EVIDENCE-BASED ADULT EDUCATION
A Perspective from the United States

John Comings, Director
National Center for the Study of Adult Learning and Literacy
Harvard Graduate School of Education
Cambridge, Massachusetts

Introduction

The U.S. Department of Education’s strategic plan calls for all education to become evidence-based. The Department’s Institute of Education Sciences describes evidence-based education as “the integration of professional wisdom with the best available empirical evidence in making decisions about how to deliver instruction.” The strategic plan points to medicine as a model for how to employ scientifically based research to make decisions about specific practices. Medical research uses random assignment experiments as a tool to decide which clinical practice is most effective, and the Department of Education believes that this approach will lead to the same dramatic improvements in education that have been achieved in medicine.

In Pasteur’s Quadrant, Donald Stokes (1997) documents the huge impact of the reciprocal influences between basic science and the field of medical practice. Experiments identified bacteria as the cause of infection and disease, and then practitioners in hospitals (and later food handling and agriculture) developed ways to put that knowledge into practice. These practices were then refined through additional experiments. Once both scientists and practitioners accepted the germ theory, they were able to work together to dramatically lower disease and infection rates. A reciprocal relationship between researchers and practitioners in adult education could lead to more effective and useful services, if policy makers are willing to structure funding and administrative procedures in ways that support this effort.

1 In this paper, the term Adult Education refers to adult literacy and numeracy, adult English for speakers of other languages, and adult secondary education.
2 This paper draws from a draft by John Comings, Hal Beder, Beth Bingman, Steve Reder and Cristine Smith that will be published later in 2003.
4 This quote can be viewed at http://www.ed.gov/offices/IES/speeches/evidencebase.html.
Evidence-based Education

Educational decisions are sometimes made based on theories of how people learn, most educational theories have not been rigorously tested. Decision are often made based on tradition, opinion, or trial and error experience. In evidence-based education, decisions are made based on empirical evidence. Empirical evidence comes from two processes:

- **Research** produces knowledge that can be used to design models for instruction and support services. An example of research is a study by Strucker and Davidson (2003) that identified ten groups of adult literacy learners based on their component reading skills. This information can be used, along with findings from other research, to design instructional models for each group.

- **Evaluation** tests models to see if they work or to see which model works best. An example of evaluation would be a test of models of reading instruction based on the Strucker and Davidson’s research along with other research as well.

Research studies an aspect of education, while evaluation tests a model of instruction and support services derived from a large number of research studies. Research and evaluation have two phases: exploratory and confirmatory.

The exploratory phase employs a wide range of research methods, both qualitative and quantitative, to explore instruction and support services and develop hypotheses about which approaches might work best. The exploratory phase identifies the hypotheses that look most promising, excludes ineffective approaches, and suggests the approaches that should be evaluated.

In the confirmatory phase, research and evaluation employ a narrower range of research methods to test hypotheses developed through exploration. A hypothesis is tested with two groups of students: the treatment group receives an intervention (an activity consistent with the hypothesis) and the control or comparison group does not. Sometimes more than one treatment is tested at the same time. In this phase, some research methods provide more reliable evidence than others. The hierarchy of methods for the confirmatory phase is:

- **Experimental** employs two identical groups of participants that are randomly assigned to treatment and control groups.

- **Quasi-experimental** employs treatment and comparison groups that are not randomly assigned but appear identical, though they may have unseen differences.

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5 This paper assumes that adults need both instruction and support services to be successful in learning.
• **Correlational with statistical controls** employs treatment and comparison groups that are not identical, but researchers use statistics to control for differences that may be important.

• **Correlational without statistical controls** employs treatment and comparison groups that are different, but researchers assume that the differences may not be important, since the sample (the students in the study) is usually large.

• **Case studies** may employ only a treatment group and assume that differences among participants are not important or are obvious, since the sample is usually small.

The hierarchy defines levels of reliability. That is, a study that employs a method that is higher on the hierarchy provides stronger evidence than one lower down. In addition, each research method has rules as to how data should be collected and analyzed, and only evidence from studies that conform to those rules is considered useful to decision making. The level of adherence to the rules is judged by peer review, an evaluation by qualified researchers who were not involved in the study.

