


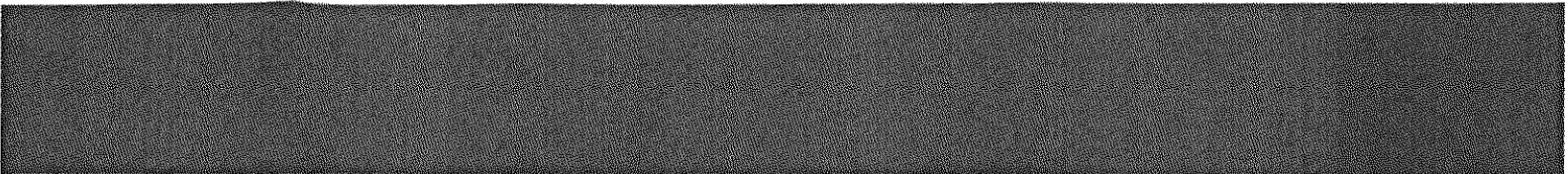
Informed Choices **FOR Struggling** **Adolescent Readers**

**A Research-Based Guide
to Instructional Programs
and Practices**

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Costs of Implementing Adolescent Literacy Programs

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THE CHALLENGE OF ADDRESSING inadequate literacy among adolescents goes beyond identifying the magnitude of the literacy problem and its solutions. Progress in addressing adolescent literacy challenges also depends heavily on schools choosing appropriate programs and implementing them well. This is a central focus of this book, as well as other recent reports on the subject (Biancarosa & Snow, 2004; McCombs, Kirby, Barney, Darilek, & Magee, 2005).

Sadly, the history of school reform is replete with repeated attempts to adopt reforms that are subsequently abandoned on the basis that they were ineffective. Clearly, schools need to choose reforms that have promise, and this volume provides a catalogue of approaches. But we would be remiss in not pointing out that the challenge of getting reforms to “work” is as much a responsibility of the schools as it is of the developers of the reforms.

Too often reforms are adopted by schools in a mechanical fashion as if a perfunctory acceptance of the reform and its training requirements are sufficient to routinely yield educational success. Very often such adoptions are not accompanied by the appropriate leadership, resources, and commitment to succeed. The result is that considerable time and resources are wasted as schools and school districts recycle through reform after reform with little long-term progress.

This chapter highlights issues of implementation and the costs of program choices, while Chapter 5 details issues of school and district leadership and readiness for change as integral elements for improving adolescent literacy outcomes. After reviewing the literature on implementation of educational reforms, this chapter proceeds to a study of differences in implementation and costs among a sample of schools that have adopted the same adolescent literacy program for three very different programs (READ 180, Questioning the Author [QTA], and Reading Apprenticeship [RA]), which are also listed in Part

II of this book. We conclude the chapter with some recommendations for procedures that will improve the chances for a successful implementation.

Importance of Implementation

The traditional view of educational reform at the school district or school site is that it begins with the identification of an educational challenge that needs to be resolved. Typical challenges are low student achievement or inappropriate student behavior in terms of disruptions or absenteeism. The decisionmakers consider a number of alternatives such as new textbooks, curriculum packages, software, and staff development and choose from among the alternatives. New materials are purchased, professional development follows, and the reform is considered to be in place. Within a few months the decisionmakers begin to look for results. When the expected improvements are not forthcoming in a year or two, it is assumed that the reform did not work and there is a search for a new reform. This behavior is so typical that anyone who has worked in a particular school or school district for a decade or so will have experienced as many as three or four different reforms dedicated to the same problem and dozens of different reforms addressing the myriad issues facing their schools.

What is notable about this approach is that it is part of standard school procedure in that it is the most common approach to seeking school improvement. School reforms are adopted in a perfunctory manner that implicitly assumes that the adoption of new materials and professional development will automatically transform the school and alleviate the problem. But this is almost never the case, so the search for solutions continues to follow this repetitive pattern as previous efforts fail and are replaced by something new. Why do schools seem to be perpetually adopting reforms to address persistent problems without the reforms succeeding?

Two reasons are given for this. The first is that schools are unique institutions rather than ones that can be altered effectively by a cookie-cutter approach. Change strategies must take account of the unique features of the school situation, including previous school experience with reforms, school leadership, commitment to change, staff capacity, student characteristics, and available resources. Schools with habitual adoption and turnover of reforms may see reform as a ritual rather than a reality to be taken seriously. School administrators often lack a full understanding of the needs of a reform and how to create productive roles that will support the reform. School staff may not believe that change is needed and may attribute problems to factors such as teacher turnover, inadequate resources, and student limitations. Furthermore, schools often undertake interventions without a clear idea of what resources are required and where they will be obtained, and school districts may encourage or mandate adoptions of reforms without providing the supportive conditions for success.

Any strategy for reform must build on not only the theory and details of the reform but also the concrete features and realities of the school in which the reform is being enacted (Evans, 1996).

The second reason is related to the first. Not only does each school differ as a context for change, but even an understanding of these differences may not be fully adequate for developing a strategy for change. The reason is that schools are not quiescent or inert organizations waiting to follow instructions from outside experts on how to alter themselves. They respond to outside interventions, molding them in ways that are often unpredictable and even unrecognizable. In a famous set of studies by the RAND Corporation, it was found that although adopted reforms are designed to change the school, the school has the agency and wherewithal to reshape the reform, even to neuter it completely. In fact, the failure of school reforms has been largely attributed to the capacity of the schools to swallow external interventions without allowing the reforms to fundamentally change school directions. (The literature on resistance to school change and on how schools shape reforms, rather than reforms shaping schools, is substantial. On the former, see Evans [1996]. On the latter, see the summary in McLaughlin [1990] of the RAND Change-Agent studies.)

Although the literature on the importance of paying attention to the details of implementation is voluminous (c.f., Berends, Kirby, Naftel, & McKelvey, 2001), the complexities of school organizations and operations typically neglect implementation planning. The RAND multiyear evaluations of the New American Schools concluded that, "Throughout the history of research on program initiatives, one finding has emerged again and again: Implementation dominates outcomes" (Berends et al., 2001, p. 23; see also Fullan, 1991; Pressman & Wildavsky, 1973). The conclusions drawn from the literature are that schools need to plan in depth the details for implementing reforms, beginning with the specification of the types of resources that will be needed and their costs—as well as how they will be deployed.

This chapter shows how such resources can be identified and their costs determined. This attention to resource needs and uses in adopting a reform shifts attention to the details of the intervention from what is often viewed as a mechanical adoption of a program that should automatically ensure success by virtue of its adoption.

Resources and Implementation

Although there may be many reasons for poor implementation, two of them are failure to account for the resources that will be needed to promise success and failure to procure the appropriate resources. An example of the first is that effective reform requires concrete efforts to ascertain the precise resources that are needed. One cannot simply assume that they will be available when needed.

For example, reduction of class size has specific resource consequences in that more teachers must be hired and more classrooms must be provided. Often schools simply assume that sufficient accommodations can be made without adequately anticipating the specifics. Then, at a late hour, they find themselves searching for the additional space and qualified personnel, an oversight that is unlikely to solve the logistical shortcomings.

Provisions for time commitments of personnel are often overlooked or not properly scheduled. For example, longer instructional periods for literacy activities also mean that provisions for teacher assignments and scheduling must be changed. If the school day remains fixed, resources and time must be reallocated with obvious consequences for the overall scheduling of classes and assignments. In an extended day additional teaching resources must be provided. Time for professional development includes not only the time allocated to formal workshops and professional development but also the time required for instructional planning among faculty and consultation and evaluation by coaches with classroom teachers. Often no formal arrangement is made to capture the time that these activities necessitate. Rather, it is just assumed that the time will be "found." Leadership of school principals for the reform means that time must be found in the schedule of principals and other school-site administrators to engage in training, teacher meetings, classroom observations and feedback, modeling good practices, and so on. Yet many reforms simply assume that administrative staff will find the time for all of these activities by rearranging their daily schedules, even though no provision has been made to reduce other responsibilities. In some cases, schools are expected to have a full-time or part-time coach. In too many cases a Title I coordinator or department head is just given an additional assignment without provision to shed other responsibilities or otherwise free up time for their new roles.

