individualized, creative performances.

As an alternative, imagine a testing system in which each learner must demonstrate the potential to become an expert in a specific domain of his or her choice. Demonstrating such domain expertise would be qualitatively different than evidencing a broad-based ability to apply general learning or problem-solving skills. Most learners should and would choose an area that was of personal interest and in which they had some evidence of their own aptitude for expert learning. AP exams are a model for this approach, but drawn from a subject area focus. The model could be applied to interdisciplinary applications of knowledge (e.g., criminologist) and adult social roles, whether occupational, civic, or social (e.g., parenting, family management). New models for expert scoring would need to be developed to handle the reliability and validity issues that would arise, along with innovative uses of intelligent assessment and technological communications systems to distribute the task. However, the individual and social value of each learner demonstrating his or her ability to learn to learn would be high, making it worthwhile to consider the investment.

Conclusions: Back to reality?

The ideal assessment system would probably collect information from a learner over time using a variety of methods. The learner would demonstrate expertise by participating in authentic activities conducted in that knowledge domain. His or her performance would be evaluated by experts using common standards, judging not only for accuracy, but also creativity and the potential for future learning in the domain. We would also assess how well the individual worked in collaboration with others, and how well he or she could communicate and reflect on his or her knowledge. We would evaluate the products produced by an individual after engaging in extended projects as well. What I am describing is the ideal high school learning environment. Clearly, an accreditation such as the GED cannot be all this—it must make compromises for cost and efficiency. ACE and

GED are moving cautiously in this direction, for example, with the prospect of an interdisciplinary test. But over time, perhaps ACE and GEDTS will find ways to use a more varied mix of these alternative methods as valid indicators of an individual’s capabilities, without compromising the social utility of the service they already provide.

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Integrating Technology Into the ABE/GED Curriculum

by Noreen Lopez, Director, Literacy Link

A total of 723 downlink sites registered to participate in the LiteracyLink® April 23rd live satellite event on integrating technology into the ABE/GED curriculum. This was the second LitTeacher® satellite offering from LiteracyLink, which is a partnership of the Public Broadcasting Service, the National Center on Adult Literacy, KET/The Kentucky Network, and the Kentucky Department of Education. LiteracyLink's first live satellite event, "Planning and Funding Technology for Adult Literacy" was presented on June 5, 1997. It garnered the Annual TeleCon Award at the November 1997 USDLA conference for Best Distance Learning Program - Continuing Education.

Following a design similar to that of the award-winning event, "Integrating Technology into the ABE/GED Curriculum" offered video segments of actual classroom use of computers and the Internet, a panel discussion focusing on successes and challenges encountered by teachers who have integrated technology into their adult literacy instruction, and questions to the panelists from viewers via phone and fax.

The audio portion of the videoconference was also offered over the Internet with supporting visuals through PlaceWare's virtual auditorium. This highly interactive technology offered an alternative means of participation for those who did not have access to a satellite. Online participants were able to share their thoughts and experiences with each other via the auditorium software's chat function—an added bonus!

Some of the topics addressed by the panelists included:

- how they as teachers started learning about and using technology
- successful approaches for using computer technology to support learning
- instructional strategies for classes with limited technology
- methods for helping learners develop technology skills while they work on their ABE/GED skills
- students empowered by using technology to become active learners
- barriers encountered in the technology integration process and whether or not they were overcome

Viewers from the downlink sites generally rated the broadcast very favorably. In their written evaluations, they gave top marks for up-to-date information, excellent print materials, current hot topics, and knowledgeable panelists. To quote one respondent: "Our instructors found the seminar to be very informative. As an adult educator, I was very impressed with the knowledge and communication skills of the presenters. I have used several PBS seminars and this by far was the best yet!"

As a followup event, visitors to LiteracyLink's web site were invited to submit questions that were answered by the panelists in an online Forum. To view the Forum, go to www.pbs.org/literacy and click on "LitLinker Forum" in the menu. Then scroll down to the heading "Previous Forums" and click on the hyperlinked text "Integrating Technology into the ABE/GED Curriculum." Videotapes of the live satellite event and print packets are now available. For ordering information, click on the hyperlink "Order" in the "What's New" area of the LiteracyLink homepage or call PBS toll-free at 1-800-257-2578.

