

**Original**

**Proposal for the Northeast and the Islands Regional Education  
Laboratory Tasks 1-5**

**Solicitation No.: ED-05-R-0006**

**Technical Proposal**

Submitted to: U.S. Department of Education  
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*Submission of this proposal certifies the offeror's full agreement with all terms, conditions and provisions included in the solicitation and agreement to furnish any or all items upon which prices are offered at the price set opposite each item.*

*This offer remains valid for 90 days from the date of receipt.*

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Robert A. Rotner, Sr. Vice President & Treasurer

**Partners/Subcontractors**

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| American Institutes for Research<br>TERC | WestEd<br>Sun Associates | Empirical Education, Inc.<br>Nimble Assessment Systems |
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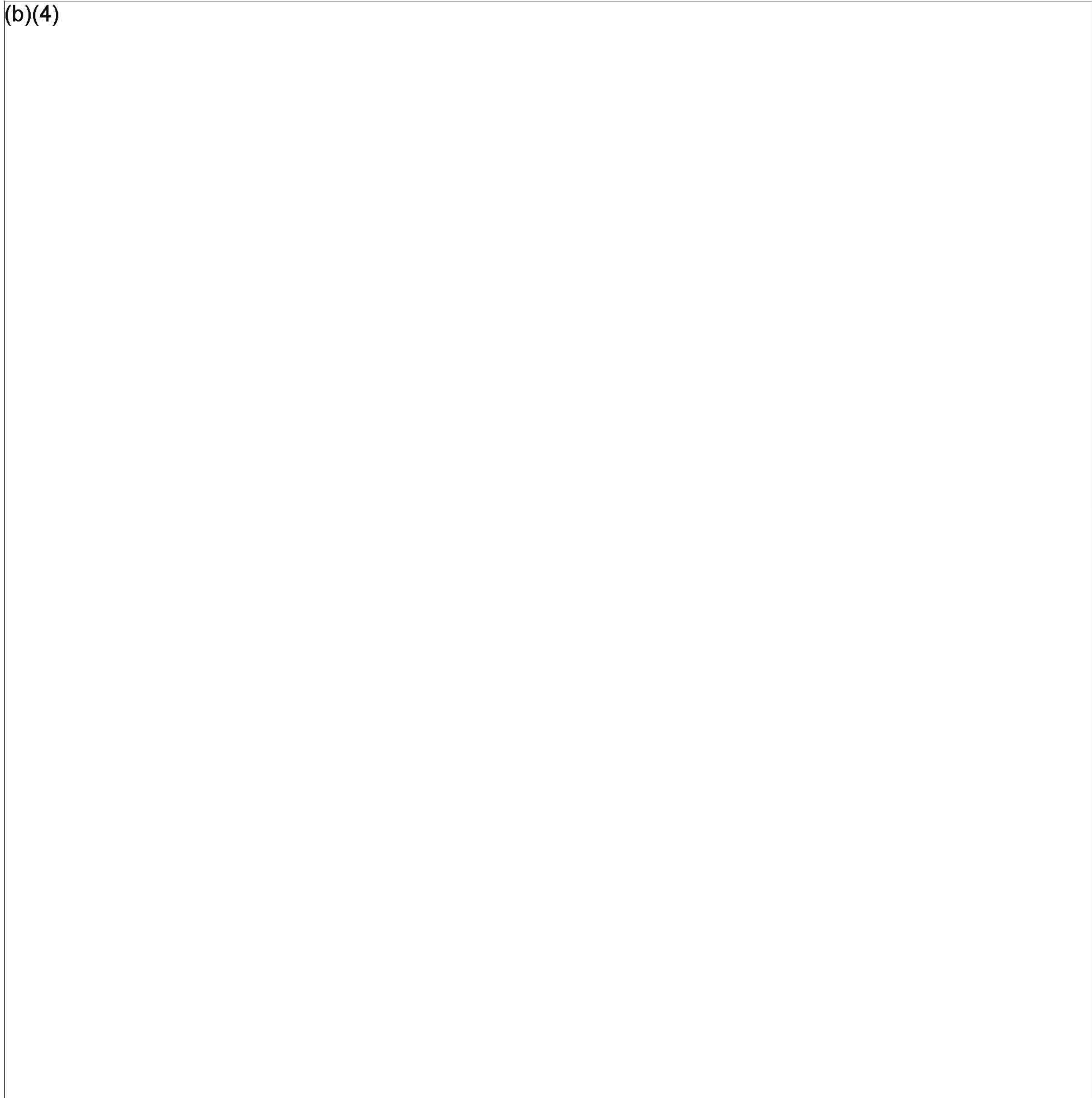
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**Proposal for the Northeast and the Islands  
Regional Education Laboratory**

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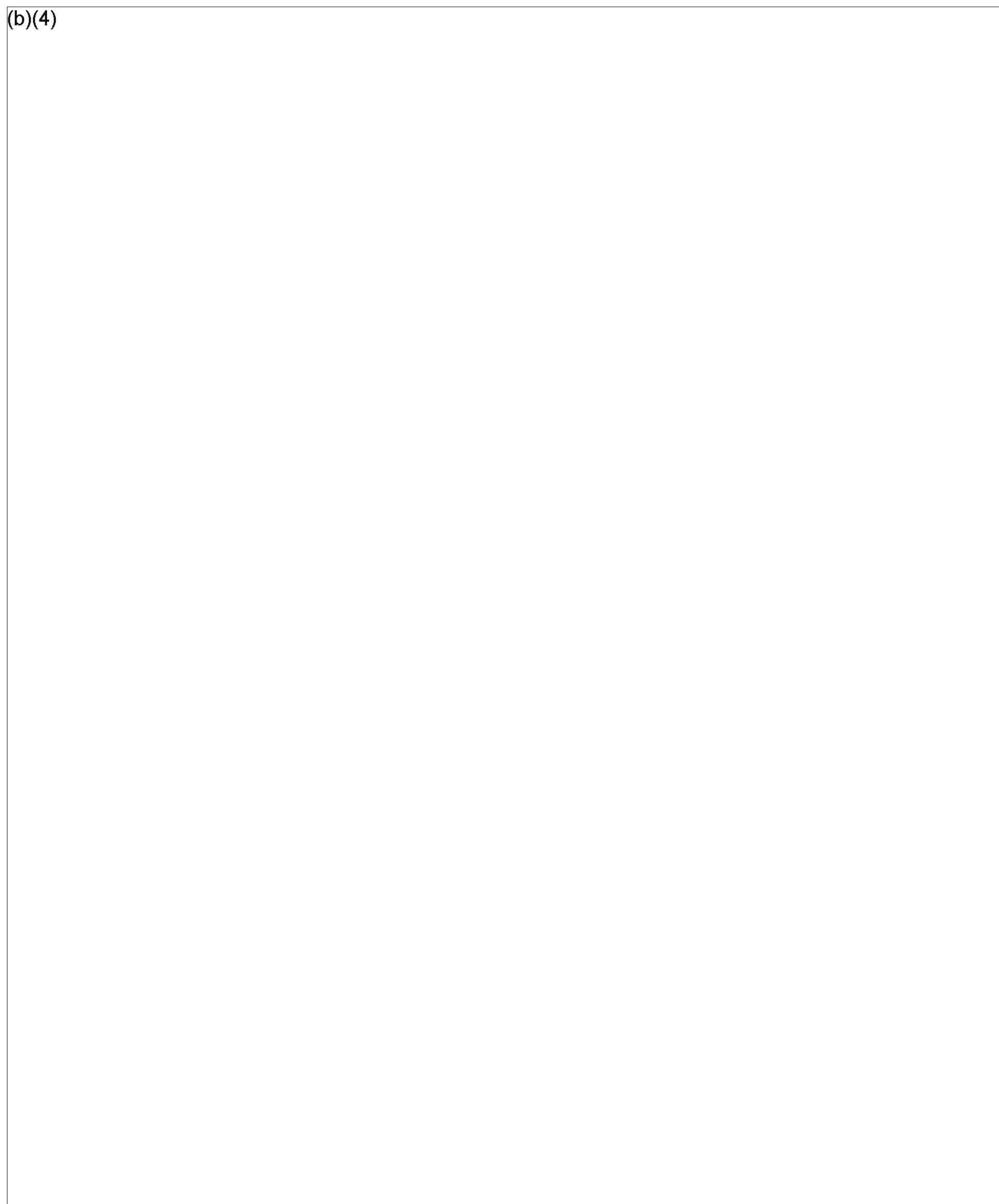
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## Table of Contents Tasks 1-5 (Continued)

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### **3. Technical Proposal: Introduction**

The core theme of the proposed Northeast and the Islands Regional Education Lab (NEIREL) is *evidence-based education*, with the goal being to help preK-16 educators, at the state, district, and school levels, increase the use of scientifically-based evidence to improve student achievement and reduce performance gaps among student groups. This is consistent with the legislation that creates the Regional Labs, which designated regions, using applied research, development, dissemination, and training and technical assistance, to bring the latest and best research-based and proven practices into school improvement

Our planned applied research and development activities will address three key priorities established for IES by the National Board for Education Sciences: (1) develop or identify a substantial number of programs, practices, policies and approaches that enhance academic achievement and can be widely deployed; (2) identify what does not work and what is problematic or inefficient; and (3) gain a fundamental understanding of the processes that underlie variations in effectiveness of various educational programs, practices, policies, and approaches. In addition, by providing an independent, scientific base of evidence and promoting and enabling its use, NEIREL will help fulfill the fourth priority for IES, name transformation of education into an evidence-based field, and thereby enable the nation to (National Board for Education Sciences, 2005).

#### ***Goals of NEIREL***

The proposed work plan for NEIREL, detailed in the sections of this proposal for Tasks 1-5, reflects the following major goals:

1. Identify and respond to pressing regional needs and concerns, while at the same time adding to the national knowledge base, by identifying and synthesizing scientifically rigorous evidence about what works to improve student achievement circumstances.
2. Conduct applied research, where gaps in the knowledge base exist, that meets the scientific standards of evidence set by IES, the What Works Clearinghouse, and the National Research Council.
3. Disseminate evidence-based knowledge in ways that effectively reach education policymakers and practitioners, and those who influence them, in order to improve schools, enhance student academic achievement, and close the achievement gap.
4. Collaborate with the USED Comprehensive Centers and other USED training and technical assistance (T/TA) providers to implement evidence-based policies, practices, and programs.
5. Foster an understanding of the value of research-based knowledge among education policymakers, practitioners, and clients, in order to increase the demand for and use of evidence-based educational practices.
6. Assist state and local leaders, as well as other key stakeholders, build their capacity to understand rigorous research and apply it to their local settings.

#### ***Guiding Principles for NEIREL***

Knowledge generation and dissemination does not necessarily result in knowledge use. In pursuing the intertwined goals of fostering evidence-

based knowledge generation, dissemination, and use in the region, the NEIREL staff will be guided by the following principles.

1. *Applied research combines scientific rigor and relevance.* To promote knowledge use, applied research must serve two masters: it must meet rigorous scientific standards while addressing pressing issues of concern to policymakers and practitioners. The research we undertake will address both requirements.
2. *Useable knowledge is created through a dynamic interplay among researchers, policymakers, and practitioners.* Researchers inform practice and policy, while policymakers and practitioners inform researchers. NEIREL will foster the required types of productive interactions among these communities, in which all parties respect one another's expertise and work together to help education become a more evidence-based field (Shoenfeld, 1999; Culp, Honey, and Spielvogel, 2003).
3. *Change happens in a context.* Evidence-based knowledge is usually adapted to meet specific circumstances and conditions (Cuban, 1998; McLaughlin, 1987). As we conduct and disseminate research, we have to be explicit about the conditions under which the research findings were generated and what is known about whether these findings generalize to different contexts. Since the educational system has multiple subsystems—district, school, and classroom, we must also take into account the state and local factors that may facilitate or impede implementation.
4. *Education reform requires a tightly coupled “knowledge community.”* Changes in policies and practices are most likely to occur when policymakers, practitioners, researchers, and intermediaries work together to frame questions, generate and share scientifically-based evidence, apply new knowledge in real-world settings, and reflect collaboratively on the results (Senge, 1990; Louis & Kruse, 1995). NEIREL, the USED Training and Technical Assistance (T/TA) network, and the State Education Agencies (SEAs) share joint responsibility as change agents. We will closely coordinate our efforts with these organizations and others in the region.

These principles will guide our approach to addressing each of the major tasks of the Lab, which are shown in Figure 1. The regional needs assessment (part of Task 1.1) and the Governing Board, which will set priorities for our work (as described under Task 5), will result in the voices of policymakers and practitioners being heard throughout our work to ensure relevance. The highly qualified research teams that will conduct the fast response (Task 1.2) and rigorous (Task 2.1) applied research and development studies, along with the nationally-recognized experts who have agreed to serve on our External Technical Working Group (Task 2.2) will ensure that all the studies are both rigorous and relevant. Our training and technical assistance activities (Task 1.1), along with our regional dissemination efforts (Task 4) and collaborations through the National Laboratory Network (Task 3) will make sure that the best available research evidence is disseminated in any contexts to help states, districts, schools, and teachers apply evidence-based practices to improving student achievement. Our planning, management, reporting, and quality assurance procedures (Task 5 and additional management plan) will make sure that all the work is of high quality and makes effective use of the available resources. Throughout the work, there is a strong emphasis on serving the needs of low-performing, Title I, high need, and rural districts and schools. Specific plans for each task are described in the following sections of this proposal.

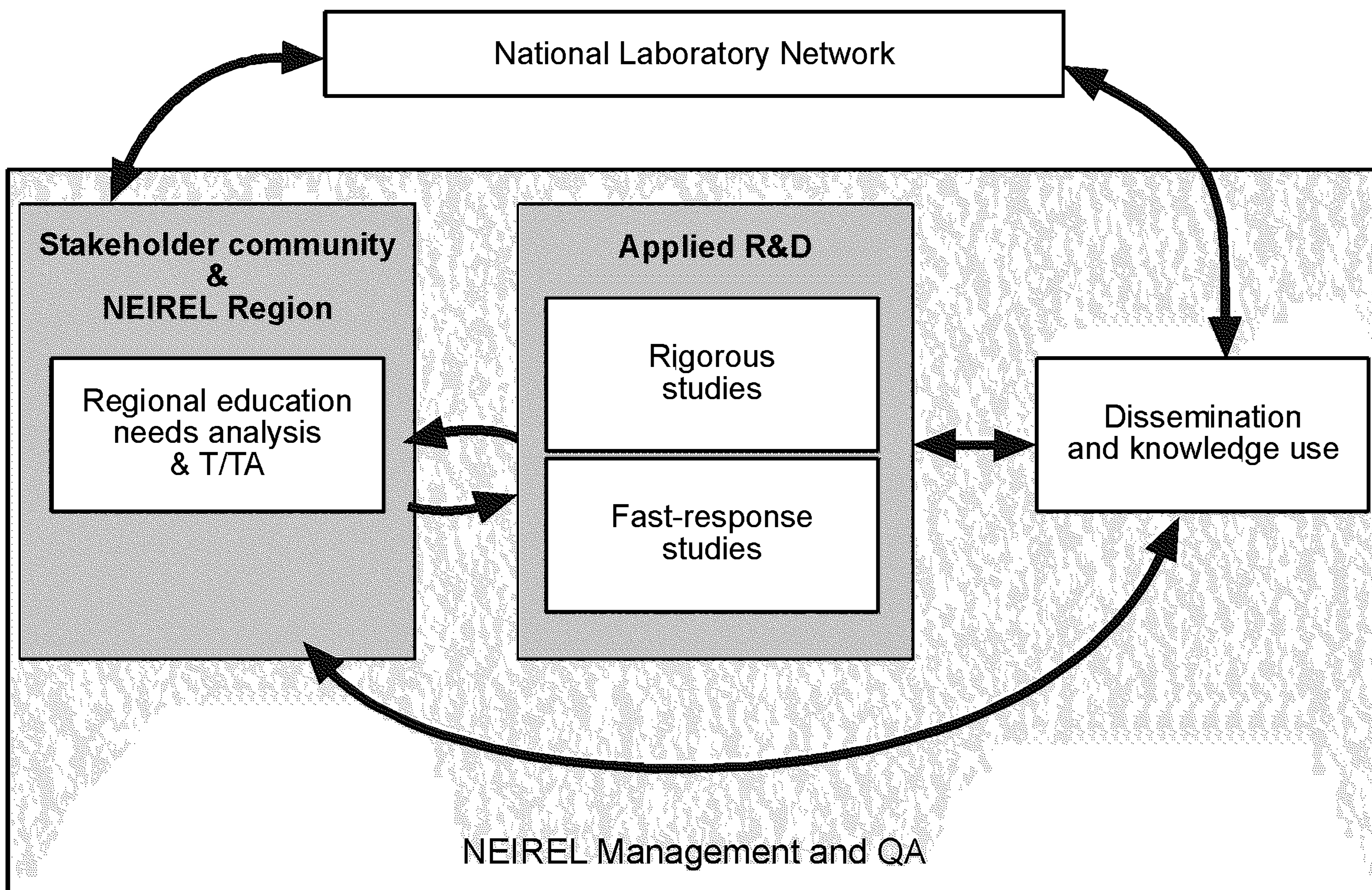


Figure 1: Relationships of the Major Tasks

## **Task 1—Regional Education Needs Analysis, Training and Technical Assistance and Fast Response Applied Research and Development Projects**

The Northeast region is one of the largest and most diverse in the country. It includes more than 5 million students, nearly 10,000 schools, and 1,994 districts in the six New England states, New York, Puerto Rico, and the Virgin Islands. Three of the states (NY, MA and CT) are highly populous, industrialized states with multiple large and medium-sized cities. New York City alone serves approximately 1,311,000 students. At the same time, upstate New York and western Massachusetts also contain a large number of low-income rural districts.