The confirmation phase works best when the outcomes of education are clearly defined. Traditional adult education outcomes, such as reading comprehension or oral vocabulary, are easily measured by a test. Behavioral outcomes, such as changes in reading at home or the use of English at work, are difficult but can be measured by observations and interviews. Difficult to assess outcomes, such as increased critical thinking ability or stronger self-efficacy, may be assessed with complicated measurement tools. Some outcomes, such as enhancement of democracy, may be impossible to measure, but these outcomes can sometimes be broken down into parts that can be measured. For example, tools to measure enhancement of democracy might assess changes in voting behavior, participation in advocacy efforts, or knowledge about political issues.

**Weaknesses and Limitations of Research and Evaluation**

Research and evaluation have weaknesses. Research can provide evidence that is of limited use. For example, Slavin (2002) explains that research supports the use of mnemonic devices such as, “When two vowels go walking, the first one does the talking,” to teach a spelling rule. However, he points out that no one would suggest a course of study that only employed mnemonic devices. In addition, evaluation may provide evidence that a model works, but the model may be difficult to implement. For example, Folger and Breda (1989) found that students performed better in smaller classes. However, this advice is only useful to schools that have the resources to hire many new teachers who are as well trained and experienced as their present teachers.
Research and evaluation rarely identifies a model that works for everyone. For example, instructional model "A" may work well with 40 percent of students and model "B" with 60 percent of students. Though this suggests that model B should be adopted, additional research must explore why it worked with some students and not others. This second exploratory stage might lead to design of a new model that works well with a larger proportion of students or to the addition of another model, “C”, for the 40 percent not served well by model "B." Then, another confirmatory stage takes place to test the new model. This process continues exploring and confirming until almost all students are served well, not with a single model but with a range of models that have been proven effective.

As this process continues, research may find that there is a limit to a particular line of enquiry. Models A, B, and C, etc. in the present example, might never be successful with more than 75 percent of students. When this happens, research may need a new paradigm that identifies barriers to success with the existing instructional models. The barriers to success may be the effect of poverty, the need for incentives and support services, or untrained teachers who are implementing the approach incorrectly. Research investigates these barriers and proposes another model that must then be evaluated.

The confirmatory phase can lead to advice that works in the research or evaluation context but doesn't work in most programs. Once a model is shown to work in a small, controlled experiment, it must be tested in a large number of programs that include many different learning contexts. Large-scale evaluations are difficult and expensive, and so they must be carefully planned. Given their difficulty and expense, large-scale evaluations will always be rare, and so they should be undertaken only after evaluation on a small scale has been completed.

Professional Wisdom

The development of professional wisdom is part of evidence-based education. After research suggests what should be done, practitioners develop approaches to using this advice in ways that work best for their particular students. For example, Purcell-Gates (2002) found that positive changes in reading habits resulted when teachers focused instruction on texts that were related to the real and immediate needs of adult students. Teachers might find it impossible to abandon commercial materials and build unique curriculum around the interests of each individual student. However, teachers might find many ways to link the commercial curriculum with materials each student brings from their home. As teachers struggle with how to make their instruction more open to authentic materials, they develop professional knowledge that should be shared in their program and with other programs.

The role of professional wisdom is not limited to the field of education. In an editorial in the *Journal of the American Medical Association*, Donald Berwick (1996) makes the case that professional wisdom is important to making the findings from research work better in the field of heart surgery. He cites an example of a group of
surgeons in Massachusetts who came together to learn why some of them had lower mortality rates during surgery than others, even though they were all following the same evidence-based practices. They observed each other’s work, talked, debated, and learned from each other, and they lowered mortality rates among their patients by 24 percent. Their closeness to the processes of surgery allowed them to reflect on the possible causes and effects that a more distant investigator could only have discovered more slowly.

Though this practitioner research lacked accepted controls and statistical analysis, Burwick argues that its findings should be accepted for publication in medical journals. Berwick likens this study to the action and reflection that takes place in quality circles in private enterprise and to John Dewey’s general model of learning, which was to take action, guided by theory, and then to reflect on that action. As with quality improvement in a factory or learning in a class, the process of group inquiry can produce powerful positive changes. The development of professional wisdom should be supported as part of evidence-based education, and it should be systematically recorded and shared. Professional wisdom is also a rich source for hypotheses about how to improve the model.

