

# **Functional Context Education: Making Learning Relevant in the 21st Century**

## **Workshop Participant's Notebook**

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# **Functional Context Education: Making Learning Relevant in the 21<sup>st</sup> Century**

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**Chapter 2.** Research and development related to FCE principles and methods in several industrialized nations.

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Summary: Introduction to Functional Context Education (FCE) materials and principles available online; Overview of FCE in Australia, Canada, Ireland, New Zealand, United Kingdom; Concepts of “relevance.” Determining “relevance” at the national level: the Adult Literacy and Lifeskills (ALL) survey, National Adult Assessment of Literacy (NAAL) survey, and relationships to concepts of literacy in FCE.

### **Part 2 (1045-1200)**

**Chapter 4.** Functional Context Education in historical perspective.

**Chapter 5.** Overview of methodologies used in adult literacy research for determining what is relevant to youth and adult learners.

Summary: Functional Context Education in historical perspective, (1860-Present) (illustrated with teaching materials integrating functional content with literacy instruction): Freedman’s Schools; Moonlight Schools; Military Schools in World Wars I and II; Laubach Literacy; Paulo Freire and Learner Centered, Participatory Literacy Education. Overview of methodologies and research-based methods used in adult literacy research for determining what is relevant to youth and adult learners, including focus groups; individual interviews; literacy task analysis; photographic ethnography; community newspapers; teachers and students as researchers and reporters; environmental analysis and design for learning.

### **Part 3 (1300-1430)**

**Chapter 6.** Two case studies of integrated vocational and basic skills education.

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### **Part 4 (1445-1530)**

**Chapter 7.** Three case studies integrating basic skills education with job training, parenting, and health education.

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### **Part 5 (1530-1600) Q & A; Workshop Close**

## **What will you learn in this workshop on Functional Context Education?**

- \* You will gain an understanding of the conceptual framework of Functional Context Education (FCE) based on cognitive science. (Chapter 1,3)
- \* You will learn the scientific, evidence-based research that validates the FCE principles and methods. (Chapters 6,7)
- \* You will learn how various approaches to "contextual learning" such as "situated," "embedded" or "integrated" basic skills relate to FCE. (Chapters 1, 2)
- \* You will learn what research and development following FCE principles and methods has been accomplished in several industrialized nations. (Chapter 2)
- \* You will learn the differences between FCE and traditional adult education. (Chapters 1,2)
- \* You will learn how to use FCE principles and methods to design new courses of instruction for workforce education, family literacy, and lifelong learning. (Chapters 6,7)
- \* You will learn different techniques for determining what is relevant to youth and adult learners: focus groups; individual interviews; literacy task analysis; photographic ethnography; community newspapers; teachers and students as researchers and reporters; environmental analysis and design for learning. (Chapter 5)
- \* You will learn where you can download free materials for FCE from internet web sites in different nations. (All Chapters)

## Chapter 1

### Introduction to Functional Context Education (FCE) Materials and Principles Available Online

The concepts of Functional Context Education, developed within the field of adult literacy education, are being widely disseminated on the internet. Several online databases provide a wide range of resources for adult educators and others and include information about Functional Context Education theory and principles for embedding or integrating basic skills with relevant content subject matter.

1. National Adult Literacy Database (NALD) in Canada. An earlier (1997) Functional Context Education (FCE) Workshop Resource Notebook is available for free pdf downloading from the NALD in Canada at

<http://www.nald.ca/fulltext/context/cover.htm>

(or [www.nald.ca](http://www.nald.ca) under Full Text Documents searched by S for Sticht.) The notebook presents FCE theory of cognition and literacy, and it provides evidence for the effectiveness of FCE and examples of FCE type programs.

What is Functional Context Education (FCE)?

Functional Context Education is an approach to education that is based upon a cognitive science theory of cognitive development, learning, and instruction. The theoretical framework and the principles for applying this framework to the task of instructional development are discussed in this notebook.

Literacy is given special attention in FCE because of its importance to all schooling and instruction in our information age. A general thesis is that the idea that literacy is something one must "get" in one program, which is then "applied" in another is misleading. Rather, it is argued that literacy is developed while it is being applied. This means that for the large numbers of youth and adults who read between the fifth and ninth grade levels, literacy and content skills education can be integrated. Therefore there is no need for special "remedial" literacy programs to get students to "prerequisite" levels of literacy before they are permitted to study the "real thing."

In overview, education based on functional context theory includes the following conceptual framework:

- *Society and culture* provide the most important resources for human cognitive development. These resources include symbols and symbol systems, such as the natural language and conceptual (in contrast to perceptual) knowledge, which constitute the primary means for the transmission of cognitive abilities.

- *The learner possesses a "human cognitive system"* with an internal knowledge base "inside the head" and access to an external knowledge base in the world "outside the head." The learner has a working, or short term memory in which processing skills such as language are used to move information in and out of both the internal and external knowledge bases.

• *Learning is information processing* whereby the learner actively seeks out information used in constructing a meaningful interpretation of the world and a knowledge base comprised of these interpretations.

• *A developmental perspective of literacy* emphasizing the development of oral language from earlier prelinguistic knowledge and literacy as the amalgam of prelinguistic, linguistic and graphic symbolic knowledge.

• *The importance of context* in learning new information and in transferring information already learned to new and different problems and situations.

The application of this theoretical framework to the instructional development process suggests creating courses that facilitate learning on entry into the course, learning throughout the course, and transfer into the contexts for which the learning is meant to apply. To accomplish these objectives, courses should be developed that:

• Explain what the students are to learn and why in such a way that they can always understand both the immediate and long term usefulness of the course content (facilitates entry into the course; motivates learning).

• Consider the old knowledge that students bring with them to the course, and build new knowledge on the basis of this old knowledge (facilitates entry learning)

• Sequence each new lesson so that it builds on prior knowledge gained in the previous lessons (facilitates in-course learning).

• Integrate instruction in reading, writing, arithmetic, and problem solving into academic or technical training programs as the content of the course poses requirements for information processing using these skills that many potential students may not possess; avoid decontextualized basic skills "remedial" programs (facilitates in-course learning; motivates basic skills learning; reduces instruction time; develops "learning to learn" ability ).

• Derive objectives from careful analysis of the explicit and tacit knowledge and skill needed in the home, community, academic, technical training, or employment context for which the learner is preparing (facilitates transfer).

• Use, to the extent possible, learning contexts, tasks, materials, and procedures taken from the future situation in which the learner will be functioning (facilitates transfer).

Why is FCE important for youth and adult education?

Unlike children, who tend to do things to please their parents or teachers, youth and adults will usually want to understand the functional utility of investing time and mental energy in learning something. With respect to out-of-school youth and adults then, FCE focuses on improving

(1) *Participation* in adult education programs by making explicit the relationship between what students want to learn, what is being taught and its application in the contexts that the person will be functioning in after the educational program, this promotes increased motivation;

(2) *Achievement* in learning and transfer by ensuring that instruction relates to the learner's prior knowledge in such a way that the learner can function within the learning situation and

improving transfer by deriving instructional contents as much as possible from the future contexts in which the person will apply the learning, and

(3) *Prevention* of learning problems in future generations by designing youth and adult programs that maximize the intergenerational transfer of the adults' new skills and attitudes about education to their children.

The 1997 FCE notebook elaborates upon the principles summarized above and illustrates the application of these principles in case studies of programs for adults, including family literacy programs with a focus upon women's education that can provide an intergenerational transfer of language and literacy skills to their children.

2. Encyclopedia of Psychology. The Encyclopedia of Psychology facilitates browsing in psychology. There are two paths for this purpose, one providing original information generated by respected researchers and practitioners in various fields of psychology and the other providing a hierarchical database of links to web sites providing information about scientific psychology. The site aims to create a set of links that represent the best available sites organized in a manner that furthers the understanding of Psychology as a science.

An entry in the Encyclopedia of Psychology about FCE can be found at

[http://www.psychology.org/links/Environment\\_Behavior\\_Relationships/Education/](http://www.psychology.org/links/Environment_Behavior_Relationships/Education/)

It includes an Overview of FCE stating (abridged here):

The functional context approach to learning stresses the importance of making learning relevant to the experience of learners and their work context. The learning of new information is facilitated by making it possible for the learner to relate it to knowledge already possessed and transform old knowledge into new knowledge. By using materials that the learner will use after training, transfer of learning from the classroom to the "real world" will be enhanced.

The model of the cognitive system underlying this approach emphasizes the interaction of three components: (1) a knowledge base (i.e., long term memory) of what the individual knows, (2) processing skills including language, problem-solving, and learning strategies, and (3) information displays that present information. The performance of a task requires knowledge about what one is reading or writing, processing skills for comprehension and communication, and displays of information to be processed.

The functional context approach also proposes new assessment methods. Instead of using grade level scores, tests should measure content knowledge gained and distinguish between functional learning and academic learning. For example, an assessment of reading should measure both reading-to-do (e.g., looking up information in a manual) and reading-to-learn (e.g., information needed for future decisions).

Functional context theory shares a similar emphasis with [Situated Learning theory](#) which also stresses the importance of context during learning.

3. Encyclopedia of Educational Technology. The Encyclopedia of Educational Technology (EET) is a collection of short multimedia articles on a variety of topics related to the fields of instructional design and education and training. The primary audiences for the EET are students and novice to intermediate practitioners in these fields, who need a brief overview as a starting point to further research on specific topics. Authors are graduate students, professors, and others

who contribute voluntarily. Articles are short and use multimedia to enrich learning rather than merely decorate the pages.

An entry in the Encyclopedia of Educational Technology about FCE is at

<http://coe.sdsu.edu/eet/articles/functionace/index.htm>

It includes an introduction to FCE stating (abridged here): General notions in education have traditionally held that literacy is a skill one must learn in one setting, then apply in others. The primary focus of FCE has been to promote improvement in literacy, as well as other basic skills, within instructional contexts that are highly relevant and useful to the learner. This allows for teaching methods that are optimal for adult learners; most adults are not motivated to learn if the content of instruction is not meaningful.

Most adult learners are highly unlikely to invest time in educational endeavors unless beneficial outcomes are very apparent. This factor is coupled with the reality that social stigmas are commonly associated with 'remedial' literacy programs. FCE provides opportunities for adults to improve reading and other skills within contexts that are conducive to their career and social goals.

4. FCE In High Schools. Over the years a number of organizations have taken up the banner of FCE under the label of "contextualized teaching." For instance, for more than a decade, the Center for Occupational Research & Development (CORD) Web site: [www.cord.org](http://www.cord.org) located in Waco, Texas has been involved in developing contextualized courses for students in the K-12 system. Dale Parnell, former President of the American Association for Community Colleges in the United States and a past member of the SCANS published a book with CORD entitled Contextual Teaching Works. In a chapter on What Research Says About Contextual Teaching he presents a review of the research on FCE that colleagues and I reported in Cast-off Youth and notes that this research offers a scientific base for contextualized teaching. The book provides examples of FCE programs in various high schools in the U.S. and Canada.

In September 2003, the American Youth Policy Forum (AYPF) produced a report edited by Betsy Brand entitled Essentials of High School Reform: New Forms of Assessment and Contextual Teaching and Learning. (Washington, DC: American Youth Policy Forum [www.aypf.org](http://www.aypf.org)). The report includes two papers that discuss issues related to the development of contextualized teaching and learning (CTL) curricula in high schools and developing assessments that will provide a more accurate indication of student learning in CTL classrooms. In addition to presenting discussions of the issues and challenges that face those who wish to move toward CTL, the report appendix offers examples of CTL using problem-based learning, service-learning, project-based learning, curriculum integration, work-based learning and collaborative/cooperative learning. It also provides some cases of CTL in high schools.

5. FCE In Community Colleges. A January 2003 report by C. Mazzeo et al. entitled Building Bridges to College and Careers: Contextualized Basic Skills Programs at Community Colleges is available from the Workforce Strategy Center on the web at [http://www.workforcestrategy.org/publications/Contextualized\\_basic\\_ed\\_report.pdf](http://www.workforcestrategy.org/publications/Contextualized_basic_ed_report.pdf)

Citing the work on FCE reported in Cast-off Youth and other work stimulated by the SCANS work on contextualized teaching and learning (CTL), the report's authors describe their research in five community colleges that are committed to CTL. The authors of the report state that, "Research suggests that contextualized basic skills instruction is often more successful than

traditional models of adult education in engaging disadvantaged individuals and linking them to work.”

In developing their CTL programs, the five colleges:

- Integrated developmental (basic skills) and academic content
- Developed new curricular materials and professional development for CTL faculty.
- Maintained links with employers and industry associations.
- Found resources to fund the programs, at least in the short-term.

The authors state that, “While none of these colleges profiled in this study have been able to serve more than 20% of their developmental, English as a Second Language (ESL) and adult education population, they all seek the resources and capacity to go to scale.”

6. Globalization and Functional Context Education. Within developing nations, moving into the world marketplace and benefiting from its economy requires that illiterate and poorly literate adults receive literacy and education at the beginning literacy, post-literacy and lifelong learning stages if they are to develop sustainable literacy skills and volumes of knowledge that will permit them to utilize the worldwide communications technologies that are so rapidly changing the distribution of information and knowledge underlying new economies.

Following Functional Context Education principles, which call for integrating basic skills education with important content area knowledge and skills, more rapid progress can be made in achieving sustainable development than is typical of sequential programs in which basic skills are first raised to some assumed necessary level before the adult can obtain the education and training needed. Functional Context Principles can be applied to sustainable development activities such as:

1. education on microenterprise development so adults can learn how to become entrepreneurs and economically self-sufficient,
2. job skills training so that displaced workers in unskilled jobs can be efficiently cross-trained into better paying jobs that do not suffer from outsourcing;
3. financial literacy so that once employment at a self-sufficiency level is achieved adults can be better consumers in various domains and manage their money better so they can begin to invest in wealth accrual,
4. health literacy so that individuals and families can take better care of themselves and access affordable, competent medical care;
5. workplace literacy so that employed and under employed workers can acquire skills for upward mobility or transfer into better paying jobs.

For more on globalization see resources online at <http://econ.worldbank.org/prr/subpage.php?sp=2477>

For more on Functional Context Education and sustainable, economically self-sufficient education and training for underserved adults see Wider Opportunities for Women’s (WOW) Family Economic Self-Sufficiency Project online at <http://www.wowonline.org>

### **Functional Context Education (FCE): An Evidence-Based Approach to Adult Literacy Education Integrating Professional Wisdom With Scientific Evidence**

In 2002, Dr. Grover (Russ) Whitehurst, Director of the U.S. Government’s Institute of Education Sciences, defined evidence-based education as: “the integration of professional wisdom with the best available empirical evidence in making decisions about how to deliver instruction.” He went on to define professional wisdom as “the judgment that individuals acquire through experience” and “consensus views.” He noted that “Increased professional wisdom is reflected in numerous ways, including the effective identification and incorporation of local circumstances into instruction.”