Three of the states (NH, ME and VT) are primarily rural, with many isolated school systems in economically distressed rural regions. In contrast, Rhode Island, the smallest state in the nation, encompasses a number of small and medium-sized cities, including Providence, Warwick, Central Falls, and Newport. Puerto Rico has approximately 600,000 students, most of whom have limited English proficiency and 81% of whom qualify for free or reduced lunch. The Virgin Islands, in comparison, has fewer than 18,000 students, 70% of whom qualify for free or reduced lunch programs.

Examination of statewide assessment data reveals that a large percentage of students in the region fail to meet proficiency standards and that academic performance generally declines from elementary to middle to high school, especially in mathematics. In addition, there are persistent achievement gaps, with low achievement shown, on average, by students with disabilities, English Language Learners, African-American students, Hispanic students, and students from low income families.

### ***1.1—Regional Education Needs Analysis, Training and Technical Assistance Response Unit***

Immediately following contract award, we will assemble a *Needs Analysis, Training and Technical Assistance Response Unit* ) that is responsible for (1) *outreach* to the region to raise awareness of laboratory services, identifying pressing needs, and soliciting T/TA requests; (2) developing and maintaining a *Regional Needs and Response Database*; (3) *analyzing regional needs and setting priorities*; (4) developing a *Fast Response Plan*; and (5) *monitoring results*. The goal, throughout, will be to identify, synthesize and disseminate evidence-based knowledge to the regi  
pede success.

The Unit will be directed by a staff member with a broad understanding of the needs of the region, as well as significant experience in T/TA at the state, territory, district, and school levels. To ensure that the needs of each jurisdiction are well understood within their respective contexts, the Unit Director will assign a 2-member *Liaison Team* to serve as primary contact and liaison to each jurisdiction. The Unit will make available to these teams, through the Unit Database, current information about emerging issues and trends, including the latest demographic and student achievement data, policies affecting education, and other pertinent information. Based on past experience, we plan four teams to serve the following jurisdictions: (1) New York State; (2) the three Northern tier Ne  
ne, Vermont and New Hampshire; (3) the three  
nd, Massachusetts, and Connecticut; and (4)

Puerto Rico and the Virgin Islands. The New York team will be housed in  
City office, while the Islands will be served locally through small business partner TEAM Consultants. (NOTE: Puerto Rico is a Commonwealth, VI is a Territory).



To ensure overall coordination of the needs analysis and T/TA activities, the Unit Director will hold biweekly conference calls with site liaisons. Once a month staff responsible for other Unit functions, such as the Database Coordinator, will join these calls. Through this structured, regular communication process, the Unit Director and other staff will be stay abreast of emerging needs and requests, discuss responses to those needs and requests, and identify areas where a new, coordinated response is necessary to fill gaps. All relevant data will be collected in the Regional Needs and Responses Database, which will be established within three weeks from the start date of the contract. The Database will also serve as an integral tool to facilitate coordination and monitoring of requests and responses, to monitor progress of Fast Response Projects, and to prepare the Monthly Progress Reports.

### ***Outreach and Needs Assessment Strategies***

Within 10 weeks after the start date of the contract, NEIREL will submit a revised Fast Response Plan detailing the strategies to promote awareness of its services, assess regional needs, and solicit client requests. The plan will also delineate the criteria to be used in assessing and prioritizing those needs and the manner in which the laboratory will respond to them. Among the client groups to be included are state and district policy makers, school administrators, teachers, parents, librarians, higher education institutions, early childhood educators, and the various T/TA providers. Through the outreach and needs assessment process, we will also develop a large database of organizations, associations, and individuals with interest in  
Over the life of the contract, we will use this database not only for needs assessment and project monitoring purposes, but also to ensure widespread dissemination of research reports, policy and research briefs, and other Lab products.

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*Governing Board members as informants and emissaries.* The Governing Board members have been selected as representative of both the jurisdictions in which each resides, and of the client group each person represents. As such, at the biannual retreats, the Board will engage in a needs assessment process to identify, clarify, and prioritize regional needs.

*Annual visits to each state education agency.* Each year, we plan to make site visits to each of the nine state education agencies. In preparing this proposal, we conducted in-person or telephone interviews with the key leaders in e  
Director for Accountability or the Associate Commissioner responsible for school and district improvement under NCLB Title I; Directors of NCLB Title III; and curriculum coordinators for Mathematics and Science.

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In carrying out all of the market research activities including interviews, surveys and other data collection activities, we will follow federal requirements regarding survey data and privacy issues, as outlined in Subtask 2.3 below. Each year, we will focus on specific topics in our needs assessment process, such as the ways in which jurisdictions are supporting schools in need of improvement, addressing high school reform, or dealing with the shortage of highly qualified teachers in mathematics and science. These descriptive data will be compiled into research or policy briefs that inform state and local policymakers and practitioners about what their peers are doing to respond to common problems, or used to determine which topics we will address in Tasks 1.2 and 2.1.

### ***Regional Needs and Responses Database***

A relational database will serve as the tool for managing the data gathering, analysis, response, and monitoring process. It will include responses to interviews, focus groups, surveys and other needs assessment activities, regular needs assessment reports that summarize and synthesize these data, a record of specific research and T/TA provided, the laboratory's responses to those requests, product dissemination, and feedback on the entire process.

EDC will build on its extensive experience in providing technical assistance in numerous contexts to construct a virtual work environment that facilitates effective responses to inquiries from the field, organizes disparate information from the jurisdictions and from our own work, and creates timely analysis and reports. The system is built on existing capacity that EDC already has deployed along with the addition of customizable open-source tools with which EDC and our designated small business contractor are already familiar.

The core application will be a secure instance of the *Team Portal* to create an internal intranet for all of the staff, partners, and consultants involved in this task. Access is via common web browsers permitting secure work from any location. The environment will contain document libraries with version control and discussions, group and task calendars, issues, and task assignments.

Within the Sharepoint environment will be a link to a customized version of the open source tool Request Tracker, which uses MySQL to create a web-based request tracking system complete with the ability to take requests from email, web forms, telephone, facsimile, and from direct interaction with clients. The program offers a variety of management views to ensure requests are responded to appropriately. It includes various reports and knowledge management components to produce FAQs and an evolving knowledge base.

Linked to this tool and to the Sharepoint environment will be another MySQL database that stores demographic information about key performance indicators and related information from the jurisdictions along with the ongoing needs assessment information being collected from the field. This information will be queried using dynamic web parts to produce standard reports on a regular basis as well as staff and funder custom queries on demand.

These tools are already installed and available at EDC. We will use a small business contractor, SCA, to customize the MySQL-based components and ongoing support to the team. SCA is now in its 11<sup>th</sup> year of providing customized data management, project management, and web development solutions to clients throughout New England.

***Analysis of Regional Needs and Priority Setting***

Each month, the Unit will submit a report to the coordinating contractor on the ongoing outreach and needs assessment efforts and update the regional needs analysis, where appropriate. The report will also include a description of all the T/TA requests and

Each year, as new data are collected, the Unit will analyze the entire database, including interview, survey, student achievement and demographics, and other needs assessment data. This analysis, which will encompass both quantitative and qualitative data from interviews, focus groups and hearings, will be integrated into the Updated Annual Plan (as described in Task 5.1). Particularly useful will be the generation of concerns by jurisdiction, special population, content area, and grade span. These can be used by Liaison Teams as they work with clients in their jurisdictions, including policy makers, intermediary associations, and networks in their various SEAs.

The Governing Board will review the report, prior to its being finalized. It will then be sent to IES and the coordinating contractor for the National Laboratory Network, so that they have an up-to-date understanding of changing needs and priorities in the region. The Profiles will be especially useful for Liaison Teams in working with emerging issues that rise to the level of ent process and will become candidates for consideration for a Fast Response Project.

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### *Nature of the Fast Response Plan*

Training and technical assistance (T/TA) activities will match the priority needs of the region, based on the client needs assessment, ongoing requests, the concerns of the Governing Board, and the issues raised by USED Comprehensive Centers and other T/TA providers. In general these responses will focus on helping states, districts, schools, and teachers identify and adopt or adapt exemplary and promising policy, programs, and practices to improve teaching and learning.

The Unit will provide four kinds of responses, based on the needs analysis: (1) provide readily available research evidence; (2) refer the client to an USED CC or other T/TA provider; (3) Design and conduct a Fast Response Project; or (4) provide T/TA on conducting and using rigorous research. Whatever action is taken, NEIREL will make sure that it is not only timely and cost-effective, but also based on the most rigorous scientific evidence available.

*1. Provide Readily Available Research Evidence.* In some cases, clients will simply be looking for the latest research on a particular policy, program, or practice. This research may be readily available through other Labs in the National Laboratory Network, the What Works Clearinghouse (WWC), or one of the other IES National Centers, such as the National Center for Education Research, National Center for Education Statistics, National Center for Education Evaluation and Regional Assistance, National Center for Special Education Research, National Center for Rural Education, ERIC, or other scientifically-based research organizations. The first task will be to search the Web and/or contact these entities to determine if the information requested already exists. If so, the Unit will provide a simple response, either by

mailing a hard copy report, referring the client to the appropriate website, or encouraging the client to contact the research entity directly. When there are enough requests for similar information to constitute a priority need in the region, NEIREL will, within one to two months, develop a short research or policy brief (3-5 pages) summarizing the information available. Where data are not readily available, the Unit staff will search the *National Lab Network Intranet* site to determine whether any other Labs are currently responding to the same request. If so, the Labs involved can determine together how to respond in the most efficient and effective manner.

An example is a request from Connecticut, which is now grappling with ways to provide districts and other local providers with ways to effectively measure districts. By working with state administrators, our Unit staff can quickly provide a research synthesis of valid and reliable instruments to fulfill its legislative mandate. This will enable districts and other local providers to analyze the instrument against current research and current framework. A second example stems from many of the state and local leaders we interviewed, who are looking for the latest research on the effectiveness of small high schools and other high school reforms. AIR is currently engaged in two empirical studies of small high schools, one for the Gates Foundation and one for the Carnegie Foundation. In addition, USED has recently awarded several grants specifically aimed at high school reform. As findings from these studies are released, we will alert key stakeholders and/or distribute brief summaries through our various dissemination channels.

*2. Refer clients to an USED CC or other T/TA provider.* The Unit may determine that a request from a state or local client is more appropriate for referral to another ED-funded T/TA provider, and, if so, staff will broker that connection. For example, if a state special education director is looking for help in providing support to districts on reducing disproportionate representation of minorities in special education, the Unit may recommend contacting the relevant Regional Resource Center for direct assistance.

To ensure that these referrals result in high-quality T/TA, the Lab will routinely provide the CCs with new evidence-based knowledge that may assist them in delivering services. For example, the Lab will make sure that the Maine Math and Science Alliance, the Regional Education Services Centers in Connecticut, and the BOCES in New York have the latest research-based evidence about proven and promising math and science programs and practices. Similarly, the Lab will share the latest findings about how best to serve students with disabilities with staff of the Northeast Regional Resource Center (NERRC). By helping strengthen the capacity of these organizations to provide T/TA to policy makers and practitioners, the Lab will ensure that evidence-based knowledge finds its way into districts, schools, and classrooms across the region.

*3. Design and conduct a Fast Response Project.* Where research-based evidence is not readily available to meet high priority needs in the region, NEIREL may design a Fast Response Project to obtain answers to client questions. These projects will involve one or a combination of several methods: conducting a research appraisal and synthesis, mining existing databases, or helping states and districts carry out short-term experimental studies using their own state assessment data. Since not every request can be met each year, due to resource limitations and other factors, the criteria described previously will be used to identify those requests that result in Fast Response Projects that can be completed within a year.

4. *Provide T/TA on conducting and using rigorous research.* In some cases, states and districts may be able to answer their own questions by examining their own databases or carrying out short-term randomized control experiments (sometimes called rapid evidence assessments) to test innovations before they are adopted state or district-wide. Another response to requests from the field will be to work with clients to generate answers to their own questions. In this way, ased educati archers, practitioners, and policy makers produce, share, and utilize the highest quality evidence in order to educate all students effectively.

For example, we will work with states and districts to upgrade their databases and identify ways to use them more effectively, building on the ongoing work of the New England Compact, which spans Maine, New Hampshire, Vermont, and Rhode Island. Several Task 1.2 studies already involve mining existing databases to address issues of interest to clients in the region. By involving state and local administrators in designing and carrying out these studies, we will not only answer specific questions, but also enable state and district officials to answer related questions in the future.

As another example, in collaboration with Empirical Education, Inc., one of our small business partners, the Lab will help states and districts in the region learn how to carry out their own small-scale Randomized Control Studies in a timely and cost-effective manner. (b)(4)

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Using one or more of these methods, the Unit will respond as quickly as feasible to each need identified as high priority. In some cases, the request may be so narrow and contextualized and/or the research evidence so sparse that NEIREL may not be able to answer a request. We will document such information and include it in our monthly report.

***Monitoring the Needs Analysis, Responses to Requests, and Results***

At the first meeting of the Governing Board, the NEIREL management team will work with Board members to develop performance standards and rating elements for each key outcome of this task. That information will be shared with the Unit and will help guide the outreach and needs assessment, database management, priority setting, and Rapid Response tasks. Several different indicators will be employed, including the following:

1. Unit staff will visit the SEA in each jurisdiction to introduce themselves and gather additional information within 8 weeks of the contract start date, and within 10 weeks in each subsequent year.
2. Within 10 weeks after the start date of the contract, the Unit will submit its revised Fast Response Plan, along with a revised list of performance standards and rating elements.
3. Within 4 months of the contract start date, NEIREL will hold regional hearings and carry out other outreach/needs assessment activities where OMB and IRB Clearance are not required.
4. The Unit will comply with all other reporting requirements for Year 1, including monthly reports detailing client requests, Lab responses, and emerging trends.

5. Within 3 weeks after the contract start date, the Unit will create a searchable Regional Needs and Responses Database that will be updated over the life of the contract.
6. Each year, an Updated Annual Plan will be submitted to IES by July 1.

Beginning in Year 1, the annual outreach and needs assessment process will include a series of  
 ance. Sample indicators may include the following: CSSOs and other clients throughout the region rate the timeliness and utility of the  
 nses to requests as at least 4 on a 5-point scale; 80% of respondents are familiar with at least one Lab report or major finding; 80% of respondents say that they have shared Lab information with districts, schools, or teachers with whom they work; more than 80% of all recipients of T/TA services (such as capacity building activities) rate them as very good to excellent in helping them gain access to evidence-based knowledge; more than 75% of respondents can cite examples of how the information they have received from the Lab has influenced their policies, programs, or practices. We will also monitor the timeliness of responses to requests. We expect all requests to be answered within 2 weeks of receipt, and 90% to be completed in the time frame established with the client.

***Example Fast Response: State Support to Schools and Districts in Need of Improvement***

The comple support to districts and schools requires a constellation of strategies for responding to a single request. The following is an example of this type of a request and potential response that will be taken, upon contract award.

*Context and Request.* The No Child Left Behind Act (NCLB) requires SEAs to create statewide systems of intensive and sustained support for LEAs that do not m  
 adequate yearly progress (AYP) for two consecutive years. In the course of preparing this proposal, four states (Massachusetts, New Hampshire, Maine, and Rhode Island) specifically requested assistance with monitoring, evaluating and/or improving their statewide support systems. Focusing attention on state support systems is not only re  
 issues and concerns, it is also supported by research on district and school improvement. Studies have shown that school improvement could not be sustained over long periods of time if the larger system (district) in which a school was located did not provide a supportive infrastructure (Togneri, 2003). Moreover, Fullan (2005) has called for a shift in thinking to focus on the need  
 the need to look at improvement systemically across the three levels: school/community, district, and state.

*Fast Response.* This request m riteria for high priority. The laboratory will respond with three activities. Findings from all three activities can be used  
 support system into a coherent, comprehensive program of inputs and processes (Raudenbush, 2005). Further, these activities demonstrate an iterative and collaborative process that will also build capacity within the requesting states to conduct their own research.

*Activity 1. Synthesize what is known nationally about state support systems.* The Unit will first draw upon two recent studies that shed some light on what states are doing across the country to support districts and schools in need of improvement. (Blank & Langesen, 2003 and Mintrop & Trujillo, 2005) The first identified several major areas of support for low-performing schools in five states: Illinois, Louisiana, Maryland, New York, and Texas, and found a number of common elements.

The second study, carried out by the National Center for Research on Evaluation, Standards, and Student Testing (NCREST), focused on seven medium and large states and two large districts (Chicago and Philadelphia). Researchers identified a variety of strategies used to promote corrective action and encourage school redesign, finding that states and districts typically employed a combination of these strategies. The researchers found that no single strategy has been universally successful and that a comprehensive bundle of strategies is key.

The researchers will also conduct a thorough search to see if there are any more recent studies, and they will also use the Lab intranet to determine if other labs are gathering similar data that can be shared.

The resulting product from this search will be a Research Synthesis with a four-fold focus: (1) classification and description of key elements of state support systems; (2) identification of elements that show evidence as promising practices; (3) identification of key intervening factors that may have an impact on the effective use of state supports; and (4) identification of benchmark outcomes (e.g., changes in policies and practices) that appear to be pre-requisites or correlates of improved student achievement.

*Activity 2. Identify the kinds of strategies and designs (initiatives, programs, or policies) that each State and Territory in the region has implemented to assist districts in need of improvement. Only one Northeastern state is included in the*

synthesize what we already know nationally, but also to look at what SEAs in the region are currently doing to support districts and schools in need of improvement and in corrective action. The work of this phase will include analysis of formal documents, which may include descriptions of plates for improvement plans, evaluations of services provided in past years, improvement legislation, and other relevant documents. Recognizing that most states see the creation of their support system as an ongoing, evolving process, this phase will also include semi-structured interviews with key department of education personnel in order to enrich the descriptions and ensure that the perspectives of key stakeholders are reflected. This activity will result in a Policy Brief that describes how all of the states in the region are currently responding to the NCLB legislation regarding state support systems. We will share it with key policymakers and administrators within the region, Ed T/TA Centers, and the National Laboratory Network.