Building an Evidence-based Education System

Adult education programs employ a wide range of practices. For example, instruction is delivered by full-time teachers, part-time teachers, unpaid volunteers, and computers, and some teachers are trained extensively and some are not. Some programs rely on one-to-one tutoring while others have classes. Classes can be as small as a few students or as large as 50. Some of these differences may not matter. For example a part-time teacher might provide instruction that is identical to a full-time teacher. Other differences are important. A trained teacher should provide better instruction than one who is not trained. Some differences may work for one group of students but not for another. For example, large classes may not work for ESOL students but might be effective for those studying to pass the GED.

Research and evaluation should take place within programs that meet some basic criteria for good design. This paper refers to these programs as baseline models. An evidence-based adult education system should start with a baseline model evaluation, one that measures the effectiveness and impact of participation in a model of instruction and support services that conforms to the existing empirical evidence, professional wisdom, and expert opinion. This model would establish a place from which to begin improvement. This baseline model evaluation would not employ an experimental design but would measure the persistence rate and achievement of its students and the impact of participation. After this baseline model has been established, alternative models could be tested with experiments or other methods of confirmation.

Medical research has a baseline model. For example, two approaches to a surgical procedure are always tested in an operating room that meets specific accepted criteria. No medical researcher would test an approach to surgery in a basement or in an operating
room that had no nurses to aid the surgeon. Surgeons in these experiments have all been trained in science, medicine, and surgery and always obey strict rules that protect patients from infection. Research and evaluation, for example, should take place in adult education programs that have trained teachers and classes that are small enough for effective instruction.

A Baseline Model for Adult Education

Agreement on the baseline model is essential to success of an evidence-based education system for adult education. A baseline model for adult education would have five elements:

1. **Recruitment** is the way in which programs describe and publicize their services to attract students who are making an informed choice to begin a course of study.

2. **Intake and Orientation** is the way in which programs assess the instructional needs and goals of students that inform both the student and teacher.

3. **Instruction** is the way in which programs serve the educational needs of students and help them reach their goals. Instruction has two parts: a part that is common to all students and a part that is common to a group of students who share the same goals and needs.

4. **Accountability** is the way in which programs measure the quality of their services, the achievement of their students, and the impact of participation in their services to both report to their funding sources and improve their performance.

5. **Reengagement** is the way in which programs help students reengage in learning after they have dropped out or to engage in postsecondary education or training after completion of program services.

A baseline model would include principles for each of the five elements. A principle describes a guiding assumption about how best to organize instruction and support services. These principles would be derived from empirical evidence and professional wisdom that has been interpreted by experts.

These principles should be defined through a process that balances the advice from evidence with the constraints inherent in the field of adult education. One constraint that must be defined is the unit cost (cost per student per year). This unit cost should be set high enough to support the five elements of a program but within a limit that government agencies and other funding sources are willing to support. Other constraints may include the need for multi-level classes and program services that are convenient for workers who have full-time jobs.
Depending on the evidence available, a principle might be general or precise. An example of a principle could be two aspects of reading instruction: 1. the skills that are taught and 2. the materials used for reading practice. For skills, a general principle might state that instruction should be built on an assessment of the reading skills of the student. The principle could be more precise and state that instruction should be based on an assessment of the student’s component reading skills rather than on the results of a comprehension test. A more precise principle might identify profiles of students based on the component tests and suggest specific teaching and learning strategies. For materials, a general principle might state that materials for reading practice should focus on adult themes. A more precise principle might state that the materials should relate to the specific interests and goals of the students. To be more precise, the principle could suggest specific approaches to identifying student interests and goals and linking them to materials. Even when the principle is very precise, teachers and programs would have wide latitude on how they meet the demands of that principle.

**Defining, Testing, and Using the Baseline Models**

The principles for each element of the baseline model are not identified in this paper. These principles should come out of a comprehensive process of enquiry and debate. The model that emerges will look like existing good programs, but it may have principles that have not been widely implemented. A baseline model should draw from existing program experience and research that suggests new directions for practice.

Once the model is defined, it should be tested in several research sites. Each site would be a partnership between a research team and an established adult education program. All of these research sites would test the baseline model, and after the test they would continue to support that model. Each site could then undertake research that would test specific hypotheses about how to improve an element of the model or evaluate a completely different model. Once an improvement is established at one site, it could be tested in all of the others.