Functional Context Education (FCE) is an approach to adult literacy education that had its beginnings in the professional wisdom of teachers of adult literacy and later acquired an empirical base of research that has validated and extended the professional knowledge of teachers. Following is a brief outline of this transition of Functional Context Education from being based solely on professional wisdom to being based more on empirical research:

1861-1870 The education of freedmen during reconstruction following the Civil War. The teachers developed special materials that tried to reflect the post-slavery circumstances and aspirations of both children and adults. Though aspects of the materials reflected a middle-class conception of how freed slaves should live, the attempt was made to make the materials relevant to the current life circumstances of freedmen rather than impart a typical childhood education in reading and writing using the primers of the schools.

1911 Cora Wilson Stewart started the Moonlight Schools of Kentucky and explicitly stated that one should not teach adults as though they were children. She developed functional materials for teaching reading, writing, and math in the contexts of health, family care, farming, banking, citizenship, etc. for adults.

1917 World War I soldiers were taught reading, writing, and math using materials that incorporated aspects of camp life and military circumstances to make it easier for the men to relate their experiential knowledge to the new knowledge they were to gain from book reading.

1943 World War II soldiers were taught reading, writing, and math using military contexts and two fictional characters, Private Pete and his buddy Daffy to help men relate to literacy learning during war time. Testing was introduced to measure learning progress, which was found to occur.

Late 1940's Frank Laubach created materials for teaching reading in India which incorporated adult themes and concerns such as health and citizenship.

1960's Paulo Freire developed methods for teaching reading in the functional contexts of adult's lives and lead them to critical consciousness about their life circumstances and how they might go about changing their situations.

All the foregoing were based on professional wisdom without the benefit of much by way of what would be considered empirical research.

Late 1960's into 1970's Army's Functional Literacy (FLIT) R & D program was first research program that introduced systematic methods for studying literacy practices of personnel in various jobs and job training programs, incorporated these practices into the design of job-related literacy programs, and compared the effectiveness of general literacy programs to job-related programs and found that the latter produced as much improvement in general literacy but three to five times the improvements in job-related literacy, which was what the programs were supposed to do. The FLIT program was not only based on the professional wisdom of earlier adult literacy educators it also incorporated concepts from cognitive science in formulating the practices of "reading to do" versus "reading to learn" based on research in psychology on a human cognitive system with various memory systems, and it incorporated both direct instruction based on behavioral principles of systematic instruction, pre-and post-testing of learning, and progression based on mastery, and instruction of a constructivist nature based on an extensive review of linguistic, computer science (e.g., artificial intelligence), developmental psychology, and experimental studies of reading. The program was externally and independently evaluated by the American Institutes for Research and implemented in several states indicating that the methods were generalizable beyond the R & D site.

1970's – Present. Various research projects in cognitive science reinforced the ideas making up Functional Context Education principles that were based on professional wisdom at the turn of the 20<sup>th</sup> century. The principles were officially formulated in 1987 in a book entitled *Cast-off Youth: Policy and Training Methods From the Military Experience*. Research by Victoria Purcell-Gates and colleagues at NCSALL in the late 1990s confirmed the principle of transfer formulated in FCE and found that programs that used materials from the lives that adults live outside the classroom were more likely to stimulate the transfer of literacy from the classroom to the "real world" of the adults. Numerous projects in India and other nations have confirmed that making materials relevant to the lives of adults promotes greater participation and retention in programs than do academic oriented programs.

The foregoing, demonstrates the accumulation of educational knowledge about the teaching of adult literacy based on professional wisdom and scientific research over a period of more than a century. This body of knowledge has produced at its most generally applicable level a series of principles, not particular materials or techniques, that can guide the development of adult literacy programs.

## Chapter 2.

### Research and Development Related to FCE Principles and Methods in Several Industrialized Nations

Australia

#### **ANTA: Australian National Training Authority**

The Australian National Training Authority (ANTA) sponsored a report entitled “Review of research. Vocational education and training literacy and numeracy by M. Watson, L Nicholson, and E Sharplin (2001) Published by NCVER ([www.ncver.edu.au](http://www.ncver.edu.au))

One section of the report is entitled, “Effective approaches to the delivery of literacy and numeracy support.” In this section the authors report, “Consistent and clear findings have been identified in the research, supported over a wide cross-section of student groups and across training sectors. The research provides clear direction for desirable approaches to the provision of literacy and numeracy training. An integrated approach is being advocated for the delivery of literacy and numeracy, utilising team teaching and contextualised learning. This will be enhanced with the use of customised resources. The teaching and learning skills need to be matched with the demands of job-related skills. Flexible delivery options, including information technology, are advocated and reliance on print-based resources is to be avoided. Early identification of existing literacy and numeracy difficulties and an understanding of cultural issues impacting on appropriate provision will underpin the effectiveness of any delivery.”

#### **NCVER: National Centre for Vocational Education Research**

The NCVER published in 2005 a report by Rosa McKenna and Lynne Fitzpatrick entitled “Integrated approaches to teaching adult literacy in Australia: A snapshot of practice in community services.” (<http://www.ncver.edu.au>)

In this report the authors state that, “Practice in English language and literacy instruction has broadened and deepened over recent decades, as has the conceptual base underpinning emerging practice. This change has resulted in the growth of ‘integrated training’, in which the acquisition of literacy skills are ‘built in’ to broader skills development, and where literacy learning is placed in authentic and real-life settings.”

Using qualitative and historical review research methods McKenna and Fitzpatrick reported that, “The following features were identified as central to successful integrated models:

- using a constructivist approach, which acknowledges that learning is affected by the context in which it is taught as well as by students’ beliefs and attitudes
- developing an explicit model of language
- using a multidisciplinary approach
- providing a framework for describing language, literacy and numeracy
- conducting an analysis of training packages and workplace context
- ensuring the capacity to identify critical points of intervention
- using direct instructional activities
- considering the needs of learners.”

## **HRDC: Human Resource Development Canada**

A report based on a technical paper prepared by Dr. Kathryn Barker was published in March 2000 by Human Resources Development Canada entitled: Adult Literacy: Policies, Programs and Practices Lessons Learned Final Report.

([www11.hrdc-drhc.gc.ca/pls/edd/ALPP.html](http://www11.hrdc-drhc.gc.ca/pls/edd/ALPP.html))

In this report Barker provides an overview of some lessons learned from work in adult literacy in Canada over the last decade or so. Following are extracts from the report that are concerned with FCE:

“There are some common elements that comprise good practice in adult literacy programs (Boivin, 1993; De Bruin Parecki, Paris and Seidenberg, 1996; Marshall and Selman, 1992; Ziegler, 1996). Among them are trained instructors; non-threatening learning environment; adult-oriented materials and approaches to teaching and evaluation; and individualized instruction. Quality literacy programs are flexible and able to accommodate different skill levels and personal goals. They provide support services and linkages to other service providers. **Instruction is focused on the interests of the learners, emphasizing life skills and contextual skills.** (bold added). In effective programs, issues of access, child care, transportation, community and cultural orientation, and personal meaningfulness are considered (De Bruin Parecki, Paris and Seidenberg, 1996). The strongest predictors of student retention and attendance are the presence of support services such as counseling, instruction during the day, and the type of learning environment – a learning lab or independent study in addition to classroom learning (Ziegler, 1996).

...Literacy instruction is often more effective when it is combined with teaching practical skills (Eisemore, Marble and Crawford, 1998). Teaching materials should reinforce all aspects of learners' experiences – home, work, community. Culturally relevant teaching and support materials should be used, and instructors should assess materials for cultural bias (Marshall and Selman, 1992). Context-specific reading materials – workplace reading tasks in workforce training, for example – are the most successful (Phillipi, 1987).”

## **CPHA: Canadian Public Health Association**

Second Canadian Conference on Literacy and Health October 2004 Ottawa, Ontario

([www.cpha.ca/literacyandhealth/themes.html](http://www.cpha.ca/literacyandhealth/themes.html))

Best practices in literacy and health are programs, projects and policies that have been successful in improving the health of Canadians with low literacy skills.

Sample topics for this theme include best practices in:

- Building partnerships that integrate adult literacy and health;
- Building skills of learners and health consumers to find and use health information;
- Building skills of health professionals to communicate health information effectively;
- Providing family literacy programs to parents with low literacy skills and their young children;
- Working with youth who have dropped out of school;
- Working with seniors who have low literacy skills;
- Planning and providing services through community development and participatory approaches (involving learners, health consumers and practitioners);
- Improving the health of people with low literacy skills from distinct population groups. For example: people living with a common disease (e.g. diabetes, cancer, heart disease); people of

the same background or culture (e.g. Aboriginal peoples, francophones, immigrants/New Canadians, ethnocultural groups).

## **Ireland**

### **NALA: National Adult Literacy Agency**

Integrating Literacy: NALA Guidelines for Further Education and Training Centers  
Compiled by Bláthnaid Ní Chinnéide NALA, 2002 ([www.nala.ie](http://www.nala.ie))

Following are extracts from the NALA Guidelines, though the extracts are in a different order from where they appear in the Guidelines. The Guidelines were developed to address the needs of Further Education and Training Centers with programmes that often serve “people who left school with no qualifications and often with poor literacy skills.

Literacy skills are best developed in the context of meaningful, relevant and purposeful activity. In pursuing a course which is interesting to them, and which has built-in literacy support, people with literacy difficulties can successfully complete the course and develop transferable literacy skills.

What does ‘Integrating Literacy’ mean? Essentially, ‘integrating literacy’ means that within a Further Education and Training programme the needs of people with literacy difficulties are recognised and addressed. This is seen as the responsibility of the whole centre, not just of the specialist literacy staff. Subject teachers/trainers, management, administrative staff, guidance and counselling staff – all have a role to play in ensuring that learners with literacy difficulties are appropriately supported.

In an integrated service it is complemented by a systematic partnership between the literacy tutor and other staff, providing daily opportunities for the learner to acquire and practise literacy skills in the context of their core programme. The need to integrate literacy support applies not just in these settings, but across the entire range of Further Education and Training programmes.

Participants in programmes at any level, in any setting, may have difficulties with some of the literacy requirements of their course. Spelling difficulties can cause problems with coursework and assignments. Difficulties with handwriting can compound these. Together, they can lead to a situation where written work submitted by the learner does not do justice to their grasp of the particular subject. Note-taking from lectures or other spoken information may be very difficult and stressful for learners whose spelling and writing is not automatic. Particular writing skills may be needed for the course, for example, essay-writing or report-writing. Particular reading skills are needed to deal efficiently with course texts. Learners may also require support in developing the associated skill of taking notes from texts. Most courses involve learners in language development, acquiring and internalising new, course-related terminology and developing the skills to communicate effectively with staff and fellow-learners. Particular numeracy skills may be associated with the course.

The fact that a person is competent and skilled in the particular subject area does not mean that that he or she will be comfortable with all the reading, writing and numeracy demands of the course. Equally, the fact that a person has a literacy difficulty does not mean they should be denied access to education or training in an area which interests them and for which they have an aptitude.

## New Zealand

### Workbase: National Centre for Workplace Literacy & Language

Following is extracted from an article entitled "Vocational trainers can teach literacy" by Ginnie Denny which appeared *Literacy at Work* Newsletter #36, May 2002, ABC Canada ([www.abc-canada.org/our\\_publications/36.asp](http://www.abc-canada.org/our_publications/36.asp))

Workbase New Zealand's National Centre for Workplace Literacy & Language, ([www.workbase.org.nz](http://www.workbase.org.nz)) was funded to design and implement the Literacy Innovation Network Cluster (LINC) project. The aim was to develop and implement a comprehensive capacity-building model for integrating literacy teaching within vocational courses.

Using a functional-context-oriented approach to integrating literacy into vocational skill development, the aim of the project was to "upskill" vocational tutors in literacy teaching. This approach, based on the work of Thomas Sticht, recognizes that the use of job and course-specific material as literacy teaching material significantly increases retention, transfer and applicability of literacy skills.

An overwhelming outcome from the LINC project was the recognition by tutors that once they had the skills and confidence to integrate literacy into their courses, teaching became easier and more effective. Tutors reported that learner needs were being met more appropriately and effectively, and that learning was more successful. Another key outcome from the project was the creation of a list of Best Practice Indicators for literacy delivery:

- \* Provider develops a literacy-focused vision / mission / policy statement.
- \* All learners have their course specific literacy needs assessed upon entry into a course.
- \* Assessment results inform the direction and content of a course.
- \* Evidence is available that literacy skill development and assessment are ongoing and recorded throughout courses.
- \* A specific staff member, or staff role, is responsible for ensuring the provider retains a literacy focus. This responsibility is included in their job description.
- \* The organization allocates regular non-teaching time for professional development for tutors in literacy skill development and networking around literacy issues.
- \* The organization allocates regular non-teaching time specifically for literacy resource development and internal group discussions around literacy issues.
- \* For learners with low levels of literacy skills, there is access to courses of longer duration.
- \* Each provider maintains an up-to-date resource base specific to literacy skill development.
- \* Links are made with specialist literacy organizations where advice, support and input can be accessed as necessary.
- \* Funding is allocated within the provider organization for literacy initiatives, including encouraging resource development and professional development to provide opportunities for small group or one-to-one work when needed.
- \* Provider organizations are clear about the literacy policies, procedures, practice expectations and intentions of funding bodies.
- \* Provider organizations support tutors with their own literacy skill development.

As a result, learners accessing these vocational training courses have their literacy needs assessed and met while learning the vocational skills necessary for entry into the workplace.

## **United Kingdom**

### **DFES: Department for Education and Skills**

Introduction to the Skills for Life: Materials for Embedded Learning project  
([www.dfes.gov.uk/readwriteplus/embeddedlearning](http://www.dfes.gov.uk/readwriteplus/embeddedlearning))

The materials build on the firm evidence that there are many adult learners for whom literacy, language and numeracy ‘barriers’ stand in the way of engaging fully and successfully in society. By setting literacy, language and numeracy learning in realistic context-based settings, the hope is that the obvious value of enhancing literacy, language and numeracy skills will be self-apparent to learners. The resources in this file are intended for use by teachers – coming both from community-based and literacy, language and numeracy backgrounds. The printed versions of Embedded teaching and learning combines the development of Literacy, Language and Numeracy with vocational and other skills. The skills acquired provide learners with the confidence, competence and motivation necessary for them to succeed in qualifications, in life and at work.

### **NIACE: National Institute of Adult Continuing Education**

Embedded Basic Skills ([www.niace.org.uk/projects/LrningfromExperience/EBS/What-is-EBS.htm](http://www.niace.org.uk/projects/LrningfromExperience/EBS/What-is-EBS.htm)) used to be called “Contextualised” or “Integrated”, and is still being fully defined. There are different views as to a precise definition of Embedded Basic Skills, but a working definition of Embedded Basic Skills could be: “Activities or experiences supporting the development of basic skills in participants in the activities or experiences, and in the context of those activities or experiences”.

The activity within which the skills are embedded need not be directly related to education or training, but may be in the context of other needs shown by the participants. The activity within which the skills are embedded can, as you might expect, be a course in some other aspect of learning or training, but with the opportunity to develop the individual learner’s Basic Skills within the principal activities of the course

The skills developed and the activities used to develop them should be based upon the identified needs of the individual, and should be charted against the framework of national standards for Basic Skills, particularly in the context of allowing for quality control and access to funding for Embedded Basic Skills.