Fortunately, there are relatively simple tools for schools to identify the resources that are needed to implement reforms. These tools are easy to use because they build on the resources and activities that are integral to the intervention. The basic model used to evaluate the resources that will be needed and their cost is what is known as the "ingredients method" (Levin & McEwan, 2001). This method requires that planners follow a number of relatively simple steps in planning implementation.

The first step is to identify the "ingredients" or resources that will be required to effect a reform (Levin & McEwan, 2001, Chapter 3). This must be done in a systematic way and entails participation by both school and district staff. School leadership and teachers need to understand what it takes to implement the reform, and district staff need to become cognizant of program requirements and funding needs. Most of this type of analysis can be done by using a financial spreadsheet such as Excel. Personnel positions are listed according to their qualifications and the portion of time that will be needed. If the principal is expected to allocate one-quarter of her time to the reform, that requirement is

identified in a formal way rather than entrusted to “whether and when she has time.” The same is true of other personnel positions. At the same time it is important to begin to identify where these personnel will come from. Will extra teachers be needed to free up time for professional development and teacher discussions and deliberations? If so, how many positions will be needed and with what qualifications? Clearly this will have implications for hiring or reassignment.

Facilities needs and specific furnishing and equipment are also identified. If additional classroom space is needed for reductions in class size, that space should be specified. If computers, software, instructional materials, and other equipment are required, these also need to be denoted. Ultimately, all of the ingredients will be listed with sufficient detail on qualities and characteristics. Compilation of the needed ingredients is not only important for developing a complete list of resources associated with the intervention, it also gives school and district personnel a better understanding of the needs and purposes of the overall reform and enlists joint support in obtaining the resources. Specific sources of information in identifying ingredients include the descriptive materials on the reform and interviews with the sponsor or developer of the intervention, articles and reports on experiences of other schools in adopting the intervention, and observations and interviews (often by e-mail or telephone) with personnel in other schools or districts that have adopted the intervention.

The second stage in using the ingredients method to identify resources and implementation needs is to associate each ingredient with its cost. Methods of setting out the cost for each have been well developed in the literature (Levin & McEwan, 2001, Chapter 4). A complete listing of the ingredients and their costs will provide an estimate of the overall cost of the intervention. It also clarifies the resources that must be in place to promise success so that the school year begins with the necessary personnel and adjustments in schedule and group size that are integral to the specific reform.

The third stage is to ascertain where the resources will come from. In some cases, reallocation of the budget will be necessary, assigning existing resources to the intervention in place of using them for activities of a lower priority. In other cases, new resources will be required with implications for school budgets or for obtaining volunteer support. At this stage the details of financing the intervention must be in place in order to move forward with the reform.

Each of the interventions listed in this book has been formulated and applied to improving adolescent literacy. Although the developers of each reform have made considerable investments in constructing and testing their models, this is no assurance that when the intervention is adopted in a specific setting it will produce results. The foregoing discussion asserts that the adoption of a promising reform, in itself, is not sufficient to ensure that the reform has predictable costs and effectiveness. How the reform is implemented will contribute heavily to its probability of success or failure and its cost.

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Implementation is a joint responsibility of the model developer and the school and school district. The model developer must provide clear guidelines with respect to how the reform works and what modifications it requires to usual school practices as well as the ingredients required to make it succeed. The school and school district must set out a blueprint in advance that allows for identification, funding, and acquisition of the required resources and planning activities that the reform comprises. This will vary from site to site, depending upon the initial alignment of programs and personnel. In some schools the challenge of any specific reform will require greater modifications of resources and be more costly than in others. For example, as we will show below, a reform that requires a small class size will obviously be easier to implement in a district that already has smaller classes than in one with larger classes. Moreover, a large reduction in class size will be more expensive as will be the search for additional classrooms to accommodate the smaller classes.

In what follows, we illustrate dramatically different costs and methods of implementing the same reforms. The purpose of this effort is to assist school decisionmakers and schools in selecting from among these—or other interventions to improve literacy among their students—on the basis of their students' needs and the careful consideration of the costs of implementation. In some of the cases discussed below, the reasons for wide divergence in costs are due to the need to make larger departures from existing practices at some sites than at others. In other cases, the site decisionmakers have decided to make modifications in the models. In yet others, there are idiosyncratic factors that seem to enter into implementation decisions. In all cases, we suggest that careful planning and analysis in advance of the launch of the reform is likely to provide better implementation and cost management.

We should also note that there is nothing nefarious about the differences in implementation patterns and costs that will be presented. Our purpose is more descriptive than analytical. Although we are illustrating the variability in implementation among a small sample of adolescent literacy reforms, the overall findings should not be viewed as unique. Virtually all reforms show this type of variability, even ones that are largely implemented by "formula." For example, one of the most widely used reading reforms at the elementary school level, Success for All (SFA), shows similar variability despite its relatively rigid requirements in materials, organization, and instructional practices. Using the ingredients method of estimating costs, King (1994) found that Success for All had an implementation cost ranging from about US\$500 per child to about US\$1,300 per child, even though it appears to have a cost of only about US\$150 per child for materials and training (about US\$75,000 for a school with 500 students). The difference is that SFA requires schools to provide extended class periods for reading, smaller class sizes, and additional personnel in the school for supporting the reform. Whether large differences in cost from site to site are

associated with differences in effectiveness among sites is beyond the scope of this study, but that is certainly a possibility.

Three Adolescent Literacy Programs

To demonstrate the variability in implementation and subsequent variability in costs, we have selected three highly regarded reforms for improving adolescent literacy:

- READ 180
- Questioning the Author
- Reading Apprenticeship

These programs are also reviewed in Part II of this book. We obtained information on implementation of these programs at different sites. In particular, we collected data on the logistics of the implementation as well as the resources used to carry out the intervention at a number of different sites. Bear in mind that each developer provided the same description of the intervention and its implementation requirements to the different sites. From the perspective of the developer, success requires that the nature of the professional development and the provisions necessary for the reform have similarities to ensure quality control from site to site. We describe the three interventions and explore differences in their implementation and costs among sites to see how much variance exists.

READ 180

READ 180 is a reading intervention designed for struggling readers in late elementary, middle, and high school (see Part II, page 186). Its goal is to improve students' decoding, fluency, and comprehensions skills. The program was developed through collaborative research between Vanderbilt University and the Orange County Public School System in Florida. It was piloted with more than 10,000 students between 1994 and 1999 (Scholastic Research and Evaluation Department, 2006). Scholastic began publishing READ 180 in 1999 and currently markets the program to school districts across the United States.

READ 180 lessons consist of whole-group, small-group, and individualized literacy instruction. During whole-group instruction teachers read aloud, engage students in shared and choral reading, and model fluent reading and the use of reading strategies. The class is then divided into three groups that rotate through three reading stations: small-group instruction, computerized instruction, and independent reading. In small-group instruction, the teacher gives more personalized reading instruction to a small group of students. At the computer station, students receive individualized instruction via a program that advances to new text only after students demonstrate mastery in fluency, word

recognition, spelling, and comprehension. The program provides support for readers, including a video to enhance background knowledge, pronunciation, translation, and definitions for difficult words in the text; decoding tips; and a summary of the student's reading accomplishments. During independent reading, students self-select texts from the READ 180 library and listen to audiobooks, which model fluent reading and comprehension strategies. The READ 180 lesson ends with another short period of whole-group instruction (Florida Center for Reading Research, 2006).

Scholastic recommends that READ 180 be delivered to students in daily 90-minute instructional blocks. Using this model, students get 20 minutes of whole-group instruction and three 20-minute rotations through the stations, followed by a 10-minute wrap-up. Scholastic also suggests limiting enrollment in READ 180 classes to 15 students. While many school districts follow these recommendations closely, others do not have either the resources or flexibility to modify the school day or to drastically reduce class size to fit Scholastic's recommendations. When this is the case, schools mold the program to fit their specific circumstances. Some schools use the READ 180 program with average or only slightly reduced class sizes. Others split the 90-minute instructional block into two 45-minute periods within the same day, or even into two 45-minute periods on consecutive days. The intervention has also been used as an after-school program, administered as infrequently as two times a week.