*Activity 3. Help states answer their own questions about implementation and impact: (a) How are districts using their support systems to foster school improvement? (b) Are there any contextual factors that should be taken into account in delivering state support? (c) How do these support systems affect school and student performance over time?* We will work closely with officials in these four (and other) states to identify intermediate benchmarks to monitor progress and mine statewide assessment data to distinguish between districts and schools that are making significant progress and those that aren't. For example, Hampshire, Vermont, and New Hampshire have adopted the New England Common Assessment Program (NECAP) and will soon implement a corresponding statewide, innovative assessment, the New England Common Assessment Program (NECAP). The fact that they will use the same assessment gives them an opportunity to examine a common measure of student performance while at the same time examining variations in strategies and contextual variables.

Massachusetts, on the other hand, has been consistent in its use of the MCAS as its statewide assessment tool over a number of years. This will allow for the inclusion of trend data against which current improvement targets can be compared. Surveys and interviews with a sample of

districts at the two ends of the spectrum can then be used to obtain a richer picture of key intervening or mediating factors.

We will encourage each state to share its findings with colleagues, and we will also structure opportunities for state and local officials, representatives from the CCs and other USED T/TA providers to meet regularly to discuss lessons learned through the policy briefs and state-level studies (See the dissemination section below).

This example demonstrates how the Unit will: (1) prioritize requests to focus its support on issues of relevance to the wide education community; (2) use diverse methodologies to address which policies and practices show promise; (4) refine questions that guide the emergence of a second generation of policies and practices; (5) help enable states to conduct their own research; and (6) produce and disseminate products that can be useful to throughout the region.

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### **Task 1.2: Fast Response Studies**

The following sections describe the series of fast response studies we propose for Year 1 of NEIREL. In defining the focus areas and key questions for each study, we have built upon the initial regional needs analysis conducted in preparation for this proposal as well as our extensive knowledge of the region from prior work, including the NECAC, NEIRTEC, and NERRC projects that have been providing technical assistance to the NEIREL or New England region during the past years. We have selected fast response studies that will serve multiple jurisdictions within the region. Even in cases in which the actual research will be conducted within a single district or state, the results will be widely relevant and useful.

#### ***Fast Response Study Methods***

The proposed research studies employ four major categories of meta mining, (3) descriptive studies of existing practices, and (4) short-term randomized control trials studies (RCTs) using data collected by the school or district.

*Research reviews and syntheses* will often use the methodological approach developed by the Government Social Research Analysis for Policy group in the United Kingdom (Butler, et al., 2005). This methodology, which they describe as *Quick but Not Dirty: Rapid Evidence Assessments as a Decision Support Tool in Social Policy*, is systematic and rigorous, has explicit and transparent criteria for judging the quality of the research evidence, and has explicit ways of establishing a cumulative effect of what the evidence shows (Davies, 2003, cited in Butler et al., 2005). Moreover, it reduces the time it takes to conduct a systematic review of the literature, which is critical for this project. This Rapid Evidence Assessment (REA) methodology involves the following steps:

- Formulate the policy issues into a clear research question;
- Develop a search strategy and establish inclusion criteria for identifying relevant research to be included in the review;
- Search the electronic and print literature as comprehensively as possible within the constraints of a policy or practice timetable;
- Assess the methodological quality and relevance of the identified articles, using specified selection criteria;
- Synthesize the evidence across the studies that met the criteria, using methods selected to be appropriate for the specific research question and body of evidence available;
- Disseminate the key messages to the relevant practitioner and policymaker audiences.

*Data mining studies* will use a variety of sources of data and mining techniques, depending upon the questions being addressed and the available data. We have compiled extensive information about the data sets available in the region, as well as national data sets that might be useful in

data mining about issues relevant to the region. Specific data mining questions, data sets, and analysis approaches are described in the studies employing data mining described below.

*Descriptive studies of existing practices* will make use of available documentation, such as state, district, or school plans; existing data sets from state departments of education, school districts, and other sources; project evaluation studies, masters and dissertation studies conducted in the region, as well as interviews with knowledgeable stakeholders, such as state and district curriculum coordinators, directors of assessment, and others depending upon the study.

*Short-term randomized control trials (RCTs)* will be conducted in collaboration with school districts and make use of assessment data already being collected by the districts. These will be used to provide a rigorous means to test pilot implementations of new curricula or professional development programs. In doing so, we will use a methodology developed by a small business subcontractor, Empirical Education, Inc. with funding from IES (grant # R305E040031: Low Cost Experiments to Support Local School District Decisions). [The specifics of this methodology are described above.]

### ***Proposed Year 1 Fast Response Studies***

The proposed Year 1 studies, shown in the Table below, were selected as a set to address questions of interest to multiple audiences in the region and to provide opportunities to extend the use of evidence-based education at multiple levels. We group the planned studies into three categories: (1) classroom and school practices; (2) teacher quality, and (3) assessment to improve student achievement. The specific studies in each category, along with the methodologies applied in each, are shown in the table below. Note that we are also proposing large scale RCT studies in each of these categories, as described in the Task 2 section.

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Some of the fast response studies focus on issues that are particularly critical in Title I and other high need districts (#1, #4, #5, #6, #7, #9); several address the specific needs of special education students (#2, #3) and English Language Learning students (#4, #6, #8); one focuses on issues related to educational technology (#2); and several address issues that our needs assessment identified as of high interest to rural districts (#3, #5, and #7).

Each of the proposed fast response studies is described below. The study directors and key staff listed for each study were the authors of the study plan. Note that the credentials for the study directors are provided in the personnel section and that information about the dissemination plans for each study is provided under Task 4, dissemination. A timeline for each study is provided following the full set of study descriptions.

We recognize that additional studies will be added and that we will work with USED and the National Lab Network to develop a coherent national plan for studies across the 10 Labs. Therefore view the following list as a working plan to be revised during that process.

| <b>Studies of Classroom and School Practices</b>   |   |
|--|---|
| 1. Practices that promote school connectedness and reduce drop-out rates in high poverty urban high schools  | Research review and synthesis   |
| 2. Supported electronic text and the reading comprehension of struggling readers   | Research review and synthesis   |
| 3. Effective practices in mathematics education for students with special needs  | Data mining and descriptive study of existing practices                                 |
| 4. Improving reading comprehension in Spanish and English in Puerto Rico   | Data mining and descriptive study of existing practices                                 |
| <b>Studies of Teacher Quality</b>  |   |
| 5. Retention of qualified science and mathematics teachers   | Data mining   |
| 6. Impact of QTEL professional development program on the academic achievement of English learning students in NYC                                   | Data mining   |
| 7. Approaches to strengthening the education workforce, with studies of mentoring programs for new teachers and of professional learning communities | Research review and synthesis, descriptive study of existing practices, and data mining |
| <b>Studies of Assessment to Improve Student Achievement</b>  |   |
| 8. Deepening analysis of large-scale assessment data to address predictors of performance for English Language Learning students                     | Data mining   |
| 9. Impact of benchmark assessments aligned to state standards on student achievement   | Data mining   |

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## **1. Practices that Promote School Connectedness and Reduce Drop-Out Rates in High-Poverty Urban High Schools**

DC)

Consulting methodologist: Ann Stueve (EDC)

Other staff: Athi Myint-U (EDC), Renée Wilson-Simmons (EDC), and Alexi San Doval (EDC)

Senior consultant: David Osher (AIR)

Throughout the region and the nation, districts are moving to create small secondary schools, break large schools down into smaller learning communities, and establish advisory programs. One of the major reasons for these and related interventions, including the small high school initiatives funded by the Gates Foundation, is to promote greater personalization and increase

. School connectedness refers to the belief by students that adults at their school care about their learning and about them as individuals (McNeely, Nonnemaker & Blum, 2002) as well as a sense of attachment, belonging and social bonding to teachers and other students (e.g., Osterman, 2000; Goodenow, 1993). School connectedness has been identified as a key protective factor and potential point of intervention for promoting academic, emotional, and social health (McNeely et al, 2002; Wilson, 2004).

Perhaps nowhere is the challenge for promoting connectedness greater than in poverty urban high schools, where African American and Latino students continue to be at disproportionate risk of school failure and drop out, as well as delinquency, substance abuse and other behaviors that compromise their futures. Despite growing interest in interventions addressing connectedness, evidence of what works has not been adequately compiled and assessed, especially with regard to economically disadvantaged urban students.

School connectedness is an important and promising topic to study because it is potentially amenable to intervention. We will cast a wide net to identify and assess what is known about the determinants of connectedness and what types of practices and policies may promote connectedness among students at high risk of school failure, drop out, and other negative health and social behaviors. Addressing these risks is a high priority of districts within our region.

There is a need for a systematic evidence review of school connectedness that will synthesize relevant studies that are spread across multiple literatures. These include the educational literature on academic performance, drop out prevention, and school structure and climate, as well as the developmental and public health literatures on youth problem behaviors. To date, these literatures remain relatively distinct, even though there is acknowledgment that efforts to understand and promote connectedness require interdisciplinary approaches and collaboration (Bonny, Vritto, Klosterman, Hornung, & Slap, 2000). Our focus on urban schools that serve African American and Latino students addresses continuing and even widening disparities in school success that potentially can be mitigated through strategies that connect students in positive ways to caring adults and peers in their school communities.

In this proposed study, we will identify, appraise, and synthesize primary research on school connectedness to address three questions:

1. What factors (e.g., school structure and climate, teacher support, disciplinary practices, peer relations and opportunities for engagement) influence school connectedness among youth in high-poverty urban schools serving predominately African American and Latino students?

2. What dimensions of school connectedness are most related to outcomes of school success in these populations, where rates of student \_\_\_\_\_ and their associated \_\_\_\_\_
3. What policies or practices to promote connectedness have evidence of promise or effectiveness in high-poverty urban high schools, where large proportions of students drop out, perform poorly, or engage in problem behaviors that impede their success?

Our systematic evidence review will provide practitioners with a reliable knowledge base for making informed local decisions about practices and policies that are feasible and culturally relevant for urban schools struggling to address multiple educational priorities. It will also identify gaps and establish priorities for future research to address the interconnections among school connectedness, student health, and school success. Our aim is to identify and inform evidence-based strategies that can be implemented in districts that serve economically disadvantaged African American and Latino families.

### ***Research Plan***

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We will conduct a systematic evidence review that identifies, extracts, analyzes, and summarizes data relevant to our three research questions (Mulrow, Cook, Davidoff, et al., 1997). Our procedures will reduce bias, be replicable, and provide a reliable basis for decision making about both regional practices and future research (Cooper & Hedges, 1994). They are consistent with the REA approach (Butler, et. al., 2005) described previously. Findings will be used to identify sub-literatures where meta-analysis may be appropriate, uncover research gaps, and make recommendations for policy and practice. Our research plan will entail the following steps.

#### Develop Search Strategy and Terms

Using an iterative procedure, we will compile a comprehensive list of terms to identify literature related to school connectedness and our outcomes of interest. This is important because the core construct of connectedness is labeled differently across different literatures and has changed over time (e.g., school bonding, attachment, orientation, connectedness, aspirations). This is also the case for many of our outcomes (e.g., school success, school failure, drop out, retention, truancy, social promotion, problem behaviors, risk taking, youth development).

#### Identify and Screen Source Materials

Employing the list of search terms, we will identify and retrieve source materials. We will search specialized electronic indexes (e.g., ERIC; PsycInfo; MedLine; PsycArticles; SocIndex; Expanded Academic Index ASAP; and Science Direct). We also will use primary data from publicly available datasets, including the National Survey of Adolescent Health, as well as the investigative team \_\_\_\_\_ ted Reach for Health Longitudinal Study, which has followed over 1200 youth in New York City from middle school into young adulthood, obtaining information on school connectedness, school failure, and a wide range of problem behaviors. We will include federal, regional, and local sources of information on student and school performance and school characteristics and practices. Finally, we will consult colleagues, nationally and within our region, who collect data relevant to our research questions.



### Develop a Master List of Source Materials: Inclusion Criteria

A master list of sources will be compiled and entered into a database. Two criteria will be used for inclusion in this list: relevance to the concept of connectedness and inclusion of one or more student outcomes of interest. Second, this list will be divided into two categories: those that include primary research and data versus those that do not (e.g., commentaries, descriptions of practice). Our evidence review will focus on the former.

### Analyze and Synthesize Source Material

We will develop a template for systematically extracting and recording information about the primary source material that meets inclusion criteria. This template will allow for updating and replication of procedures. Source material will be scored on multiple indices, including: target population (e.g., urban/non-urban; racial/ethnic composition; economic disadvantage/not); theoretical grounding (e.g., strong, adequate, weak/not available; type of theory); methodological rigor (strong, adequate, weak/not available); and research question(s) addressed. Subcategories within methodological rigor will be assessed using established standards to appraise study quality (e.g., sample size and power; reliability and validity of measures; adequacy of research design; appropriate use of statistical techniques). For studies of practices we will also rate feasibility, including cost (high, medium, low, not reported). When necessary, we will contact authors to obtain additional information. For each research question, we will create a comprehensive synthesis that identifies findings as well as gaps and recommendations.

### ***Final Products***

We will produce a working paper that will be distributed for review by experts in relevant fields. This paper will be finalized for publication in a peer-reviewed major educational journal. In addition, we will prepare several research and policy briefs that summarize findings for the targeted audiences: (1) researchers; (2) policy makers and educational leaders; and (3) practitioners. We also will present findings at a national and regional meeting.

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## 2. Supported Electronic Text and the Reading Comprehension of Struggling Readers

Study director: Judith Zorfass (EDC)

Consultants: Lynne Anderson-Inman (University of Oregon) and John Hitchcock (AIR)

Eight million students in grades 4-12 are estimated to be struggling readers, performing below proficient levels (NCES, 2003, Loomis and Bourque, 2001).

Approximately a quarter of the population of 12<sup>th</sup> graders are still reading at basic levels, which means that they are barely able to comprehend at a literal level, make simple interpretations, identify relevant information, make simple inferences, and recognize and relate interpretations and connections (Kamil, 2003). These students are at-risk for academic failure, likely to drop out, and have limited opportunities for post-secondary education or productive employment.

Data for the Northeast Region reflect this national picture, with between 62% and 73% of 8<sup>th</sup> graders and between 57% and 71% of 4<sup>th</sup> graders scoring below proficient on the 2003 NAEP reading assessment across the states. In April 2005, the New England Comprehensive Assistance Center (NECAC), housed at EDC, sponsored a meeting of state leaders of literacy, Title I, and special education. These leaders requested information about the role technology tools could play in supporting reading comprehension, especially for struggling adolescents. This request has been echoed in needs assessments in Maine, Connecticut, New York, and New Hampshire. Specifically, participants want to know: (a) What technology tools are available? (b) What are their features? and (c) What is the evidence of their effectiveness when linked to research-based strategies? Answers to these questions will inform the development and implementation of technology-supported adolescent literacy programs.

In response to this identified regional and national need, we propose a study that focuses on one particularly promising technology area for students in grades 4-12:

Electronic text (e-text) to aid reading comprehension. When students read electronic textual material that is read using a computer or some other electronic device, supported e-text goes further. This concept, first developed by Anderson-Inman and Horney at the University of Oregon (1998), refers to electronic text that is modified or enhanced in ways that support student comprehension and extend student learning. Anderson-Inman (2004) proposes the following nine supportive e-text resources: presentational, navigational, translational, illustrative, summarizing, enrichment, instructional, notational, and

collaborative. In addition, supported e-text can be structurally presented in ways that accommodate individual learning needs and styles, and facilitate meeting instructional objectives.

Anderson-Inman asserts that enhancements that allow users to mark text, condense it, follow links to additional information, or hear text read aloud can help struggling adolescents overcome the comprehension hurdles. Our goal is to explore how this typology aligns with the evidence-based vocabulary and comprehension strategies recently identified by the National Reading Panel (2000) and reiterated in *Adolescents and Literacy: Reading for the 21<sup>st</sup> Century* (Kamil, 2003). Examples of recommended vocabulary strategies include using explicit and implicit instruction, multi-media, strategies for making reading automatic, and strategies for making connections between what readers know and the unfamiliar words they encounter. Recommended reading comprehension strategies include comprehension monitoring, cooperative learning, graphic and semantic organizers, story structure, question answering, question generating, summarization, and multiple strategies (e.g., Palincsar & Brown, 1984). All of the above strategies can be implemented with software tools that embed supported e-text features (e.g., *SOLO*, *e-Reader*, *Inspiration*).

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### ***Research Plan***

We propose to conduct a research appraisal and synthesis, which will dovetail with the work of two USED-funded national centers in which EDC is a collaborating partner: (1) The Center for Implementing Technology in Education (CITEd) at AIR and (2) the National Center for the Study of Supported Text at the University of Oregon. Our approach draws on the research appraisal and synthesis process being used by CITEd under the leadership of John Hitchcock and the typology of resources developed by Lynne Anderson-Inman in Oregon. Both researchers will serve as consultants.

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The questions guiding our review are:

- What is the research base for each of the nine types of supportive resources in the Anderson-Inman (2004) typology?
- What types of supported e-text supports have been used effectively to improve adolescent *content-area vocabulary* and *reading comprehension* when linked to research-based instructional strategies?
- What software tools and web-based resources are available to facilitate the adoption of supported e-text strategies for vocabulary and reading comprehension improvement?

A key feature of our work will be to categorize the findings in the research as emerging, promising, or evidence-based practices, using criteria consistent with those of the What Works Clearinghouse (WWC). The expected outcomes will be to describe the potential of supported e-

text, identify specific tools that embed useful supported e-text features, produce a synthesis of the knowledge base, and identify critical areas for further research.