### **NRDC: National Research and Development Center for Adult Literacy and Numeracy** ([www.nrdc.org.uk/content.asp?CategoryID=600](http://www.nrdc.org.uk/content.asp?CategoryID=600))

The NRDC has recently completed a series of case studies of embedded teaching and learning of literacy, language and numeracy (LLN). The Skills for Life strategy recognises that many people with LLN needs do not want to attend LLN classes. But often such people’s willingness to work on their LLN skills is enhanced when they can improve them in the context of the vocational programme which is their primary motivation.

These case studies show that, while embedding LLN and ESOL in vocational courses helps to improve learners’ motivation and successful completion of programmes, it does much more than this. It helps learners to develop new identities and practices, to learn how to be and act in new ways, to become someone in the building trade, or a nurse in the NHS, or a childcare worker, or

to have expertise that is valued by family and friends and could lead to employment, such as massage skills. These new roles and identities would not be developed in discrete basic skills sessions, nor would learners appreciate the value of LLN in achieving vocational and recreational goals if their course paid little or no attention to LLN.

### United States

#### **NCSALL: National Center for the Study of Adult Learning and Literacy**

Research From the National Center for the Study of Adult Learning and Literacy (NCSALL) ([www.ncsall.net](http://www.ncsall.net))

Purcell-Gates, V., Degener, S. & Jacobson, E. (1998, July). U. S. Adult Literacy Program Practice: A Typology Across Dimensions of Life-Contextualized /Decontextualized and Dialogic/Monologic. Report #2. Cambridge, MA: National Center for the Study of Adult Learning and Literacy.

Rate Your Classroom (circle one):

<u>Highly</u>	Somewhat	Somewhat	<u>Highly</u>
Life-Contextualized	Life-Contextualized	Life-Decontextualized	Life-Decontextualized

<u>Highly</u>	Somewhat	Somewhat	<u>Highly</u>
Learner Centered (dialogic)	Learner Centered (dialogic)	Teacher Centered (monologic)	Teacher Centered (monologic)

Purcell-Gates, V., Degener, S. Jacobson, E., & Soler, M. (2000, November). Affecting Change in Literacy Practices of Adult Learners: Impact of Two Dimensions of Instruction. Report #17. Cambridge, MA: National Center for the Study of Adult Learning and Literacy.

Rate Your Classroom (circle one):

<u>Highly</u>	Somewhat	Somewhat	<u>Highly</u>
Authentic	Authentic	School-only	School-only

<u>Highly</u>	Somewhat	Somewhat	<u>Highly</u>
Collaborative	Collaborative	Teacher-Directed	Teacher-Directed

Note: Additional U. S. work on FCE from CORD: Center for Occupational Research and Development, AYPF: American Youth Policy Forum, and WSC: Workforce Strategy Center on FCE in community colleges is referenced in Chapter 1.

### Chapter 3

## “Relevance” at National Levels in Relation to Foundational Concepts of Literacy in Functional Context Education

For how many adults is adult literacy education relevant? A major effort for determining the “relevance” of or “scale of need” for adult literacy education took place in the mid-1990s when Canada, the United Kingdom and the United States joined with what was eventually nineteen other member nations of the Organization for Economic Co-operation and Development (OECD) to take part in the International Adult Literacy Survey (IALS). Using door-to-door sampling methods, the IALS developed performance tasks for three different measurement scales: prose, document and quantitative. For each scale adults were assigned to five literacy levels (Level 1-low to Level 5-high literacy). Additionally, the IALS developed a scale for the adult’s self-assessment of their literacy ability including rating categories of poor, moderate, good, excellent (and no response).

*Table 2.1. Comparison of IALS test score data for the prose scale with adult’s self-assessed reading skills. Data for United States.*

Levels	IALS Prose Literacy			
	1	2	3	4/5
Numbers	33M	42M	52M	34M
Percents	21	26	32	21
<i>M=millions of adults</i>				
Self-Assessment	1	2	3	4
Numbers	9M	11M	54M	86M
Percents	6	7	34	53
Self-assessed reading levels: 1=Poor, 2=Moderate, 3=Good, 4=Excellent				

Using the document performance tasks, 23.7 percent of United States adults ages 16-65 were assigned to literacy level 1, the lowest level of literacy, while in Canada the percentage assigned to document literacy Level 1 was 18.2, and in the United Kingdom 23.3 percent of adults were assigned to document literacy Level 1. Similar percentages, with a little variation, held for the prose and quantitative literacy scales and the assignment of adults to Literacy Level 1 on those scales.

Using the performance scales then, in the mid-1990s, literacy education would be relevant for about one fifth of adults aged 16-65 in these three countries. This is about 32 million adults in the US, 3.3 million in Canada, and 7 million in the UK.

*Self-Perceived Literacy and Numeracy Skills.* Using the adult’s self-assessments of their reading abilities for work and daily life, grouped by the document scale results, fewer than 5 percent of adults in either Canada, the UK, or the U. S. rated their reading as poor. Using a 5 percent estimate for these three nations, some 8 million adults in the U. S., less than 1 million in Canada, and fewer than 2 million in the U. K. would consider adult literacy education to be relevant to them. Similar results held for self-assessments of writing and numeracy and with self-assessments grouped by the prose and quantitative scales.

If it is adult’s self-perceived need for literacy education that determines whether or not they will enroll in literacy programs, then it might be useful in national assessments of adult literacy to delve further into adult’s self-perceptions, what explains their self-perceptions, what information would help them better assess their literacy skills, and to provide respondents who assess themselves as poor in literacy with information about how they might locate adult literacy programs. It might also be useful to determine other education needs or desires so that the adult education and literacy provision systems in these and other nations might better align themselves with adult educational needs.

## The 2003 Adult Literacy and Lifeskills (ALL) Survey

In 2003 a follow-up to the IALS was conducted. Called the Adult Literacy and Lifeskills (ALL) survey, the new international survey of adult literacy once again focussed on the relevance of or scale of need for adult literacy education. The ALL survey used the same prose and document scales as used in the IALS, and the results obtained in 2003 were about the same as those for the mid-1990s. Headlines from a press release dated May 11, 2005 from a national organization concerned with adult literacy in Canada stated, "After nine years, the same per cent of adults have low literacy. Regarding those Canadians, aged 16 to 65, scoring literacy Levels 1 and 2, deemed below the minimum of what is suitable for coping with the demands of everyday life and work, the percentage reported in ALL is the same as was recorded in 1994 (42 per cent). Level 1 literacy skill means a person is unable to read, for example, information on a medicine bottle. Level 2 means the person can only deal with simple printed material, and has difficulty facing new demands or tasks at work or in the community."

### Literacy in Prose and Document Scales

In both the IALS and ALL surveys literacy was assessed using two different scales of literacy, the prose and document scales. In Functional Context Education theory the use of these two scales is based on the idea that literacy is considered a part of the use of graphics technology. One aspect of graphics technology use in literacy is the use of the alphabet as a graphic display of aspects of the spoken language. This is based on the idea that the written language is a second signaling system for speech, i.e., a "coded" version of the spoken language. In the IALS and ALL surveys, the prose scale is considered as a written representation of speech.

In the document scale, a second aspect of graphics use in literacy is considered. In this case the written language is embedded in a graphic information display such as a form, with blanks labeled such Name, Residence, etc. In this case the document must be searched while the written language is being decoded. This means that the Document scale can be more or less difficult due to either the difficulty of the language in the Document, or the complexity of the graphic display, or an interaction of both.

By considering literacy as competence in working with graphics technology, instructors can help adult learners understand that much of what is encountered in teaching and learning reading results from the fundamental characteristics of graphics displays. These characteristics permit literates to work with the graphics technology in certain ways. Furthermore, the products of the work of literates create new graphics displays (e.g., history timelines; TV schedules; troubleshooting flow diagrams; atlases, etc.). This imposes demands upon new readers who wish to learn to work with these new displays.

*Major Features of Graphics Technology.* The major features of graphics technology, examples of the types of products that may be produced by those in command of the technology, and examples of the types of demands for information processing that the products of this technology may require include:

*1. Permanence.* Graphic information displays, such as this page of print, or forms, tables, graphs, and so forth, are more or less *permanent*. Therefore, they can be used to collect or store information, including an extended body of knowledge. The information can be stored over time and retrieved later on, and it can be transported across space.

In reading instruction, the relative permanence of the graphic display permits the teaching of "reading-to-do" and "reading-to-learn" processes.<sup>8</sup> In reading-to-do, the permanence of the

material permits the reader to consult it while performing a task. For instance, in filling-out a parts form in an automotive supply store, the part number can be looked-up, held in working memory just long enough to do the task of completing that part of the form, and it can then be forgotten. Because the parts catalog serves as a graphic "memory" device for storing information, the part number can be looked-up again when needed. There is no need for the clerk to memorize or otherwise learn the numbers of the parts in the store.

In reading-to-learn, much of what is taught as "study skills," or "learning strategies" reflects the property of the permanence of graphic displays and their ability to be studied at length and repeatedly read to extract the information collected in the display(s) and to relate it to prior knowledge. Strategies such as the variants of Robinson's SQ3R - Survey, Question, Read, Recite and Review - , which give suggestions for information processing before reading, during reading, and after reading, were invented because the permanence of graphic displays permits the storage of knowledge and the need, then, for new learners to acquire the knowledge by reading.<sup>9</sup>

In Canada, Human Resources and Skills Development Canada has identified what it considers are the Essential Skills that are relevant for work, learning and life ([www15.hrdc-drhc.gc.ca/English/general/Understanding\\_ES\\_e.asp](http://www15.hrdc-drhc.gc.ca/English/general/Understanding_ES_e.asp)). Two of nine Essential Skills are based on the prose and document scales of the IALS and ALL surveys. One is called Reading Text and a second is Document Use. In contrasting reading as it is done in schools versus workplaces, HRSDC states that, "A great deal of classroom reading focuses on "reading to learn." For instance, emphasizing concepts such as finding the main idea and supporting ideas and restating them in one's own words is "reading to learn." On the other hand, a great deal of workplace reading is "reading to do," with the reader taking various actions and assuming risks associated with error. That fact that the reader takes various actions as a result of reading materials changes the dynamics of reading considerably. That is why the person with hands-on experience to support the knowledge gained through reading is often the best equipped to carry out the work." ([www15.hrdc-drhc.gc.ca/awm/main/c\\_tf\\_read1\\_e.asp](http://www15.hrdc-drhc.gc.ca/awm/main/c_tf_read1_e.asp))

The permanence feature of graphic displays permits the storage of information over time or its transportation over space or both. This has the effect of removing the information display from its original setting or context. In turn, this makes it necessary to learn ways of making graphics displays so that they can be used out of context and of ways for comprehending such decontextualized displays. Much of what is taught about "conventionalized" devices such as topic sentences, greetings, salutations, narratives, exposition and so forth results from the capacity for decontextualization that permanent graphics displays exhibit, and the need, then, to have "recontextualizing" devices and modes of expression that literates can learn to help them process the information displays efficiently.

2. *Spatiality*. Unlike speech, graphic information displays can be arrayed in space. Signs can be placed on doors, over buildings, alongside highways, and so forth; pages of print with words layed out spatially to permit the recreation of a temporal flow of speech can be constructed; forms can be developed with "slots" containing labels ("Name;" "Address;" etc.) and myriad other graphic tools to accomplish various information transmission and processing tasks can be developed ( labels, lists, bus schedules; flow charts; tables; schematics; transparencies; and so on).

In mathematics, spatial layout becomes especially important in the concept of "place value." In teaching reading, students may be taught to read graphs or figures, or to analyze text materials using such graphic devices as "semantic networks," outlines, tree structures, and other devices

that depend for their effectiveness on the fact that the more or less permanent, graphic displays can be arrayed in space.

Spatiality is especially important in the use of graphic displays for analysis and synthesis. For each of the three types of analysis identified by Upton<sup>10</sup> there is a primary graphic device. For *classification*, in which objects or events are analyzed by features and then sorted into categories, the *matrix* is the primary graphic device. With lines forming rows and columns that intersect to form cells (graphic "pigeonholes"), information can be sorted into various cells to fit category headings of columns and rows. The white space of an empty cell serves as an information processing aid, and reminds one to look for information that might fit the cell.<sup>11</sup>

For *structural* analysis, in which the relative location of objects and/or their parts is of importance, pictures, schematics, block diagrams tree structures, or similar devices that display information spatially are the primary tools of analysis. Devices such as tables of contents and indexes display the relationships among the parts (chapters) and contents (indexed terms) of a text to the total book.

For *process* or procedural analysis, in which the sequencing of events over time is the object of analysis, the *flow chart* is the primary graphic device. With the use of special symbols such as arrowheads, the steps required to accomplish some task can be arrayed spatially, read sequentially and guide the task performance of the reader.

With each of these graphic tools, the products of analysis are synthesized into a new display in which the spatial aspect of the graphic display permits and facilitates important information processing functions. A large amount of the success of such displays reflects the fact that they take advantage of visual perception. For instance, things grouped together in close proximity tend to be perceived as distinct from other things and as belonging to one another. This is a useful method for uniting perceptual and semantic "chunking" to aid in overcoming memory load and for organizing information for learning, as in the use of "mind maps" or other forms of semantic networks.<sup>12</sup>

In Canada, Human Resources and Skills Development Canada discusses the Essential Skill of Document Use and states that it "refers to tasks that involve a variety of information displays in which words, numbers, icons, and other visual characteristics (e.g., line, colour, shape) are given meaning by their spatial arrangement. Workplace examples of documents include graphs, lists, tables blueprints, schematics, drawings, signs and labels."

3. *Light*. The third major feature of graphics technology that is drawn on in literacy is the use of light. The marks that are made to produce such graphic symbols as written or printed words, numbers, arrowheads in procedural flow charts, the white space of the cells in a table (matrix) and so forth are constructed by structuring the light that leaves the surface of the graphic medium such that the eye can detect the structure in the display.

The properties of light that are used most in graphics technology are brightness and color. Brightness provides the contrast that makes writing possible. That is, the "black" of the line of writing (or type) is in contrast to the "white" background. Brightness provides contrast that can be used in conjunction with permanence and spatiality to aid information processing, such as the use of "white space" in arranging information spatially on pages to facilitate semantic "chunking" for learning.

In addition to aiding in overcoming *memory* limitations and facilitating learning through various semantic "chunking" and organizing devices, the properties of light are extensively used to aid

*attention* during information processing. **Bold print** may be used to call attention to certain information and *color* can guide information processing, as when a red line is used in an electronics diagram to permit a particular circuit to be traced in an array of circuits printed in black.

Learning strategies instruction may include pre-reading activities in which bold faced, italicized, or segregated (as by white space) words or phrases are first surveyed to activate prior knowledge about what is to be read in greater detail. This is done to increase comprehension and make learning more effective.

Study techniques such as highlighting or underlining with colored pens use the electromagnetic spectrum as tools for focussing attention and reducing the amount of information that must be processed in a second reading (itself a learning strategy made possible by the permanence feature of graphics technology).