Questioning the Author

QtA is an instructional technique rather than a complete literacy program or curriculum (see Part II, page 183). It is designed to engage late elementary through high school students in critical reading, thinking, and discussion. The goal is for students to improve comprehension and retention of the information presented in texts (Beck, McKeown, Hamilton, & Kucan, 1997). As such, it has been used primarily with content area texts, particularly in the social sciences, but is intended to be appropriate for interactions with any type of text. The technique was developed by researchers at the University of Pittsburg and Bethany College in cooperation with the Pittsburgh Public Schools.

Using this approach to literacy instruction, teachers model their own reading processes for students (Beck, McKeown, Sandora, Kucan, & Worthy, 1996). In addition, they make use of a carefully constructed set of questions, referred to as queries. The queries are posed at planned intervals during the reading of the text and are designed to assist students in constructing meaning. Students are encouraged to see authors as fallible human beings who do not always express information and ideas clearly. Through student-to-student interaction, the group works collaboratively to demystify the text and uncover its more subtle meanings. Teachers use discussion moves such as "marking" (drawing attention

to an idea) and “revoicing” (using other words) to enhance student discussion and comprehension (Florida Center for Reading Research, 2006).

QtA requires few resources outside of professional development costs. However, the training time varies widely, ranging from approximately 4 to 12 days per teacher in the first year. Because teacher preparation is an integral part of this program, developers believe that new practitioners will need 1.5 hours to prepare for each lesson. This is because appropriate queries must be planned out by teachers for each new text. However, most schools are unable or unwilling to give teachers the additional planning time needed for this preparation; as a result, teachers must either implement the technique without the suggested preparation time or spend many hours outside of school preparing texts and developing queries. The developers also recommend rearranging the classroom furniture into a U shape so that students can see one another’s faces during the discussion. Some teachers choose to follow this suggestion, and others do not.

Reading Apprenticeship

RA is an approach to literacy that seeks to demystify academic reading for middle and high school students who struggle with text comprehension (see Part II, page 191). Similar to QtA, it is not a complete curriculum so much as a pedagogical approach. In contrast to QtA, RA aims to root literacy instruction and practice in the subject areas by attending to the unique demands and practices within each discipline. Developed by the Strategic Literacy Initiative (SLI) at WestEd, it is based on the premise that remedial, basic-skills programs result in a “literacy ceiling” that can limit academic and other opportunities (Greenleaf, Schoenbach, Cziko, & Mueller, 2001, p. 86). To surpass these limitations, RA prepares educators from all content areas to embrace new and complex conceptions of reading as well as new ways to develop students’ academic reading skills. In RA classrooms, teachers and students act as partners in a collaborative inquiry into reading as they engage with texts in their specific subject area.

In order to create classrooms where students are active and effective readers and learners, RA trains teachers to reframe reading and writing in their subject areas by planning along four dimensions: social, personal, cognitive, and knowledge building. The social dimension focuses on creating and maintaining a supportive learning environment where students are comfortable making mistakes and asking questions. The personal dimension seeks to improve students’ identities and attitudes as readers. The cognitive dimension provides students with strategies and tools to aid comprehension, with an emphasis on group discussion of when and why certain tools are useful. The knowledge-building dimension involves recognition and expansion of the knowledge students bring to a text. These four dimensions are linked in the classroom through “metacognitive conversation,” a practice that makes the invisible aspects of each

dimension visible and open for discussion (for detailed discussion of dimensions, see Schoenbach, Braunger, Greenleaf, & Litman, 2003).

While it is possible for RA to be implemented by a single teacher, SLI emphasizes the importance of cross-curricular implementation. In an ideal implementation, all teachers in a school will implement RA, meeting regularly to discuss progress and strategies. It is important that "full implementation" schools make time for such meetings to occur.

SLI trains educators in RA through a variety of professional development opportunities, ranging from an eight-day SLI series of sessions to one-day sessions provided by local "teacher experts." Nevertheless, across all professional development, educators are trained to see reading differently through examining their own reading process and that of adult peers and students. Because RA focuses on re-training content area teachers, program implementation does not require structural change to the school schedule, purchase of new equipment, or additional personnel.

Data and Analysis

It is important to note that this project was constrained to three months during the summer of 2005. This meant that both time limitations and vacations at school sites limited the more refined collection and analysis of data that would be required in a precise cost accounting. However, we believe that differences in the resource patterns among sites and the overall cost magnitudes are representative.

A five-step method was used to gather and organize data for this study; this approach is part of the "ingredients method" described in Levin and McEwan (2001, Chapters 3 and 4).

First, we reviewed published program documents for each intervention. These documents included general program descriptions, implementation guidelines, reports by previous program evaluators, district and program websites, implementation videos, journal articles, and various other sources of information. This review of published materials familiarized us with the programs and alerted us to potential costs and pitfalls of implementation.

Second, we contacted program developers by telephone and, where possible, met with them in-person. Developers explained both the minimal and ideal resources required for successful implementation of their intervention. They described the primary obstacles to implementation as well as the resources and actions that schools and districts commonly used to overcome those obstacles. Each of the three program developers provided a wide range of program literature and contact information for successful program implementers around the United States.

Third, we conducted telephone interviews with school and district personnel—teachers, principals, technology specialists, district literacy coordinators, and

superintendents—to learn how programs were being implemented at the local level. Our goal was to document and understand the various ways that a single model took on different operational features at the sites of implementation. Respondents at each site were asked not only to describe the pattern of implementation but also to identify the characteristics of personnel required for successful program implementation. For example, one district noted the necessity of a full-time district literacy coordinator, while another had no such position. In addition, respondents described the nature of the professional development offered to teachers, administrators, and technicians. Finally, they described the materials and the facilities required to implement the program. Some of the interventions required the purchase of additional technology and the procurement of additional classrooms, while others did not. At each of these stages, local staff described problems they encountered as well as the resources and actions they used (or tried to use) to overcome them. In some cases, it was difficult to schedule interviews because school personnel were out of the office for the summer. We note the number of sites contacted at the beginning of each program's results section. The time frame also made conducting observations of the interventions impractical.

Fourth, we used the above sources of information to construct ingredients lists for each site's implementation. This list outlined the personnel, materials, and facilities used at each implementation site and could be compared with the developers' recommended ingredients. The purpose of this method was not to highlight inconsistencies between implementer approaches and developer models, but rather to show future schools and districts the real range of resources required to implement a given intervention. By identifying the ingredients that are actually used in an intervention, we hope to inspire schools to think more deeply about the resources, time requirements, and personnel needs that contribute to program success.

Fifth, we created Excel spreadsheets detailing the ingredients and relative costs for each intervention across different sites. Costs were assigned to the ingredients using national averages, developer costs, and individual estimates. Total program costs were determined as well as program costs per student. Although major cost components such as program licenses, professional development, and computers are purchased in the first year, they continue to provide services over a number of years; using proper costing techniques, these costs were annualized where appropriate. That is, only that portion of the cost of such ingredients that should be charged to a single year of use is included in these estimates. To annualize costs, we assumed five years of program implementation at a 5% discount rate. Five years is also a number recommended by Scholastic, although the program has been implemented beyond five years in some sites. Exceptions to the five-year expected lifespan are noted in Tables 4.1–4.3. (For further information on how to annualize costs, see Levin and McEwan [2001, pp. 67–70].)

Findings

The following presentation describes the findings from analysis of site implementation of each of the reforms. Since this work was performed over the summer, we were limited in both time and access to school personnel in obtaining data. Accordingly, what follows should be viewed not for its precise cost analysis as much as for its patterns of resource use and the magnitudes of cost. Also, our purpose is not to compare the cost of different intervention models, because some are more modest than others, a factor that may be reflected in both their scope and effectiveness, and because they have distinctively different goals. Results for each program are summarized separately in the following sections and in Tables 4.1–4.3. Each of the tables reports for a given program the costs of that program's ingredients, the costs at an "idealized" site described by its developer, and the costs at one or more actual implementation sites. We close the chapter by offering our readers some conclusions and insights gained through this study.