We will employ the following process for our research appraisal and synthesis:.

- *Develop a Protocol.* We will refine our definitions for the student sample (grade levels, types of comprehension problems, and types of disabilities); research-based vocabulary and comprehension strategies; supported e-text typology; and types of electronic, web-based, and software applications. We will also refine the WWC criteria for this area of research.
- *Identify and Gather the Literature.* We will consult with key informants, starting with Lynne Anderson-Inman, who has already begun a review of the literature for all populations and for students with disabilities, and determine where there are gaps requiring further study. We will also confer with other key contacts from our technology, literacy, and special education networks at WestEd, AIR, CAST, National Center for the Study of Supportive Text, and the National Adolescent Literacy Coalition. Second, we will obtain agreement on the study designs that are of interest. Third, we will have a researcher identify existing original studies, meta-analyses, and research syntheses of interest, including WWC findings.
- *Apply the Protocol to Analyze Literature.* We will carry out the following steps: 1) develop a strategy for coding procedures; 2) apply coding guide and categorization strategies; and 3) develop a tracking procedure for both coding and effect size calculation, modeled after approaches used by the WWC.

### ***Final Products***

We will produce a research brief and accompanying guide that ensures an accurate translation of our research findings. The research brief will include a conceptual framework describing the typical challenges faced by adolescent readers, evidence-based strategies designed to address these problems, and how features of supported e-text can help (using the Anderson-Inman typology). It will also include an overview of the research methods and findings, as well as suggestions for future research. The accompanying guide will include a listing of commonly available technology tools with their supported e-text features, along with an assessment of the underlying research evidence. In addition, we will include illustrative vignettes and examples of how these tools can be used with diverse students. The product will be available both in hard copy and as a PDF file accessible on the National Laboratory Network website.

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### 3. Effective Practices in Mathematics Education for Students with Special Needs

Study director: Amy Brodesky (EDC)

Consulting methodologist: Laur (Education Consulting Associates)

States and school districts face a critical need to improve mathematics learning by *all* students, including those with special needs due to cognitive, language, physical, sensory, or emotional disabilities. The Individuals with Disabilities Education Act (IDEA) mandates that these students be included in the general education curriculum and receive the supports necessary to progress to the same high standards as other students. Both NCLB and IDEA require that students with special needs be included in standardized assessments. Furthermore, NCLB holds school systems accountable for improving student performance, requires that the data for students with disabilities be disaggregated, and imposes sanctions for schools in which these students do not show adequate progress. In response to these major changes in expectations and accountability, school district leaders are grappling with questions about what structures, policies, and approaches to use with students with special needs.

These questions are particularly pressing for mathematics education because of the extremely low performance of students with disabilities on standardized math assessments that can profoundly limit their future school and career options, and put their schools in jeopardy of not meeting AYP requirements. In a comprehensive analysis of state assessment data, the National Center for Educational Outcomes found that on average, only 29% of elementary students with disabilities achieved proficiency on standardized assessments in mathematics and only 14% of middle school students achieved proficiency (Thurlow, Moen, & Wiley, 2005). Findings in the Northeast region mirror those of the nation. For example, in 2004, 151 districts out of 221 Massachusetts districts failed to meet AYP in the special education subgroup (Massachusetts DOE, 2004).

SEAs and LEAs in the Northeast region are searching for ways to improve the performance in mathematics by students with special needs, including learning disabilities and attention deficit disorders (ADD/ADHD). This involves making complex decisions about the placement of students with special needs, staffing, professional development, schedules, and types of interventions in a time of tight resources. District leaders have little research available to help them make these critical decisions. In ED *Addressing*

*Accessibility in Mathematics*, we found many differences across a set of school districts in the structures, policies, and approaches used to improve math learning by students with special needs.

The proposed study builds on our prior work and [redacted] math disabilities (e.g., Fuchs & Fuchs, 2002; Geary, 2003; Kroesbergen & Van Luit, 2003) and effective practices (Butler, Beckingham, & Lauscher, 2005; Fuchs & Fuchs, 2003; Woodward & Montague, 2002) to provide district administrators and special educators with valuable information about best practices in improving mathematics achievement of students with special needs. In addition, we will provide a much-needed context for interpreting the data on the performance of special needs students on standardized math assessments and will help identify promising practices for further research. The study will address two key research questions: (1) What are current practices in the teaching of mathematics to students with cognitive, social, emotional, and/or physically disabilities in grades K-5? and (2) What practices are used in districts that have made improvements in the mathematics achievement of students with disabilities?

### ***Research Plan***

The proposed study will focus on a representative set of LEAs from three states in the region: Massachusetts, New Hampshire, and Connecticut. By examining available state mathematics assessment data, we will identify elementary schools (20 urban and 20 rural) that showed strong and/or improving performance by students with special needs. We will then identify low performing elementary schools (20 urban and 20 rural) that match these schools on a number of dimensions, including the percentage of students receiving free and reduced lunch, percentage of students with disabilities, and percentage of ELL students. For the 80 schools, we will gather and analyze existing data about their current practices, such as IEP procedures, qualifications of general and special education teachers to teach mathematics, placement of students with disabilities for mathematics instruction, and special supports, if any, provided to these students. Since there is a wide range of disabilities, our research will focus on those with the highest incidence, such as learning disabilities and attention deficit disorders.

In order to obtain a comprehensive picture of current practices, research will focus in the following six specific areas (b)(4)

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1. *Student Placement*: Are students with disabilities included in regular education classrooms or taught in separate special education classrooms? What policies and procedures guide these placement decisions? Do placements differ for different types of disabilities?
2. *Staffing*: [redacted] qualifications in mathematics and preparation to teach students with special needs? Have special education teachers received preparation to support the teaching of rigorous mathematics curriculum?
3. *Amount of Instructional Math Time*: How much math instruction time are students with disabilities receiving?
4. *Diagnostic Tools*: What diagnostic methods are being used to evaluate students with disabilities in mathematics? What measures are elementary schools taking to identify students who are struggling in mathematics?

5. *Math Support Interventions:* What kinds of interventions are schools using to help students with disabilities improve in mathematics? What evidence is being gathered about the effectiveness of these interventions?
6. *Professional Development:* What kinds of professional development do districts offer general educators, special educators, and math specialists to help them improve math learning for students with special needs?

We will analyze the data to identify trends and suggestive patterns of differences between the schools with strong/improving performance and those with low performance. In order to gather more information about the differences in practices, we will conduct follow-up phone interviews with administrators in a small sample of districts. Drawing on this analysis, we will identify a small subgroup of schools with potentially promising practices for teaching mathematics to students with disabilities to be the focus of future research.

### ***Final Products***

This study will result in a final report that will summarize current district practices in the math education of students with special needs, and patterns of differences between the more and less effective schools. In addition, we will prepare a research brief to set directions for further studies on promising practices and trends.

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#### **4. Improving Reading Comprehension in Spanish and English in Puerto Rico**

Study director: Zoraida Santiago-Centeno (TEAM Consultants, Inc.)

Staff and consultants: Olga Villamil, Alfred Delbrey (b)(4), Dinah Kortright (TEAM Consultants, Inc.)

Reading comprehension is a key skill for success in other academic fields. In Puerto Rico students are expected to master reading comprehension in both official languages, English and Spanish. Performance on reading comprehension achievement tests raises serious concerns. College Board (2005) data show that from 1996 to 2004, public school students scored significantly and consistently lower than students in private schools on verbal reasoning tests in both languages. A recent study by the Cervantes Virtual Center (López Morales, 2004) concluded that public school students' reading comprehension scores on both Spanish and English tests are so disastrously low that special programs need to be created to enable students to be successful in college or vocational programs.

There is currently centralized control of public schools and the curriculum in Puerto Rico and little use of research evidence to inform instruction. However, there are proposed plans that, if approved, will result in more localized control of schools, along with growing awareness of the deficiencies in reading instruction in both English and Spanish. As a result, many schools will

be considering how to improve reading instruction, and the proposed study is designed to help these schools make evidence-based educational decisions. Dr. José Assistant for Education, stated that teacher quality is a priority of this administration, and that this study should prove useful in enhancing the quality of English development on the basis of empirical data (personal interview, September, 17, 2005).

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This study will address three questions that are critical to informing improvements in the teaching of reading comprehension in Puerto Rico: (1) What are the gaps in student achievement in reading comprehension, both in Spanish and English, as expressed in the appropriate sub-tests of the standardized *Pruebas Puertorriqueñas* achievement test; (2) What are the prevailing teaching methods used by English and Spanish teachers in Puerto Rico system; and (b)(4)

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### ***Research Plan***

The Department of Education of Puerto Rico (DE) administers a standardized achievement test, *Pruebas Puertorriqueñas*, to all students in April of each year. The English and Spanish tests are aligned with the DE curriculum standards and assess reading comprehension along with other language skills. Data collected by the DE during 2004-2005 and 2005-2006 will be made available to our researchers for analysis. We will analyze the data from a stratified representative sample of students in grades 3, 6, and 9. Grades 3-9 covers the range of grades in which reading comprehension instruction is a focus and in which reading comprehension problems must be diagnosed and remediated for a student to be successful in school. (b)(4)

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To address the first question about gaps in student reading comprehension achievement, we will use the test data to identify the pattern of errors by grade level in both English and Spanish.

This analysis will enable us to identify the areas related to reading comprehension on which students have the most difficulty (e.g., vocabulary, sentence understanding, summarizing main ideas, understanding causal connections, etc.) and examine whether the patterns are the same in both English and Spanish and across the grade levels. This analysis will yield evidence about the specific areas in which reading instruction, at each grade and in each language, needs strengthening.

To address the second question about prevailing reading comprehension teaching methods, we will review curriculum materials, teacher guides, standards, other relevant documents, and research reports on the teaching of reading comprehension in both English and Spanish in Puerto Rico. In addition, our team will examine results of theses and doctoral dissertations on the teaching of English and Spanish in Puerto Rico public schools, and obtain information directly from language arts coordinators and reading teachers about their classroom practices. We will map the information about teaching practices to the data about patterns of student errors, to determine whether there are clear relationships between teaching practices and errors that receive minimal attention in the curriculum.

To address the third question about effective, research-based, reading comprehension teaching practices, we will review teaching strategies and best practices that are recommended by scientifically based reading comprehension studies in Puerto Rico, the United States or other countries (e.g., Spain for Spanish language reading comprehension). Our examination will be organized around the seven categories of teaching practices identified by the U.S. National Reading Panel as having a solid scientific basis for concluding that they improve comprehension in normal readers: (1) comprehension monitoring; (2) cooperative learning; (3) the use of graphic and semantic organizers including story maps; (4) question answering; (5) question generation; (6) summarization; (7) multiple strategy approach. We will review the evidence for these and other comprehension strategies for both English and Spanish readers. We will identify those strategies that are not being widely employed in the teaching of Spanish or English reading comprehension in Puerto Rico and that could, if utilized, significantly improve the teaching of reading comprehension and student achievement.

### ***Final Products***

We will synthesize the information obtained in our work, answering each of the three questions into a report that maps reading comprehension errors, current teaching practices, and research-based effective teaching practices. We will then develop specific recommendations for improving the teaching and learning of reading comprehension in Puerto Rico. This report will inform plans to improve the reading and language arts curriculum, the teaching of reading within the other content areas, and the preparation of both current and pre-service teachers in evidence-based practices for effective reading instruction. The report will be presented in English and Spanish, in print and will be available digitally in the Regional

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## 5. Retention of Qualified Science and Mathematics Teachers

Study director: Abigail Jurist Levy (EDC)

Advisors: Tom Keller (former Maine Science Supervisor); Jeff Nellhaus (Deputy Commissioner, Massachusetts Department of Education); David White (Assistant Director, Standards & Assessment, Vermont Department of Education). Three additional advisors will be identified for a total of two from each state

The issues of teacher quality and teacher turnover are critical at the national, state, and local levels. According to a report from the National Center for Education Statistics, approximately a third of science teachers leave teaching sometime during their first three years of teaching; almost half may leave during the first five years (NCTAF, 2003, p. 24). Moreover, shortages and turnover rates are more pronounced for science and math teachers than for those in other subject areas (Ingersoll, 2001; Murphy, DeArmond, & Guin, 2003). Not only are science and mathematics teachers more likely to leave teaching, they are also more likely to be teaching out of their field. In grades 5-9, only 34% of math teachers and 49% of science teachers have an academic major in their subject area, while in grades 10-12, 75% of math teachers, 41% of physical sciences (chemistry, geology and physics) and 62% of biology teachers have an academic major in their subject area (NCES 2003).

States in the Northeast region are impacted by these trends and are trying to address them. Interviews conducted to assess the needs for this proposal found that teacher retention and teacher quality were primary concerns for four of the seven states,

particularly for urban and rural districts. Moreover, several states have already taken steps to reduce turnover. For example, Connecticut has three initiatives underway, one will offer incentive bonuses and local multi-year contracts for outstanding teachers in priority school districts, (CT State Board of Education, 2004). Vermont, Connecticut, Maine, and Massachusetts have all invested in new teacher induction programs, while Connecticut, Massachusetts, New Hampshire, and New York have also invested in mentoring programs (Ansell & McCabe, 2003).

However, for states to assess the effectiveness of their policy responses, they must have access to accurate information on teacher employment. In September 1999, the Western Interstate Commission for Higher Education issued a report, *Teacher Quality and Teacher Shortages: The Need for Policy-Related Information*, in which the authors determined that few states have readily available information adequate to understand and address critical teacher shortages (p. 2). Six years later, reliable information at the district and state level on the teacher workforce is still lacking. Although many interviewed for this proposal knew the necessary data was collected, they were unable to use the necessary information with it in order to produce useful information to guide decision-making and assess progress. For example, Commissioner, Jeff Nellhaus, and Superintendent, Tom Gorman, are director of science, and Tom Gorman for methods for analyzing the teacher data available in order to provide background information to inform their policy decisions.

This study will provide policy makers and analysts in the Northeast region with a description of the characteristics of their district teacher workforce, trends in their district teacher mobility over time, and the methods for generating this information for themselves in the future. It will do so by answering the following questions:

1. What are the recruitment and departure trends for science and mathematics teachers compared to teachers in other content areas?
2. What are the characteristics, including demographics, educational attainment, salary, and licensure, of the science and mathematics teachers who stay in their districts compared to those who leave?
3. What are the most efficient and effective methods for state and district policy makers and analysts (e.g., personnel directors, superintendents, math and science leaders, union and teacher association heads) to gather, analyze, and present this data to their decision-maker?

The answers to these questions will form a foundation of knowledge regarding the characteristics of the district teacher workforce and teacher mobility over time. The research may be continued into a second year, with NEIREL looking more closely at the state and local policies and practices that might explain these variations in turnover. With an understanding of the policies that are shown to make a difference and a methodology for tracking teacher turnover and teacher quality, districts and states will be better able to assess the effectiveness of their policy initiatives.

This study builds on important work previously done by others. For example, the RAND Corporation's *A Review of the Research Literature on Teacher Recruitment and Retention* (2004), examines research published since 1980 on teacher recruitment and retention in the United States, providing a historical perspective in which the issues are better understood. The NCES report, *Mobility in the Teacher Workforce* (2005), uses national data to



answer the same questions that this study will address. The study proposed here will enable policy makers in the Northeast to compare their results with those of the Central Regional Educational Laboratory, which has done similar analyses for four states in that region, looking closely at trends in teacher turnover, teacher quality, mobility, and recruitment. This study recognizes the equivalent need for policy makers in the Northeast region.

### ***Research Plan***

Method: This study will focus on nine districts: three in each of the states of Massachusetts, Maine, and Vermont (i.e. one rural, one suburban, and one urban). Using the "Locale Codes" classification system of urban/rural districts, researchers will categorize districts according to their geographic characteristics. NEIREL researchers will inform districts of the study, and interested districts will provide information regarding the status of their teacher workforce data. Nine districts will be randomly selected from those districts that demonstrate the data capacity necessary for this analysis.

Information Gathered: NEIREL will compile a data set for each district that includes, at a minimum, the following variables: ID # for each teacher; date of hire; personal characteristics including demographic information, degree, and certification; school; grade; salary; and subject(s) taught for each year for the past three years. Departure date and reason, and receiving school district will also be identified if possible.

Data analysis plan: Data will be analyzed using descriptive statistics including frequencies, means, and correlations in order to arrive at the following analyses for each year of data for each district: (1) the personal characteristics of the teacher workforce matched to all of the subjects they teach; (2) the departure rates for each school of all teachers and by their subject area; and (3) the personal characteristics of teachers who stay in the same school, who stay in the same district, and who leave their districts matched to the subjects they teach. Analyses using ANOVA and logistic regression will allow relationships between personal characteristics, employment and retention outcomes to be discerned.

### ***Final Products***

1. A profile of each participating district will be generated that describes the nature and extent of teacher turnover, including how much it differs by subject area, by teacher characteristics and salary; the characteristics of teachers who stay within the same school, who shift to other schools within their districts, and those who leave their district.
2. A cross-district report of findings and implications for policy and future research that pays particular attention to the issues of turnover and teacher quality that are uniquely relevant to urban, suburban, and rural districts.
3. A manual that describes the process for collecting and cleaning the data, the analysis tools used and particularly how preliminary findings informed additional lines of inquiry. This manual will be designed to provide guidance to others who will be involved in overseeing similar workforce data collection and analysis.

(b)(4)

**6. Impact of the QTEL Professional Development Program on the Academic Achievement of English Learning Students in New York City**

Study Director: Neal D. Finkelstein (WestEd)

Staff: Aída Walqui (WestEd), Sue Henderson (WestEd), and Marla Perez-Selles (WestED)

The need to accelerate the linguistic and academic development of English Language Learners (ELLs) in schools in the Northeast region is justified by persistent achievement gaps in core areas of academic learning. To mitigate these gaps, there is a critical need to study teacher professional development from pre-service to induction to ongoing professional development consistent with the documented need within the Northeast region. It has been well established that teachers need professional development and support to improve student achievement for ELLs at the secondary level (August & Hakuta, 1997; Parsad, Lewis & Farris, 2001; Ruiz-de-Velasco & Fix, 2000). By studying student achievement patterns connected to professional development activities for teachers, researchers can quantify the effectiveness of the intervention and disseminate findings accordingly.

