THE FIFTEEN KEY ELEMENTS OF EFFECTIVE ADOLESCENT LITERACY PROGRAMS

To establish a list of promising elements of effective adolescent literacy programs, the panel considered elements that had a substantial base in research and/or professional opinion. After considerable discussion, they determined a list of fifteen critical components (see Table 1). Literature supporting these elements is cited in Appendix A.

In an ideal world, schools would be able to implement all fifteen elements, but the list may also be used to construct a unique blend of elements suited to the needs of the students they serve. This report treats each element as a distinct entity, but it is important to recognize that the elements are often synergistically related, and the addition of one element can stimulate the inclusion of another. The elements should not be seen simply as isolated elements in an inventory of potential elements, but rather as a group in which elements have a dynamic and powerful interrelationship. For instance, it is difficult to implement text-based collaborative learning (Element 4) without a classroom library of diverse texts (Element 6). We expect that a mixture of these elements will generate the biggest return. It remains to be seen what that optimal mix is, and it may be different for different subpopulations of students.

THE OPTIMAL MIX

In the medical profession, treatment needs to be tailored to an individual patient's needs; at times, more than one intervention is needed to effectively treat a patient. Similarly, educators need to test mixes of intervention elements to find the ones that work best for students with different needs.

Table 1. Key Elements in Programs Designed to Improve Adolescent Literacy Achievement in Middle and High Schools

Instructional Improvements	Infrastructure Improvements
1. Direct, explicit comprehension instruction	10. Extended time for literacy
2. Effective instructional principles embedded in content	11. Professional development
3. Motivation and self-directed learning	12. Ongoing summative assessment of students and programs
4. Text-based collaborative learning	13. Teacher teams
5. Strategic tutoring	14. Leadership
6. Diverse texts	15. A comprehensive and coordinated literacy program
7. Intensive writing	
8. A technology component	
9. Ongoing formative assessment of students	

Two Categories of Elements: Instruction and Infrastructure

The list of elements is divided into two sections: instructional improvements and infrastructural improvements. While the instructional improvements can have a tremendous impact, it is important to realize that they would be more effective if they were implemented in conjunction with infrastructural supports. Furthermore, the instructional improvements are unlikely to be maintained or extended beyond the original intervention classrooms if these infrastructural factors are not in place. Despite the clear advantage of linking instructional improvements to infrastructural improvements, the list prioritizes instructional improvements because of our focus on the individual learner as the unit of intervention and analysis and on improved instruction as the most important element influencing student outcomes.

Improving the overall school climate is undeniably a critical factor in improving adolescent literacy, and school reorganization and reform efforts have helped dramatically in this area. However, it too often happens that the climate improves with little or no impact on achievement. For the biggest returns, stakeholders must invest in school reform, with an eye toward curricular improvement. That is, structure and infrastructure changes should be determined by curricular and instructional consider-ations. Too frequently, changes in school structure (for example, block scheduling, small schools, and so on) have been adopted without *first* carefully considering curricular and instructional implications.

The list of the fifteen key elements begins with instruction and then focuses on infrastructure that will support the instructional improvements. Improving instruction, whether done by an entire school or a single teacher, can have dramatic effects on student achievement. However, improving school infrastructure to better support literacy teachers and students *in addition to instructional improvement* will reap the biggest rewards. Ultimately, change can occur from the top down, the bottom up, or the middle in, but truly effective and enduring change must include elements of both instruction *and* infrastructure. There are no shortcuts; the process of implementing instructional *and* organizational change to improve adolescents' literacy skills is necessarily time-consuming and complex.

Instructional Elements

Direct, explicit comprehension instruction

Effective adolescent literacy interventions must address reading comprehension. A number of excellent approaches have been shown to be effective in middle and high school contexts, but no one approach is necessarily better than another; the ideal intervention will tap more than one comprehension instructional approach. Possible approaches include

- *comprehension strategies instruction*, which is instruction that explicitly gives students strategies that aid them in comprehending a wide variety of texts;

- *comprehension monitoring and metacognition instruction*, which is instruction that teaches students to become aware of how they understand while they read;

- *teacher modeling*, which involves the teacher reading texts aloud, making her own use of strategies and practices apparent to her students;

- *scaffolded instruction*, which involves teach–ers giving high support for students practicing new skills and then slowly decreasing that support to increase student ownership and self-sufficiency; and

- *apprenticeship models*, which involve teachers engaging students in a content–centered learning relationship.