READ 180: Ingredients and Costs

The list of ingredients for READ 180 was derived from telephone conversations and e-mails with numerous sites suggested by Scholastic, the sponsor of READ 180. Three of these sites, chosen for their diversity in geographic region and school size, are included in Table 4.1. In addition, we obtained details on the intervention from meetings, phone conversations, and correspondence with Scholastic representatives. The main categories of cost ingredients include personnel, professional development, facilities, equipment and materials, and licenses purchased. Table 4.1 provides a listing of ingredients with the additional quantities of each for three READ 180 school sites and the recommended model of Scholastic.

Personnel costs were divided into five categories: school administrators, school technicians, district coordinators, district technicians, and additional teachers required for program implementation. Additional teachers are required for READ 180 when schools cut class sizes for the program and/or alter their schedules to accommodate the recommended 90-minute class period. Therefore, we calculated the number of additional teachers needed for READ 180 where the READ 180 requirements deviated from existing class sizes and period lengths.

Clearly, the simple purchase of READ 180 courseware in itself is inadequate to ensure increased student literacy achievement without appropriate staffing, professional development, and use of the courseware. One purpose of this report is to make the less conspicuous costs of adolescent literacy programs visible to future implementers. All sites reported that district leadership and support are required to initiate and sustain an effective implementation of READ 180. For example, a teacher from a large urban district reported that in

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TABLE 4.1. READ 180 Implementation Models

INGREDIENTS LIST	INGREDIENT		SCHOLASTIC		READ 180 SITE ONE		READ 180 SITE TWO		READ 180 SITE THREE	
	Costs (US\$)	Annual Costs (US\$)	Inputs ^a	Annual Costs (US\$)	Inputs	Annual Costs (US\$)	Inputs	Annual Costs (US\$)	Inputs	Annual Costs (US\$)
LICENSES (Packs of 60)	\$32,000.00	\$7,392.00 ^b	1	\$7,392.00	186	\$1,372,472.64 ^a	18	\$133,056.00	40	\$295,680.00
PERSONNEL (FTE)										
Additional teachers ^c	\$57,355.00 ^d	\$57,355.00	1	\$57,125.58	36.86	\$2,114,105.30	17.93	\$1,028,375.15	3.12	\$178,947.60
READ 180 teacher-student ratio			1:15	1:30		1:15		1:24		
Percentage reduction from 30-student class size ^e			50%		0%		50%		20%	
School-level administration	\$105,282.50	\$105,282.50	no rec.		n.r.		n.r.		0.02 ^f	\$2,105.65
In-school technician	\$57,355.00 ^g	\$57,355.00			2.36	\$135,357.80	.45	\$25,809.75	0.83	\$47,604.65
READ 180 district technician	\$95,385.00	\$95,385.00			1.13	\$107,308.13	4	\$381,540.00	0.40	\$38,154.00
READ 180 district coordinator	\$85,892.50	\$85,892.50	no rec.		0.90	\$77,303.25	0.33	\$28,344.53	0.80	\$68,714.00
PROFESSIONAL DEVELOPMENT										
First-year teachers trained ^h			1		270		58		37	
First-day implementation training	included		yes		yes		yes		yes	
Second-day implementation training	included		yes		no		no		yes	
Read online course	two included		yes		limited		no		no	
Seminar series	\$2,500.00	\$577.50	two optimal		no		no		no	
Independent district training							7 days		3 days	
Noncontract training									9 hours	\$5,994.00
Substitute days	\$120.00	\$27.72			270	\$7,484.40	348	\$9,646.56	185	\$5,128.20
Total teacher training days			2		270		464		185	
Administrator training	\$105,282.50	\$24,320.26	0	\$315.85 ⁱ	0	\$72.96	0	\$0.00	0	\$33.78
Technician training	\$57,355.00	\$13,249.01	.01	\$66.25	0.24	\$3,219.51	0.13	\$1,748.87	0.07	\$883.18
Half-day implementation training	included				81		no		no	

(continued)

TABLE 4.1. READ 180 Implementation Models (continued)

INGREDIENTS LIST	INGREDIENT		SCHOLASTIC		READ 180 SITE ONE		READ 180 SITE TWO		READ 180 SITE THREE	
	Costs (US\$)	Annual Costs (US\$)	Inputs ^a	Annual Costs (US\$)	Inputs	Annual Costs (US\$)	Inputs	Annual Costs (US\$)	Inputs	Annual Costs (US\$)
One-day implementation training	included		yes		no		no		no	
One-day technical training	\$9,000.00	\$2,079.00			no		22	\$2,079.00	no	
Two-day technical training	\$12,000.00	\$2,772.00			no		no		1	\$2,772.00
FACILITIES										
Classrooms			no rec.		166		181			20
EQUIPMENT AND MATERIALS										
Student computers	\$600.00	\$138.60	5	\$693.00	1,660	\$230,076.00	108	\$14,968.80	144	\$19,958.40
Application server	\$2,000.00	\$462.00	1	\$462.00	85	\$39,270.00	18	\$8,316.00	20	\$9,240.00
Printers	\$120.00	\$27.72	1	\$27.72	166	\$4,601.52	18	\$498.96	20	\$594.40
Cassette players	\$4.00	\$4.00	5	\$20.00	n.r.		n.r.		144	\$1,440.00
Headphones	\$10.00	\$10.00	5	\$50.00	n.r.		n.r.		18	\$3,298.19
Additional books for classroom	\$499.00	\$183.23 ^k			n.r.		yes		50	\$3,102.84
Project achievement reading kits	\$169.00	\$62.06 ^k			n.r.		18	\$1,117.02		
Total cost				\$66,152.39		\$4,019,271.50		\$1,635,500.64		\$684,186.89
Students served				60		6,701		1,080		2,400
Cost per student				\$1,102.54		\$610.55		\$1,514.35		\$285.08

FTE = full-time employees
 no rec. = no specific recommendation; depends on size of implementation and district resources
 n.r. = not reported
 a Reported by Scholastic. READ 180 National Implementation Manager.
 b All one-time costs are annualized over five years using a 5% discount rate unless otherwise noted.
 c Additional teacher formula, for each 100 students, assuming a class size of 30 and six-period day: $100 / (\text{READ 180 class size} \times \text{READ 180 periods per day}) = X$; $100 / (30 \times 6 \text{ periods per day}) = .56$; (X students enrolled in school - .56) / 100 = new teachers per READ 180 student. X = number of READ 180 students served = number of additional READ 180 teachers.
 d All personnel costs were calculated using national averages for the 2004-2005 school year (source: Educational Research Service) plus 25% estimated fringe benefits, unless otherwise noted.
 e We assumed an original class size of 30 at all sites, although many districts reported higher class sizes in non-READ 180 middle and high school language arts classes.
 f Number of additional hours divided by 1,440 (work hours per year). This formula for personnel is used throughout the study.
 g No national salary information was available. Teacher salary information was used as an estimate of in-school technician costs.
 h The cost of teacher time is calculated as part of teacher salaries. It also affects substitute time.
 i Formula used to derive opportunity cost of training: Hours of training / 1,440 = % FTE. FTE × # trained = total training FTE. Total training FTE × annualized salary = opportunity cost of training. This calculation was used for all personnel opportunity costs.
 j This district uses only "oversized" classrooms for READ 180.
 k Annualized over three years based on reports from sites.

school = .20 / 100 = new teachers per student. Also included in the calculation of personnel costs are the costs of training, unless otherwise noted.

d All personnel costs were calculated using national averages for the 2004–2005 school year (source: Educational Research Service) plus 25% estimated fringe benefits, unless otherwise noted.

e We assumed an original class size of 30 at all sites, although many districts reported higher class sizes in non-READ 180 middle and high school language arts classes.

f Number of additional hours divided by 1,440 (work hours per year). This formula for personnel is used throughout the study.

g No national salary information was available. Teacher salary information was used as an estimate of in-school technician costs.

h The cost of teacher time is calculated as part of teacher salaries. It also affects substitute time.

i Formula used to derive opportunity cost of training: Hours of training / 1,440 = % FTE. FTE × # trained = total training FTE. Total training FTE × annualized salary = opportunity cost of training. This calculation was used for all personnel opportunity costs.

j This district uses only "oversized" classrooms for READ 180.

k Annualized over three years based on reports from sites.

its first four years of READ 180 instruction his school had four different principals—none of whom were committed to READ 180. As a result, there was vast inconsistency in implementation, with children constantly shifting in and out of READ 180 classes. In the fifth year of implementation, the school hired a principal who was supportive of READ 180 and, for the first time, the teacher had the same students from September to June. In addition, support for program challenges was readily available, as were resources for program essentials such as headphones and technical support. In this case, both additional principal time and school resources were needed to maximize the success of the program. The above description of essential support systems was echoed by Scholastic as well as teachers, principals, and district personnel at all sites.