As with all technology, the power of graphics technology arises from its use to develop tools for amplifying and extending human capabilities.<sup>4</sup> However, unlike hammers, sewing machines, automobiles, and other technologies that extend human strength, dexterity, or locomotion abilities, graphic technologies gain their power from their application to the extension of human cognition and the ability to manipulate information in symbolic form.

In particular, the merging of graphics technology with spoken language, itself a form of human technology for communicating with symbols, produces the power behind, and the awe and appreciation of, literacy.

*The Graphic Representation of Spoken Language.* The capstone achievement in graphics technology was the development of the *alphabet*, a relatively simple technology by means of which a few graphic marks can represent enough aspects of the oral language that the marks permit a reader to reconstruct a language-based message from the graphic display.<sup>6</sup> The importance of this is that it permits graphic language to draw on the power of oral language for representing and communicating knowledge, while bringing the power of the three features of graphics technology to bear on the development of new knowledge and tools for thinking and problem solving.

Knowledge, The Human Cognitive System, and Reading. Just as the oral language is used to represent knowledge (ideas; thoughts) in the acoustic medium, the alphabetic writing system is used to represent knowledge in the graphic medium. In both these cases, knowledge is both the beginning and end product of communication.

Because knowledge can be represented in different modes, as in drawings, speech, written language, dance, and so forth, it is useful to consider the person as possessing a knowledge base that can be operated on by different sets of procedural rules (themselves a part of the knowledge base) to represent the knowledge. In a very simplified model of a human cognitive system (HCS) the system has a long term memory in which the knowledge base is stored, a short term or working memory that is actively involved in processing information, and a sensory/perceptual system for picking-up and placing information in the environment.

When the person is listening to speech, the HCS is picking up information in the acoustic medium and simultaneously picking up information from the *internal* knowledge base and merging the two to comprehend the message. Similarly, in reading, the person picks-up information from an *external* store of knowledge (a book; sign; list; table; etc.) and merges it with knowledge picked-up simultaneously from the internal knowledge base.

From this model, it is clear that *the success of reading for comprehension rests upon*

(1) the possession and access of content knowledge relevant to what is being read;

(2) the possession and access of task-relevant information processing (procedural) knowledge, including planning or goal-setting (metacognitive) knowledge and knowledge of strategies for learning from texts; oral language representation knowledge (grammar:lexicon and syntax); communicative knowledge (such as questioning for clarification) and written language representation knowledge, including various communicative conventions developed by literates over time (such as topic sentence and supporting details in expository materials) and

(3) an external information display that can be accessed, scanned (read), and transformed into an internal representation in working memory for use in performing some task (reading-to-do) or with transfer to the long term memory or knowledge base when learning is desired (reading-to-learn).

Organizing these various components and processes of the human cognitive system into a program to help adults expand their knowledge of and skill in using graphics technology for reading is a formidable task. How one proceeds depends in large part upon the needs of the adults being served and the instructional contexts. For instance, adults with the absolute minimum knowledge of the alphabet, writing, and phonics require education in the alphabetic principle and its use in reading. There will be a need for extensive practice in decoding before these adults can give a skillful reading performance.

*Engaging in Literacy Practices to Become Highly Literate.* A salient finding from research across the last half century is that people with higher levels of education have higher levels of literacy skill and they engage in higher levels of literacy practices, i.e., they read books, magazines and newspapers more frequently than do the less educated and less skilled.

The combined evidence suggests that *practice in reading*, and especially the reading of books, is a potent contributor to the development of vast bodies of knowledge in long term memory and efficiency in word recognition and other aspects of the processing of language and graphic displays of information in working memory. In turn, it is the large bodies of knowledge that a reader possesses that permits him or her to provide a *functional context* for what they read. This makes it possible for highly literate readers to contend with even poorly designed and written books and other materials that are poorly contextualized. The highly literate reader uses prior knowledge to construct a meaningful context for the text, even when the text itself does not.

Some evidence exists to suggest that adult students who leave literacy programs may not only fail to develop additional literacy skills if they do not engage in further literacy practice, but also that they may actually, and fairly rapidly, lose new found skills if they are not practiced after the program<sup>23</sup> (p. 118). Literacy students who received job-related reading training and then went on to job technical training were re-tested about eight weeks after leaving the literacy program. It was found that at the end of the six week literacy program the students had gained 2.4 reading grade levels (RGL) of skill in job-related reading. Eight weeks later, after completing job technical training, that gain dropped to 1.9 RGL, for a retention rate of 80 percent. However, while gain in general literacy was about 1.0 RGL at the end of the job-related literacy program, eight weeks later that gain had dropped to 4 months, for a retention rate of only 40 percent of what had been gained in general literacy.

The foregoing suggests that although the amount of reading practice may have dropped when the students left literacy training and entered job technical training, they nonetheless continued to practice reading job-related materials. This may have helped them maintain their gain in job-related literacy. However, since it is likely that they did not engage in as much reading practice as during the literacy program, this may have contributed to their loss of most of their gain in general literacy.

For adult literacy education, this implies that instruction should follow the principles of Functional Context Education including the classroom use of materials that are relevant to the student's life outside the classroom, so-called "real world" or "authentic" materials, so that transfer of new knowledge and skills from the classroom to the world outside the classroom can occur and additional practice in literacy use can be encouraged, as discussed in Chapter 2 of this notebook.

NOTE: References cited in this chapter can be found online in Sticht, T. (1997). Functional Context Education (FCE) Workshop Resource Notebook. See Chapter 6. Functional Context Education and Literacy Instruction.

([www.nald.ca/fulltext/context/cover.htm](http://www.nald.ca/fulltext/context/cover.htm))

## **Chapter 4**

### **Functional Context Education in Historical Perspective**

#### **Harriet A. Jacobs (1813-1897)**

One of the earliest accounts of teaching an adult to read comes from the work of the slave Harriet A. Jacobs (1813-1897). Even though it was unlawful to teach slaves to read, Jacob's owner's daughter taught her to read and write. In 1861, after she became a free woman, Jacobs wrote a book entitled, "Incidents in the life of a slave girl written by herself" (Jacobs, 1987/1861). In it she tells the story of how she helped an older black man, a slave like her, learn to read. She said, "He thought he could plan to come three times a week without its being suspected. I selected a quiet nook, where no intruder was likely to penetrate, and there I taught him his A, B, C. Considering his age, his progress was astonishing. As soon as he could spell in two syllables he wanted to spell out words in the Bible. ... At the end of six months he had read through the New Testament, and could find any text in it."

Later in her life, after achieving her freedom, Jacobs taught school for former slaves in what were called the Freedmen's Schools. These schools were set up after the Civil War when the U. S. Congress created the Bureau of Refugees, Freedmen, and Abandoned Lands as the primary agency for reconstruction (Morris, 1981). In the Freedmen's Schools it was not unusual for both children and their parents to be taught reading, writing, spelling, and arithmetic in the same classroom at the same time. This was an early form of "family literacy" education.

Special textbooks were developed for the Freedmen's Schools that emphasized practical affairs of life and the instilling of positive values. For instance, a lesson from *The Freedman's Second Reader*, published by the Boston wing of the American Tract Society in 1865 first presents a list of words for sight reading instruction, but with some attention to phonics (e.g., What letter is silent in hoe?). It shows a drawing of an African-American family gathered around a table listening while the father reads. Beneath the drawing the text says:

"THE FREEDMAN'S HOME

See this home! How neat, how warm,  
how full of cheer it looks! It seems as  
if the sun shone in there all the day long.  
But it takes more than the light of the sun  
to make a home bright all the time. Do  
you know what it is? It is love.”

The work of Harriet Jacobs and the teachers of the Freedmen’s schools illustrate two aspects of teaching reading with adults during the 19<sup>th</sup> century. First, Jacob’s used what she called the “A,B, C” method, which others have referred to as the “alphabetic” method. Second, specially written Freedman’s readers oriented their lessons to the types of things that the authors thought would be of interest and relevance to former slaves, both children and adults, and they included illustrations with African-American children and adults in them. This is an early form of “functional context education” in teaching adults to read.

### **Cora Wilson Stewart (1875-1958)**

A leading pioneer of adult literacy education, Cora Wilson Stewart, Superintendent of Instruction in Rowan County, Kentucky, noticed that many parents of the children in the public schools were illiterate. So she mobilized a group of teachers who volunteered to teach adults to read and write. The adults would be taught in the same schools as the children but at night, after the children went home. But because there were no street lights in the hills and hollows of the region, classes could only be held on moon lit nights, when adults could see their way to school. For this reason, the literacy program became known as the Moonlight Schools of Kentucky.

Stewart was devoted to the analytic (whole language) method of teaching reading. This is clearly indicated in the *Soldier’s First Book* which she published in 1917 for teaching soldiers to read during World War I. In the Instructions to Teachers at the front of the book, she states, “The reading lessons in this book are to be taught by the word and sentence method combined. It is as easy to teach “I go” as it is to teach I “g” “o”---“go”. The first lesson should be learned at one recitation. After teaching the pupil the sentence, drill him on words by pointing out and having him point out each word as many times as it occurs in the lesson, and by other drills.”

Stewart produced an innovative method for teaching adults to write. She understood that for adults who had to make a mark in public events, such as voting, nothing was more important than learning how to write their names. So she introduced the practice of taking a soft sheet of ink blotting paper and carving the person’s name in it. Students then traced over the indented name until they could write it without any guide from the blotter paper. Later this approach to teaching writing would be called the “kinesthetic method.”

Stewart was the first to produce reading materials especially for adults learning to read. She prepared a special newspaper, the *Rowan County Messenger*, to keep new learners up to date with local and national events. She wrote three *Country Readers* with contents that were related directly to the lives of adults outside the classroom, such as on the farm, health, civic activities, parenting, and other topics, including spiritual development, a topic no longer addressed in most adult literacy programs in the United States. This use of functional context education helped adults learn to read “real life” materials and transfer their new learning to contexts outside the classroom.

### **J. Duncan Spaeth (1868-1954)**

During World War I, John Duncan Spaeth, a native of Philadelphia with a Ph. D. in early Anglo-Saxon literature from the University of Leipzig,, took time away from his position as Professor of English at Princeton University and worked as Educational Director of the Young Men's Christian Association (YMCA) at Camp Wheeler, Georgia and Camp Jackson, South Carolina. Because large numbers of men being called for military service were illiterate, or of very limited literacy, schooling in reading and writing became a necessary element of military training.

In 1918, the Southwestern Department of the National War Work Department of the Y.M.C.A. in Atlanta, Georgia published the "Camp Reader for American Soldiers," written by Spaeth. In this book Spaeth acknowledged the help of Cora Wilson Stewart. But in a revised edition published in 1919 there was no recognition of Stewart's influence. In fact, Spaeth rejected the analytic method of teaching reading that Stewart favored and instead became the first person to prepare an extensive theoretical introduction to the synthetic (phonics emphasis) method of reading teaching written especially for teachers of adults.

Though he eschewed the analytic method of teaching reading favored by Stewart, Spaeth used the same functional context education approach in the Camp Reader for American Soldiers as used by Stewart in the Country Life Readers and the Soldier's First Book that she had prepared for teaching soldiers to read in World War I. Spaeth's Camp Reader for American Soldiers was illustrated with pictures of Army situations and it included much of the vocabulary and concepts used in training in soldiering that the Army expected new recruits to learn, and it provided spiritual and morale building readings as well.

### **Frank C. Laubach (1884-1970)**

According to the New York Times of June 12, 1970, in 1911, the year Cora Wilson Stewart started the Moonlight Schools, Frank C. Laubach received a master's degree in sociology from Columbia. In 1913, the year that the "each one teach one" slogan was invented for use in Kentucky, Laubach received his doctorate in sociology. In 1914 he was ordained a Congregationist minister and a year later, in 1915, he and his wife left for the Philippines to work as missionaries.

A chronology from the Laubach Literacy library in Syracuse, New York reports that in 1930, "While working as a missionary among the Maranao people of the Philippines, Frank C. Laubach developed a simple method to teach them to learn to read and write in their own language. He also discovered the potential of volunteer tutors, as newly-literate Maranaos offered to teach illiterate family and friends. This one-to-one instructional approach became known as "Each One Teach One." A review of books by Laubach (1947,1960) revealed no citation of the earlier origins of the "each one teach one" slogan in the work of Cora Wilson Stewart. For now, it appears that this slogan that has played a major role in advancing the policy and practice of using volunteers in adult literacy programs may have had two separate birthplaces, first in the hills and hollows of Kentucky, and some fifteen years later in the dense jungles of Mindanao Island in the Philippines.

Like Spaeth, Laubach (1947, 1960) followed the synthetic or alphabetic code method in teaching reading as a second signaling system for listening to speech. In teaching decoding, one of his major innovations for teaching adults was to use picture mnemonics to teach the sight-sound correspondences, such as using a picture of a snake curved to look like an "s" to teach the sound that goes with the graphic letter "s".

In 1955, Laubach started Laubach Literacy in the United States and through this organization thousands of volunteers were taught to teach reading the "Each One Teach One" way. In materials called the Laubach Way to Reading for new readers there were four structured workbooks that presented letter-sound correspondences. Following tightly scripted tutoring

manuals and graded readers using word lists that Laubach assembled, adults were taught decoding and then introduced to reading texts of increasing difficulty.

In these readings, Laubach followed functional context education principles and incorporated materials that were selected to be of interest to adults. This approach was developed earlier in India where Laubach had been invited by Mahatma Gandhi to help in preparing materials for teaching adults to read.

### **Paul A. Witty (1898-1976).**

During World War II, just as in World War I, the armed services once again faced the need to utilize hundreds of thousands of men who were illiterate or poorly literate. Paul Andrew Witty, with an M.A. (1923) and Ph. D. (1931) from Columbia University in Psychology, specialized in understanding the process of learning to read and in developing methods for helping students who were having difficulties in learning to read. With this background, he was called upon to serve as an education officer in the War Department.

In May of 1943 the War Department published TM 21-500, entitled the "Army Reader". In this book, which was produced under Witty's direction, soldiers in the Army's Special Training Units for literacy instruction were introduced to Private Pete, a fictional soldier in a Special Training Unit who was also learning reading, writing, and arithmetic. The idea was that soldier's would be able to identify with Private Pete and understand what they were reading about him because they shared common experiences, such as living in the camp, sleeping in the barracks, eating in the mess hall, and so forth. These were all things that Private Pete did in the Army Reader. Witty was apparently the first to use this approach of trying to motivate adults learning to read by providing a fictional counterpart with whom they could identify.

Witty's analytic approach reflected the influence of William S. Gray, one of the founders of the famous Dick and Jane series for children, which provided a model for Witty's use of Private Pete in the Army Reader, and Arthur I. Gates, a leading reading professor at Columbia University. Both of these men were advocates of the analytic or "meaning emphasis" approach known as the "word" method. In this method students first developed readiness to read by discussing illustrations from the readers. Then they learned a basic store of sight words used in the readiness training. Then they moved on to simple sentences made up of the sight words. In this approach, phonics instruction was downplayed and postponed until the students could do quite a bit of reading based upon discussion and whole word recognition training.