> ### DIRECT, EXPLICIT COMPREHENSION INSTRUCTION: AN EXAMPLE
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> **Reciprocal Teaching** is a **scaffolded approach** to teaching **compre- hension strategies**. It was designed for youth at any grade level, typical- ly scoring in the thirty-fifth percentile or below on standardized reading measures, with the aim of teaching them to actively process the text they read in small groups. The **teacher models** four critical strategies: *questioning, clarifying, predicting*, and *summarizing*. The teacher then transfers responsibility for implementing the strategies to students by having them work in small groups. Students either take turns using each strategy or lead discussions by using all four strategies, in the latter case becoming the "teacher." By taking turns using each of the strate- gies with a series of texts, children learn to independently and flexibly apply the strategies on their own.
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> *Questioning* poses questions based on a portion of a text the group has read, either aloud or silently.
>
> *Clarifying* resolves confusions about words, phrases, or concepts, drawing on the text when possible.
>
> *Predicting* suggests what will next happen in or be learned next from the text.
>
> *Summarizing* sums up the content, identifying the gist of what has been read and discussed.
>
> Source: Palincsar & Herrenkohl, 2002.

Note, too, that these approaches are not listed in order of importance and have been utilized by effective readers long before they were ever dubbed and defined as "strategies" or "metacognition."

> *From age ten, [Benjamin] Franklin was largely a self-taught reader (he had a tutor for a year). To improve his reading comprehension, he copied passages, made short summaries, rewrote passages, turned essays into rhyming verse and other games, and avidly discussed what he read with peers. [Frederick] Douglass was also briefly tutored but then forbidden to read. Forced to learn on his own, he too invented reading and writing exercises, summarized passages, played word games, and practiced giving speeches and responding to issues in debate. (Trabasso & Bouchard, 2002, p. 177)*

Many of the existing instructional options utilize more than one of these approaches. Whatever approach is utilized, teachers should teach these approaches explicitly by explaining to students how and when to use certain strategies. Teachers should also explain why they are teaching particular strategies and have students employ them in multiple contexts with texts from a variety of genres and subject areas.

Effective Instructional Principles Embedded in Content

This element has two forms. The first form applies to the language arts teacher. When instructional principles are embedded in content, the language arts teacher does not simply teach a technique (such as outlining) as an abstract skill, but teaches it using content-area materials. Students should receive

instruction and then practice their new skills using these materials. Too often reading and writing instruction focuses solely on literature and does not promote the transfer of the skills into the context of content-area materials. Furthermore, learning from reading in content-area texts requires skills that are different than the skills needed to comprehend literature. Language arts teachers need to expand their instruction to include approaches and texts that will facilitate not only comprehension but also learning from texts.

The second form of this element applies to subject-area teachers. When instructional principles are embedded in content, subject-area teachers provide or reinforce instruction in the skills and strategies that are particularly effective in their subject areas. This instruction should be coordinated with the language arts teachers, literacy coaches, and other subject-area teachers. The idea is not that content-area teachers should become reading and writing teachers, but rather that they should emphasize the reading and writing practices that are specific to their subjects, so students are encouraged to read and write like historians, scientists, mathematicians, and other subject-area experts. Additionally, it is important that all subject matter teachers use teaching aids and devices that will help at-risk students better understand and remember the content they are teaching. The use of such tools as graphic organizers, prompted outlines, structured reviews, guided discussions, and other instructional tactics that will modify and enhance the curriculum content in ways that promote its understanding and mastery have been shown to greatly enhance student performance—for all students in academically diverse classes, not just students who are struggling.

DIRECT, EXPLICIT COMPREHENSION INSTRUCTION: A SECOND EXAMPLE

Reading Apprenticeship puts the teacher in the role of content-area expert, and late-middle and high school students are "apprenticed" into the reasons and ways reading and writing are used within a "discipline" (subject area) and the strategies and thinking that are particularly useful in that discipline. In reading apprenticeship classrooms, *how* we read and *why* we read in the ways we do become part of the curriculum, accompanying a focus on what we read.