The baseline model could also serve as a framework for an accreditation system (Comings and Stein, 1991) for accountability purposes. Accreditation is the accountability system used in postsecondary education. Once the principles for the baseline model have been established, funding agencies could ask programs to demonstrate that their services conform to these principles. If a program did not meet the principles set out in the model, it could be helped to do so. The test of the baseline model would also provide a standard for persistence, achievement, and impact. If a program conforms to the model but its students have persistence, achievement and impact rates that are significantly under the standard, the program should be helped to identify why and how to improve.

**Establishing an Evidence Based Adult Education System**
Establishing an evidence-based adult education system should be a process that follows a set of recurring steps. Those steps are:

- A review of existing research and professional wisdom informs the design of a baseline model for instruction and support services that conforms to the best available evidence.

- That baseline model is evaluated to establish its outcomes and impact.

- Practitioners would use the results of this evaluation to make decisions about their practice.

- Practitioners would share their experience of putting the model into practice.

- Researchers would study the implementation of the model and pursue additional exploratory research.

- A new or revised model would be proposed and compared to the existing model in a random assignment evaluation. This evaluation would usually focus on a single element of the model but might occasionally test a completely different model.

- The results of this evaluation would establish a new model (or confirm the existing model) and practitioners would use the results to make decisions about their practice.

This process would continue until additional improvements no longer occurred.

This system follows what Khun (1969) calls normal science. In normal science, research accepts a common theory and develops it through increments of improvement. In an evidence-based adult education system, practitioners would all be working under the same theory of how to provide instruction and support services. They could, therefore, easily share insights into how to make that theory work in practice. Professional development would be more productive because teachers would be working in programs that supported the new techniques they learn. Researchers could more easily communicate their findings because practitioners would understand the theory behind the research. Khun points out that a weakness of normal science can cause researchers to avoid exploration of new theories, and so an evidence-based adult education system must provide support to research that explores alternative models.

The National Center for the Study of Adult Learning and Literacy (NCSALL) is conducting research meant to support the design of a baseline model for adult education. The next section of this paper describes NCSALL findings that inform that inform model development.
Emerging Model from NCSALL Research

The body of research on adult education is small compared to that on K–12 schooling. Adult educators, therefore, look to K–12 research for guidance on decisions about both the process and content of instruction. This guidance is more useful if it is tempered by an understanding of the fundamental differences between adult education and the system of child schooling. NCSALL’s research has identified four essential differences between adult education and the child schooling system that are important to consider when applying K–12 research findings to adults. Those differences are Persistence, Content, Student Profiles, and Participation.

Persistence

Adults choose to participate in educational programs, whereas children participate because of legal mandates and strong social and cultural forces that identify schooling as the proper work of childhood. Adults must make an active decision to participate in each class session and often must overcome significant barriers to attend classes. Improving persistence rates is critical for any effort to increase program impact.

Teachers in adult education programs hope their students will persist in learning until they reach their educational goals. However, the National Evaluation of Adult Education Programs (NEAEP) found that although 44 percent of participants left their programs satisfied, only 5 percent left having achieved their goals (Young, Fleischman, Fitzgerald, & Morgan, 1994).

Several studies have identified approximately 100 hours of instruction as the minimum adults need to achieve an increase of one grade-level equivalent on a standardized test of reading comprehension (Sticht, 1982; Dakenwald 1986; Perin & Greenberg, 1993). Comings, Sum, & Uvin (2001) and found that after 150 hours of instruction, the probability of making a one grade level or greater increase was 75 percent. Yet the average adult student spends fewer than 70 hours in a program in a 12-month period (U.S. Department of Education, 2002), which is less than one tenth of the time that a K–12 student spends in school during a year. These figures do not include adults who drop out before they complete 12 hours of instruction, which would lower the average significantly.

Young, et al. (1994) found that most adults are leaving programs before completing the 100 hours needed to make measurable progress and that students are reporting that they have not achieved their goals. Although some adults who enter an adult education program may have specific goals that require only a few hours of instruction, most adult students have instructional needs that require a long-term effort. Program participation of even 150 hours, therefore, is probably inadequate for most adult students to reach their learning goals.

Adults must be helped to persist in their studies for more hours in a year and to continue to be engaged for several years. Adult education programs should focus part of their resources on helping students persist longer in their learning. This will only happen
if the policies governing funding support the kinds of activities that lead to greater persistence. NCSALL’s Adult Student Persistence Study (Comings et al., 1999) summarized previous reviews of research on persistence, interviewed and followed participants in adult education programs, and reviewed program practice in support of persistence. This study identified four supports to persistence that serve the purpose of compulsory attendance in K–12 schooling.