Witty's program for the Army introduced several innovations in adult literacy education, including early use of audio-visual technologies such as film strips, cartoon strips in *Our War*, a special newspaper for literacy students, and photo novellas in which Private Pete and his buddy Daffy were portrayed in photographs of soldiers as actors in materials used to teach reading to soldiers about to be discharged from military service. The program also innovated with unit tests to measure progress towards achieving the goal of 4<sup>th</sup> grade reading ability. In all these materials, a Functional Context Education approach was used to ensure that the materials were of direct relevance to the soldier students in the context of the military training and service in which they found themselves at the time.

### **Francis P. Robinson (1906-Unknown)**

World War II not only served to teach reading to the poorly educated and least literate adults, it also served higher level students like those in developmental reading programs in colleges (Pauk, 1999). In what was known as the Army Specialized Training Program (ASTP), United States colleges were swamped by Army personnel who were on campus to take courses for hundreds of

specialized skills needed to win the war. The courses these soldiers had to take were accelerated, highly concentrated, and placed considerable demands on reading and mastering the content of difficult technical manuals. Under such conditions, many men were experiencing reading and learning difficulties.

At the Ohio State University, Professor Francis Robinson, a member of the psychology department faculty, was selected to head a new Learning and Study Skills program that would teach military personnel to learn better by reading. After reviewing research and approaches to effective study skills, Robinson came up with a formula for reading and study that has endured for two-thirds of a century. He developed what is called the SQ3R method of reading and studying. In this method, students are taught to first Survey the text and to raise Questions about the meaning of what they are reading, then they Read the text carefully, stopping now and then to construct and Recite to themselves summary statements of what they have just read, and to later Review what they have read.

The SQ3R method is today referred to as a “study skill” and sometimes a “reading comprehension strategy” and is one of several such strategies that can be subsumed under the label of “active reading strategies” which advise readers to take actions Before they read (as in Surveying and Questioning), While they read (as in Reciting) and After they read (as in Reviewing). Importantly, this general strategy can be applied to a wide variety of materials in Functional Context Education.

### **Septima Poinsette Clark (1898-1987)**

Septima Poinsette Clark, the great civil rights teacher from the Highlander Folk School in Tennessee was an innovator in teaching adult reading and writing within the functional context of the civil rights movement to free African-Americans from the oppression of those wanting to deny them full citizenship. In this regard, she pre-dated the Brazilian educator, Paulo Freire in developing a Pedagogy of the Oppressed (Freire, 1970).

Clark followed the analytic, “meaning-making” method in teaching word recognition and followed functional context education methods in using “real life” materials for teaching adults to read (Clark, 1986). On January 7, 1957, Clark and her teachers started the first Citizenship School serving adult African-Americans on Johns Island in South Carolina. Clark (1962) recalled that when the teachers asked the students what they wanted to learn, the answer was that, “First, they wanted to learn how to write their names. That was a matter of pride as well as practical need. (p. 147).

In teaching students to write their names, Clark used what she said was the “kinesthetic” method which she had learned from Wil Lou Gray, State Superintendent of Adult Education in South Carolina in the middle of the 20<sup>th</sup> century. In turn, Gray learned the writing method from Cora Wilson Stewart, whose books called the Country Life Readers were also used by Gray in South Carolina literacy schools in the 1920s. Following the lead of Stewart and Gray, Clark instructed teachers to write student’s names on cardboard. Then, according to Clark (1962), “What the student does is trace with his pencil over and over his signature until he gets the feel of writing his name. I suppose his fingers memorize it by doing it over and over; he gets into the habit by repeating the tracing time after time.” (p.148). She went on to say, “And perhaps the single greatest thing it accomplishes is the enabling of a man to raise his head a little higher; knowing how to sign their names, many of those men and women told me after they had learned, made them FEEL different. Suddenly they had become a part of the community; they were on their way toward first-class citizenship.” (p. 149).

It is astonishing to realize that across half a century, Cora Wilson Stewart, Wil Lou Gray, and Septima Poinsette Clark all used the same simple instructional technique to teach adults to write their names, that this technique was used by Clark in the development of the Citizenship schools of the Southern Christian Leadership Conference, and this technique eventually taught 10,000

teachers and registered 700,000 thousand African Americans to vote in the South. Amazingly, a simple technique used by adult literacy educators for teaching adults to write their names was instrumental in forging the Civil Rights movement of the late 1950s and 60s.

### **Paulo Freire (1921-1997)**

To instill a feeling of confidence in the adult peasants and other oppressed folk with whom he worked, Freire developed an approach to education aimed at helping adults liberate themselves from the oppression of others. To do this he first concentrated on teaching adults to “read the world” so they could then “read the word.” By “reading the world” he meant helping adults understand the differences between the world of nature and the world of culture. Nature is made by natural forces and is not subject to change by humans. Culture on the other hand is made by humans and can be changed by humans. We “read the world” to know what is nature and what is culture. Oppressive conditions are cultural and hence capable of being changed by humans.

Literacy is a technology for helping humans change the cultural contexts in which they live so that they can achieve social justice and is hence worthwhile learning. This line of reasoning was to motivate adults to learn to read and write. To start the process, Freire followed a Functional Context Education approach, though he did not call his practice that. He used pictures of contextual information that adult literacy students “read” to distinguish what in the picture was due to nature and what was due to culture, i.e., human actions. In discussing the pictures, the adults demonstrated that they possessed a lot of knowledge about the world, including both nature and culture. This knowledge was drawn on in teaching reading.

Freire listened to the adult learners discuss pictures depicting various situations and then chose words that the students used to start the process of teaching literacy. Words with a lot of emotional meaning, such as “favela” (slum) were selected to teaching decoding of the written language. The word was first discussed, along with a picture of a situation denoted by the word. Then the word was broken into syllables –FA-VE-LA. This was continued until the word could be read (decoded) fluently. This method of “reading the world” and then “reading the word” was used extensively to build on the knowledge that adults possessed and to teach them to read the language that they used to express their knowledge. Then new knowledge was introduced to stimulate adults to take actions to change their oppressive situations.

Freire contrasted this learner-centered, participatory approach in which the adults helped determine the content and direction of their own education with the more traditional, school-centered education in which teachers determine the content and direction of education and attempt to deposit and “bank” knowledge in learner’s minds even if they do not understand the value of the new knowledge.

Note: References for this chapter can be found online in a paper entitled: Seven Pioneering Adult Literacy Educators in the History of Teaching Reading With Adults in the United States ([www.nald.ca/fulltext/sticht/feb05/1.htm](http://www.nald.ca/fulltext/sticht/feb05/1.htm))

### Table 1

Numbers of Adults Made Literate Through the Work  
of Four of the Seven Pioneers of Adult Literacy Education.

Cora Wilson Stewart and the Moonlight Schools  
Kentucky – 130,000  
N. Carolina – 10,000  
Georgia – 17,892

Alabama – 25,000	
	Total: 182,892
J. Duncan Spaeth and World War I Y.M.C.A. in Development Battalions - (Illiterate and non-English-speaking troops with literacy education by February 1919.	25,000
<u>Paul A. Witty and World War II</u> (Graduated from Special Training Units)	254,272
<u>Septima Poinsette Clark</u> (Southern Christian Leadership Conference Citizenship Schools)	<u>700,000</u>
	Total: 1,162,164

## Chapter 5

### Overview of Methodologies Used in Adult Literacy Research for Determining What is Relevant to Youth and Adult Learners

#### Individual Interviews

A basic tenet of Functional Context Education (FCE) is that adult literacy education ought to be based on what is relevant to the contexts of adults' lives. To evaluate this idea, we took a two-pronged approach. First, using individual interviews we looked at the reasons that adult students gave for why they were attending English as a second language (ESL) education and the types of programs they were attending. We wanted to see, for instance, whether adults who were attending ESL programs having a particular focus, such as being vocationally-oriented, are more likely to give job-related reasons for attending ESL instruction than are adults enrolled in other types of courses, such as family-literacy oriented, or general academic or life oriented.

Interviews were conducted with students in an adult continuing education center who were enrolled in either Vocational ESL, Family ESL, or Conventional (academic; life skills) ESL. As a part of the interview students were asked to complete a survey that included the question, "Why are you taking this course? (circle one or more)." Then seven alternatives were presented: (1) to get a job, (2) to keep a job, (3) to get into vocational training, (4) to go to college, (5) for self-improvement, (6) to help my children, and (7) for citizenship.

Data analysis indicated that the programs in which the students were enrolled reflected their main reasons for studying ESL. The main reason adults in Vocational ESL enrolled in the program gave for wanting to study ESL was to get, or keep a job or to get into vocational training. Similarly, those enrolled in Family ESL said their main reason for studying ESL was to help their children. Those enrolled in general ESL were interested in self-improvement or going for further education. Thus, the more relevant the course to the student's main reason for wanting to study ESL, the more likely the person was to enroll in the course.

In a second study we looked at relation of relevance of programs to student's major interest and their persistence in the program. In this case we looked at the course completion rates of vocationally oriented adult students in three on-going vocational ESL (VESL) programs that

differed with regard to the specificity of the vocational training component of the ESL instruction. Here we were interested in whether the extent to which a VESL course focused on actual job training and job placement, which was the major goal for adults taking the VESL courses, increased the likelihood that adults would persist in and complete the program.

Data on persistence showed that, in general, the closer the match between the reasons of the adult students for taking the VESL course, in this case to get a job, and the focus of the program, in this case focusing directly on vocational training and finding jobs for students, the more likely the students were to complete the course.

In general, interviews with adult students can provide useful information about their goals, and this in turn can help teachers and curriculum developers provide instruction that is relevant to these goals. Though limited, the research described here suggests this is an important activity that influences both the choice of programs in which adults will enroll and their persistence in such programs.

Reference: Sticht, T. G.; McDonald, B. A.; Erickson, P. R. (1998, January). Passports to Paradise: The Struggle To Teach and To Learn on the Margins of Adult Education.  
(<http://SearchERIC.org/scripts/texis.exe/scripts/asearch1?db=ericft&expand=no&disp=snote&proximity=rank&lmt=nul&nsl=20&arg=passports+to+passports>)

## **Focus Groups**

### **The CONSABE Project: Content Standards for Adult Basic Education**

**What is the CONSABE Project?** A joint project of the San Diego Community College District, Division of Continuing Education and the National Institute for Literacy in Washington, DC to develop content standards for Adult Basic Education.

**Why Are We Doing The CONSABE Project?** National Surveys by the General Accounting Office found that Adult Basic Education programs lack a clear statement of the knowledge and skills that adults need to possess. Local reviews of ABE revealed that there is no uniform guide for what adults should know and be able to do after completing an ABE program.

**CONSABE Second Synthesis of Draft Content Standards for Adult Basic Education**

Equipped For the Future (EFF)		Three Life Roles	
Parent/ Family Member	1.0	2.0 Citizen	3.0 Worker
Domain Specific Knowledge & Skill	Domain Specific Knowledge & Skill	Domain Specific Knowledge & Skill	Domain Specific Knowledge & Skill
1.1 Parenting Activities	2.1 Consumer Economics	3.1 Labor Market Information	
1.2 Caregiving	2.2 Citizenship Activities & Voting	3.2 Workplace Culture	
1.3 Health	2.3 Civic Participation	3.3 Education/Training	
1.4 Community Resources	2.4 Community Resources	3.4 Needs & Opportunities	
1.5 Housing & Transportation	2.5 Law	3.5 Job Finding & Holding	
1.6 Behavioral Management	2.6 Behavioral Management	3.6 Behavioral Management	
<b>4.0 Generative Knowledge Across Life Roles and Four Purposes</b>			
4.1 Facts, Concepts, Procedures, Rules & Principles of Basic Physical, Social & Life Sciences; World & U. S. History & Geography; U. S. Government at Federal, State, & Local Levels Literary Thought; Art and Mathematics			
4.2 Language: Functional Knowledge of 15,000 Vocabulary Words & Their Derivatives			
<b>5.0 Generative Skills for Independent Action, Decision Making and Lifelong Learning</b>			
5.1 Thinking About Goals; Managing and Monitoring Learning			
5.2 Scientific Reasoning: Empirical & Conceptual Evidence vs Personal Experience, Beliefs & Faith			
5.3 Thinking: Analogical Reasoning: A is to B as C is to D Logical Reasoning: Assume Premises & Deduce Conclusions Analysis & Synthesis: Classification, Structural, Temporal			
<b>6.0 Generative Skills for Accessing &amp; Voicing Information</b>			
6.1 Computeracy: Keyboarding; Word Processing; Internet			
6.2 Numeracy: Comprehension, Computation, & Communication			
6.3 Literacy: Reading & Writing Comprehension & Production			
6.4 Oracy: Listening & Speaking Comprehension & Production			
6.5 Social & Interpersonal Interacting & Cooperation			

**How Is the CONSABE Project Working to Develop Draft Content Standards for ABE?**

Over 350 adults have been involved in a multi-pronged approach that includes: grassroots participation by adult students, business leaders, teachers in ABE, administrators, and other stakeholders. These community members have participated in focus groups, adult students have participated in writing contests, surveys of citizens have been completed, and a review of related projects that have developed content standards for ABE has been completed.

**What Do the First Draft Content Standards Look Like?**

The first draft of the new content standards are shown in the accompanying figure. The draft standards include content for three Life Roles: Parent/Family Member; Citizen; and Worker. There are also three cross-cutting content areas that are made-up of generative skills for accessing and voicing information (area 6.0), generative skills for taking independent action, decision making, & lifelong learning (area 5.0), and generative knowledge that cuts across the three life roles.

**What Happened Next?**

The CONSABE project contributed to the Equipped for the Future (EFF) initiative of the National Institute for Literacy. EFF went on to develop content standards and initiated projects to implement a variety of activities to reform adult basic education programs to make them more relevant, meaningful, and useful to adult students and to make them more accountable to the public at large.

A project of the San Diego Consortium for Workforce Education and Lifelong Learning (CWELL)

Reference: Sticht, T., Erickson, P., & Armstrong, W. (1996). Voices from the community. CONSABE: Content standards for adult basic education: Moving toward draft standards. Final Report. Washington, D.C: National Institute for Literacy. (available from <http://www.searchERIC.org> )

Literacy Task Analysis

Project REALISTIC: Identifying Listening, Reading, Mathematics Demands of Jobs

Attempts to find out how literate adults needed to be to perform various jobs led to the introduction of techniques for identifying the kinds of tasks involving reading that job trainees and job incumbents have to perform. In 1975, the Human Resources Research Organization (HumRRO) published "Reading for Working: A Functional Literacy Anthology". The research and development reported in RfW set the stage for what became known as "workplace literacy." For the first time, adult literacy work included an extensive body of empirical research to find out just how literate adults had to be to perform well in various occupations. The work took place within the context of the U. S. Army of the Vietnam era of the 1960s and continued into the newly implemented Volunteer Army of the 1970s and beyond. It expanded from studies to determine how literate personnel had to be to work as automobile mechanics, cooks, supply clerks, medical corpsmen, etc., to the design of more readable and usable books and manuals, and the design, development, and implementation of workplace literacy programs at Army recruit training centers across the United States.