Rather than offering a sequence of strategies, reading apprenticeship is focused on creating classrooms where students become active and effective readers and learners. To accomplish this, teachers are encouraged to plan along four dimensions: *social, personal, cognitive*, and *knowledge-building*.

The *social* dimension focuses on establishing and maintaining a safe and supportive environment, where all members' processes, resources, and difficulties are shared and collaboration is valued.

The *personal* dimension focuses on improving students' identities and attitudes as readers and their interest in reading. It also promotes self-awareness, self-assessment, metacognition, and ownership.

The *cognitive* dimension is where students are given the reading tools and strategies they need to read like experts in the discipline.

The *knowledge-building* dimension focuses on building content and topic knowledge and knowledge of a discipline's typical text structures and styles.

The main tactic is that of metacognitive conversations that make the invisible aspects of these dimensions visible and open for discussion.

Source: Jordan, Jensen, & Greenleaf, 2001.

Motivation and Self-Directed Learning

This element addresses the need to promote greater student engagement and motivation. As students progress through the grades, they become increasingly "tuned out," and building student choices into the school day is an important way to reawaken student engagement. This is critical, because competency in reading is necessary but insufficient by itself to engender better academic performance. Students need to be self-regulating not only to become more successful academically, but also to be able to employ their skills flexibly long after they leave school.

One way that motivation and engagement are instilled and maintained is to provide students with opportunities to select for themselves the materials they read and topics they research. One of the easiest ways to build some choice into the students' school day is to incorporate independent reading time in which they can read whatever they choose. Yet this piece of the curriculum is often dropped after the primary grades. Providing students with additional choices, such as research and writing topics, further stimulates motivated and engaged students. However, self-regulation is only developed when students are given choices *and* the instructional support and aids needed to succeed at their chosen tasks.

Another way to better engage students in literacy and learning is to promote relevancy in what students read and learn. As a first step, teachers need to "tune in" to their students' lives in order to understand what they find relevant and why. Then teachers can begin to redesign instruction so that it is more obviously relevant to students.

EFFECTIVE INSTRUCTIONAL PRINCIPLES EMBEDDED IN CONTENT: AN EXAMPLE

The **Strategic Instruction Model (SIM)** provides teachers with an array of *Content Enhancement Routines* to enable them to teach complex curriculum content in ways that make it easier to understand and remember difficult subject matter. For example, there are routines that help teachers show how lesson or unit content is organized as well as to help them clearly explain the important features of a new concept. Additionally, SIM provides an array of targeted strategies to help students learn and deal with a variety of academic tasks. There are four reading strategies: the *Word Identification Strategy*, the *Visual Imagery Strategy*, the *Self-Questioning Strategy*, and the *Paraphrasing Strategy*.

The ***Word Identification Strategy*** helps students to break down multi-syllabic words using three simple syllabication rules and a knowledge of roots, prefixes, and suffixes.

The ***Visual Imagery Strategy*** helps students create "mental movies" of narratives they read in order to increase comprehension.

The ***Self-Questioning Strategy*** helps students determine a motivation for reading by getting them to create questions about the material they will be reading, form predictions about what the answers will be, and locate their answers in the text.

The ***Paraphrasing Strategy*** helps students summarize the text stating the main idea and major details in their own words.

Source: Center for Research on Learning, 2001.

Text–Based Collaborative Learning

Another element is text-based collaborative learning, which means that when students work in small groups, they should not simply discuss a topic, but *interact with each other around a text*. This text might be assigned or self-selected reading, or it might be essays that the students are writing. The former case involves designing learning opportunities for pairs or small groups of students that are similar to the book clubs or literature circles implemented in primary grades. Learning is decentralized in these groups because the meaning drawn from a text or multiple texts is negotiated through a group process. In addition, such an approach is not limited to the language arts classroom, but can be implemented in subject-area classes and with students who have a wide range of abilities. For instance, students might read different texts about the Underground Railroad—each at his or her own reading level—and then present the ideas (rather than the plots) to the circle. A similar approach can be used in any subject area, even math, by having students work together on the same problem or on a set of similar problems. Moreover, text-based collaborative learning is effective in improving not only reading skills but also writing skills. The important aspect of this approach is that teachers provide scaffolding for engagement at every ability level in the class and promote better oral language and content-area skills by giving the students concrete problems to discuss or solve. Such an approach requires that the teacher provide instruction about how to use time effectively, which means assigning roles within each group, at least initially, to ensure effective implementation.