The Quality Teaching Initiative (TQI) has been working in partnership with the New York City Department of Education (NYCDOE) to improve the academic achievement of the city's English Language Learners in secondary schools. The 2003-2004 work involved several phases of support for 125 NYC professional developers and for 1,200 teachers from all regions of the city, using an apprenticeship model of scaffolding academic instruction for ELLs.

TQI staff provided the NYCDOE Professional Development Team (PDT) with support that helped them build a strong base of theoretical understanding and generative strategies to conduct in-service professional development and coaching to teachers working with adolescent ELLs. At the same time, and as part of the apprenticeship of the PDT, TQI staff provided professional development and coaching to teachers to build their capacity to effectively teach academic uses of language to English learners.

During the 2004-2005 year, a randomized controlled trial (RCT) of the professional development program's impact on classroom practices and ELLs achievement was implemented in NYCDOE middle schools. Specifically, the study examined the effectiveness of professional development activities on teacher pedagogical content knowledge, teacher attitudes, teacher practice, and student achievement. Approximately 200 Language Arts and ESL teachers and 5,000 predominantly low-SES ELL students from 38 middle schools participated in the study. Data collected during this study is currently undergoing analysis in 2005 by WestEd analysts. These data include outcome measures collected during the 2004-05 academic year.

While the prior RCT study will provide rigorous evidence about the impact of the first year of teacher participation in the QTEL (*Quality Teaching for English Learners*) program, it does not provide information about the longer term effects, which is important for a complete evaluation of the value of the program. Since the necessary data will be available from NYCDOE, we propose a quick response study of the following question: What changes occur in English Language Learners' achievement in English language arts, as measured by standardized tests, more than one-year following exposure to the QTEL professional development program?

### ***Research Plan***

The New York State English as a 2nd Language Test (NYSESLAT) is administered to all English learners in May of each year. In addition, the Regents Comprehensive Examination in English is used to assess academic achievement in English Language Arts; the test is aligned with New York State learning standards and assesses reading, writing, and listening skills through a combination of multiple-choice questions and student essays. Through prior

agreement between WestEd and NYCDOE, data collected during the 2005-06 academic year by NYCDOE will be made available to WestEd researchers for analysis. In addition, the data provided by NYCDOE make connecting students to teachers, across years, possible.

With these new data available, we propose to analyze whether the impact of QTEL on students is more or less pronounced one year following the professional development intervention. To expand our analysis, some students will also have had the benefit of receiving instruction during the 2005-06 academic year from teachers who had previously received the professional development treatment one year earlier. These students, therefore, may have been exposed to the impact of the QTEL program for more than one year. This allows us to investigate whether growth in student outcomes is generative or cumulative over time. (b)(4)

(b)(4)

This research study expands on prior analysis of the 2004-05 data by including an additional year of student achievement data. The analysis uses multi-level modeling, accounting for the nested design of the original study (students nested within teachers nested within schools). These models will control for student, school and teacher background characteristics, all of which have been collected as part of previous work, or are systematically included in the NYCDOE student achievement data. Baseline scores on standardized achievement measures will also be included as control variables in the models. (b)(4)

(b)(4)

As part of 2006 follow-up activities in the TQI New York City study, NYCDOE may be supporting the collection of additional teacher outcome data from those who did and did not participate in QTEL professional development activities. This could include surveys of pedagogical content knowledge and structured classroom observations. These measures examine changes in teacher self-efficacy and reported changes in instructional practice. Should these data become available, WestEd researchers will include these updated teacher outcomes in this proposed analysis.

### ***Final Products***

The study will result in the development and dissemination of a research brief documenting the key findings. The brief will be valuable in providing the various communities of researchers, practitioners, and policymakers involved in the education of secondary English learners with follow-up information from this large scale investment in professional development. In addition, a regional research seminar will be held.

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### **7. Approaches to Strengthening the Education Workforce**

(b)(4) Ann Brackett (WestEd), (b)(4)  
(b)(4) Susan Mundry  
(WestEd)(b)(4)

Consulting methodologist, both studies: Laura O Dwyer (Education Consulting Associates)

In the needs assessment for the NEIREL region, a central theme across all the states and islands, and the districts and schools within them, is the need to improve both teacher and administrator

quality. Strengthening the education workforce was also identified as a major regional need by the New England Regional Advisory Council (RAC) organized by USED to inform the regional Comprehensive Center. Teacher quality issues are of particular concern in rural and urban high need districts, where both teacher recruitment and teacher retention are challenging.

State and district leaders find that a variety of approaches are being recommended and that specific implementations of these approaches are already in use in some districts. The approaches that our needs assessment has identified as of greatest interest in the NEIREL region fall into four categories: (1) mentoring programs for teachers; (2) programs that build and sustain professional learning communities; (3) content-focused coaching programs for teachers; and (4) mentoring programs for new principals. Within each of these categories, there are a variety of approaches being advocated and used in the region. For example, different mentoring programs set different expectations for mentors and mentees, provide different types of training and support for mentors, range in the incentives they provide, and in their goals and evaluations.

Education leaders are asking for clear conceptual frameworks that will help them understand, discuss, compare, and make decisions about the possible approaches. For each approach to improving the education workforce, state and district leaders are asking the same set of questions:

1. What are the underlying principles and defining characteristics of the approach? What are the variations within the approach?
2. What research is available to inform their considerations about implementing one or more of these approaches? Do some approaches have a stronger research base than others? Is the evidence scientifically-based?
3. What approaches are already being used in the region? What evidence is available about their effectiveness where they have already been implemented? What data can be used to address this question?
4. Which districts have been successful in strengthening the teacher and administrator workforce? What are the approaches they have used? Are there similarities in the approaches? Are there other commonalities and lessons learned across these districts that can help inform decisions in other districts?

### ***Research Plan***

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(b)(4) Each of the proposed Year 1 studies will use a combination of methods, including: (a) Refine the definitions of the practice through initial literature review, consultation with key informants, (researchers, expert panel members, key practitioners), and develop a conceptual map of principles, characteristics, and variations within the approach; (b) Conduct a quick response review of the relevant research, using the *Rapid Evidence Assessment* methodology described earlier in this section, and, in particular, seek to categorize the findings in the research as emerging, promising, or evidence-based practices, using criteria consistent with those of the What Works Clearinghouse (WWC); (c) Review

existing programs in the region and align to the conceptual map; (d) Collect available information about implementations of the approach in the Northeast region, including evaluation data; (e) Mine available data about teacher and/or administrator recruitment, retention, performance, and advancement to identify districts that show evidence of success in improving the education workforce; and (f) Identify common factors and lessons learned, among those districts, if any, that have shown success with the approach.

***Final Products***

We will prepare a research and policy brief for each approach selected, designed to help guide SEA and LEA considerations about implementing the approach. This guide will include a summary of the results of the six research steps described above, along with case study descriptions of a sample of the successful districts. A more detailed summary of the findings will also be prepared for researchers and other interested stakeholders, including IHEs. Because strengthening the educator workforce is a complex issue of great importance throughout the region and one that requires long term investment, we anticipate building a body of knowledge across the years of the contract that is rigorous and useful on the full range of issues related to strengthening the educator professional continuum including recruitment, preparation, certification, induction and on- going professional development. We will interact with researchers, policymakers, and key practitioners in the region throughout, and as part of, the knowledge development process. In building a knowledge community of regional stakeholders that works with us over time in refining the specific areas of inquiry, building the appetite and capacity for using empirical research, and deepening ownership and interest in translating research into practice, we anticipate that this area of study and development will become increasingly focused through the course of the contract.

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### **8. Deepening Analysis of Large-Scale Assessment Data**

EDC Study directors: Caroline E. Parker and Maria-Paz Avery

Consulting methodologist: Laur (Education Consulting Associates)

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Accountability requirements under NCLB are providing states with unprecedented depth and quality of student demographic and achievement data. This increase in available data, however, is not necessarily accompanied by an increase in state-level capacity to analyze the data. While all states provide basic results for accountability purposes, much information is often left untapped. In particular, new assessments of English Language Learners provide data about their reading, writing, listening, and comprehension skills that has not previously been available.

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### ***Research Plan***

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*Sample:* In the three states, there are approximately 800 English language learners per grade.

*Data Analysis:* To address the research questions, multiple regression will be used to create models for predicting student achievement in reading and mathematics. The following is a model to address the first research question. Similar analyses will be done for the second and third research questions. Controlling for student characteristics (S) and the type of English language program (P), this model will be used to examine whether stud ELP) can be used to predict student NECAP scores in reading and mathematics. Specifically, the following model will be formulated:

$$Y = \alpha + \beta_1(S) + \beta_2(P) + \beta_3(ELP) + \varepsilon$$

*Outcome variable:* NECAP scaled score in reading and mathematics.

*Covariates:* Student demographics (gender, disability, race/ethnicity, socioeconomic status), as well as native language, years in school system, other demographic data collected on ACCESS for ELLs, and English language program.

*Main predictor variable:* Composite ACCESS for ELL score, and five subscores: listening, speaking, reading, writing, and comprehension (combined listening and reading).

### ***Final Products***

The results of this research will be of interest both to educational researchers and to practitioners, and so will be reported in at least two forms: journal articles submitted to appropriate professional journals, and report summaries targeted to the following audiences: state, district, and school-level officials, as well as parents and the local community.

## **9. Impact of Benchmark Assessments Aligned to State Standards on Student Achievement**

(b)(4)

A growing practice among schools and districts is to implement benchmark and other regular assessments aligned to state content standards to positively impact student achievement on state accountability assessments. A U.S. Department of Education report states: "Regardless of their specific mathematics programs, *No Child Left Behind - Blue Ribbon Schools* use many similar instructional techniques. All emphasize alignm mathematics curriculum with state standards and conduct frequent benchmark assessments to determine student mastery of the s/nclbbrs/math.pdf). To date, there has been little research to determine if, and to what extent, student outcomes are affected by implementation of these aligned benchmark assessment practices.

The most recent Massachusetts Comprehensive School Reform (CSR) and Technology Enhancement Competitive Grants Programs both include priorities for participating schools and districts to develop and use benchmark assessment practices. As a result, eight MA school districts will be utilizing a data management system supported by Assessment Technologies Inc. to develop their own grade-level benchmark assessments in mathematics for approximately 10,000 middle school students. In addition, benchmark assessment data analysis tools will be used to inform classroom and instructional program practice in these participating Massachusetts middle schools beginning in the 2005-2006 school year. The decision by the Massachusetts Department of Education (MA DOE) to support the development of mathematics benchmark assessments in a limited number of middle schools provides a unique opportunity to study impact on student achievement and the MA DOE has expressed a high need for this type of study to be undertaken.

The identification of district level practices that provide success in meeting NCLB requirements is important to districts throughout the NEIREL region and beyond. There is a high degree of acceptance of benchmarking assessments as a practice that positively impacts student outcomes, without much evidence to substantiate the effects of the practice and determine the conditions under which benchmark assessment can affect student outcomes. The high interest in the region on formative assessment and systems to support it, along with the pilot of a particular approach iddle schools in mathematics, makes this study both timely and important to help policymakers make decisions informed by research. In addition, the large financial investment required for the data management systems necessary to support this comprehensive approach calls attention to the need for independent research to inform state and district investment decisions.

The proposed study will address the central question of: Do districts using quarterly benchmark exams in middle school mathematics show greater gains in student achievement than those not employing this practice? This question will be examined in schools using quarterly benchmark assessments aligned with Massachusetts Curriculum Frameworks Standards for mathematics in grades 6 and 8, with student achievement measured by the Massachusetts State Comprehensive Assessment (MCAS).

### ***Research Plan***

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<sup>1</sup> We select 2 matching schools rather than 1 matching school to account for the possibility of idiosyncratic matches.



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***Final Products***

Findings will be published through a technical brief for the MA DOE Office on Accountability as well as in a 2-4 page policy brief geared to the audience of regional stakeholders (educational policy and decision makers) at both the SEA and LEA level in the region. In addition, these publications will be shared with regional technical assistance centers and support for dissemination will be provided. A state seminar will be held to discuss the findings and the implications for LEAs and SEAs.

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<sup>2</sup> See the American Psychological Association (1994) statement on statistical significance.

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## Task 1.2: Fast Response Studies Timelines

*Note: In addition to the information noted below, we will submit monthly reports for each 1.2 Fast Response Study. Any changes will be noted in our updated UAP to be submitted 7/1/06. All other ED, OMB, and IRB requirements will be met*

### **1. Practices that promote school connectedness and reduce drop-out rates in high poverty urban high schools**

| Tasks                                       | 2006 |     |     |     |     |     |     |     | 2007 |     |     |     |
|---|------|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|
|   | May  | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan  | Feb | Mar | Apr |
| Develop search strategy and terms           |      |     |     |     |     |     |     |     |      |     |     |     |
| Identify and screen source materials        |      |     |     |     |     |     |     |     |      |     |     |     |
| Develop a master list of source materials   |      |     |     |     |     |     |     |     |      |     |     |     |
| Analyze and synthesize source materials:    |      |     |     |     |     |     |     |     |      |     |     |     |
| Analyze source materials                    |      |     |     |     |     |     |     |     |      |     |     |     |
| Synthesize results and prepare draft report |      |     |     |     |     |     |     |     |      |     |     |     |
| Distribute draft for review                 |      |     |     |     |     |     |     |     |      |     |     |     |
| Finalize report                             |      |     |     |     |     |     |     |     |      |     |     |     |
| Present/disseminate findings                |      |     |     |     |     |     |     |     |      |     |     |     |

### **2. Supported electronic text and the reading comprehension of struggling readers**

| Tasks                          | 2006 |     |     |     |     |     |     |     | 2007 |     |     |     |
|--------------------------------|------|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|
|                                | May  | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan  | Feb | Mar | Apr |
| Develop a protocol             |      |     |     |     |     |     |     |     |      |     |     |     |
| Identify and Gather Literature |      |     |     |     |     |     |     |     |      |     |     |     |
| Apply Protocol                 |      |     |     |     |     |     |     |     |      |     |     |     |
| Develop products               |      |     |     |     |     |     |     |     |      |     |     |     |
| Plan for Dissemination         |      |     |     |     |     |     |     |     |      |     |     |     |
| Implement Dissemination        |      |     |     |     |     |     |     |     |      |     |     |     |

### **3. Effective practices in mathematics education for students with special needs**

| Tasks                           | 2006 |     |     |     |     |     |     |     | 2007 |     |
|---------------------------------|------|-----|-----|-----|-----|-----|-----|-----|------|-----|
|                                 | May  | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan  | Feb |
| Develop instruments             |      |     |     |     |     |     |     |     |      |     |
| Select samples                  |      |     |     |     |     |     |     |     |      |     |
| Establish district contacts     |      |     |     |     |     |     |     |     |      |     |
| Collect data                    |      |     |     |     |     |     |     |     |      |     |
| Analyze data                    |      |     |     |     |     |     |     |     |      |     |
| Follow-up with phone interviews |      |     |     |     |     |     |     |     |      |     |
| Write report                    |      |     |     |     |     |     |     |     |      |     |
| Prepare presentations           |      |     |     |     |     |     |     |     |      |     |

**4. Improving reading comprehension in Spanish and English in Puerto Rico**

| Tasks                         | 2006 |     |     |     |     |     |     |     | 2007 |     |     |     |
|-------------------------------|------|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|
|                               | May  | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan  | Feb | Mar | Apr |
| Obtain tests results          | ■    | ■   |     |     |     |     |     |     |      |     |     |     |
| Enter and analyze data-SPSS   |      | ■   | ■   | ■   | ■   |     |     |     |      |     |     |     |
| Summarize results             |      |     |     |     | ■   | ■   |     |     |      |     |     |     |
| Identify previous research    |      |     |     |     |     |     | ■   |     |      |     |     |     |
| Analyze previous research     |      |     |     |     |     |     |     | ■   | ■    |     |     |     |
| Conduct gap analysis          |      |     |     |     |     |     |     |     | ■    | ■   |     |     |
| Summarize results             |      |     |     |     |     |     |     |     | ■    | ■   |     |     |
| Write report                  |      |     |     |     |     |     |     |     |      |     | ■   |     |
| Disseminate research findings |      |     |     |     |     |     |     |     |      |     |     | ■   |

**5. Retention of qualified science and mathematics teachers**

| Tasks   | 2006 |     |     |     |     |     |     |     | 2007 |     |     |     |
|---|------|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|
|   | May  | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan  | Feb | Mar | Apr |
| <b>Identify additional advisors</b>                 | ■    |     |     |     |     |     |     |     |      |     |     |     |
| <b>Select participating districts</b>               | ■    | ■   | ■   | ■   |     |     |     |     |      |     |     |     |
| Outreach to districts                               | ■    |     |     |     |     |     |     |     |      |     |     |     |
| Review districts' data capacity                     |      | ■   | ■   | ■   |     |     |     |     |      |     |     |     |
| Random selection of nine districts                  |      |     |     | ■   |     |     |     |     |      |     |     |     |
| <b>Data collection from participating districts</b> |      |     |     |     | ■   | ■   | ■   | ■   |      |     |     |     |
| Clean data and clarify questions                    |      |     |     |     | ■   | ■   | ■   | ■   |      |     |     |     |
| Organize and create data sets                       |      |     |     |     |     |     | ■   | ■   | ■    |     |     |     |
| <b>Data analysis</b>                                |      |     |     |     |     |     |     | ■   | ■    | ■   |     |     |
| <b>Prepare reports &amp; manual</b>                 |      |     |     |     |     |     |     |     | ■    | ■   | ■   |     |
| <b>Dissemination activities</b>                     |      |     |     |     | ■   | ■   | ■   | ■   | ■    | ■   | ■   | ■   |
| Identify dissemination opportunities                |      |     |     |     | ■   | ■   | ■   | ■   | ■    |     |     |     |
| Meeting with advisors and participating districts   |      |     |     |     |     |     |     |     |      | ■   |     |     |
| Other presentations and dissemination activities    |      |     |     |     |     |     |     |     |      | ■   | ■   | ■   |