While some districts reported few technology problems, others described technology as a primary obstacle to program implementation. In all cases, technology-related personnel provided essential support to READ 180 teachers. Many schools employ on-site technology specialists to resolve problems quickly, and all districts in our sample use a district-level technology expert who travels from school to school, resolving hardware and software problems.

To determine program costs for school administrators, school technicians, district coordinators, and district technicians, we convert the amount of time spent on READ 180 per school year into a percentage of a position (assuming 1,440 work hours per year) and divide that number by the average national salary for that position. All personnel costs were calculated using national averages for the 2004–2005 school year (Educational Research Service, 2005) plus 25% estimated fringe benefits.

Scholastic provides numerous options for READ 180 professional development, some of which are included in the cost of the program licensing. For teachers, Scholastic states that two days of implementation training as well as participation in its online course—both provided with the purchase of READ 180—are necessary in the first year of implementation. Optimally, Scholastic recommends that districts purchase a selection of additional half-day seminars and/or additional online reading courses. For school- and district-level administrators, Scholastic recommends participation in a half-day leadership development course, included in the price of the program. Finally, for technicians, Scholastic provides a READ 180 Technical Training Program at an additional cost of US\$9,000 for one day or US\$12,000 for two days. The training prepares technicians to provide program support within their school environment.

Additional professional development costs that are not included with the purchase of READ 180, but are important for schools to consider, include substitute teacher costs (where required), additional teacher training, and the opportunity costs associated with time spent on READ 180 training. Because professional development is intended to exert an impact beyond the year that it is provided, the costs are annualized.

Additional classrooms make up the primary facility requirement for READ 180 to accommodate reduced class size. (The annualized value of additional classrooms is not included here on the assumption that if only a small portion of students were enrolled in READ 180, space might be found for 90 minutes a day. However, if larger numbers were enrolled and schools were fully utilized, our assumption will understate the costs.) While Scholastic provides no recommendation for facilities, it is important to note that READ 180 classrooms must be large enough to house computers for one-third of the students as well as provide sufficient space for the small, independent reading and computerized instruction groups.

Because READ 180 is a technology-based intervention, equipment and materials are vital to program implementation. Student computers and application servers constitute the largest equipment cost. However, this cost varies depending on the existing technological infrastructure of a school. For example, a school without adequate models or numbers of computers for READ 180 will incur greater first-year technology costs than will a school with the proper infrastructure already in place. Scholastic recommends a specific arrangement of system requirements for the best performance of READ 180; however, it acknowledges local differences in technology infrastructure and makes recommendations to schools and districts on the basis of the technology they already have.

While computers and servers constitute the largest equipment costs, full implementation also requires a printer, headphones, and cassette/CD players. Districts can also purchase additional classroom books and project reading kits. Costs for equipment and materials were annualized based on their average lifespan.

In order to determine the costs of implementing Scholastic's recommendations for READ 180, one must know the situation of the school prior to implementation. Much of the cost depends on preexisting local conditions such as class size, technology infrastructure, length of class periods, and personnel characteristics. Using information from three districts, all of which enthusiastically endorse READ 180, we were able to calculate the range of approximate costs associated with implementing this program. These results are found in Table 4.1.

READ 180 Site One

Site One is a large urban/suburban school district with an enrollment of close to 300,000 students. During the 2004–2005 school year, this district used the READ 180 program to instruct approximately 6,700 students. Initially, Site One adopted an “early bird” schedule in which students arrived at school prior to the beginning of the regular school day. Attendance was a serious problem, so Site One modified its schedule to allow students to receive READ 180 instruction daily, in 90-minute blocks during the school day. In addition, READ 180 classes are capped at 30 students, a significant reduction from the 38 students per class average reported by the district. (In both this case and that of Site Three we questioned the large class sizes reported to us. Respondents replied that in both cases

the districts were growing so rapidly that school construction could not keep up with the expansion of enrollments, resulting in very large classes at certain grade levels. However, because we could not confirm that the class size was initially this large, we have used a class size of 30 as the initial level. Bear in mind that Scholastic recommends a maximum class size of 15 for READ 180.)

At Site One, the Coordinator of Instructional Programs coordinates READ 180. She spends approximately 90% of her time on READ 180-related activities, which includes meeting with Scholastic and district personnel, observing teachers, and reporting READ 180 results to interested parties. Each of the 81 schools that are using READ 180 has its own Educational Computer Strategist (ECS), who spends approximately one hour per week on READ 180, usually resolving problems with computer hardware. A technical field manager trains the ECSs and provides specialized knowledge on the READ 180 software as needed. All of the district's 210 READ 180 teachers attended one day of professional development prior to implementing the program in their classrooms.

Site One purchased 185 stages of 60 READ 180 licenses in 2004, giving it the capacity to serve 11,110 students with the intervention; however, during the last school year only 6,701 students received READ 180 instruction. The reasons for this underutilization varied from school to school and included lack of administrator support, the inability of teachers to manage the small-group structure of a READ 180 classroom, and a lack of school funds for READ 180 materials. These implementation problems and the resulting idle licenses greatly increased the per-student cost of READ 180 for Site One. An additional 37 teachers are needed to accommodate the time requirement for READ 180 extended class periods. (Because class size remained at 30—double the READ 180 recommendation—there was no additional need for teachers to reduce class size.) The salaries and benefits for these teachers constituted the other major expense in implementing READ 180 at Site One. The cost per student at Site One for 2004–2005 was estimated to be about US\$600.

READ 180 Site Two

Site Two is significantly smaller than Site One, serving an enrollment of almost 48,000 students, with 1,080 in READ 180 classrooms during the 2004–2005 school year. Site Two adheres closely to the Scholastic model. READ 180 classes are limited to 15 students, half the size of the reported average middle school language arts class. In addition, class periods for READ 180 are 90 minutes long, which is twice the average class period length in the district. With these two modifications the school district would need to hire approximately 18 additional teachers, without reducing other school programs. The additional personnel cost is by far the largest resource burden for Site Two.

In this district, the Secondary Reading Supervisor is responsible for overseeing READ 180. Managing the program occupies about one-third of her time. While Scholastic provides one day of training to teachers, the Secondary

Reading Supervisor provides seven additional days of training to READ 180 teachers throughout the school year. This extra professional development necessitates substitutes for the 58 teachers who use READ 180.

Four district-level computer technicians work exclusively on READ 180. (Scholastic views these costs as discretionary on the part of the district. The new version of READ 180 will provide for a centralized data processing and analysis system.) Their job entails providing hardware and software support to schools, updating computer programs, and running the district's unique centralized computer system, which enables the district coordinator to see and manage student data from the district office. Computer technicians stationed at each school deal with simple hardware problems related to READ 180 in addition to non-READ 180 technology issues at the school.

In addition to the classroom stations suggested by Scholastic, this school district has a "computers down" station in each classroom. This area contains skills cards and other noncomputerized reading activities and allows teachers to continue using the READ 180 small-group instructional model, even when the computers are not working.

The cost of implementing READ 180 at Site Two is about US\$1,500 per student, the highest in our study. Reducing class size by 50% for READ 180, doubling the instructional periods, and hiring four district technology experts contribute heavily to this cost. Additionally, Site Two's higher costs may be attributable to the relatively small size of its implementation and the attempt to centralize the data.