TEXT-BASED COLLABORATIVE LEARNING: AN EXAMPLE

Questioning the Author engages upper elementary students in whole-class or small-group discussions of texts (including nonfiction) aimed at improving their comprehension and critical-thinking skills. Through guiding "queries" (open-ended questions without clear right answers) teachers get children to literally question the author's purpose and choices; students eventually come to regard the text as fallible and as a source of information about the author's thinking. Notable in these discussions is the degree to which children are engaged in trying to comprehend the text. The technique also gets children to voice their confusions as they arise without fear of being regarded as "stupid" for not understanding, as in the following example, where a small group of fourth-grade students discusses a passage about hermit crabs that includes the line "As the crab grows, it changes its shell f or a larger one."

Michael: Maybe it's growing or something. It said it's changing its shell for a larger one. But do they take it off?

Nicole: They get them off with their claws.

Terrence: They exchange them.

Investigator: So, what are you saying isn't clear?

Michael: How could they change one shell? I mean, I thought it stuck to the body.

Nicole: But they get bigger, too.

Michael: I know, but when they grow I thought the shell grows with them.

Nicole: It's like people. Do you keep your clothes on and when you get bigger you break out of them?

Terrence: As the crab grows, the shell breaks and it exchanges for another. It wants a larger shell as it gets bigger than it is now.

Michael: It's like clothes, putting it on.

Source: McKeown, Beck, & Worthy, 1993, pp. 564–65.

Strategic Tutoring

Some students require or would benefit from intense, individualized instruction. This is particularly true of the student who struggles with decoding and fluency, but is also true of students requiring short-term, focused help. Such students should be given the opportunity to participate in tutoring, which need not occur only during the school day. Furthermore, through approaches detailed above, instruction in general education classes should be differentiated to allow students access to important content. Tutoring is referred to as strategic in this element to emphasize that while students may need tutorial help to acquire critical curriculum knowledge, they also need to be taught "how to learn" curriculum information. Hence, within strategic tutoring sessions, tutors teach learning strategies while helping students complete their content assignments. The goal of strategic tutoring is to empower adolescents to complete similar tasks independently in the future.

Diverse Texts

This element involves providing students with diverse texts that present a wide range of topics at a variety of reading levels. Whether teaching reading and writing or a subject area, teachers need to find texts at a wide range of difficulty levels. Too often students become frustrated because they are forced to read books that are simply too difficult for them to decode and comprehend simultaneously. Learning cannot occur under these conditions. Texts must be below students' frustration level, but must also be interesting; that is, they should be high interest and low readability. Given the wide range of reading and writing abilities present in almost any middle or high school classroom, this means having books available from a wide range of levels on the same topic. The term "diverse texts" is also used to indicate that the material should represent a wide range of topics. Topical diversity in any classroom (or school) library affords students more choices for self-selected reading and research projects. The range of topics should include a wide variety of cultural, linguistic, and demographic groups. Students should be able to find representatives of themselves in the available books, but they should also be able to find representatives of others about whom they wish to learn. High-interest, low-difficulty texts play a significant role in an adolescent literacy program and are critical for fostering the reading skills of struggling readers and the engagement of all students. In addition to using appropriate grade-level textbooks that may already be available in the classroom, it is crucial to have a range of texts in the classroom that link to multiple ability levels and connect to students' background experiences.

Intensive Writing

Effective adolescent literacy programs must include an element that helps students improve their writing skills. Fourteen percent of all freshmen entering degree-granting postsecondary institutions take remedial writing courses (NCES, 2004). At public two-year institutions, 23 percent of entering freshmen take remedial writing courses (NCES, 2004). Even the best readers in high school do not necessarily write well enough to succeed in the business world or college—or perform well on

the SAT, which now includes a writing component. As of January 2006, 849 degree-granting postsecondary institutions require students applying for admission to take the SAT writing component (College Board, 2006).