Managing positive or negative forces that help or hinder persistence in programs. The research team employed sociologist Kurt Lewin’s (1999) force-field analysis theory, which places an individual in a field of positive, supporting forces and negative, inhibiting forces. Understanding the forces, identifying the strongest, and deciding which are most amenable to manipulation provide an indication of how to help someone move in a desired direction -- in this case, to reach an educational goal.

Adult education programs should help students develop an understanding of the negative and positive forces that affect their persistence. Building on that understanding, each student can make plans to manage these forces so that persistence is more likely. Adult students should first identify all the forces acting on them. They should then decide which of these forces are strong enough to significantly affect their persistence. Finally, each student should determine which positive forces can be strengthened and which negative forces can be weakened.

Building self-efficacy around learning. Although the term “self-confidence” is more common in adult education literature, it is a general term that describes a global feeling of being able to accomplish most tasks. Self-efficacy focuses on a specific task and describes the feeling of being able to accomplish that task -- in this case, successful learning in adult education programs. The Adult Student Persistence Study drew from the theory of social scientist Albert Bandura (1986), which can act as a powerful framework within which programs can help students learn that they can succeed in an adult education program. In particular, adult education programs should provide the following kinds of experiences to help participants build self-efficacy:

1. **Mastery experiences** allow an adult to be successful in learning and to have evidence of that success. Instruction should not be designed to produce only easy and constant success, however. Adults also need experience in overcoming failure and eventually achieving success through a sustained effort, and instruction should help them develop this insight. Instruction should provide opportunities for success early in program participation to give students the opportunity to experience success, but teachers should also help students deal with and learn from failure.

2. **Vicarious experiences** are provided by social models. Adult learners should be exposed to adults who are like themselves and have succeeded in an adult education program. Through both the knowledge they share directly and the indirect teaching of their behavior, these role models help adult students acquire the skills needed to manage the many demands of learning. Programs should involve successful current
3. **Social persuasion** reinforces self-efficacy through support from teachers, staff, counselors, fellow students, family, and friends. Adult students -- especially those who need to overcome negative experiences with learning during K–12 schooling -- need verbal assurances. Adult education practitioners should assure students that they can be successful and encourage students’ family members and friends to provide positive reinforcement as well. Teachers should develop a culture of support among their students.

4. **Opportunities to address physiological and emotional states** help students cope with the tension, stress, and other negative emotions that can both result from and lead to poor self-efficacy. Adult education programs should help their adult students perceive and interpret their emotional states in ways that do not affect their self-efficacy. Adult education practitioners can use life histories and dialogue journals to help students identify the physical and emotional issues that can affect their learning. Simply acknowledging that these feelings can affect learning can help diminish their negative effects on students.

**Establishing clear student goals.** Goal-setting begins even before an adult enters a program. A potential student experiences an event that causes him or her to begin thinking about entering an adult education program. These events provide potential adult students with goals they hope to accomplish by entering a program.

Program staff must help potential adult students define their goals and understand the many instructional objectives to accomplish in route to achieving these goals. Teachers should include a discussion of goals not just at the beginning of instruction but periodically because goals may change. When possible, teachers should use student goals as the context for instruction and for assessment of progress.

**Progressing toward student goals.** As goals are important supports to persistence, adult students must make progress toward their goals. Program services, therefore, must be of sufficient quality that students make progress. Programs should be funded in a way that allows them to meet standards for high-quality service and have assessment procedures that allow students to measure their progress. Most programs measure student progress as part of the accountability system imposed by their funding agency, but helping students measure their own progress may require tools and methods inappropriate for accountability systems, which rely on standardized tests that are easy to use and produce quantitative results. Students and teachers need tools that measure small changes and provide information that can help improve practice. Portfolio and authentic assessment approaches might be more useful in helping students measure progress, but their use requires more professional development for teachers.
Academic learning occupies only a small part of most adults’ lives and is usually a temporary activity. Unlike children, adults organize their lives around work, family, and community. When the content of instruction focuses on using basic skills to perform tasks or discuss issues related to these life roles, it is authentic rather than academic content. Authentic content in adult education programs provides the motivation to learn and the opportunity to practice skills that the transition from one grade to another provides in K–12 schooling.