READ 180 Site Three

This school district is a suburban district that enrolled about 420,000 students in 2004–2005. READ 180 is used to remediate literacy instruction for about 2,400 students. As was true for Sites One and Two, Site Three substantially reduced class size in READ 180 classes from a reported average of 38 to 24 students per class. However, because we could not confirm officially the initial class size, we calculate the costs based upon an average class size of 30. Unlike the other sites, Site Three does not modify the school schedule for READ 180, so students receive 45–55 minutes of instruction daily instead of the recommended 90 minutes.

The implementation of READ 180 at Site Three is facilitated by the Program Specialist for Literacy in Secondary Education. She spends about 80% of her time overseeing READ 180. Part of her job is augmenting the two-day implementation training offered by Scholastic with 2–4 additional training days for teachers. All of the training takes place during the school year, so substitute teachers are hired to cover the READ 180 classes. READ 180 teachers are also asked to participate in monthly meetings outside of their contract time, for which they are paid an hourly wage.

School-level microcomputer specialists, employed by most high schools and some middle schools spend about two hours a week per READ 180 classroom.

They perform routine maintenance on READ 180 computers and programs. When schools cannot afford a microcomputer specialist the teachers and district technician spend more time on the technological aspects of the program. One district-level READ 180 technician works with all of the schools and trains the microcomputer specialists (the district initially purchased a two-day technology training from Scholastic). READ 180 maintenance, upgrades, and trainings occupy about 40% of his time.

Currently, Site Three spends about US\$285 per READ 180 student. The cost is significantly lower than those of the other sites because this district uses 45- to 55-minute periods as opposed to the 90-minute suggested class periods. While we cannot comment on the effectiveness of this approach, the students at Site Three receive half as much READ 180 instruction as those at the other two sites, allowing the teachers to instruct twice as many students.

READ 180 Summary

Table 4.1 compares the ingredients and costs of implementation at the three READ 180 sites and for the Scholastic recommended model. Bear in mind that the overall numbers are sensitive to the scale of implementation, but the per-student cost provides a reasonable picture of the difference in magnitude of the costs at each site and the Scholastic recommendation. What is most remarkable is the variability in implementation logistics and the consequent differences in costs. For example, the recommended Scholastic model for implementation would entail about US\$1,100 in costs if followed faithfully in a district with a class size of 30. (The cost estimates in Table 4.1 are on the conservative side because we did not include several areas of potential cost, including the annualized costs of extra classrooms, where needed.) But in Site Three the cost is only one-quarter of this amount because there was only a small reduction in class size (30 to 24 students) and no increase in instructional time. This comparison also illustrates the substantial impact on costs of changes in class size and length of instructional period. For example, the costs imputed for the additional teacher resources in the Scholastic Model are about US\$950 a student, far in excess of the relatively modest charges for licensing the program and the equipment that is required. Clearly when class size is kept constant or reduced only slightly or instructional time is maintained or increased only a small amount, the costs of READ 180 are also reduced. However, these deviations from Scholastic's recommended implementation model might have a serious impact on effectiveness.

Questioning the Author: Costs and Ingredients

The ingredients needed to successfully implement QtA were determined through extensive oral and written contact with the developers at the University of Pittsburgh, and with one implementation site. Although we

contacted other sites repeatedly, we were unable to conduct interviews due to the timeframe of this study.

QtA is a professional development program that aims to equip teachers with new tools for engaging students in text and curriculum. It does not require additional materials or modifications to the school day. Because there are very broad guidelines for class size and no recommendations for period length, it is extremely unlikely that schools will hire additional staff for the express purpose of implementing QtA; however, it is suggested by the developers that a minimum of two teachers per school should be prepared so that they can plan lessons and provide support to each other.

Costing results for QtA are found in Table 4.2. The main costs of this program are incurred for professional development. In addition to the materials for teachers and the initial training, schools are expected to hire consultants to observe each teacher eight times during their first year of implementing QtA. Each observation costs US\$187.50, meaning that the observation bill for one teacher is US\$1,500. Like other one-time professional development expenses, this cost is annualized over the expected life of the program, making it about US\$350 per year. (We have used a five-year expected lifespan consistently throughout this study.) Alternatively, districts can hire a full-time facilitator to train teachers and do the observations. The developers estimate that someone in this position would need to spend about three hours per month with each teacher-implementer.

The developers suggest that administrators attend the one-day training and do about three observations of each teacher, so that they understand and are able to support the teacher-implementers. Both of these activities have opportunity costs, which are calculated by multiplying the administrator's salary and benefits by the percentage of time that person spends on the program. Using national averages for administrator salaries, we calculated this cost to be about US\$1,300 annually.

A hypothetical high school or middle school that trained two teachers in QtA following the developer's guidelines would spend only a very modest amount of about US\$11 per student annually. The emphasis is on incorporating in the existing curriculum and teachers' repertoires the capacity to ask questions in a manner that elicits thinking and articulate responses from students. The very low cost reflects the fact that modifications are not required in class size, scheduling, personnel augmentation, or additional facilities and materials.

Questioning the Author Site One

QtA Site One is a district with a total enrollment of 3,200 students. In this district, QtA has been implemented in language arts classes in grades 3 through 8. Because most of the teachers who adopted the approach work in elementary schools, they only teach one group of students per day.

In addition to a two-day initial training provided by the developers, 25 teachers and three administrators received QtA-related professional development

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TABLE 4.2. Questioning the Author (QtA) Implementation Models

INGREDIENTS LIST	INGREDIENT		UNIVERSITY OF PITTSBURGH		QtA SITE ONE ^a			
	Costs (US\$)	Annual Costs (US\$)	Inputs ^c	Costs (US\$)	Annual Costs (US\$)	Inputs ^b	Costs (US\$)	Annual Costs (US\$)
PERSONNEL (FTE)								
Additional teachers required ^d	\$57,355.00 ^e	\$57,355.00	0	\$0.00	\$0.00	0	\$0.00	\$0.00
QtA teacher:student ratio			1:20 ^f			01:22.5 ^g		
District teacher:student ratio			1:20			01:22.5		
Students per teacher trained			120 ^h			22.5 ⁱ		
School-level administration	\$105,282.50	\$105,282.50	0.01 ^j	\$1,052.83	\$1,052.83	0	\$0.00	\$0.00
District-level administration	\$85,892.50	\$85,892.50	0	\$0.00	\$0.00	0.03	\$2,576.78	\$2,576.78
PROFESSIONAL DEVELOPMENT								
Teacher training	\$55,000 ^k	\$12.71	2	\$110.00	\$25.41	25	\$1,375.00	\$317.63
Day 1 workshop	\$2,500.00 ^l	\$577.50	1	\$2,500.00	\$577.50	1	\$2,500.00	\$577.50
Day 2 workshop			0			1		
Demonstration lesson—45 minutes	included		yes			no		
Observations—eight per teacher	\$187.50	\$43.31	16	\$3,000.00	\$693.00	200	\$37,500.00	\$8,662.50
or District facilitator	\$85,892.50	\$19,841.17	0.04 ^m			not used		
Monthly meetings, annually	included		18 hours ⁿ			1,800 hours ^o		
Total training days per teacher			4.25			12		
Substitute days first year ^p	\$120,000 ^q	\$27.72	0			225	\$27,000.00	\$6,237.00
Planning time first year			1.5 hours per lesson			45 minutes ^r		
Planning time after first year			45 minutes per lesson			45 minutes ^r		

(continued)

one day per month throughout the year. Removing the teachers from classrooms for nine days incurred US\$27,000 in substitute teacher costs. (Substitute teacher costs are estimated assuming that a substitute teacher costs US\$120 per day.) The other large cost for QtA Site One was for teacher observations. At eight observations per teacher, the district paid an estimated US\$37,500 to the University of Pittsburgh for consultants to do observations. Annualized, this cost becomes US\$8,662.50 per year over five years.

The cost of implementing QtA at Site One is estimated to be about US\$35 per student per year. This cost estimate may be low because teacher-training time was not included in the analysis. The higher per-student cost at QtA Site One is attributable to a one-day-a-month professional development session for all teachers, which is not required by the developer of the model. Still, the cost per student is very modest.

An interesting note is that this district reported very little teacher turnover. The director of Elementary Curriculum and Instruction described it as a place where “Teachers get a job and stay for their career.” From this perspective, it makes sense to invest heavily in professional development because teachers may use the technique to benefit students in that district long after the professional development period is over, clearly an important consideration for model choice and implementation.