Research supports the idea that writing instruction also improves reading comprehension. For example, students who are given the opportunity to write in conjunction with reading show more evidence of critical thinking about reading. Likewise, many of the skills involved in writing—such as grammar and spelling—reinforce reading skills. However, traditional explicit grammar instruction is not effective and may actually be harmful to writing development, whereas instruction in sentence combining, summarization, and writing strategies significantly improve students' writing. Instruction in the writing process is also helpful, provided that it is connected to the kinds of writing tasks students will be expected to perform well in high school and beyond.

The defining characteristic of quality intensive writing instruction is not that there is simply more of it. Rather, such instruction has clear objectives and expectations and consistently challenges students, regardless of ability, to engage with academic content at high levels of reasoning.

> **WRITING REMEDIATION NEEDED**
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> More freshmen entering degree-granting postsecondary institutions take remedial writing courses than take remedial reading courses (NCES, 2004).

A Technology Component

Professionals and lay people are increasingly voicing support for inclusion of this element in a literacy program, because technology plays an increasingly central role in our society. Technology is both a facilitator of literacy and a medium of literacy. Effective adolescent literacy programs therefore should use technology as both an instructional tool and an instructional topic.

As a tool, technology can help teachers provide needed supports for struggling readers, including instructional reinforcement and opportunities for guided practice. For example, there are computer programs that help students improve decoding, spelling, fluency, and vocabulary, and more programs are quickly being developed to address comprehension and writing.

As a topic, technology is changing the reading and writing demands of modern society. Reading and writing in the fast-paced, networked world require new skills unimaginable a decade ago.

Ongoing Formative Assessment of Students

This element is included under instructional improvements because the best instructional improvements are informed by ongoing assessment of student strengths and needs. Such assessments are often, but not exclusively, informal and frequently occur on a daily basis, and therefore are not necessarily suited to the summative task of accountability reporting systems. Data should be cataloged on a computer system that would allow teachers, administrators, and evaluators to inspect students' progress

individually and by class. These formative assessments are specifically designed to inform instruction on a very frequent basis so that adjustments in instruction can be made to ensure that students are on pace to reach mastery targets.

Infrastructural Elements

Extended Time for Literacy

None of the above-mentioned elements are likely to effect much change if instruction is limited to thirty or forty-five minutes per day. The panel strongly argued the need for two to four hours of literacy-connected learning daily. This time is to be spent with texts and a focus on reading and writing effectively. Although some of this time should be spent with a language arts teacher, instruction in science, history, and other subject areas qualifies as fulfilling the requirements of this element if the instruction is text centered and informed by instructional principles designed to convey content and also to practice and improve literacy skills.

To leverage time for increased interaction with texts across subject areas, teachers will need to reconceptualize their understanding of what it means to teach in a subject area. In other words, teachers need to realize they are not just teaching content knowledge but also ways of reading and writing specific to a subject area. This reconceptualization, in turn, will require rearticulation of standards and revision of preservice training.

Professional Development

Professional development does not refer to the typical onetime workshop, or even a short-term series of workshops, but to ongoing, long-term professional development, which is more likely to promote lasting, positive changes in teacher knowledge and practice. The development effort should also be systemic, including not only classroom teachers but also literacy coaches, resource room personnel, librarians, and administrators. Effective professional development will use data from research studies of adult learning and the conditions needed to effect sustained change. Professional development opportunities should be built into the regular school schedule, with consistent opportunities to learn about new research and practices as well as opportunities to implement and reflect upon new ideas. Effective professional development will help school personnel create and maintain indefinitely a team-oriented approach to improving the instruction and institutional structures that promote better adolescent literacy.