**6. Impact of QTEL professional development program on the academic achievement of English learning students in NYC**

| Tasks                              | 2006 |     |     |     |     |     |     | 2007 |     |     |
|------------------------------------|------|-----|-----|-----|-----|-----|-----|------|-----|-----|
|                                    | Jun  | Jul | Aug | Sep | Oct | Nov | Dec | Jan  | Feb | Mar |
| Retrieve Existing Data from NYCDOE | █    | █   |     |     |     |     |     |      |     |     |
| Data Cleaning                      |      | █   | █   |     |     |     |     |      |     |     |
| Data Analysis                      |      |     |     | █   | █   | █   |     |      |     |     |
| Report Writing                     |      |     |     |     |     |     | █   | █    |     |     |
| Dissemination                      |      |     |     |     |     |     |     |      | █   |     |
| Research Seminar                   |      |     |     |     |     |     |     |      |     | █   |

**7. Approaches to strengthening the education workforce, with studies of mentoring programs for new teachers and of professional learning communities**

| Tasks   | 2006 |     |     |     |     |     |     |     | 2007 |     |     |     |
|---|------|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|
|   | May  | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan  | Feb | Mar | Apr |
| <b>Year 1 Mentoring and Professional Learning Communities</b> | █    | █   | █   | █   | █   | █   | █   | █   | █    | █   | █   | █   |
| Review of existing programs                                   | █    | █   | █   | █   |     |     |     |     |      |     |     |     |
| Quick response review of relevant research                    | █    | █   | █   | █   |     | █   | █   |     |      |     |     |     |
| Collect implementation of programs in NE & Data               |      | █   | █   | █   | █   | █   | █   |     |      |     |     |     |
| Mine for teacher & school data                                |      | █   | █   | █   | █   | █   | █   |     |      |     |     |     |
| Identify common factors and lessons learned                   |      |     |     |     | █   | █   | █   |     |      |     |     |     |
| Prepare research briefs and final reports                     |      |     |     |     |     |     | █   | █   | █    | █   | █   |     |
| Disseminate final reports                                     |      |     |     |     |     |     |     |     |      |     |     | █   |

**8. Deepening analysis of large-scale assessment data to address predictors of performance for English Language Learning students**

| Tasks                               | 2006 |     |     |     |     |     |     |     | 2007 |     |
|-------------------------------------|------|-----|-----|-----|-----|-----|-----|-----|------|-----|
|                                     | May  | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan  | Feb |
| Collect ACCESS datasets             | █    | █   | █   |     |     |     |     |     |      |     |
| Clean ACCESS datasets               |      |     |     | █   | █   |     |     |     |      |     |
| Collect Large scale assessment data |      |     |     |     |     | █   | █   |     |      |     |
| Clean large scale assessment data   |      |     |     |     |     |     |     | █   |      |     |
| Conduct analysis                    |      |     |     |     |     |     |     |     | █    | █   |
| Write-up                            |      |     |     |     |     |     |     |     |      | █   |

**9. Impact of benchmark assessments aligned to state standards on student achievement**

| Tasks  | 2006 |     |     |     |     |     |     |     | 2007 |     |     |     |
|--|------|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|
|  | May  | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan  | Feb | Mar | Apr |
| Identification of implementing and similar profile non-  |      |     |     |     |     |     |     |     |      |     |     |     |
| Analysis of 2003-04, 2004-05 MCAS 5-8 Mathematics Scores |      |     |     |     |     |     |     |     |      |     |     |     |
| Analysis of 2005-06 MCAS 5-8 Mathematics Scores          |      |     |     |     |     |     |     |     |      |     |     |     |
| Publish Findings   |      |     |     |     |     |     |     |     |      |     |     |     |
| Dissemination of Findings                                |      |     |     |     |     |     |     |     |      |     |     |     |



## **Schedule for Task 1**

| <b>Item</b>  | <b>RFP Language</b>   | <b>Due Date</b>                            |
|--------------|---|--|
| Deliverable  | Report on the Establishment of a Needs Analysis and Training and Technical Assistance Response Unit (1.1) | 10 weeks from start of contract            |
| Deliverable  | Create Regional Needs and Responses Database (1.1)  | 3 weeks from start of contract             |
| Deliverable  | Maintain Regional Needs and Responses Database (1.1)  | Ongoing through duration of contract       |
| Deliverable  | Revised Fast Response Plan (1.1)  | 10 weeks from start of contract            |
| Deliverable  | OMB Clearance Package (if required) (1.1)   | ED approved schedule                       |
| Deliverable  | Documentation of IRB Approvals (if required) (1.1)  | ED approved schedule                       |
| Deliverable  | Updates to Annual Fast Response Plan (1.1, required in Subtask 5.1)                                       | July 1 of each contract year               |
| Deliverable  | Monthly Progress Reports (1.1)  | Monthly                                    |
| Deliverables | Revised Plans and Schedules for Year 1 Fast Response Applied Research and Development Projects (1.2)      | Within 10 weeks from start of the contract |
| Deliverables | Updated Plans and Schedules for Years 2 through 5 for Fast Response (1.2)                                 | July 1 of each contract year               |
| Deliverables | OMB Clearance Package (if required) (1.2)   | ED approved schedule                       |
| Deliverables | IRB Documentation (if required) (1.2)   | ED approved schedule                       |
| Deliverables | Monthly Progress Reports on Applied Research and Development Projects (1.2)                               | Monthly                                    |
| Deliverables | Draft Policy Briefs and/or Products for each Fast Response Project (1.2)                                  | ED approved schedule                       |
| Deliverables | Final Policy Briefs and/or Products for each Fast Response Project (1.2)                                  | ED approved schedule                       |

## **Task 2: Rigorous Applied Research and Development**

(b)(4)

Each study and its relevance to regional and national priorities are briefly summarized below, followed by a more detailed plan for each study.

(b)(4)

*Study 1: A Study of Two Models of Virtual Algebra I Courses.*

Online courses hold great promise for bringing equitable access to high-quality content and instruction to students living in rural or resource-poor conditions or who, for varying reasons, are studying outside of traditional school structures. The current research base provides little information to practitioners about the efficacy of online learning in general, and almost none regarding the relative efficacy of different models for delivering online courses. This study will address this gap by examining whether online algebra I courses are as effective as face-to-face courses, and by comparing the outcomes of two different formats for online courses.

This study also responds directly to an expressed interest of state education leaders in the region, by focusing specifically on the experiences of middle and high school students in rural school districts. (b)(4)

(b)(4)

*Study 2: Using Data to Inform Decisions.*

(b)(4)

This study investigates the efficacy of one professional development program that targets teachers' data literacy, and examines whether participation in that program has an impact on the mathematics achievement of urban middle-grades students. While this study will provide insight into a topic of significant national interest, it also directly addresses the New York State education commissioner's strong interest in building the data literacy of that state's teachers, particularly among teachers in urban districts where achievement gaps figure most prominently. This study will be conducted in New York State, and hence will be of particular interest to policymakers and practitioners in the Northeast Region. By examining the efficacy of a mature professional development intervention to support teachers' use of assessment data to support students' learning, this study will address a critical regional and national need.

*Study 3: Accelerating Literacy in the Middle School.*

(b)(4)

This study will be of particular interest to the Adolescent Literacy Network formed last year by the New England states to identify effective programs, build local leadership capacity, and improve state-level and regional knowledge of middle and high school students' literacy needs. Additionally, the Massachusetts State Department of Education is already funding middle and high schools to help them develop literacy programs that can build on the successes of Reading First at the primary level. These activities suggest that the results of this study will be of significant interest within the region as well as nationally.

Each of these three studies uses a controlled, experimental design to investigate the effectiveness of well-defined interventions. The studies address a wide range of core content areas and grade levels, and target high-priority issues including providing rural students with access to rich educational resources, improving the academic performance of urban and low-income students, and effectively integrating students with special needs into comprehensive accountability practices. The rigor of the studies will be ensured by the expertise of each Study Leader, the institutional resources of the partner institutions, and the involvement of a Technical Working Group composed of experts in relevant methodological topics and content areas.

The results of each of these studies will provide educators with the information they need to make well-informed choices about how to select resources, train teachers, and build

technological and human infrastructure that will help them to meet the needs of all of their students, regardless of their location, age, or special developmental or physical needs. Through this suite of studies this Regional Lab will demonstrate how educational research can be defined, conducted, and disseminated in a manner that meets the highest methodological standards while speaking directly to the priorities of practitioners and administrators at every level of the educational system.

The study leaders listed below are the authors of the plan for each study. Timelines for each study are provided after the descriptions of all three studies. Dissemination plans for the study results are provided in the Task 4: Dissemination section of this proposal. The External Technical Working Group (TWG) described under Task 2.2 will review the plans of all studies prior to beginning the work.

## 2.1 Detailed Research Plans for Rigorous Studies

### Study 1: A Study of Two Models of Virtual Algebra I Courses

Study leaders: Glenn Kleiman (EDC), Teresa Duncan (AIR), Rebecca Carey (EDC)

#### *Rationale*

(b)(4)

#### The widespread and rapidly growing use of virtual courses for middle and high school students

Virtual courses delivered through online communications have rapidly become a significant part of the U.S. education system. At the college level, 90 percent of public institutions offer some virtual courses to their students, and it is estimated that 2.6 million college students took online courses in the U.S. in 2004 (Allan and Seaman, 2004). While colleges have led the movement to virtual courses, they are also growing rapidly at the secondary level, showing a tenfold increase in four years, from an estimated 40,000-50,000 students in 2001-2002 to more than 520,000 in 2004-2005 (Hughes, 2005). (b)(4)

(b)(4)

#### The important roles virtual courses can play in rural schools

There are several reasons why virtual courses are of interest in middle and high schools, especially those in rural areas. First, they enable schools to broaden the range of course offerings available to their students. For example, a small school that does not have the resources or a sufficient number of students to offer advanced placement courses can make these courses available online, so that students can take them with “classmates” from other schools. Second,

virtual courses can help schools address shortages of qualified teachers in specific subject areas. For example, a rural school that lacks a qualified physics teacher can arrange for an online physics course taught by a teacher from another location. This allows schools to take advantage of a broader population of potential qualified teachers, including current teachers who will add an additional course; teachers who are not in the classroom due to family responsibilities or other reasons but who could teach a course or two given the flexibility of online teaching; and teachers who are carrying full teaching loads with online classes since they prefer to teach online. Third, online courses provide a means to reach students who do not attend school regularly (e.g., for health issues or behavioral problems). They also provide an alternative way to reach students who don't do well in typical classroom situations, and a new means to offer educational services to home-schooled students in a school's region.

(b)(4)

The high level of interest in virtual courses in the Northeast and the Islands region

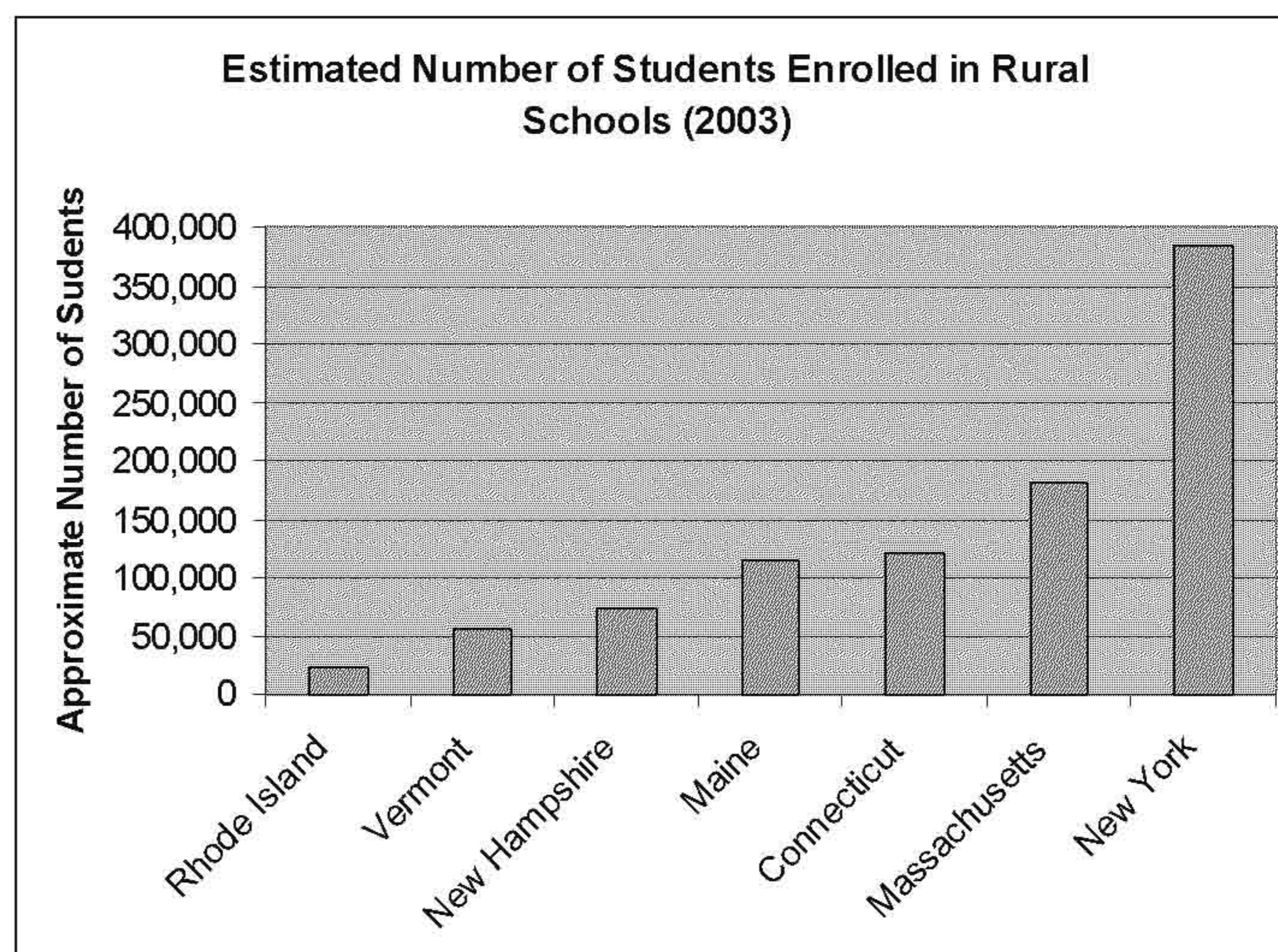
(b)(4)

(b)(4) Building upon work started under NEIRTEC (Northeast and the Islands Regional Technology in Education Consortium) and coordinated by EDC, the Education Technology Directors from the Departments of Education in the seven states, Puerto Rico, and the Virgin Islands are collaborating on the development of a regional e-learning policy. The group recognizes the potential benefits of student courses and teacher professional development delivered online across state boundaries, but also recognizes that, in order to do so while ensuring quality control, a regional policy must be developed. The States in the Northeast region are cooperating to develop common policies, standards and guidelines across the region. This work focuses on the areas of Standards and Quality, Professional Development, Program Evaluation, Finance and Infrastructure, and Governance. At a recent meeting (September, 2005) cross-state issues have been identified in each area to move toward establishing common and reciprocal policies. The ultimate goal is to be able to "erase state boundaries in order to provide equitable access to high-quality e-learning opportunities for students and teachers, regardless of the state of origin of those opportunities" (Jill Weber, personal communication, Nov. 2005). (b)(4)

(b)(4)

The potential of online courses for students in rural schools is especially relevant in the Northeast region since it contains a large number of students and schools in rural settings (see Figure A). Vermont and Maine have the first and second highest percentage of their populations living in rural conditions (National Census Bureau, 2000), with more than half of the students in these states enrolled in rural schools. Over a third of New Hampshire students are enrolled in rural schools (Beeson and Strange, 2003). While the percentage of students enrolled in rural schools in New York is low by comparison at 13.6 percent, given the large population of the State that translates into over 375,000 students in rural schools in New York State. (New York State Total Public Report Card: Comprehensive Information Report, 2005 and Beeson and Strange, 2003). Massachusetts and Connecticut each have about 20% of their total student populations in rural schools, more than 100,000 students in each state. The number of such students is low in Rhode Island.

Figure A. Estimated Number of Students Enrolled in Rural Schools (2003)



The lack of scientifically-based research to inform school leaders' decisions about online courses

While there is rapidly growing use of online courses for students, and these courses can fill critical needs, there is an inadequate research foundation about the effectiveness of virtual courses at the middle or high school levels. There is some preliminary evidence that points to the finding of “no significant difference” between online courses and face-to-face instruction, as was found in two meta-analyses of K-12 research studies by Cavanaugh et al (2001, (b)(4)). However, the number of studies Cavanaugh found to include in her analysis was quite small, and only 10% of that group employed an experimental approach (2004). Another meta-analysis by Ungerleider and Burns (2003) found only two of 232 studies that focused on online learning at the K-12 level met their criteria of being “empirically sound” (using experimental or quasi-experimental methods, using appropriate data analysis, and drawing conclusions appropriate to methodology). So while the use of online courses for middle and high school students is growing rapidly, there is a lack of well-designed research comparing online versus traditional face-to-face instruction, comparing different models of online learning, and establishing whether



online courses are more effective for some students than others. The proposed research will address these gaps and thereby provide solid research to inform educators' decisions about online courses for students.