Reference: Sticht, T. G. (1975). Reading for Working: A Functional Literacy Anthology. Alexandria, VA: Human Resources Research Organization.

### Literacy Skills Analysis for Job Training

A 1998 technical report issued from the National Center on Adult Literacy (Norback, 1998)) provides a summary of work by Sticht and colleagues and reviews three large-scale U.S. studies relating to skills and literacy as an introduction to the discussion of literacy skills analysis for job training. The history and evolution of literacy skills analysis are covered, including work by Sticht, Mikulecky, Phillipi, and Norback and a description is given of the two literacy skills analysis methods currently in wide-scale application, Literacy Task Analysis and Job Literacy Analysis. The different purposes that each approach fulfills are described along with several ongoing projects that involve the application of a combination approach. The author also discusses the differences between literacy skills analysis and traditional job analysis approaches. The contribution of literacy skills analysis approaches in developing customized curriculum is included, as are the evaluation procedures used to assess the effectiveness of the training. Finally, policy implications and recommendations regarding literacy skills analysis are made.

Reference: Norback, J. S. (1998, August). Literacy Skills Analysis for Job Training. (TR98-0) Philadelphia, PA: National Center for Adult Literacy. (available in pdf form at: <http://literacyonline.org>)

### Literacy Task Analysis for Reading to Learn at Secondary & Post-Secondary Levels

What kinds of reading comprehension and learning strategies are relevant for students at GED and developmental studies levels? Three studies describe how students learn from texts. Two studies involve adult job training situations and one involves community college students in a freshman psychology class. The first case of adult job training involves the use of correspondence course materials for job advancement. The second case of adult job training involves the use of texts in technical courses where the teachers follow a detailed curriculum guide and textbooks and workbooks are followed precisely to cover the course content. The third study involves students in a community college freshman psychology class describing how they study textbooks and how textbooks could be designed for better use.

Reference: Sticht, T. G. (2003, March). The Learning process and the Text in Use. ICAE: El Cajon, CA: (available online at [www.nald.ca/fulltext/sticht/mar03/cover.htm](http://www.nald.ca/fulltext/sticht/mar03/cover.htm))

## Photographic Ethnography

In research to develop basic skills programs for the U. S. Army in Germany in 1979 and 1980, I directed a “photographic ethnography” of the “ambient literacy” in the environments that personnel encountered as they moved around on military bases, in offices, and in training facilities.

Later, in the mid-1990s, in research for the San Diego Consortium for Workforce Education and Lifelong Learning ( CWELL) I coordinated research in three San Diego communities where ABE/ASE/ESL classes were held. To understand the sorts of literacy materials students encountered in their communities, I once again directed a photographic ethnography in which a research assistant drove through the different communities and photographed the “ambient literacy,” that is, street signs, signs in store windows, billboards, etc.

Finally, also in the mid-1990s, I conducted an evaluation of a half dozen workplace literacy programs in the Chicago area. During this work I once again used photographic ethnography to study the environmental print encountered by management and workers in the offices and plants where they worked.

Across all three environmental contexts, the photographic ethnography revealed a wide array of signs, charts, pictures, schematics, and other information displays making up what today is called “multiple literacies.” This type of photographic study reveals the ambient literacy information displays that are relevant for adult language and literacy students to learn if they are to efficiently and effectively negotiate their environments at work and in the community. The photographs also provide materials for teaching as students view them and discuss the words and graphic displays found in their communities.

## Photographic Ethnography and Environmental Analysis and Design for Learning.

In this research photographic ethnography revealed a lack of posters on the walls outside of classrooms in a U. S. Navy electronics training school. We decided to try to enhance student learning of their electronics coursework by creating a learning environment outside the classrooms using a variety of posters related to the classroom instructional topics and the equipment that an electrician encounters on the job. The goal was to have students engage in some incidental learning related to their training.

Two kinds of posters, Knowledge Questions and Problem Solving dealt with specific topics taught in the course. Two other types of posters, General Information and Motivational Information provided more general information than the specific course content addressed by the first two types of posters.

To evaluate the effects of the environmental design using posters, a survey of over 260 students was conducted. The results showed that students who had been in training longer recalled having seen more of the posters than students in the early phases of training. The posters most likely to be recalled were those dealing with General Information related to course content and Motivational Information rather than those dealing with Knowledge Questions about specific course content and Problem Solving. Overall, students rated posters easy to understand, useful, and interesting.

Reference: Sticht, T., Ellis, J., & Quellmalz, E. (1991, August). Enhancing Productivity in Navy Schools: The Use of Wall Posters and Computer-Based Instruction to Influence Learning. TR-91-11. San Diego, CA: Navy Personnel Research and Development Center.

## Community Newspapers With Teachers & Students as Researchers & Reporters

In the 1990s the San Diego Consortium for Workforce Education and Lifelong Learning (CWELL) worked in the San Diego Community College District (SDCCD) to better understand adult English as a Second Language (ESL) education and Adult Basic Education (ABE). An Action Research Center (ARC) was established which engaged both teachers and students as researchers. To disseminate the results of this research and other information of relevance to the students, teachers, and other members of the Community College District, the CWELL ARC published seven issues of a newspaper called the Community Exchange. Six of these newspapers were eight pages in length and the middle two pages were dedicated to the publication of writings by students. Research by teachers were reported in other sections of the newspaper. Following are examples of these student and teacher research articles.

### Student Research Report: Adult Students Speak Out About School Participation (From the Community Exchange, Vol. 3, Issue 1, Summer 1994, p. 2)

The CWELL Student Writing Contest is a great way to learn more about what students think of different school issues. For the last contest, SDCCD Continuing Education were invited to write about school participation. Here is what these students had to say [Note: student reports were based on interviews with other students and non-students and summarized across student researchers for this article].

#### **Why do adults not participate in education?**

Students presented many reasons for the lack of participation. Financial consideration were the most common. Lack of time was the main reason cited, as many adults are very busy and have to work and/or have to take care of their children. Some work more than one job to support the family.

Other reasons for the lack of participation were school-related. Many students do not go to school because there are no childcare services available or the parent cannot get a babysitter.

Other reasons for the lack of participation were: school was not relevant for student needs, school was not welcoming for students, teachers who do not care about the students, and lack of information about school in general. These factors promoted frustration and discouragement and eventually the students dropped out.

Personal reasons for non-participation were: adults were too old to be educated, lack of self esteem, shyness, lack of motivation, lack of interest, and lack of family and peer support. Some adults said it was too difficult to learn a second language. [Note: these were non-English speaking adults talking about ESL instruction].

### Teacher Research Report: SDCCD Teachers Become Researchers To Improve Adult Basic Education

(From the Community Exchange Vol. 1, Issue 1, Winter 1993, p. 2)

Teachers in the San Diego Community College District (SDCCD) are also becoming researchers. They are studying in adult basic education.

Begun in March 1993, ten Teacher as Research projects are underway. These projects are sponsored by the CWELL Action Research Center.

In one project, "Families Learning English Together," Marjorie Howe, SDCCD Home Economics Resource Instructor and Esther Garcia, SDCCD ESL/Child Development Instructor have joined forces.

They are developing new course curriculum and instructional materials to help Limited English Proficient (LEP) parents, especially mothers, and their preschool children integrate better into the community by : (1) developing their skills in accessing community resources, locating an using medical services, using the library, shopping for family necessities, and communicating at a basic level with school personnel a their child's school; and (2) expanding their basic survival English in the context of family situations.

In another project, "Intergenerational Transfer in the GAIN/ABE Classroom," Instructor Judy Quinn is documenting the intergenerational transfer of cognitive skills from parent to child in her classroom.

Judy is documenting this phenomenon through a literature review of the topic, various surveys, journal writing by students directed towards how their own attendance at school affects their children, and encouraging parents to participate with their children in various educational activities.

More innovative and exciting Teacher as Researcher projects will be featured in future editions of *The Community Exchange!*

## **Review of Literature on Relevance in Adult Literacy Education: Historical Example**

### Mother's First Book and Family Literacy

On January 17<sup>th</sup>, 2005, those who work to advance adult literacy in the United States celebrated the 130<sup>th</sup> anniversary of the birthday of Cora Wilson Stewart of Kentucky, who some regard as the founder of modern adult literacy education in the United States. Her work in the first third of the 20<sup>th</sup> century and that of family literacy educators of the 21<sup>st</sup> century finds an intercept in the understanding of the importance of the literacy of parents, especially mothers, on the educational achievement of children.

In 1930, the Johnson Publishing Company published the first book in the United States aimed specifically at teaching mothers to read. Written by Cora Wilson Stewart, the book was entitled, "*Mother's First Book: A First Reader for Home Women.*"

In the introduction to the book, Stewart explains that,

"This book is a first reader for women who cannot read or write. It is for the teacher's use in teaching such women, and by teacher is meant any person who helps a woman to read....While the book may be used in the class-room (sic), it is designed for use in the home. There are many women who can attend school, there are many others who cannot. Those who are unable to join a class or to enroll in school may be taught at home by the public school teacher or by an ex-teacher; or, if not by these, by a member of the woman's own family, by a neighbor or friend. Never was there a finer, nobler task for a volunteer who wants to render a patriotic, helpful, constructive service." (p. 5)

Stewart goes on to explain that, "The lessons are centered around the home and the daily activities. Based as they are on simple everyday tasks – the care of the baby, cleanliness, proper foods for the family, cooperation with the school and similar subjects – they aim not only at teaching women to read and write, but at leading them to better home practices and higher ideals in their home and community life." (p. 5)

The first reading lesson in the *Mother's First Book* goes:

"See my baby!  
See my baby play!  
My baby is well.  
I keep my baby well." (p.11)

Later, the lessons include instruction in the parenting activity of taking an interest in children's schooling:

"Some parents visit the school.  
They make a friend of the teacher.  
They invite the teacher to the home.  
The parent and teacher talk together.  
They plan for the good of the child.  
Then the child gets on faster in school. ..."

 (p. 46)

Though the *Mother's First Reader* is couched in the ideas of motherhood and family of the rural populations of the United States in the early 20<sup>th</sup> century, the idea that mothers need to be literate

and that through the intergenerational transfer of skills and attitudes the mother's education can influence the subsequent educational achievement of their children, is a foundational belief of contemporary family literacy programs.

## Chapter 6

### Two Case Studies of Integrated Vocational and Basic Skills Education

#### Case Study #1: Workplace Literacy: Integrating Reading Instruction into Six Vocational Contexts

In work for the U. S. Army, I directed a team that developed the Functional Literacy (FLIT) program that replaced all general literacy programs that the Army had in place. As part of our work, our team looked at the existing Army adult literacy programs designed by adult educators in the local school districts and found that the programs used general materials like the old SRA kits (many of you will remember these), and Josephine Bauer's Ready? Get Set! Go! Series. They used the United States Armed Forces Institute reading tests to measure pre and post program gains. This test was actually the Metropolitan Reading Achievement Test for children with a new USAFI cover on it. I still have a copy of one of the passages for measuring reading comprehension that said "Many a great artist's work is produced from the inspiration of his own personal experience. It is said that the opera, *Der Fliegende Holander*, which translated means *The Flying Dutchman*, was inspired by a stormy voyage across the North Sea by the composer, Richard Wagner, etc...." This was used with young men, many from inner centers of cities where opera attendance was quite low, who were about to go to war and fight for their lives, to measure their reading comprehension abilities!

In short, the adult educators had not done hardly anything to take into account the functional contexts in which these young men were engaged. They ignored the fact that these young men were in the Army and had to read some pretty complex technical manuals and that some of this reading was critical because it taught you how to stay alive in the midst of battle. Instead, they had just imported into the military classrooms the same materials they used in civilian programs and set out to work for six weeks, which is all the time the Army would give for adult literacy education.

Looking at this situation, our team decided that we needed to find out what Army men had to read, get copies of key documents and manuals, develop job-related reading task tests to find out how well men could read their job materials, and develop a six week curriculum that would teach reading using job-related materials instead of the SRA Kits and other general teaching materials that the adult educators were using.

*The FLIT Curriculum.* The FLIT team developed job-linked reading programs for personnel with reading skills from the 2<sup>nd</sup> to 6<sup>th</sup> grade levels who were assigned to become Cooks, Automobile Repairmen, Communications Specialists, Medical Corpsmen, Combat Specialists, and Supply Specialists.. The curriculum consisted of two separate "strands" of activities: Strand 1: reading-to-do and Strand 2: reading-to-learn. The reading-to-do strand taught personnel how to use their manuals as reference materials. Research at job sites had indicated that three-quarters of work reading tasks engaged working memory processes and involved looking up information, holding it in working memory to accomplish some job task, and then it could be forgotten. For instance, the automotive repairman might have to look up the proper amount of torque for tightening a lug nut. Or a supply clerk might have to look up the code for a piece of equipment to be ordered. A medical corpsman might have to read and follow the four life saving steps in a course on first

aid. In reading-to-do tasks, then, the person does not have to learn the material - just locate, extract, and use it to accomplish a given task.

Five modules of instruction in the reading-to-do strand included how to read and use tables of contents, indexes, tables and graphs found in the job materials, how to locate and read specifications, etc. in the body of a manual, how to read and follow procedural directions, and how to complete job forms using the information in the manuals and on the forms themselves.

Each module was preceded by a pre-test which, if passed, permitted the person to move on to the pre-test for the next module. If the pre-test was failed, then the person entered the module, completed 10 self-study worksheets, and then took a post-test. If the person failed the post-test, a second set of 10 worksheets was completed and a different version of the post-test was taken. This time, whether the post-test joint criteria of 90 or more correct in 20 or fewer minutes was reached, the person was moved on to the next module to ensure that each student spent some time on each module.

The *reading-to-learn* curriculum strand of the FLIT program differed in several significant ways from the reading-to-do strand. While the reading-to-do strand was an individualized, self-paced, mastery-oriented instructional sequence, the reading-to-learn strand was a teacher-oriented, group-paced, open-ended program designed to help students work together in teams and as individuals to comprehend and learn from training materials and job manuals.

To read for learning, people must be prepared in at least two ways: they must have the knowledge base to comprehend the material to be learned, and they must possess knowledge of strategies and methods for studying materials and relating what they read to what they already know.

To promote the development of a relevant knowledge base that would help students learn better from their job training materials, the reading-to-learn curriculum strand included specially developed materials that were written at a lower reading difficulty level (e.g., 9th instead of 11th-14th grades) and that incorporated the basic concepts and topics within a given job training program. The basic concepts for the six job fields in the functional literacy program were identified through the study of job skills training program curriculum guides, materials, and consultation with job training instructors. In each job reading program, 12 major topic areas were identified, and specific knowledge objectives were developed for each topic area.

For each of the 12 job topics, a 300-400 word passage was written that included the knowledge objectives for the topic area. The passages were written without the redundancy and elaboration typical of textbooks, because in the reading-to-learn activities students performed repeated readings of the materials, sometimes alone and at other times with teams, to construct different representations of the information in the passage. For instance, a medical specialist would be assigned to read the topic passage on First Aid and to then draw pictures illustrating what the written passage said. Then, the student would study the passage again to prepare a flow chart of the four lifesaver steps in first aid.