Ongoing Summative Assessment of Students and Programs

This element is listed under infrastructural improvements because of the substantial coordination that such assessment requires and because of its intended audience, which is the local school district administration, the state and federal departments of education, and others who fund and/or support the school, such as private foundations, the local community, parents, and students. In contrast to

formative assessments, these assessments are designed specifically for implementation with continuous progress-monitoring systems. These systems would allow teachers to track students throughout a school year and, ideally, over an entire academic career, from kindergarten through high school. In addition, these systems would allow for ongoing internal and external evaluation of the implemented program. These data and more formative assessment data could be catalogued on a computer system that would allow teachers, administrators, and evaluators to inspect students' progress individually, by class, by cohort, and by school. These assessments are more formal than the formative assessments, but should go beyond state assessments and be designed to demonstrate progress specific to school and program goals, and, if possible, to also inform instruction. Ideally, the assessment results would be generated and shared in a timely fashion so that they might also be of use to teachers in planning instruction and to students in monitoring their success and progress in school.

Teacher Teams

This element ensures that the school structure supports coordinated instruction and planning in an interdisciplinary teacher team. This vision centers on teachers meeting regularly to discuss students they have in common and to align instruction. In the primary grades students see one teacher; in middle and high school grades, their daily routine changes, and they see many teachers during discrete blocks of time devoted to discrete subjects. This shift often causes a loss in consistency in literacy instruction. Teacher teams are viewed as helpful for reestablishing coordinated instruction in higher grades and as a way to promote teacher collegiality and heighten the likelihood that no child will slip through the cracks. Teacher teams that meet regularly allow teachers to plan for consistency in instruction across subject areas, which is an important step toward a comprehensive and coordinated literacy program.

Leadership

Without a principal's clear commitment and enthusiasm, a curricular and instructional reform has no more chance of succeeding than any other schoolwide reform. It is critical that a principal assumes the role of an instructional leader, who demonstrates commitment and participates in the school community. This leadership role includes a principal building his or her own personal knowledge of how young people learn and struggle with reading and writing and how they differ in their needs. In addition, a principal who takes on the role of instructional leader will attend professional develop-ment sessions organized primarily for teachers. This knowledge and experience will give a principal the necessary understanding to organize and coordinate changes in a school's literacy program. It will further give a principal the proper foundation for making the necessary decisions to alter structural elements, such as class schedules, to ensure optimal programming for student learning.

This element also applies to teachers, who should assume leadership roles and spearhead curricular improvements. Teachers play a role in ensuring the success of curricular reform, and their involvement

is all the more crucial when a principal has not assumed the instructional leadership role. Without someone with an informed vision of what good literacy instruction entails leading the charge, instructional change is likely to be beset with problems.

A Comprehensive and Coordinated Literacy Program

In many ways, this component of a program is not obtainable without the other infrastructural improvements and is especially closely aligned to leadership and the establishment of teacher teams. Included in these teams would be additional school personnel, such as librarians, reading specialists, literacy coaches, and resource room teachers. Often in today's schools one teacher has no idea what another is teaching; this is particularly true in high schools. The vision for an effective literacy program recognizes that creating fluent and proficient readers and writers is a very complex task and requires that teachers coordinate their instruction to reinforce important strategies and concepts. It is important in a comprehensive and coordinated literacy program that teachers work in teams and are responsible for a cohort of students. This is not to advocate that math, science, and history teachers should become teachers of reading and writing, but rather that interdisciplinary teams that meet on a regular basis will provide opportunities for reading and writing teachers to better support content-area teachers. These teams can also create more consistent instruction by reinforcing reading and writing skills, such as note-taking and comprehension strategies. An effective literacy program should implement many of the instructional elements in a consistent and coordinated way.

Because the literacy needs of adolescents are so diverse, the intensity and nature of instruction in a comprehensive and coordinated literacy program—as well as which teachers are involved—will vary considerably. Some students need their content teachers to make only modest accommodations or adjustments; other students need learning strategies embedded in content material, explicit strategy instruction, or instruction in basic skills or even the basic language elements that are the foundation of literacy competence. Secondary schools must recognize adolescents' varying needs and develop a comprehensive program that will successfully address the needs of all their students.

A comprehensive and coordinated literacy program will also initiate or augment collaborations with out-of-school organizations and the local community to provide more broad-based interactions and greater support for students. These collaborations would further secure student motivation by providing students with a sense of consistency between what they experience in and out of school.