Reading Apprenticeship Ingredients and Costs

The list of ingredients for RA was obtained through reviews of program literature and from telephone conversations with the developer, Strategic Literacy Initiative (SLI) at WestEd, and implementers from multiple sites, two of which are represented in Table 4.3. The primary ingredient categories for RA are personnel and professional development. Because RA is a professional development process that trains teachers to think and teach in a new way, there are no facilities or equipment costs associated with implementation.

Schools and school districts need not hire additional teachers to implement RA because the program is delivered by content area teachers in their content area classes. While the personnel costs for teachers do not change with RA, the program does incur opportunity costs for school- and district-level administrators’ time. To determine these costs, we converted the amount of time spent on RA per school year into a percentage of a full-time position and divided that number by the average national salary for that position.

Rather than endorse a specific model of implementation, SLI provides schools and school districts with a range of professional development options to choose from. The National Institute in Reading Apprenticeship (NIRA) is an eight-day “training-of-trainers” program designed to prepare school, district, or department leaders to train teachers in local professional development sessions or implement RA in their own classrooms. Site-based trainings, provided

j Calculated by dividing the number of hours spent on QtA by the number of hours spent on other activities.
k Cost of teacher materials for professional development provided by Dr. Margaret McKeown, University of Pittsburgh.
l Flat rate for training provided by Dr. Margaret McKeown, University of Pittsburgh.
m About three hours per month per QtA teacher.
n One hour per teacher per month.
o One full day (eight hours) per teacher per month.
p The substitute days may differ from total training days because some training took place over the summer.
q This is an estimate that we used throughout the study. Substitute costs vary substantially by region.
r Standard for the district.
s Students per class \times class periods per day = students served per year \times 5 = students served over the five-year implementation period.

TABLE 4.3. Reading Apprenticeship (RA) Implementation Models

INGREDIENTS LIST	INGREDIENT		RA SITE ONE		RA SITE TWO	
	Costs (US\$) ^a	Annual Costs (US\$) ^b	Inputs ^c	Costs (US\$)	Inputs ^d	Annual Costs (US\$)
PERSONNEL						
Additional teachers for RA	\$57,355.00	\$57,355.00	0	\$0.00	0	\$0.00
RA teacher:student ratio			1:22		1:26	
District teacher:student ratio	\$105,282.50	\$105,282.50	0.01 ^e	\$1,052.83	0.01	\$1,052.83
School-level administration	\$85,892.50	\$85,892.50	0.05 ^f	\$4,294.63	0.07 ^g	\$5,964.76
District-level administration						
PROFESSIONAL DEVELOPMENT						
First year teachers trained	\$4,000.00	\$924.00	8	\$33,000.00 ⁱ	no	
NIRA ^h					no	
West Ed Site-based training/ from	\$7,500.00	\$1,732.50				
One day	\$50,000.00	\$11,550.00	42	\$60,000.00	4k	\$4,000.00
Seven days			no		n.r.	
District-customized	\$1,000.00	\$231.00	yes	\$6,000.00		
Bay Area Network Series			yes			
Paid collaboration time ^l	included		yes	included	no	included
Training after first year	included		no		4	\$776.16
Site-based training	\$120.00	\$27.72	234 ^m	\$28,080.00	28 ⁿ	\$3,360.00
Continuing Network Series	\$105,282.50	\$24,320.26	0.00 ^o	\$421.13	0.04 ^p	\$4,211.30
Substitute days	\$85,892.50	\$19,841.17	0.01 ^q	\$773.03	0.04 ^r	\$3,340.26
School administrator training						
District administrator training						

(continued)

Site-based training	INCLUDED		YES		NO		4	included
	included	not included	no	yes	no	yes		
Continuing Network Series	\$120.00	\$27.72	234 ^m				28 ⁿ	\$3,360.00
Substitute days	\$105,282.50	\$24,320.26	0.00 ^o				0.04 ^p	\$4,211.30
School administrator training	\$85,892.50	\$19,841.17	0.01 ^q				0.04 ^r	\$3,340.26
District administrator training								\$776.16
								\$972.81
								\$771.60

(continued)

TABLE 4.3. Reading Apprenticeship (RA) Implementation Models (continued)

INGREDIENTS LIST	INGREDIENT			RA SITE ONE		RA SITE TWO	
	Costs (US\$) ^a	Annual Costs (US\$) ^b	Inputs ^c	Costs (US\$)	Annual Costs (US\$)	Inputs ^d	Costs (US\$)
Total cost				\$133,621.62	\$39,003.30		\$21,929.15
Students served in 2004-2005				1,271	1,271		1,150
Cost per student				\$105.13	\$30.69		\$19.07

n.r. = not reported

a All personnel costs were calculated using national averages for the 2004-2005 school year (source: Educational Research Service) plus 25% estimated fringe benefits. All program costs are provided by WestEd.

b To annualize costs, this table assumes a five-year lifespan and a 5% discount rate unless otherwise noted.

c Provided by assistant district superintendent.

d Provided by assistant district superintendent and school principal.

e Twenty hours per year.

f Seventy hours per year.

g One hundred hours per year.

h One hundred hours per year: includes 6 hours of staff training meetings per month and 40 hours of marketing, securing resources, presenting, organizing, etc.

i National Institute in Reading Apprenticeship. See www.wested.org/cs/si for more information.

j \$4,125 per teacher. This number includes travel expenses.

k For a complete description of these options, see www.wested.org/cs/si/print/docs/si/services.htm.

l Twenty teachers have been trained over five years at approximately 4 per year.

m District pays teacher leaders for collaborative monthly meetings.

n Five days per teacher for 42 teachers for the site-based training and three days per teacher for 8 teachers for NIRA training.

o Seven days per teacher for 4 teachers.

p Six hours total: four hours half-day training and two hours end-of-year meeting.

q Fifty-six hours per administrator. One administrator participates in the seven-day training each year.

r Participation in school administrator half-day training.

s District administrator participates in half-day training.

by SLI staff or certified RA consultants, range in length from one to seven days of training. Finally, the Bay Area Network Series is a seven-day program, similar to NIRA but designed for educators in the Bay Area. (For full descriptions of RA professional development options, see www.wested.org/cs/sli/view/serv.) Following the first year of implementation, SLI offers continued training that is included with the purchase of the program. Other significant costs associated with professional development include substitute costs and opportunity costs for school and administrator training time.

In evaluating the data below, it is essential to remember that both sites from which we obtained information were recommended by SLI, and both enthusiastically endorsed RA. Thus, it is possible that our data do not account for (a) the full range of variety in RA implementation and (b) implementation obstacles experienced by less successful districts. Despite the fact that both sites have experienced success with RA, we found a wide difference in implementation between the two sites that had a large impact on costs. Because this is not a cost-effective analysis, however, we cannot comment on the relative effectiveness of the two approaches.

Reading Apprenticeship Sites One and Two

RA Site One and Site Two are both rural districts in the same state. During the 2004–2005 school year, Site One, a district comprising five high schools, trained 42 teachers and served approximately 1,270 students. In the same year Site Two, implementing RA in one large high school, trained 57 teachers and served approximately 1,150 students. While both sites trained similar numbers of teachers who served similar numbers of students, the costs per student were significantly different with Site One spending just over three times more per student annually. These differences are due to different methods of implementation, but the overall cost at both sites is relatively modest because no additional personnel, materials, or facilities are needed.

The primary costs for Site One were in professional development. The district customized the site-based training to provide 42 teachers with five days of training by SLI experts for US\$60,000. In addition, it sent eight teacher-leaders to participate in NIRA for the cost of US\$33,000. These teachers returned to their schools as leaders of program implementation. The total substitute costs for these trainings were around US\$28,000.

While Site One paid SLI around US\$90,000 for professional development, Site Two paid only US\$4,000 because it trained its teachers “in house.” Site Two sent four teacher-leaders (including one administrator) to the Bay Area Network Series. These teachers, rather than SLI experts, provided training to the site’s 53 remaining teachers during monthly professional development meetings, one-third of which were set aside by the principal for exclusive focus on RA. (The teacher-leaders trained in 2004–2005 joined other teacher-leaders trained by SLI in previous years.) The substitute costs for the Bay Area trainings were

around US\$3,360. It is important to remember that in both models the professional development costs are low estimates because we do not account for teacher training time.