In addition to the above activities, students were also engaged in reading passages that contained types of equipment, their uses, advantages, disadvantages, and so forth. Then, by studying the passages students constructed tables (matrices) with columns and rows and cells that could be filled in using the content of the passage. Through these "representation transformation" activities, students performed multiple readings of texts and elaborated them by constructing pictures, matrices, or flow charts. The latter activities required that the new knowledge in the passages be "mixed" with the student's prior knowledge for full comprehension to occur.

To help students learn to precisely analyze sentences of the passages, a simple grammar was taught that emphasized that all sentences consist of a "main idea" and "more about the main idea." More about who, what, when, where, why, how and more about the subject of the sentence. Exercises using sentences from the passages were developed to help students "parse" the sentences using the simple grammar. Finally, for some students with very poorly developed word recognition skills, individual vocabulary exercises were developed that included drill on recognizing the written versions of words that were either already in the student's speaking vocabulary, or which were taught by the instructor and then practiced by the student in reading aloud activities.

In practice, students worked in the opposite sequence from that discussed above. That is, first work was given at the word recognition level, then at the sentence parsing level, and finally in "parsing" the entire passage into pictures, matrices, or flow charts. Not all students required extensive work at the first two levels, and so they moved quickly to the passage analysis tasks.

In addition to the job-linked material, the FLIT schoolhouse had available a small library of paperback books, newspapers, and general adult basic education materials that students could read on breaks during the six hour training day.

*Evaluation of the FLIT program.* Research indicated that the general literacy programs had been making about 7 months improvement in general reading and about 5 months gain on the job related-reading tests we constructed. In contrast, the job-related programs made as much or more gain in general reading and four to five times the gain in job-related reading.

In a separate, independent, evaluation sponsored by the U. S. Department of Education, the American Institutes for Research evaluated the FLIT program and declared it one of only 12 programs out of 1500 candidates from both K-12 and adult education to be an exemplary program.

Later our team implemented the new curriculum at all Army training posts using local teachers and replicated the original program findings across the nation, demonstrating that our R & D team teachers were not a critical component contributing to the program's outcomes.

*Retention of literacy skills.* To examine the retention of end-of-course reading gains in both general and job-linked literacy, 97 students were followed-up eight weeks later and retested. On the general reading test, the students had left the six week FLIT program with a gain of 10 months from pre- to post-testing. Eight weeks later only 40 percent (4 months) of this gain was retained. In job-linked reading, students had left the FLIT program with 24 months gain and some eight weeks later they retained some 80 percent (19 months) of this gain. Thus, not only was job-linked literacy training more effective in increasing job reading skill, the newly developed skill was also retained better as the students applied what they had learned in the literacy program to their job technical skills training.

Some significant aspects of the FLIT work for the scientific, evidence-based emphasis that is now facing the adult literacy education field are that (1) we took the context into account in determining how to teach reading, (2) we used a treatment/comparison group method in developing our experimental curriculum, (3) we developed assessment instruments that measured whether students were learning what we were teaching, that is, the job-related reading task tests, (4) we used the same general literacy tests that the adult educators were using to measure generalization beyond job-related literacy in the form of gains in general literacy, (5) there was an external, independent evaluation of the program, and (6) we replicated the program

five times in other locations in the U. S. using different teachers to demonstrate that it was the curriculum and not the R & D team that made the improvements in job-related reading occur.

Importantly, this R &D took place within a context in which students did not have many external worries to distract them. They had transportation, food, housing, medical care, dental care, clothing, and supervision for time management. By holding all these factors constant, the impact of the curriculum was better demonstrated. These contextual factors are not so easily controlled in most civilian adult literacy programs.

Reference: For more on the FLIT program see Chapter 7 in Sticht, T. (1997). Functional Context Education (FCE) Workshop Resource Notebook (<http://www.nald.ca/fulltext/context/cover.htm>)

### Case Study #2: Vocational English as a Second Language (VESL): Integrating Electronics Training With English as a Second Language

[Editors Note: This description of a VESL Electronics course was written by R. Wesley Popham, a teacher/researcher in the Action Research Center (ARC) of the San Diego Consortium for Workforce Education and Lifelong Learning (CWELL). It also reports research using a quasi-experimental design with pre- and post tests on both general literacy and job-related literacy tests contrasting Popham's integrated ESL+Voced course with two comparison courses. The article is taken from Passports to Paradise (reference below).]

The Electronic Assembly Training class (EA) is run by the San Diego Community College District, Division of Continuing Education's Mid-City Center in conjunction with the International Mutual Assistance Association (IMAA) of San Diego. This particular class has been in existence continuously for 12 years as an off-site, community-based facility providing job training for Electronic Assemblers.

Although there are several other Electronic Assembly Training classes throughout the San Diego Community College District, this class is unique in that it has a Vocational English as a Second Language (VESL) component attached to it that is specifically focused on Electronic Assembly in the workplace. The primary goal of both classes is to provide particular skills to enable students to become employed upon completion of training. The VESL component of this training is the topic of this discussion.

Both the VESL (Vocational English for Electronic Assembly Terminology) and the EA (Electronic Assembly hands-on training) are designed to be interdependent. In order to complete training and receive a certificate in Electronic Assembly Training, students are required to attend both EA and VESL classes. This holds for native English as well as non-native English speaking students. Students attend training from 8:30 am to 3:00 pm, with a 30 minute lunch, five days per week for 10 weeks (previously 8 weeks). The VESL component is from 8:30 to 11:30 am and the EA component is from 12:00 to 3:00 pm. Training is open-entry/open-exit which means that students begin and complete training at various times throughout the 10-week cycle.

Classes are both multicultural and multilevel. Because the facility is located within a predominantly Asian community, the majority of students tend to be of Vietnamese, Laotian, Chinese, Cambodian and Hmong descent. The next largest population tends to be people of African descent, Spanish descent, then other (e.g. European). Although a small percentage, a number of U.S.-born, English speaking students have successfully completed training along with multicultural students.

There is generally a vast span of English proficiency levels of students in the Electronics VESL course. Students need only to demonstrate a basic understanding and verbal proficiency in English for admission to training. Frequently we have found that immigrants and refugees enter the country at this level of English proficiency or shortly attain it within a couple of months of ESL language training.

On the other end of the spectrum are students who enter training at high levels of English proficiency. These are a combination of people who have been in the U.S for five to fifteen or twenty years, many who are citizens, people who have had extensive English training in their countries, people who attended the U.S. school system from early ages, second-generation (citizen) children of immigrant and refugee families, and others.

High motivation seems to be a consistent factor for students attending training. Motivation is not so much to learn English, but to get a job, change jobs, have some money, support their family, make a better life, get off welfare, etc. In essence, students are not attending class to learn traditional English, but to get the necessary skills to obtain an electronic assembly or related job. Learning hands-on skills (EA), electronic terminology and English things to get and keep a job is what students are seeking. Such motivation is an asset for class retention, learning both assembly skills and the English the student perceives as important to apply these skills to obtain and retain a job.

*The Electronics VESL Classroom.* The classroom is located within the community from which most students come. The physical training area-classroom is set up with work stations and equipment similar to an actual electronic assembly work environment. All equipment and supplies are accessible to both EA and VESL instructors. Actual assembly equipment and materials are used by the VESL instructor for demonstration of procedures and as props for learning and discussion.

Close proximity of the VESL and Electronics Assembly instructors allows for daily communication, coordination and review between instructors. VESL materials are synchronized to procedures and materials being covered in EA. Both VESL and EA class sessions are tailored to individual abilities and areas of need as determined by instructors. Examples of this might be the EA instructor identifying a student, or students, having difficulty verbally relating procedures learned or the VESL instructor identifying a student.

Interfacing with companies for potential job placements is done approximately weekly by the EA instructor who passes information such as changing industry trends and requests on to the VESL instructor to be incorporated into both training components. Examples of this might be a company saying it would like more emphasis on surface-mount technology or preparation for employees to accept supervision from female supervisors (which may not be of similar ethnic backgrounds).

*Scripted, Modular Sequence of Instruction.* Because training is open entry/open exit, students begin and complete training at various times throughout the ten weeks. Use of scripted, sequenced, modules of instruction allows students to arrive before or during a module that will be repeated for them at the end of approximately eight weeks. Students know where they are at any given time during the training process. The final stage of each module is a written test, called a quiz to keep test anxiety low. The quiz is a culmination of individual quizzes given for each section of the module. It is usually posted, without answers, two to three days ahead of time. The goal is not for a quantitative measure of what has been retained, but rather as a vehicle to get students to study on their own to learn the answers and successfully complete it. Taking a

quiz that anybody can pass encourages review of the material while students' high success rate reinforces the individual student's sense of accomplishment. All quizzes are corrected at the student's workstation immediately upon completion. The first one to two students who complete their own quizzes with all correct are often asked to assist the instructor in moving around the class correcting other students' papers.

Successful completion of modules based on quizzes allows students to develop a progressive sense of accomplishment toward the end goal of completing the final module and graduating with a certificate in Electronic Assembly.

*Editor's Comment.* Wes Popham's VESL class provides one example of how teachers and the adult literacy education delivery system cope with turbulence due to the open entry/open exit policy for enrollment and the diversity due to many cultures, various levels of English language skills, and different focal reasons for taking ESL classes.

Turbulence in Popham's class is dealt with by having a pre-determined, modularized, written-out (scripted), series of instructional modules that everyone must complete. If new students enter in week three, they will enter a module that the class is working on and they will know that that module will be repeated in a few weeks if they have trouble with it. Because the instruction is very stable, changing only when the instructor determines that something needs changing to update the content to new industry standards or to present the information more effectively, students can see what they have to learn and when they will have to learn it. Also, they can take materials home for study. These conditions, and several of the specific teaching techniques that Popham uses that are not summarized here, make it possible for students less skilled in English to make progress along with those having greater skills.

*The Convergence of Focus.* A key factor in Popham's VESL class is that it has a strong focus on the same thing that the students are focused on - getting a job in the electronics industry. That means it is highly relevant to the student's goal. As reported in Chapter 5, one study indicated that the closer the fit between the focus of the students' interests in ESL and the focus of the course, the more likely the students were to complete the course. In that study, the course with the highest retention rate was Popham's class.

In another study, the CWELL ARC researchers investigated learning gains in Popham's ten week Electronics Assembly VESL class, a Vocational class in Electronics Assembly (no ESL instruction) and a conventional ESL class. Data indicated that Popham's ten week instructional program, which offered electronics oriented ESL in the morning and vocational training in electronics in the afternoon (VOCED+VESL), produced more gain in Vocational Vocabulary and General Reading (as measured by pre- and post-testing with the Adult Basic Learning Exam-ABLE) than did a General ESL program or an electronics vocational program with no ESL (VOCED).

In this study, students in Popham's 6 hour a day, 10 week program that integrated VOCED and VESL completed more hours of instruction between pre- and post-tests than did the 3 hour a day, 18 week general ESL program or the 3 hour a day, 18 week electronics VOCED program. In order to standardize the number of hours between the three classes and make comparisons between two different tests, the programs were compared in terms of rate of gain per 100 hours of instruction. The Vocational Vocabulary gain of 9.4 by the general ESL program was divided by the mean number of instructional hours which was 87 ( $9.4/87=.10804$ ) and then multiplied by 100 to get the rate of gain per 100 hours of instruction (10.8). Following the same procedure for the VOCED and VOCED+VESL programs gives 10.22 and 13.45, respectively.

This indicates that the rate of improvement in Vocational Vocabulary in the integrated VOCED+VESL program was approximately 25-30 percent greater than that in either of the other two programs.

Following similar procedures for the General Reading gains gives a rate of gain of 3.21 months per 100 hours of instruction for the General ESL program, 1.24 months for the Electronics VOCED program, and 5.32 months per 100 hours of instruction for the integrated Electronics VOCED+Electronics VESL program. Thus Popham's ten week, integrated VOCED+VESL program had a gain rate per 100 hours of instruction some 65 percent higher for general reading than the general ESL program, and over 300 percent greater than the VOCED program.

Taken together, the data on Popham's ten week VESL+ VOCED program suggest that it tends to produce greater retention, greater course completion, and higher gains in learning than do the comparison courses of general ESL or a conventional electronics vocational education course. Popham also indicates that placements of his students into electronics jobs is high, almost 100 percent, and many are placed by the ninth week of the course.

Reference: This Case Study is extracted from: Sticht, T. G.; McDonald, B. A.; Erickson, P. R.(1998). Passports to Paradise: The Struggle To Teach and To Learn on the Margins of Adult Education. El Cajon, CA: Applied Behavioral and Cognitive Sciences, Inc., (available online at [www.searchERIC.org](http://www.searchERIC.org) )

## **Chapter 7**

### **Three Case Studies Integrating Basic Skills Education With Job Training, Parenting, and Health Education**

#### Case Study #3: Workplace Literacy: Integrating Job Advancement and Basic Skills Education.

In R & D for the U. S. Navy I directed a team which developed new on-duty basic skills programs in reading and mathematics. At the time the project was initiated, the Navy was funding a community college to deliver a three week, 3 hours a day (45 hours) on-duty course of instruction in reading and another course in mathematics for personnel who were in need of reading and/or mathematics instruction in the 5<sup>th</sup> through 12<sup>th</sup> grade levels. The goal was to improve personnel chances of studying and passing correspondence materials for advancement to higher ranks of responsibility and pay.

The community college was using general purpose materials for teaching reading, and mathematics. While the programs made some gains on standardized tests of reading or mathematics, they were not demonstrating improvements in job-related reading or mathematics. Navy management wanted to provide job-related reading and mathematics as a means of more closely linking instruction to requirements for job advancement.

*Literacy and Numeracy Task Analysis.* To develop a new functional context education reading program, we first conducted studies of what kinds of tasks Navy personnel performed using reading in job training and on the job. In this research, students, instructors, and job performers in ten Navy jobs were interviewed and asked for information two major types of reading tasks: reading-to-do and reading-to-learn. In a reading-to-do task, the person is performing some job task, needs some information from a document, looks-up the information, holds it in working memory long enough to apply it, and can then forget it. In a reading-to-learn task, the person reads information to be stored in long-term memory as part of their knowledge base, and then

retrieves it (or a reconstruction of it) for use at some later time, such as taking an end of week test, or for a performing a task on the job.

On the basis of the reading task analysis, we designed and developed a reading program that had a functional context for Navy personnel in that the program used Navy knowledge content derived from materials that personnel must study to pass promotion tests, and the information processing skills for reading that they learned were of immediate use to them.

In a experimental classroom, materials were developed with students primarily in the mid-level of literacy, from around 5<sup>th</sup> through the 10<sup>th</sup> grade levels. The instructional program incorporated the use of teachers, books, computers and peer instructors. Two basic books were developed, one called the Navy Knowledge Base (KB), which presented Navy-related content, and the other a study skills book called the Information Processing Skills (IPS) book. In practice the students used the IPS book to perform a number of tasks that called for using the KB as a source document. This was done to make it possible to devise learning tasks in which information from the IPS book had to be held in working memory while searching the KB book to provide practice in reading-to-do tasks, as well as reading-to-learn tasks.