The importance of students learning Algebra and the current poor performance of students on algebra assessments.

Algebra is a critical course in every student's education, since a solid proficiency in Algebra is both essential to success in more advanced mathematics, (Kilpatrick, et al, 2001), and a critical step in student achievement overall (Gamoran, 2000). Success or failure in this course is a major determinant of students' further work in mathematics and science, and hence a major determinant of future educational and employment opportunities (U.S. Department of Education, 2001). While mastering algebra is critical, student achievement in mathematics in middle and high school is a national and regional concern. In 2003, only 29% of grade eight students scored at or above Proficient on the mathematics assessment administered by the National Assessment of Educational Progress (NAEP), while 39% scored at the Basic and 32% scored at the Below Basic levels (NCES, 2004). While these scores reflect a slight rise from 2000, they still show that 71% of students lack sufficient mastery of mathematics in 8<sup>th</sup> grade. Students from the United States ranked eleventh on the Algebra strand out of twenty-nine comparison countries included in the Trends in International Mathematics and Sciences Study (TIMSS) and thirteenth overall in mathematics in 2003. In a study done by the Program for International Student Assessment (PISA), fifteen year olds from the United States were found to be less mathematically literate than twenty of the twenty-eight comparison countries included in the study (Lemke, et al, 2004).

In the Northeast Region, the percentages of students who tested at Proficient or above on the NAEP grade 8 mathematics assessment range from 24% in Rhode Island to 38% in Massachusetts. In each state, more than 60% of the students show insufficient mastery of the mathematics, scoring at the Basic or Below Basic level (NCES, 2004).

The shortage of qualified mathematics teachers in many rural areas

The No Child Left Behind (NCLB) Act requires a qualified teacher in every classroom, but many rural districts are encountering difficulty in recruiting and retaining sufficient numbers of qualified mathematics teachers. (b)(4)

(b)(4)

(b)(4) Within the region, Connecticut reports that 55 % of those teaching middle school mathematics are not certified to teach mathematics (Blank and Langeson, 2003), and SEA leaders across in Maine, Vermont, and New Hampshire are concerned about recruiting and retaining sufficient qualified mathematics teachers in rural areas. (b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

***Research Questions and Control Conditions***

The two central research questions are:

*1. How effective is online delivery of Algebra I instruction as compared to face-to-face instruction?*

(b)(4)

2. Does the mode of instruction differentially affect subgroups of students?

(b)(4)

**Research Design**

Our discussion of the research design is organized into the following sections:

- *Study Design.* In this section, we describe our study design and address design considerations including sampling, recruitment of schools, random assignment procedures, statistical power, and issues regarding feasibility.
- *Measures and Data Collection Process.* Here we review the relevant constructs, discuss potential measures of these constructs, and describe our data collection schedule.
- *Field Operation Management and Monitoring.* This is a large and complex study that requires careful coordination of multiple efforts by three organizations and staff dispersed across many sites. In this section, we address our plans for managing the work, ensuring high quality, and adhering to timelines.

- *Statistical Methodology.* Here we briefly review the types of data analyses that will allow us to answer our research questions, as well as address our plans for intent to treat analyses and handling crossovers.

(b)(4)

(b)(4)

Each intervention will take place during an entire school year. As part of the course requirements, all students (treatment and control) will be required to take a baseline measure of their mathematical skills and an end-of-year Algebra I exam. For the Distributed Class model, schools will also be required to provide site monitors, who can be teachers of any subject, aides, guidance counselors, or other staff, who will proctor exams and be available to meet in person with students if problems arise (e.g., if students are not doing their work in the online course).

### *Sampling*

We define eligible schools as those that: (1) are situated in the Northern Tier states (Maine, New Hampshire, Vermont), (2) are eligible for Title I funds; (3) have regular school status;<sup>2</sup> (4) are located in rural areas;<sup>3</sup> and (5) have an 8th and/or a 9th and/or a 10th grade. We have decided to focus this study on Maine, New Hampshire, and Vermont because of the large proportions of rural schools that exist in these states, along with a high degree of interest in virtual courses for students. This sampling approach will allow us to address the needs of rural schools and of Title I students by providing a highly qualified Algebra I online teacher for the school for each year it is part of the study.

Based on the 2003-2004 Common Core Data (CCD) preliminary dataset, a total of 302 schools in 263 districts in these three Northeast Region states fit these criteria. These include 177 primary schools, 59 middle schools, 40 high schools, and 26 other schools that enroll preK-12, K-12, or 6-12. Of these 302 eligible schools, Maine has 182 schools in 147 districts, New Hampshire has 49 schools in 47 districts, and Vermont has 71 schools in 69 districts.

(b)(4)

Before we initiate any recruitment activities, we will explore further these schools' characteristics, to identify which schools: (1) offer Algebra I at which grades; (2) have the technology in place to enable students to participate in an online class, so that students have ready access to Internet-enabled computers in classrooms, libraries, or computer labs. Most schools in Vermont, New Hampshire, and Maine will be able to meet our technology requirements (e.g., Maine's Learning Technology Initiative provides a laptop to every 7<sup>th</sup> and 8<sup>th</sup> grade student and teacher); and (3) for the Intact Class Model, we need schools with sufficient enrollment to populate at least two Algebra I classes, so both the experimental and control groups need to meet as full classes at the school location. (For the distributed class model, an online class can be comprised of students from two or more schools.)

<sup>2</sup> This excludes vocational, special education, and alternative/other schools.

<sup>3</sup> Schools identified as rural by NCES, i.e., rural, outside CBSA (any incorporated place, Census-designated place, or non-place territory not within a metropolitan core-based statistical area (CBSA) and defined as rural by the Census Bureau) and rural, inside CBSA (any incorporated place, Census-designated place, or non-place territory within a metropolitan CBSA and defined as rural by the Census Bureau).

We will conduct state, district and school website searches to determine enrollments,<sup>4</sup> Algebra course offerings, and availability of technology. If this information is not available through these means, we will telephone schools to obtain any missing information.

Each of the two Virtual Algebra studies will involve approximately 30 schools in rural Maine, New Hampshire, and Vermont that have an 8th and/or a 9th and/or a 10th grade. We assume an average of about 40 Algebra I students in each school, 20 assigned to the treatment condition and 20 to the control condition. These schools, especially at the middle and high school levels, tend to have students from a large geographic area. They typically contain students from a range of social-economic status levels, including students at high-risk of failure in mathematics. There is minimal diversity in terms of race/ethnicity and ELL in these schools, so we will not be able to disaggregate data on those factors.

### *Recruitment*

To recruit schools, we will build upon EDC's longstanding relationship with SEA and LEA technology and mathematics education leaders in the three states. Our experience in past evaluations has demonstrated the importance and value of building a consensus of support with schools. This leads to schools that have the capacity, willingness, and commitment to implement the intervention and to cooperate fully with the research and data collection procedures. Investing in site development at the front end reduces problems in the back end, helping to ensure smooth implementation of the evaluation.

Once schools have been identified, informational brochures and packets will be sent to the schools, followed by telephone calls. It is important to have clear, non-technical descriptions of the goals of the study, its methods, the roles and responsibilities of the various organizations involved, and the reasons to participate. Our past experience suggests that the research team must craft a message that leads with the benefits of participating and then is clear about the responsibilities assumed by participating schools, students, and by the research team. Schools that clearly understand the benefits of participating and the goals of the study are more likely to relate this to back to parents clearly. The best recruitment strategy, however, requires in-person discussion, especially when trying to explain to schools what participating in a random assignment study means and what their role in the study will be. Having that face-to-face contact is important for recruitment processes and will increase the likelihood that schools will participate and encourage their families to participate. Unfortunately, due to the remoteness of many of the schools, convening a large meeting is not practical and may be a large inconvenience to the schools. This would cause an increased burden to the schools and therefore may reduce recruitment rates.

As a result, we will send out recruiters to schools that show initial interest. We will be sending 3 pairs of recruiters to meet with 2 schools per day for a total of 30 schools per week across all recruiters. We anticipate visiting approximately 90 schools to obtain the (b)(4) students we seek for each study. This will occur twice, once for the Distributed Class model study and the second time for the Intact Class model study. Schools that declined the first time will be kept in the eligible pool, if they meet all the criteria, for the second study.

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<sup>4</sup> There is a great deal of missing enrollment data in the 2003-2004 CCD preliminary dataset, and we cannot say when the dataset will be updated and/or finalized.



(b)(4)

*Power analysis and assumed minimal detectable effect (MDE)*

(b)(4)

Our preliminary power analyses are based on tables developed by Schochet (2005). Schochet's Design II addresses the case of random assignment of students within sites, where site (i.e., school) effects are treated as random (pp. 15-19). Schochet suggests that a within-school design with random school effects will require approximately 828-1311 students to detect an MDE of 0.25 (Schochet, 2005, Design II; see Table C):

**Table C. Preliminary MDE Analysis of SL Study Design**

| <b>Intraclass Correlation (ICC)</b> | <b>Schools (Students) to detect MDE = 0.25</b> |
|-------------------------------------|--|
| 0.10                                | 12 (828)                                       |
| 0.15                                | 16 (1104)                                      |
| 0.20                                | 19 (1311)                                      |

(b)(4)

The numbers in Table C are based on the following assumptions:

- Balanced allocation into the study groups and no sampling of students within units
- Eighty percent power at  $\alpha = 0.05$ , two-tailed
- No finite population correction (fpc)
- A regression  $R^2$  value of 0.50 for the baseline covariate and that 80 percent of students will provide posttest data
- A value of 0.50 for the correlation between treatment and control group students within schools
- The intervention is being tested in a single grade; and 69 students per school
- No adjustments for longitudinal observations or repeated measures on students

(b)(4)

### Measures and Data Collection Process

AIR and Nimble Assessment Systems will collect data from students and teachers and conduct classroom observations and interviews.

*Students' mathematics achievement.* The primary construct of interest is student achievement in Algebra. At the beginning of the school year, we plan to administer an *Algebra readiness test* such as the Iowa Algebra Aptitude Test, 4th Edition (Schoen, Ansley, Hoover, Rich, Barron, & Bye, 1993) or the Orleans-Hanna Algebra Prognosis Test, 3rd Edition (Hanna, 1998). We will use the Algebra readiness test as a baseline measure of student ability, and as a covariate in our analyses. (b)(4)

(b)(4)

(b)(4)

All of the assessments will be administered and scored electronically for cost effectiveness. We will work closely with USED and the external Technical Work Group to determine the most appropriate measures for our needs, taking into account factors such as need for calculators and feasibility of delivering the assessment by a secure online system.

*Background and attitudinal surveys.* While student math achievement is our primary outcome measure, we believe it is important to gather background and attitude data to provide additional context for our findings. We will include background questions (e.g., grade level, age, gender, experience and comfort with using technology) and a measure of attitude toward mathematics when we administer the Algebra readiness test to students. We will administer the attitudes toward mathematics measure again at the end of the year, along with a course evaluation. The student course evaluation will contain three sections, one focusing on the quality of the material (e.g., of the assignments, the textbook), another focusing on the quality of instruction (e.g., regarding the teacher's organization, preparation, communication), and the last on overall

judgments of the experience (e.g., how difficult the course was; how prepared one feels for the next math class, the advantages and disadvantages of the course).

(b)(4)

- *2006-2007*: Collect data from 600 students, 300 in Distributed Class classes and 300 in traditional classrooms (schools and parents will be recruited Spring and Summer 2006)
- *2007-2008*: Collect data from 600 students, 300 in Distributed Class classes and 300 in traditional classrooms (schools and parents will be recruited Spring and Summer 2007)
- *2008-2009*: Collect data from 600 students, 300 in Intact Classrooms and 300 in traditional classrooms (schools and parents will be recruited Spring and Summer 2008)

- 2009-2010: Collect data from 600 students, 300 in Intact Classrooms and 300 in traditional classrooms (schools and parents will be recruited Spring and Summer 2009)

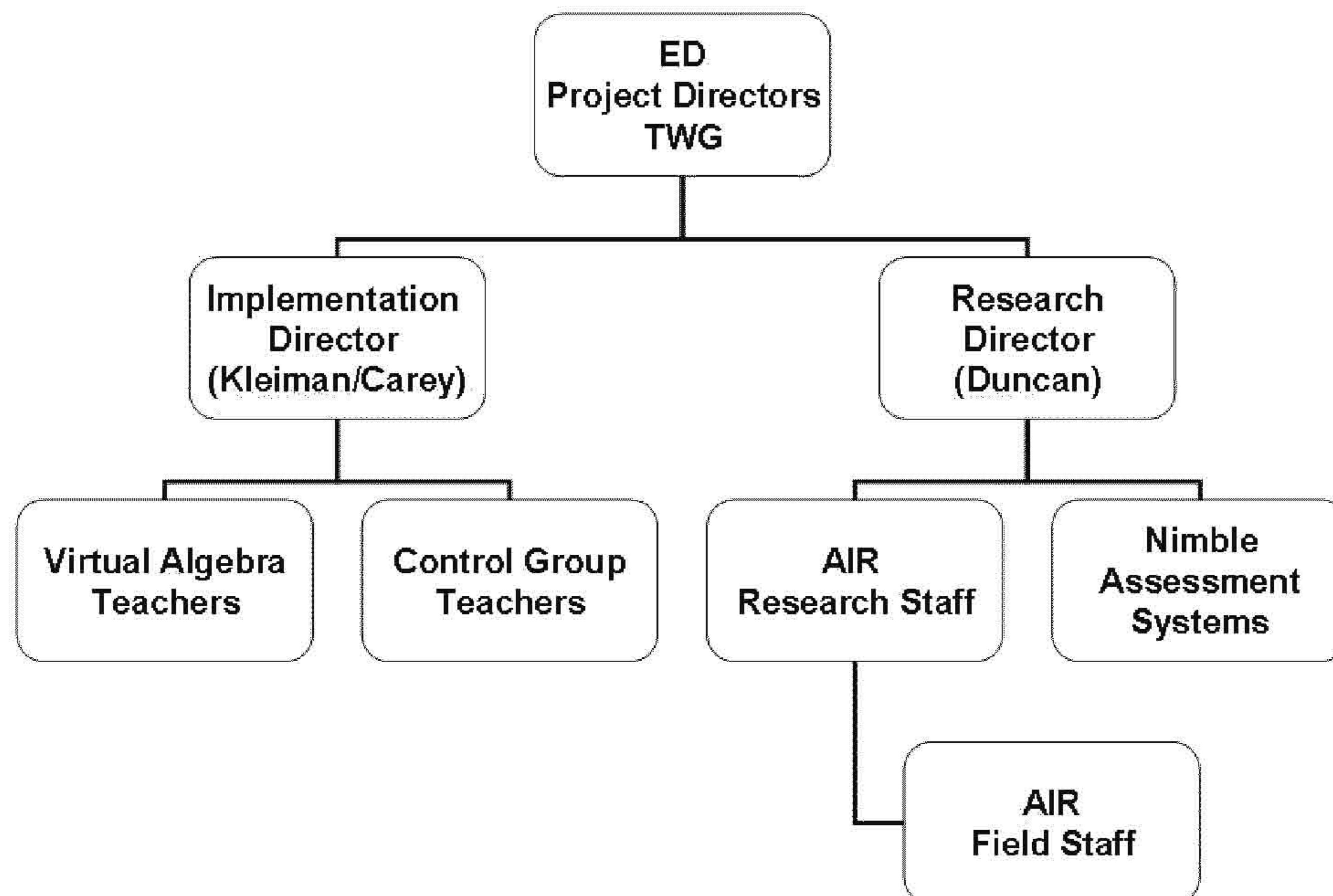
(b)(4)

The data collection strategy must ensure that all the data needed for the evaluation are collected on a schedule that allows for meaningful use of the information and that data collection procedures can be implemented easily across all sites. We will carefully design our data collection plans so that we do not gather data at inopportune times (e.g., months when states are doing their testing; periods immediately prior to and after school breaks). We understand that these may be difficult times when schools are focusing on other matters or when attendance may be low. Sharing with schools our understanding of these sensitive periods will provide schools an assurance that we are trying to decrease their burden and not impose on their schedules. This, in turn, will increase school participation and possibly increase parents' willingness to volunteer their children to the study.

#### Field operation management and monitoring

EDC will be responsible for choosing the Virtual Algebra programs, arranging for local implementation, and ensuring that treatment schools maintain fidelity to program tenets. AIR will be responsible for recruiting and randomizing participants, selecting and refining measures, collecting data, scoring and analyzing data, and writing up reports. Nimble Assessment Systems will develop secure online systems through which the math pretest, Algebra I end-of-year exam, background and attitudinal surveys will be delivered. Nimble will also provide the necessary technical assistance and maintenance of these systems, and deliver to AIR data files with the necessary documentation at the end of each round of data collection. The VA study management structure is displayed in Figure C.

**Figure C. Virtual Algebra Study Management Structure**



Statistical Methodology

The basic logic of our analytic strategy is to compare students that are randomly assigned to receive an intervention with those that are not, and to conduct subgroup analyses to explore the differing effects of the intervention dependent on student, school, setting, and implementation level characteristics. Because treatment groups are determined at the student level, the primary unit of analysis will be the students. However, the data for this evaluation can be thought of as hierarchical or nested. Students are nested within classrooms or teachers, and teachers and classrooms are nested within schools. Because units at the same level are not statistically independent from one another, the most appropriate way to estimate the effect of the interventions on students' algebra achievement and to correctly estimate the statistical precision of these estimates is to apply a multilevel model. The multilevel models will be estimated using Hierarchical Linear Modeling (HLM) software, or solved into a composite equation and estimated using SAS Proc Mixed.