Outside of professional development, the primary cost to both sites was for school and district administrator time. While the costs do not seem high, it is essential that this category not be overlooked by future implementers. In Site One the assistant superintendent spent approximately 70 hours per year on RA, whereas in Site Two the assistant superintendent spent about 100 hours per year. These are significant numbers, considering the numerous responsibilities and obligations of top district administrators. In both sites, this time was spent in staff training meetings, working with program developers and school administrators, securing program resources, organizing logistics, and so forth. While such time commitments are clearly not required for program implementation—both site administrators emphasized that they went above and beyond the requirements for successful RA implementation—both sites emphasized that without such strong district involvement and organization, it would be difficult to consistently implement the intervention at a high level.

In addition to the large time investment by district administrators, there are three other similarities that are important to note. First, school administrators at each site attended the vast majority of teacher-related professional development sessions. At Site Two, for example, the three top administrators attended the Bay Area Network training over the course of three years, along with most in-school collaborative meetings and trainings. Second, both sites adhere closely to SLI's recommendation that RA be "embedded in subject-area instruction across the curriculum, rather than becoming the sole purview of the English department" (Greenleaf et al., 2001, p. 89). Taken together, these two factors advanced implementation by creating collaborative cultures of literacy with extensive administrative support.

Third, both sites reported few problems with teacher turnover. Because RA is an approach to the professional development of teachers, the risks associated with turnover are high. For example, a teacher who is trained in his second year and leaves by his fifth will raise the annualized cost of RA implementation by reducing its lifespan. Thus, local retention rates should be considered when generalizing RA data across districts. That being said, high-turnover schools can minimize this risk by selecting the teacher-leaders who are most likely to remain at the school over time.

Recommendations for Successful Implementation

An important finding from this study is that implementation costs may vary considerably from setting to setting because of differences in implementation.

Some of the variation in costs may be due to different prices for resources among areas, such as differences in teacher salaries and benefits among places with low costs of living and high costs of living. These are not reflected in our data because we used an average of "national" prices in estimating the costs. Other reasons may be due to students with a greater incidence of special needs, such as immigrants and English-language learners (ELLs), or a greater incidence of poverty that requires more intensive services. However, we believe that most of the difference is simply due to differences in implementation among school sites, with some using more resources than others for the same intervention. Whether these differences are merited by differences in outcomes is unknown and requires careful and rigorous evaluations that are beyond the focus of this chapter. However, on the basis of work we have done on school district reform, we suspect that a significant amount of the differences are not related to either the nature of the students or differences in effectiveness, but simply to differences in implementation.

We believe that if schools were to pursue the following recommendations, they could provide more effective implementation and better monitoring of costs.

Selection of Intervention

The selection of an intervention ought to entail sufficient time to gather appropriate information and to include discussions and input by teachers and other staff who will be involved in implementation. Considerable experience affirms that staff agreement on goals and knowledge of and commitment to reforms provides greater promise of success. Datnow (2000) has emphasized that the process of participation of teachers and other staff in becoming informed about the issues leading to new interventions and the choice of interventions is key to their cooperation. However, she found that often this process of school "buy-in" has been carried out in a perfunctory manner, culminating in a ritual vote that reaffirms the obvious and declared preference of key administrators. An authentic process of informing staff and obtaining their input is more likely to enhance their understanding of the need for change and their willingness to get involved in both the choice of an intervention and its effective implementation.

Given the presence of many reforms dedicated to improving adolescent literacy, it is crucial to attempt to match potential choices of reforms to student needs and the capacity of a school to implement the intervention. A review of the various alternatives will reveal that different reforms have been developed for different groups of students (e.g., ELLs) or students with different learning needs. Evaluations of results will also emphasize where these reforms have shown success. Furthermore, the descriptions of the interventions will suggest strengths that schools might build on such as experience with the use of educational technologies or particular approaches to student grouping or scheduling that match up well with specific reforms. Obviously, it is better to choose

potential reforms that match school strengths than to require the schools to develop major new ones in order for a reform to succeed.

Implementation Requirements

The adoption of a reform that matches the needs and strengths of a school is based upon the overall features of the school and reform. However, such a decision does not address the details of implementation and their costs. The ingredients method allows for both planning the intervention and ascertaining its costs. This method calls for decisionmakers to identify and specify all of the resources and conditions that will be required to make the reform a success. Details on identification of ingredients, personnel, facilities, equipment, supplies, and other resources can be found in Levin and McEwan (2001). The goal of this activity is to be clear about what will be needed with special attention to the qualitative dimensions of the resource, such as the qualifications of appropriate personnel. Information on required ingredients can be obtained from three sources. First, developers can provide descriptive materials and information as well as reference other sites that have adopted the reform. Second, these other sites can be contacted, and visited if close by, to observe the program. Third, practitioners at these sites can be interviewed on details of their implementation as well as lessons learned from their experience. All of this information can be integrated into a plan for implementation and the resources necessary for the plan to succeed.

Costs and Resource Availability

Two key questions on which good implementation rests are "Has adequate funding been put aside to cover the cost of the reform?" and "Are the appropriate resources available?" The way to ascertain the answer to the first question is to know the cost of the reform by placing a cost on all of the ingredients (Levin & McEwan, 2001). Not all of the ingredients require additional funding if some of them can be obtained through reallocation of existing resources from less productive uses. Many reforms stumble because available personnel in the school such as administrators, coordinators, and coaches do not have the skills or experiences that are necessary to provide support for the reform. This may place the school in a difficult situation where personnel must be marshaled from those internally available in the school or district, but where those who are readily available are inappropriate.

From the analyses of cost and resource availability, it is possible to ascertain both the obstacles to implementation success as well as possible solutions for overcoming those obstacles. If the costs exceed the resources that are available, it is important to seek additional resources or to decide how to accommodate reform within available resources. For example, the cost of additional personnel

and space for reducing class size to some prescribed level may exceed the funding and space that are available. Schools will need to confer with developers on how to address this shortcoming or whether successful implementation can take place despite this shortfall. A similar analysis must be done in terms of ensuring that appropriate personnel are in place. At the point of implementation planning, the specific personnel who will work with the reform should be noted. This is important for two reasons. First, the particular personnel should be familiarizing themselves with the reform and their roles well in advance of the actual implementation. Second, those who are planning the implementation need to size up required qualifications against those of the potential appointees. If available personnel are inappropriate, the organizers of the reform will need to seek alternatives or confer with the developers on what might be done.

Implementation Plan

All of this taken together contributes to the formation of an implementation plan. All resource requirements are identified, and provision is made for their availability for the reform. Funding is adequate to cover their costs or to provide appropriate resources from within the school organization. Plans are made to acquire materials, software, and equipment in sufficient time to launch the reform. A timeline and calendar for professional development and other activities such as monitoring, classroom observations, feedback, and evaluation of results must be set out. If the school site lacks the funding and available resources to implement the reform along the lines recommended by the developer, discrepancies will become obvious and there will be time to enable a search for alternatives. Minimally, this approach to costing and implementation planning will establish whether the reform is feasible in the sense of the school's having the operational and financial capacity to undertake it. More promising is the possibility that such planning will provide a blueprint for implementation—avoiding many of the unpleasant surprises and unintentional compromises that many schools have had to face, leading to underperformance of the reform.

Conclusion

As noted earlier, our work in school district reform suggests that much or most of the differences in program costs, both between programs and between sites implementing the same program, are related simply to differences in implementation. We do not believe these differences to be reflections of either the nature of the students at different sites or differences between programs in their effectiveness. Rather, they reflect conscious decisions made by administrators. What is unclear is the extent to which these choices alter the effects programs have on students.

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An underlying assumption of program developers and of too many implementation models is that teachers and administrators are in agreement about the nature of the adolescent literacy problem and its solution at a particular site. The next chapter addresses this assumption head-on and provides you with a framework for understanding your own school's or district's readiness for implementing any adolescent literacy program.