NCSALL’s Literacy Practices of Adult Learners Study (Purcell-Gates, Degener, Jacobson, & Soler, 2001) considered whether authentic content in adult literacy programs had an impact on learning. The study examined how adults in literacy programs use literacy skills in their everyday lives and the type of instruction that best increased the degree of everyday literacy activity. More specifically, this study focused on whether the degree of authenticity of the texts and activities employed in the classroom positively changes literacy practices outside the program. Students learning to read with materials relevant to their lives and focused on their current interests expanded their amount of reading and the types of materials they read outside class. This remained true after controlling for the other factors that also showed independent significant effects on literacy practice change.

Adult education theory supports this finding. Most of this theory builds on the work of Malcolm Knowles, who proposed five assumptions about adult learners (Merriam & Caffarella, 1999, p. 272):

- As adults mature, their self-concept moves from a dependent personality toward a self-directed human being.

- Adults accumulate a growing reservoir of experience, which is a rich resource for learning.

- The readiness of adults to learn is closely related to the developmental tasks of their social roles.

- There is a change in time perspective as adults mature -- from future application of knowledge to immediacy of application; therefore, adults are more problem-centered than subject-centered in learning.

- Adults are motivated to learn by internal rather than external factors.

These theoretical assumptions argue for authentic curriculum content.

Focusing adult education programs on authentic content that is interesting and important to adult students can support their motivation and achievement, particularly related to improvement in reading skills. Instruction focused on content that interests adult students will build skills they can apply to tasks in their roles as parents, workers,
and citizens. Therefore, the needs and interests of program participants should dictate the content of instruction.

Improving the reading of parents enhances the impact of adult education programs on the children of participants in family literacy programs. As a report of the National Research Council, Preventing Reading Difficulties in Young Children (Snow, Burns, & Griffin, 1998) noted, success in learning to read in school is related to the preparation and support parents provide before children enter school and while students are in the first three grades.

**Student Profiles**

Adults who have the same achievement score on a standardized test might have very different skills, knowledge, and abilities, whereas most children in the same grade and with the same test score have similar skills, knowledge, and abilities. Identifying student profiles in adult education programs produces the instructional groups that K–12 schools constitute on the basis of age and test scores.

Adults come to adult education programs with a set of skills, knowledge, and abilities developed over their lifetime. When two adults with the same background and similar scores on a standardized test enter a class, one may benefit from a particular teacher’s approach to instruction, and the other may not. This performance difference sometimes can be attributed to differences in their profile of skills, knowledge, and abilities. If teachers are not aware of these student profiles, they may provide instruction effective for some but not for others.

Most programs assess reading ability with a reading comprehension test, but this test does little to inform a teacher or student about the best content or process of learning. Comprehension is only one of several reading component skills, which also include print skills (phonics, which is the ability to pronounce the sounds that correspond to written letters and syllables, and decoding, which is the ability to read words), oral vocabulary, background knowledge, and fluency (the speed and accuracy of reading).

NCSALL’s Adult Reading Components Study (Strucker & Davidson, 2002) administered a series of reading component tests to 600 ABE and 400 ESOL students, and these test scores were used to make up their individual reading profiles. Overall, the data indicated that most of the native English speakers had scores that would place them in special education if they were children. In fact, many of these adults had been in special education or received other forms of extra help when they were in school. The ESOL students who spoke Spanish were also tested in their native language, and 95 percent had adequate print skills in Spanish.

Placing the ABE and ESOL individual profiles in a database and using cluster analysis (a procedure that forms groups of students with similar profiles in reading strengths and weaknesses), the researchers identified 10 clusters:
1. Strong GED students who have strong skills in all reading components. These grade equivalent (GE) 11–12 students can usually pass the GED after a few months of test preparation in writing and math.

2. Strong pre-GED students with needs in vocabulary and background knowledge. These GE 8–10 students can get through the GED tests with their present skills but should be encouraged to spend time to improve vocabulary and background knowledge if they plan to go on to postsecondary education.

3. Pre-GED students who have needs in vocabulary, background knowledge, and print skills. For this GE 8–10 group, concerns regarding vocabulary and background knowledge are similar to those about the previous cluster. In addition, their weak decoding skills and slow reading rate may make finishing the GED tests within the time limit difficult. They need help to increase their reading rate.