The computer-based instruction (CBI) consisted of both Navy-related programs and commercially available, “game” programs for vocabulary drill and practice. The Navy-related CBI was authored by the R & D team and was developed for stand-alone use aboard ships if no teacher was available or feasible. The CBI material consisted of two curriculum “strands,” each consisting of about 15-20 hours of instruction depending upon the reading skill level of the user. The Strand I materials contained content appropriate for sailors seeking promotion to lower level supervisory positions, while the Strand II material was primarily for those seeking higher level promotions)

In addition to the functional, Navy-related curriculum materials, we also developed a new reading test battery to test Navy-related reading skills (reading-to-do and reading-to-learn), as well as Navy knowledge. The latter, that is, knowledge gained, is rarely measured in adult literacy programs because reading is considered as a content-free, process skill. But cognitive science makes clear that knowledge of what one reads is required to make reading comprehension possible. So we assessed the improvement in content knowledge as a function of participation in the functional context education program.

*Evaluation of the Program.* In a small-scale evaluation of the program, the improvement of a sample of students who took the Navy’s “general” reading program offered by the education contractors was compared to the improvement of students in the functional context course on three tests: a commercially available, standardized reading test that the Navy used on a regular basis, the Navy-related Reading-to-Do and the Navy Knowledge tests that we developed.

The data indicated that, while the general reading program did better on the general reading test, this did not transfer to the Navy reading and knowledge tests to any significant degree. The Navy-related reading program, on the other hand, resulted in improvement on the general reading test, and it consistently made greater improvements than the general program where it counted for Navy personnel, that is, in their Navy reading and knowledge needed for job advancement.

*Functional Context Mathematics Program.* In addition to the Navy reading program we also developed a 3 week, 3 hours a day Navy-related mathematics program. The mathematics program used the same Navy Knowledge Base as used in the reading program, but a different information processing skills book. The latter included a number of tasks for personnel to

perform that required them to go to the knowledge base book and extract numbers to be used in the tasks, such as calculating how big a budget they would need to cover personnel costs in running a mess hall aboard a ship. The types of tasks included mathematics and the management of financial resources, material resources, and human resources.

The mathematics program focused on what we called the Three C's: Comprehension, Computation, Communication. In this case, we taught the personnel the idea that they needed thoroughly to comprehend what the type of task was that they were working on and what resources they needed to obtain from the Navy Knowledge Base book to work on the task. Then they needed to know how to perform the various computations needed to complete the task, and finally they needed to know how to communicate the results of their task performance to those who worked for them or to their supervisors.

In teaching comprehension of tasks in the Navy Knowledge Book, we taught an active reading strategy of what to do before reading, during reading and after reading. Along with this reading strategy, called the PQ3R: Preview, Question, Read, Recite, Review, sailors were also taught math problem solving tips such as READ the problem carefully; circle or list the facts given, underline the main question to be answered, transform the text into some other form: a drawing or diagram, organize the known data, create a number sequence or set up an equation or use a formula, decide on a process: add, subtract, multiply, divide, do the computations in the correct order and check the accuracy, test your answer: does it make sense, and others. A special programmed section on how to do decontextualized computations was included in the Information Processing book to teach computational processes, types of numbers, systems of measure, descriptive statistics, and basic algebra and geometry.

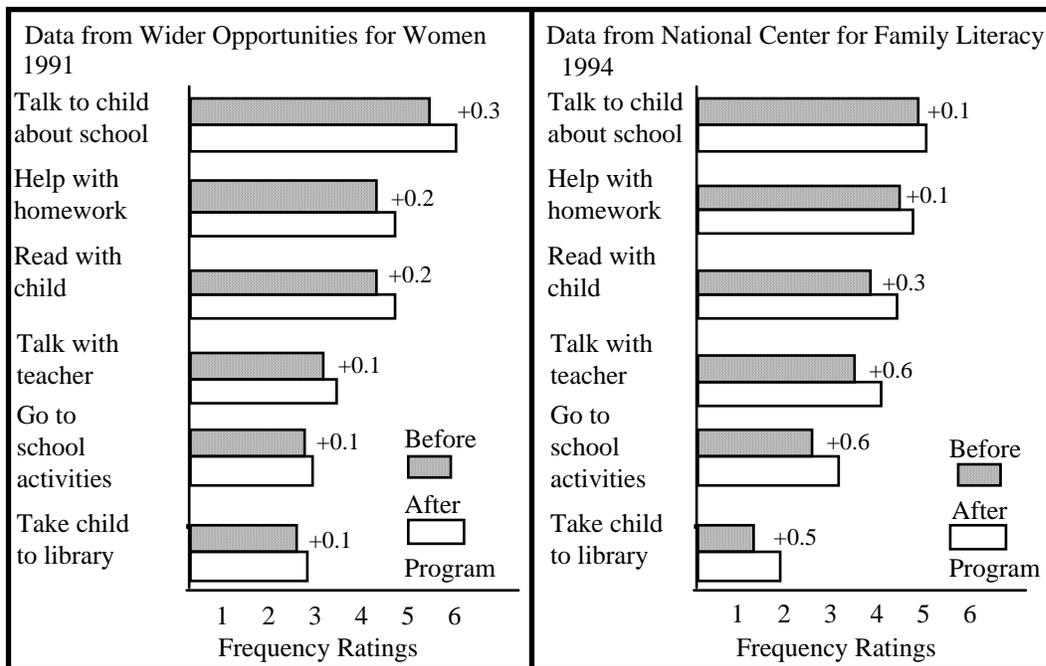
Reference: Sticht, T. (1987, March). Functional Context Education: Workshop Resource Notebook. El Cajon, CA: Applied Behavioral & Cognitive Sciences, Inc.

#### Case Study #4: Family Literacy: Research Illustrating the Integration of Functional Content in Parenting With Basic Skills Education.

Improved education of adults may lead not only to a better tax base and community social services, it may also stimulate a greater interest on the part of parents to become involved with the education of their children. Research by the Wider Opportunities for Women in Washington, DC, USA, studied the effects of women's participation in basic skills training on (1) their behavior toward their children, (2) their interactions with teachers and participation in school activities, and (3) their children's behavior in school.

Mothers reported that, as a result of their participation in the basic skills programs, they spent more time with their children talking about school, helping with homework, and other activities. They spent more time going to and helping with school activities and they talked more with teachers about their children's education. (see figure below, along with comparable data from the National Center for Family Literacy in 1994; all improvements are statistically reliable). WOW mothers also reported that their children liked and attended school more, and they made improvements in their school grades, test scores, and reading.

Figure 1.2 Parent's activities with children before and after education programs.



An important aspect of the WOW study was that the mother's children showed educational improvements even though the WWFN programs involved had not set out to do anything other than educate the mothers. While some programs emphasized to mothers the importance of their being involved with their children's education, there were no systematic programs designed to have the mother's educational achievements transfer to benefit their children's educational achievements. This sort of "intergenerational transfer" of better attitudes toward education and improved behavior to their children's educational needs occurred simply because the women themselves were engaged in basic skills education.

*A Learner-Centered, Participatory Method for Developing a Parenting Program* The mothers who participated in filling-out questionnaires read sections asking questions about how often they read to their children, how often they participated in school activities, etc. While doing this, many expressed surprise to learn that they could be doing things to improve their children's pre-school and in-school learning and achievement. Many mothers began coming up with ideas for how they could become better teachers for their children.

This suggests that a low-cost approach to the development of a parenting program could involve the mothers in their education and training courses to develop their own ideas about how they might improve their own literacy, mathematics and other skills while also learning more about and going about helping their children learn more.

Program operators could provide resources, such as guidance in using libraries and bookstores for finding useful resource materials. They could also invite specialists from universities and family literacy programs to speak to their clients. Cameras for making picture books, paper for drawing sketches and for children to "scribble-write" or to print and write on could be provided. But the mothers themselves could develop the materials that they would use to interact with their children and their children's schools. By using this learner-centered, participatory approach, an intergenerational literacy program can be developed inexpensively. By engaging in the education of parents, we increase the educability of children. This is just one of the reasons we need to find ways to reach a larger number of youth and adults with functional context education.

<b>Phase of Parenthood and Schooling</b>	<b>Effects of Higher Levels Of Mother's Education</b>	<b>Important Topics for Parenting Program</b>
Before pregnancy	Higher economic productivity; better personal health care; lower fertility rates; smaller families.	Teenage pregnancy and the importance of education; family planning.
During pregnancy and at birth.	Better prenatal health care; more full-term births; higher birthweight babies; fewer learning disabilities.	Prenatal care; drug, alcohol, and tobacco use effects on fetus; intrauterine learning and cognitive development.
Before going to school	Better health care; better development of language, cognitive, and literacy skills; better preparation for schoolwork.	Health; nutrition; safety; mother and infant interaction; learning from visits to community locations (zoos, stores; churches;parks;office buildings; mother's education and training programs; work-sites; shopping malls; theaters; schools;etc.); language and literacy development; playing school and other socialization activities.
During the school years	Greater success in the primary grades; fewer placements in special education; better management of homework; better advocacy for children's education and negotiation of school and children's conflicts; higher academic achievement by children; more participation in schooling and better high school completion rates.	The nature of schooling; importance of taking part in school activities; talking with teachers; talking with child about school, looking at children's schoolwork; reading school notes, schedules, and report cards; communicating with school personnel; managing homework and extracurricular activities; motivating children to achieve well, stay in, complete school; sexual development and behavior of adolescents; peer influences on children.

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Reference: Van Fossen, S. and Sticht, T. (1991, July). Teach the Mother and Reach the Child: Results of the Intergenerational Literacy Action Research Project of Wider Opportunities for Women. Washington, DC: Wider Opportunities for Women.

## **Case Study #5. Two Resources on the Internet for Health Literacy**

Resource #1: Virginia Adult Education Health Literacy Toolkit

Compiled by Kate Singleton, July 2003 (<http://www.aelweb.vcu.edu>)

[Editor's note: the following information is taken directly without editing from the report cited above.]

### About the Toolkit

The Virginia Adult Education Health Literacy Toolkit grew from many teachers' observations of adult literacy learners whose education paused or ended because a small health problem became bigger and brought on a host of other difficulties. Many adult learners, particularly those with the lowest literacy skills, are unaware of accessible health care options for the un- and underinsured and have a limited understanding of prevention of those conditions for which they are at

increased risk. Those who are able to access care often do not know how to advocate for themselves in the complex, changing U.S. health care system. The spoken and written language of the U.S. health care culture seems to them beyond their reach.

This Toolkit is a resource to help adult education instructors and administrators better understand the problem of health literacy as it affects their learners. It is designed to support creative approaches to help learners increase health literacy as they engage in sound, productive adult literacy instruction. Information and resources are provided to educate the educator about health care in the United States and cultural issues relating to health, and to simplify creation of health lessons and curricula for teachers and programs.

The Toolkit is broken into the following sections:

Section A: What Is Health Literacy?

Section B: Why Is Health Literacy So Important?

Section C: What Resources Are Available?

Section D: Teaching Health Topics

Section E: Addressing Teachers' Concerns about Teaching Health

Section A looks at definitions of health literacy from various stakeholders and proposes a more explicit definition that is helpful for the needs of adult educators and literacy learners specifically. Two glossaries are also provided as resources to educators who face the task of helping their learners understand the U.S. health care system. These are a glossary of Virginia-specific health care terminology and a glossary of terms used in health insurance and managed care.

Section B presents statistics and background information on health and health care among different population groups that are present in Virginia adult literacy programs. The benefits of teaching health to adult literacy learners are presented, as is a skill-by-skill breakdown of how health topics basic literacy, GED preparation, and English for Speakers of Other Languages instruction.

Section C provides extensive resources on affordable health services, potential program collaborators and funders, and extensive Web and print health teaching resources for use with adults. Where available, information is given on culturally and linguistically sensitive providers. Websites and printed material are described as to level of difficulty and suggested uses.

Section D examines the actual teaching of health. Recommendations are provided regarding teaching approaches, content ideas, curriculum design, instructional supports, and learner projects. Links are provided for existing Virginia adult health literacy curricula.

Section E is a response to the many valid concerns that teachers voice about teaching sensitive health topics. Suggestions are provided for ways to keep instruction of important health topics engaging, informative, and productive, while keeping teacher and learner discomfort to a minimum.

Resource #2. Introduction to the Skills for Life: Materials for Embedded Learning Family Health ([www.dfes.gov.uk/readwriteplus/embeddedlearning](http://www.dfes.gov.uk/readwriteplus/embeddedlearning))

By setting literacy, language and numeracy learning in realistic context-based settings, the hope is that the obvious value of enhancing literacy, language and numeracy skills will be self-apparent to learners. The resources in this file are intended for use by teachers – coming both from community-based and literacy, language and numeracy backgrounds.

First, the definition of 'embedded learning' that the project has used: Embedded teaching and learning combines the development of Literacy, Language and Numeracy with vocational and other skills. The skills acquired provide learners with the confidence, competence and motivation necessary for them to succeed in qualifications, in life and at work.

The twenty files that constitute this project (of Family Health is one) set out to explore this idea in a variety of contexts and media. The resources contained in this project will assist those who are preparing learners for national qualifications in work-, college-, and community-based settings. The aim is to bridge between content territory on the one hand, and Literacy, Language and Numeracy (LLN) on the other.

The materials build on the firm evidence that there are many adult learners for whom literacy, language and numeracy ‘barriers’ stand in the way of engaging fully and successfully in society. By setting literacy, language and numeracy learning in realistic context-based settings, the hope is that the obvious value of enhancing literacy, language and numeracy skills will be self-apparent to learners.

The resources in this file are intended for use by teachers – coming both from community-based and literacy, language and numeracy backgrounds. The file contains extensive Teacher notes linked to Learner materials that are mainly paper-based, but also include audio clips presented on an audio CD, bringing real-life situations into the learning environment. An additional CD presents PDF and Word® computer files from which the paper-based resources can be reproduced electronically.

The Learner materials are presented in colour in the main teacher reference section of the file, with the relevant Teacher notes interwoven with them. A black-and-white version of the Learner materials, printed at an appropriate resolution that optimises the quality of reproduction when photocopied this way, is also offered as a separate section at the back of the file. Screen-based materials: including generic interactive practice resources

*Introduction to Family health.* This is one of the Project’s community-based files.

The approach we have taken with these resources is to identify areas of adult interest and needs, and use these as levers for Literacy, Language and Numeracy skill development. The resources build on an initiative undertaken jointly by the Department of Health and the Department for Education and Skills, Skilled for Health, which aims to develop health awareness in conjunction with developing literacy, language and numeracy skills in a range of pilot projects.

Parents with young children (defined for this purpose as Pre-school) are faced with all sorts of issues, right from the time of their child’s birth. The resources address topics such as accessing health services, healthy eating, child care, and ‘looking after yourself’ – matters that are known to be of concern to young parents. These resources are intended for a wide range of learners, some of whom may find it challenging to articulate and begin to address issues that they have either not experienced, or have actively avoided in the past. Therefore, these materials are designed both to aid literacy, language and numeracy skills development, to increase understanding of health issues, and where necessary to build self-confidence and encourage participation in the learning process.