Software for Adult Education—How to Find the Right Package for Your Learning Context

by Jennifer Elmore,
Project Specialist, NCAL

Selecting appropriate educational software from the wide variety of applications currently available is a time-consuming and potentially challenging endeavor. When setting out to locate software that will meet the needs of your organization, adopt a "layered approach"—that is, try to use multiple assessment measures and several evaluators. You must be able to clearly define your organization's educational/administrative objectives if you hope to design meaningful software evaluation tools; ideally, software packages should both reflect and extend their intended context. It is equally important to involve as many stakeholders as possible in the evaluation process. Future users (instructors, administrators, and learners)

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LINCS... a national information retrieval and communication system for literacy

LINCS is a cooperative electronic network of the National Institute For Literacy, four Regional Partners, and major national organizations such as the National Center on Adult Literacy. LINCS' home pages and communication sites at every level—national, regional, and in 52 states and territories—bring adult literacy-related resources, expertise, and knowledge to a single focal point. Explore the four LINCS home pages listed below.

Eastern LINCS: A collaboration between the New England Literacy Resource Center/World Education and the National Center on Adult Literacy. (<http://easternlincs.worlded.org/>)

Southern LINCS: Located at the Center for Literacy Studies at the University of Tennessee, in collaboration with the National Center for Family Literacy in Kentucky, Georgia Institute of Technology, Lifelong Learning Network and Florida State University, Educational Services Program. (<http://hub2.coe.utk.edu/>)

Midwest LINCS: Located at and coordinated by the Ohio Literacy Resource Center at Kent State University. (<http://archon.educ.kent.edu/Midwest/>)

Western/Pacific LINCS: Located at the State Literacy Resource Center of California, Western LINCS, in collaboration with the Outreach Technical Assistance Network (OTAN). (<http://www.literacynet.org/>)

New Releases

NCAL and the International Literacy Institute (ILI) engage in research projects that focus on a range of issues in the field of adult literacy. The following are recent publications concerning some of those issues. These reports and numerous others from our Centers are available to download free-of-charge from the Literacy Online website (www.literacyonline.org). Paper copies may be purchased at cost from the Centers and these prices can be found at the website or by calling or faxing NCAL.

Adult Literacy, Technology, and Public Policy: An Analysis of the Southeastern United States Region, Jennifer Elmore (PB98-01, 8 pages; published in conjunction with SEIR*TEC)

Assessing Lifelong Learning Technology (ALL-Tech): A Guide for Choosing and Using Technology for Adult Learning, Regie Stites (PG98-01, 21 pages; published in conjunction with NCRTEC)

Indigenous Education and Literacy Learning, Daniel A. Wagner (TR98-01, 6 pages)

Adult Literacy in Developing Countries: A Contemporary Annotated Bibliography, Laurel D. Puchner (TR98-02, 11 pages)

Investing in Adult Literacy: Lessons and Implications, Thomas Owen Eisemon, Kari Marble, & Michael Crawford (TR98-03, 7 pages)

Technology in the Workplace: Issues of Workers' Skills, Lynda Ginsburg & Jennifer Elmore (TR98-04, 15 pages; published in conjunction with the CADETT project)

Assessing Mathematical Knowledge of Adult Learners: Are We Looking at What Counts? Joy Cumming, Iddo Gal, & Lynda Ginsburg (TR98-05, 30 pages)

Learning to Earn: Direct Incentives for Work-Based Literacy Learning, Stephen Reder (TR98-06, 35 pages)

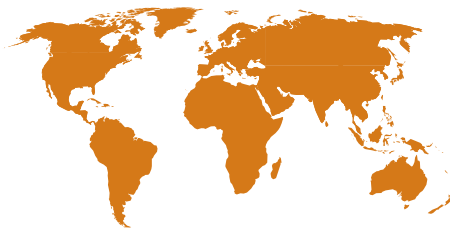
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Regional Literacy Forums

by Daniel A. Wagner, Director, ILI & NCAL

INTERNATIONAL

Notes

In February and March 1998, the International Literacy Institute (ILI) and UNESCO organized two major regional forums on literacy, in Asia and in Africa. The meetings brought together the most informed and involved specialists (from field specialists and academic researchers to senior policymakers and representatives from donor agencies) to focus on how to reinvigorate literacy work in these regions, which have the world's lowest rates of literacy. Papers from each of the forums may be located and accessed at ILI's website, Literacy Online (www.literacyonline.org), or through UNESCO's education website (www.education.unesco.org).