4. Intermediate students with adequate print skills but very weak meaning skills. These GE 6 students need instruction focused on vocabulary, background knowledge, and comprehension strategies.

5. Intermediate students with adequate print skills but very weak meaning skills. These GE 6–7 students need instruction to improve their print skills and increase their reading rate; like the previous group, they also need to improve their vocabulary and background knowledge.

6. Low intermediate students with GE 4–5 profiles in all components. These students need instruction in both print and meaning skills, but they do not show signs of severe decoding or reading rate problems.

7. Low intermediate students with severe decoding and reading rate needs. For these GE 4–5, the focus should first be their GE 3 decoding and very slow reading rate, then their vocabulary and background knowledge.

8. Beginning readers at GE 2 or below. These students need instruction in basic phonics and word recognition.

9. Beginning readers at GE 2 or below with severe rate impairment. These students are similar to the previous group but also show signs of underlying reading rate impairment.

10. “Should be in ESOL” students. Although 90 percent of these readers are not native speakers of English, they have become fluent in basic oral English through long-term U.S. residency. However, their English reading is limited by their GE 2 English vocabulary. They should be placed with teachers who
are familiar with the vocabulary and written grammar needs of ESOL students.

To address the reading problems of adult students effectively, practitioners need to know the reading strengths and weaknesses of their adult students. As teachers do not have the resources to provide different instruction to each student, the profiles developed by the Adult Reading Components Study provide a way to group students.

NCSALL’s Adult Development Study (Kegan, Broderick, Drago-Severson, Helsing, Popp, & Portnow, 2001) was based on the hypothesis that adults have different beliefs that amount to an interpretive lens through which they make meaning. This lens filters the way a person takes in, organizes, understands, and analyzes his or her experiences. The study looked beyond the acquisition of literacy, language, and increased content knowledge to explore the ways in which adults make meaning of their experience of the world, their “way of knowing.” Adults’ gradual evolution from a simpler way of knowing depends on available supports, appropriate developmental challenges, and encouragement of growth.

This study built on Robert Kegan’s theory of adult development, which identifies three qualitatively distinct ways of knowing most prevalent in adulthood: Instrumental, Socializing, and Self-Authoring ways of knowing. People with an Instrumental way of knowing understand and organize their experience of self, others, and the world by concrete attributes, events, and sequences; observable actions and behaviors; and their own vantage point, interests, and preferences. People who have a Socializing way of knowing have a more abstract and internal orientation to the world. They experience other people as not merely resources to the self but sources of external validation, orientation, or authority. Finally, people with a Self-Authoring way of knowing can take responsibility for and ownership of their internal authority and develop their own belief system. They can not only identify abstract values, ideals, and longer-term purposes, but also prioritize and integrate competing values and develop a personal ideology or overall belief system.

Familiarity with the different meaning making systems can help explain how the same curriculum, classroom activity, or teaching behavior excites some students yet leaves others feeling lost or deserted. The study also found that adults with all three ways of knowing could learn together in group processes. In fact, students who worked together as a group were more likely to make developmental gains. However, the ways students participate in groups may reflect their particular way of knowing.

In addition to increasing knowledge of meaning making systems, this study expands understanding of possible outcomes of adult education programs. Qualitative transformation in an adult’s way of knowing took place in students observed for 12 to 18 months, and even greater transformation may occur over longer periods.

The Adult Development Study suggests that adult educators should view differences in developmental ways of knowing as important to their work and should
develop a range of instructional designs that encompass the range of adult learners’ ways of knowing. Students with an Instrumental way of knowing might prefer instruction that puts the teacher at the center, has measurable increments of success, and follows set procedures. Students with a Socializing way of knowing might prefer group learning, peer teaching, and personalized forms of assessment. Those with a Self-Authoring way of knowing might prefer a self-directed approach to learning in which the teacher is one of several sources of knowledge.

Teachers are often impressed by their students’ nonacademic abilities in such areas as music, art, conversation, auto repair, or counseling and wonder how this potential can be used to enhance learning in adult education programs. Howard Gardner’s theory of Multiple Intelligences (MI), which defines intelligence as the ability to solve problems or create products valued in one or more cultures or communities, provides another way to look at adult students’ strengths and abilities. Currently, eight forms of intelligence have been recognized: linguistic, logical-mathematical, spatial-visual, bodily-kinesthetic, musical, interpersonal, intrapersonal, and naturalist.