The Second Asia Regional Literacy Forum (the first was held in Manila in 1997) was held in New Delhi, India, February 9-13, 1998, and was co-organized by the ILI, the National Literacy Mission of India, and UNESCO-PROAP, with co-sponsorship from Unicef, World Bank, DFID, SEAMEO-INNOTECH, and Norway. More than 240 specialists from 22 Asian nations participated.

The Forum was organized under the theme "Innovation and Professionalization in Adult Literacy: A Focus on Diversity," and panel discussions and presentations focused on the need for:

- tailoring quality nonformal education programs that recognize ethnic linguistic diversity;
- taking advantage of the cost-effectiveness of new technologies;
- increasing communication between governments and NGOs active in literacy and basic education; and
- recognizing nonformal education as a crucial route to reach out-of-school youth and young adults.

In Dakar, Senegal, more than 190 participants representing 34 African countries attended the Africa Regional Literacy Forum—the first all-Africa meeting on literacy and NFE in decades—which was held on March 16-20, on the theme of "Innovation and Professionalization in Literacy and NFE: New Directions for the Year 2000." The forum was designed to address literacy issues with particular resonance in many African countries, such as literacy in crisis situations, literacy for the handicapped and disabled, and the education and status of women. The Dakar Forum was co-organized by ILI, UNESCO-BREDA, and the Ministry of Basic Education and National Languages of Senegal, with co-sponsorship from Unicef, World Bank, ADEA, DSE, USAID, Cooperation Francaise, and Norway.

Important issues discussed at the Forum that require urgent attention in the Africa region are:

- the improvement of quality control in literacy programs;
- the need for clear and explicit language policies;
- the increased support of gender-sensitive education programs; and
- the need to create more effective inter-sectoral linkages.

For more information, please see the Literacy Online "Forum Updates" page (<http://www.literacyonline.org/ili/forumupdates.html>) or call the ILI at 1-215-898-9979.

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PENN
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Software for Adult Education...

(continued from page 6)

should be invited to try out candidate software, share their opinions, and offer purchasing recommendations.

Although you may be able to easily articulate your organization's educational and administrative goals, you may not know how to translate these goals into the selection of appropriate software titles. The following descriptions and questions in three categories (content, instruction, operation/design) may help you and your colleagues customize software evaluations that will support the acquisition of valuable software packages for your context.

The content category refers to the quality and relevance of topics covered within the software program. Content includes the following:

- *Instructional objectives:* Are its educational purposes clearly defined?
- *Sequencing of instructional events:* Does instruction proceed logically?

- *Appropriateness for various learning populations:* Does it truly appeal to the student group it identifies?
- *Accuracy of materials:* Does it contain incomplete or inaccurate information?
- *Value of its exercises:* Does it offer a variety of exercises that develop pertinent skills?
- *Effectiveness of its graphical interface:* Do graphics enhance and/or clarify the text?
- *Relevance of presented scenarios:* Do user populations relate to the given examples or situations?

The instruction category refers to the degree to which the software supports educational objectives, techniques and assessment strategies. Instruction includes the following:

- *Software's relationship to an established curriculum:* Does it complement or support classroom goals and activities?
- *Nature of student performance assessment:* What sort of evaluative method(s) does it support?

- *Adherence to "sound" educational techniques and theories:* Does it rely on particular educational research and practice to inform its design?

The operation/design category refers to the software's technical and graphical sophistication. Operation/design includes the following:

- *Software's operational simplicity:* How easily can users navigate through it, and how much previous experience does a user need to operate it?
- *Program support:* Does it come with a good training package/user's manual, and does it provide support services?
- *Level of user control:* Does it afford users many or few options?
- *Effective use of multimedia:* Does it include a combination of sound, graphics, and video and do they complement the rest of the program?
- *Screen:* Is the layout pleasing and easy to interpret?



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