In NCSALL’s Adult Multiple Intelligences (AMI) Study, a group of adult education teachers explored the application of MI theory to their practice. MI theory served as a tool for developing the adult students’ knowledge about their own learning. The theory gave the students a positive framework within which to discuss and reflect on their past successes and failures at learning. This self-reflection was an important, preliminary step to identifying individual learning strategies. The teachers found themselves relinquishing some control over instruction by giving their students a choice of learning and assessment activities and respecting their individual ways of learning and knowing. The teachers perceived a noticeable shift in the teacher-to-student power relationship in the course of the AMI study that they attributed to their MI-based practices. Over time, students began taking more initiative and control over the content or direction of the activities.

Adult education practitioners can use MI theory as a framework to explore the abilities of their students in ways that can inform instruction. This might lead to instruction that uses the student’s strongest intelligence to learn academic content -- teaching reading with the lyrics of songs, for example. An exploration of MI theory might lead a teacher to offer several different ways to learn the same thing, each employing a different intelligence. The most important contribution, however, might be a change in instruction that helps students start learning with their strengths rather than their weaknesses.

MI theory, which emphasizes the positive ways that people acquire knowledge and interact with the world, may be especially valuable to teachers working with adult students who have experienced repeated difficulties learning in academic environments, which primarily value linguistic intelligence. Adults have years of experience developing their strongest types of intelligence, and this strength may form a foundation for success in academic subjects.
Participation

Adults use episodes of program participation and self-study to build their skills and knowledge to meet goals important to them, whereas children engage in continuous participation to meet the goals set by schools. Despite this difference, most adult education programs are organized like schools, with classes that meet at specific times and in specific places.

Although teachers encourage further learning and practice outside the classroom, program resources are focused on time in class. The high dropout rate and low persistence rate of students in adult education programs are an indication that attending classes on a set schedule and at a specific place is difficult for many adults.

Two NCSALL studies have found that self-study may be an important part of an adult’s educational process. The Adult Student Persistence Study (Comings et al., 1999) found that adults who had been involved in previous efforts at basic skills education, self-study, or vocational skill training were more likely to persist than those who had not. This relationship was particularly strong for adults who had undertaken self-study. The Longitudinal Study of Adult Learners (Reder et al., 2002) has been looking at how adults improve literacy skills by following nearly 1,000 high school dropouts. This study has found that 34 percent of those who had never been in an adult education program had pursued self-study to improve basic skills or prepare for the GED. Of those who had been in programs, 46 percent had been involved in similar self-study. Of the group of dropouts who acquired a GED during the first two years of the research, 74 percent had been involved in self-study. As the study has progressed the percentage of participants who have engaged in self-study has increased.

The NCSALL finding about self-study is consistent with the recognized need to change how participation is viewed. Wikelund, Reder, and Hart-Landsberg (1992) called for broadening the definition of participation to acknowledge that adults engage in education in many ways other than formal classes. They also explored how research and theory have failed to provide programs with useful models for defining participation, concluding that research and theory -- as well as practice -- should break out of the framework of K–12 schooling. A new definition of participation would acknowledge that adult learning -- even improvements in literacy skills -- could take place outside formal programs. With this new definition, programs would attempt to support learning at times when adults are not able to attend classes.

Adult education programs should help students plan how to use both formal program participation and self-study to build a pattern of learning. This would allow adult learners to move in and out of adult education program participation without the stigma or loss of learning that dropping out entails. Rather than dropping out, adults would pursue their learning through self-study and then might return to their program or join another one. A plan that incorporates both formal education and self-study could offer the opportunity for continuous learning in adult education programs that the K–12 system offers through schools with set places and schedules.
Incorporating Research in Adult Education Practice

NCSALL’s research offers guidance on how to establish a set of principles for the elements of a baseline model, but models should be built from the largest range of research. Once all the research has been reviewed and models designed and tested, an evidence-based adult education system could be established, but it would require well-trained and supported teachers who can commit to a career in adult education programs. That commitment would only be forthcoming if teachers have job security, decent pay, and basic employment benefits. Teachers would need access to high-quality professional development programs and to supports, such as paid release time, that help them participate in this training for as many hours as possible. A commitment to an evidence-based adult education system requires building the foundation for making good practice possible.

Bibliography


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