*Intent-to-treat analysis.* In an intent-to-treat (ITT) analysis, all participants who were randomly assigned to study groups are included in the analysis, regardless of noncompliance, protocol deviations, withdrawal, and anything that happens after randomization. The primary concern behind the ITT analysis is that deviation from the original randomized groups can compromise the group equivalence established through randomization. The ITT analysis permits one to depend on the randomization to produce groups that do not differ systematically. (b)(4)

(b)(4)

(b)(4)

***Schedule: A Study of Two Models of Virtual Algebra I Courses***

*Note: Following is the updated projected timeline for this study. However, this timeline (including starting dates) will be adjusted as necessary based on the revised detailed research*

plan submitted to ED for review and on the adjustments made in UAP. In addition to the information below, we will submit monthly reports. Any changes will be noted in our updated UAP to be submitted on July 1 of each year of the contract. All other ED, OMB, and IRB requirements will be met.

| Tasks  | 2006 |    |    |    | 2007 |    |    |    | 2008 |    |    |    | 2009 |    |    |    | 2010 |    |    |    |
|--|------|----|----|----|------|----|----|----|------|----|----|----|------|----|----|----|------|----|----|----|
|  | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 | Q3 | Q4 |
| <b>School Selection for 1st Comparison</b>                 | █    | █  |    |    | █    | █  |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Identify possible schools                                  | █    |    |    |    | █    |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Create & distribute materials                              | █    | █  |    |    | █    | █  |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Confirm participation                                      |      | █  |    |    |      | █  |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| <b>Recruit Participants for 1st Comparison</b>             |      | █  | █  |    |      | █  | █  |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Get student permissions                                    |      | █  | █  |    |      | █  | █  |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Recruit teachers   |      | █  |    |    |      | █  |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Prepare teachers for study                                 |      |    | █  |    |      |    | █  |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Assign students to condition                               |      |    | █  |    |      |    | █  |    |      |    |    |    |      |    |    |    |      |    |    |    |
| <b>Develop Instruments</b>                                 | █    | █  | █  |    | █    | █  | █  |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Create instruments   | █    |    |    |    | █    |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Pilot instruments  |      | █  |    |    |      | █  |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Refine instruments   |      |    | █  |    |      |    | █  |    |      |    |    |    |      |    |    |    |      |    |    |    |
| <b>Run 1st Comparison</b>                                  |      |    | █  | █  | █    | █  | █  | █  | █    | █  | █  | █  |      |    |    |    |      |    |    |    |
| Enroll students  |      |    | █  |    |      | █  |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Administer pre-surveys                                     |      |    | █  |    |      | █  |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Administer post-surveys                                    |      |    |    |    |      | █  |    |    |      | █  |    |    |      |    |    |    |      |    |    |    |
| <b>Data Analysis for 1st Comparison</b>                    |      |    | █  | █  | █    | █  | █  | █  | █    | █  | █  | █  |      |    |    |    |      |    |    |    |
| Pre-survey analysis  |      |    | █  | █  | █    | █  | █  | █  | █    | █  | █  | █  |      |    |    |    |      |    |    |    |
| Final analysis   |      |    |    |    |      | █  | █  | █  |      | █  | █  | █  |      |    |    |    |      |    |    |    |
| Report on 1st comparison                                   |      |    |    |    |      |    |    |    |      | █  | █  | █  |      | █  | █  | █  |      |    |    |    |
| <b>School Selection for 2nd Comparison</b>                 |      |    |    |    |      |    |    |    | █    | █  |    |    | █    | █  |    |    |      |    |    |    |
| Identify possible schools                                  |      |    |    |    |      |    |    |    | █    | █  |    |    | █    | █  |    |    |      |    |    |    |
| Create & distribute materials                              |      |    |    |    |      |    |    |    | █    | █  |    |    | █    | █  |    |    |      |    |    |    |
| Confirm participation                                      |      |    |    |    |      |    |    |    | █    | █  |    |    | █    | █  |    |    |      |    |    |    |
| <b>Recruit Participants for 2nd Comparison</b>             |      |    |    |    |      |    |    |    | █    | █  |    |    | █    | █  |    |    |      |    |    |    |
| Get student permissions                                    |      |    |    |    |      |    |    |    | █    | █  |    |    | █    | █  |    |    |      |    |    |    |
| Recruit teachers   |      |    |    |    |      |    |    |    | █    | █  |    |    | █    | █  |    |    |      |    |    |    |
| Prepare teachers for study                                 |      |    |    |    |      |    |    |    | █    | █  |    |    | █    | █  |    |    |      |    |    |    |
| Assign students to condition                               |      |    |    |    |      |    |    |    | █    | █  |    |    | █    | █  |    |    |      |    |    |    |
| <b>Run 2nd Comparison</b>                                  |      |    |    |    |      |    |    |    |      |    | █  | █  | █    | █  | █  | █  | █    | █  | █  | █  |
| Enroll students  |      |    |    |    |      |    |    |    |      |    | █  | █  | █    | █  | █  | █  | █    | █  | █  | █  |
| Administer pre-surveys                                     |      |    |    |    |      |    |    |    |      |    | █  | █  | █    | █  | █  | █  | █    | █  | █  | █  |
| Administer post-surveys                                    |      |    |    |    |      |    |    |    |      |    |    |    | █    | █  | █  | █  | █    | █  | █  | █  |
| <b>Data Analysis for 2nd Comparison &amp; Final Report</b> |      |    |    |    |      |    |    |    |      |    | █  | █  | █    | █  | █  | █  | █    | █  | █  | █  |
| Pre-survey analysis  |      |    |    |    |      |    |    |    |      |    | █  | █  | █    | █  | █  | █  | █    | █  | █  | █  |
| Final analysis   |      |    |    |    |      |    |    |    |      |    |    |    | █    | █  | █  | █  | █    | █  | █  | █  |
| Report on 2nd Comparison                                   |      |    |    |    |      |    |    |    |      |    |    |    |      |    | █  | █  | █    | █  | █  | █  |
| Final report on both                                       |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    | █    | █  | █  | █  |

## Using Data to Inform Decisions

Study Leaders: Katherine McMillan Culp (EDC) and Nancy Love (TERC)

### *Rationale*

A notable outgrowth of the No Child Left Behind Act (Elementary and Secondary Education Act, 2001) is that educators are being asked to think much more systematically about educational decision-making, and are beginning to use data to inform their decisions about everything from resource allocation to instructional practice. As researchers at the UCLA Center for Research on Evaluation, Standards, and Student Testing (CRESST) note, "Data-based decision-making and use of data for continuous improvement are the operating concepts of the day. These new expectations, that schools monitor their efforts to enable all students to achieve, assume that school leaders and teachers are ready and able to use data to understand where students are academically and why, and to establish improvement plans that are targeted, responsive, and flexible" (Mitchell, Lee, & Herman, 2000, p. 22). However, despite encouragement at the policy level, there is growing consensus that schools are not adequately prepared for the task (Herman & Gibbons, 2001, Olsen, 2003).

The lack of training for teachers and school administrators in how to use data to improve student performance has posed a long-term problem (Schafer & Lissitz, 1987; Wise, Lukin, & Roos, 1991) that has become a high priority nationally and a critical need in the region. It is rare to find schools in which teachers routinely think critically about the relationships between instructional practices and student outcomes (Confrey & Makar, 2005; Hammerman & Rubin, 2002; Kearns & Harvey, 2000). (b)(4)

(b)(4)

Recent research conducted by Education Development Center has found that in the absence of systematic training in a particular approach to data-driven decision-making, educators working at different levels of a school system have distinctive intuitive approaches to the process. For example, school administrators use high-stakes test data to understand *general* patterns of performance, identifying class-, grade-, and school-wide strengths and weaknesses so that they can allocate resources and plan professional development and other kinds of targeted intervention activities (e.g., after school remediation, summer school attendance, etc.). Teachers, in contrast, tend to use multiple sources of data – homework assignments, in-class tests, classroom performances, as well as impressionistic, anecdotal, and experiential information – to inform their thinking about their students strengths and weaknesses (Brunner, Fasca, Heinze, Honey, Light, Mandinach, & Wexler, 2005; Honey, Brunner, Light, Kim, McDermott, Heinze, Bereiter, & Mandinach, 2002; Light, Wexler, & Heinze, 2004). While drawing on varied sources of data to form opinions about students' competencies is not new behavior for teachers, our research (Mandinach, Honey, Light, Heinze, & Rivas, 2005) and that of others (Confrey & Makar, 2002, 2005; Hammerman, & Rubin, 2002, 2003) suggests that teachers are more inclined to examine factors that contribute to individual patterns of behavior and to think on a case-by-



case basis, rather than look for patterns in data at different levels of aggregation, such as classroom-wide patterns. As a result, teachers' decision making strategies often lack systematicity, from student-to-student, class-to-class, and year-to-year; are unintentionally tinged with personal bias; and rarely involve a systematic analysis of the relationship between student performance and instructional strategies and materials.

And yet, data literacy – the ability of instructional leaders and teachers to work individually and collectively to examine outcomes-based achievement data, formative assessment measures of student performance and students' work products, and to develop strategies for improvement based on these data – is now widely recognized as a critical strategy in the academic performance of schools (Fullan, 1999; Haycock, 2001; Johnson, 1996; Love, 2004; Schmoker, 1999; Zalles, 2005). A major piece of data literacy is the ability to generate only the data that are needed, and to make full use of those data that are collected. But it is clear that schools are not using the data they have. The National Research Council (1996) notes that, “far too often, more educational data are collected and analyzed than are used to make decisions or take action” (p. 90). Lacking techniques for making sense of assessment data, too many schools and districts draw only the most superficial conclusions from the data available, missing a wealth of opportunities to learn about the strengths and weaknesses of their educational programs. Even though the data exist, for those resources to become meaningful to educators, they need to be transformed into information, and ultimately into usable or actionable knowledge (Mandinach & Honey, 2005).

Taken as a whole, the emerging research in this area suggests that what is needed is a comprehensive and purposeful approach to the use of data that not only informs the practices of individual teachers, but is supported as an essential and strategic part of school wide improvement strategies. With support from the National Science Foundation, and the Eisenhower Regional Alliance for Mathematics and Science Education, TERC has created a professional development model that trains teachers and school leaders in how to make use of data in systematic and rigorous ways to continuously improve student performance. The *Using Data* professional development model introduces teachers to a process through which they learn to frame questions, collect data, formulate hypotheses, draw conclusions, take action, and monitor results. (Love, 2002). The *Using Data* model recognizes the need for a systemic, multifaceted, and a sustained approach to the complex challenge of preparing educators to use data effectively and accurately.

Preliminary studies using mixed methodologies have been conducted to examine the impact of the *Using Data* treatment. These studies indicate that schools implementing the *Using Data* approach have had an impact on teacher classroom behavior and on their approach to data analysis and interpretation (Love, 2004), and has also improved student learning as indicated by state and formative assessments (b)(4); Zuman, 2005). External evaluations of the intervention have been conducted in: Canton, OH, a small urban area which has a large percentage of economically disadvantaged students; Johnson County, TN, a rural area with high percentages of disadvantaged students; Clark County, NV, the fastest growing urban district in the country; and rural schools serving Native American children in Arizona. Results showed substantial gains in student performance on state accountability measures in the areas of math and language arts.

Love (personal communication) has provided us with preliminary data from a recent *Using Data* implementation in Fentress County, TN that tested the intervention in two middle schools and

used two other county middle schools as a comparison. The data, reflecting results from 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> grade science classes, indicate that across science skills and knowledge, the intervention schools consistently outperformed the comparison schools, as well as schools system-wide, and across the state. Although these studies are preliminary and have not used the strongest possible methodology, they point to the potential efficacy of the *Using Data* model.

### ***Key Research Questions and Issues to be Addressed***

The focus of this study is to test the impact of two versions of a professional development intervention that addresses the use of data to inform instructional decision-making on student achievement in mathematics learning. The intervention, *Using Data*, is a well-established professional development program developed by Nancy Love and her colleagues at TERC. The program uses a two-level structure through which some teachers are trained by professional trainers from TERC (data coaches), and other teachers (the data team) are trained locally by the data coaches. The program is delivered in both twelve-session and six-session formats.

Our main research question is whether students whose teachers have been trained to use data through either the twelve-session (high intensity) or six-session (low intensity) versions of the intervention outperform students whose teachers are in a control group using their usual practices.

A second question will test the differential impact between the twelve-session and the six-session models. To date, preliminary research has focused on examining the more intensive model. If the six-session model were to show the same impact as the twelve-session, this would make the intervention that much more scalable.

A third research question focuses on the directness or indirectness of the intervention. We seek to determine if there is differential impact between the two models of intervention transmission. Do teachers trained directly by the *Using Data* developers produce stronger student outcomes than teachers who participated in the data team, or are there no differences in outcomes? The latter finding would suggest that there can be effective transmission from the data team facilitators to other members of the school community, which would provide strong guidance for scaling this professional development program.

The specific research questions to be addressed are:

- Does the *Using Data* intervention, in comparison to practice as usual, affect how teachers interpret and act upon data so that their actions positively impact student performance in mathematics as measured by standardized achievement tests?
- Is there differential impact from the twelve-session (high intensity) versus the six-session (low-intensity) model of intervention on student achievement?
- Is there differential impact from the direct versus the indirect model of transmission of the intervention on student achievement?

### ***Research Design***

#### **The *Using Data* Intervention**

The purpose of the *Using Data* intervention (Love, 2002) is to build the capacity of teachers and school administrators to become skilled and knowledgeable data facilitators who are capable of working with other teachers in their schools. As the primary recipients of the *Using Data*

intervention, data facilitators are expected to lead data teams to engage in the following strategic practices: framing questions, collecting data, formulating hypotheses, drawing conclusions, taking action, and monitoring results.

TERC has developed two different models for the *Using Data* intervention, a twelve-day training model that typically runs over a 24-month period and a six-day training model that is completed within 12 months. Both models are designed to enable practitioners to learn how to:

- Use multiple sources of student learning data (classroom assessments; criterion-referenced, norm-referenced, and performance assessments; and student work), observations of teaching, and interactions with colleagues to reflect on and improve practice (National Council of Teachers of Mathematics, 1995; National Research Council, 1996);
- Use data disaggregated by race, gender, socioeconomic status, and other factors to uncover gaps in performance, opportunities to learn, and other trends (National Council of Teachers of Mathematics, 1995);
- Distinguish reliable, valid, and accurate data from unreliable, invalid, and inaccurate data;
- Engage in constructive dialogue about data, using a three-phase process of activating and engaging, observing, and drawing conclusions;
- Develop grade-level, school, and district assessment plans that include multiple measures of student achievement (National Research Council, 1996), draw on current research, and take advantage of a variety of mathematics assessments such as TIMSS, NAEP, and state-level assessment data;
- Make sound inferences from assessments about achievement and opportunities to learn and learn to distinguish observation from inference (National Council of Teachers of Mathematics, 1995; National Research Council, 1996); and
- Develop systemic action plans for school-wide improvement of mathematics based on rigorous collection and analysis of data.

The professional development sessions provide participants with the opportunity to engage in the process as learners, practice facilitating specific tasks, and discuss and investigate how they can apply what they are learning in their own schools. Professional development sessions are sequenced so that data facilitators can take what they learn and apply it in their work with other teachers (data teams) in their schools. Each professional development session is defined by the following structure: (1) Learning goals for the data facilitators; (2) Framing questions; (3) Specific tasks for data facilitators to carry out with their data teams; (4) Outcomes. The twelve- and six-session *Using Data* professional development sequences are described below.

### Twelve- Day *Using Data* Intervention (High Intensity)

#### **Day 1 - Building the Foundation for the Strategic and Systematic Use of Data**

##### *Learning Goals*

- Understand content specific goals for improvement based on national and local standards

- Understand the strategies for framing questions, collecting data, formulating hypotheses, drawing conclusions, taking action, and monitoring results that underlie being able to engage in data work within a school
- Understand the implementation requirements of *Using Data* strategies
- Understand the role of data facilitators
- Understand how to establish data teams
- Use data and planning tools to assess current uses of data and plan for implementation
- Understand how to build broad support for strategic data work within a school

### *Framing Questions*

- How can we organize ourselves for collaborative inquiry?
- What are our core commitments to school and mathematics improvement?

### *Tasks 1-3*

1. Establish data teams
2. Build understanding of *Using Data* process
3. Define objectives of data team's work

### *Outcomes*

- Data teams and support for program established
- Data collection begun.

## **Days 2-6 - Identify Content Focused Student Learning Problem**

### *Learning Goals*

- Accurately identify a weakness in students' understanding through analysis of aggregate, strand, item level data and student work and triangulation of multiple data sources
- Use disaggregated data to pinpoint individual students and student groups having difficulty

### *Framing Question*

- What is our student learning problem/goal?

### *Tasks 4-10*

1. Engage with aggregate data
2. Engage with disaggregated data
3. Engage with strand or cluster data
4. Engage with item-level data
5. Engage with student work
6. Triangulate
7. Identify student learning problem/goal

### *Outcome*

- Student learning problem/goal identified accurately and in detail

### **Days 7-8 - Verify Causes**

#### *Learning Goals*

- Verify cause of identified student learning program using data about programs and practices to pinpoint weaknesses in curriculum, instruction, assessment, teacher preparation, and beliefs and relevant research
- Conduct equity check to assure that causes are not attributed to students and their backgrounds

#### *Framing Question*

- How can we be sure that the causes of our problem are grounded in research and our own local data and do not blame students' failure on causes that are out of our control?

#### *Tasks 11-12*

8. Conduct cause-and-effect analysis
9. Investigate curriculum, instruction, assessment, equity, critical supports, and relevant research

#### *Outcome*

- Causes are grounded in research and local data and point to programs, policies, and practices contributing to identified student learning problem

### **Days 9-10 - Generate Solutions**

#### *Learning Goals*

- Use a logic model and best practice research to identify solutions that are logically linked to interim and final outcomes
- Develop a monitoring plan for frequently monitoring of student progress and implementation

#### *Framing Question*

- How can we be sure that are actions are producing the intended results?

#### *Tasks 13-15*

10. Generate Solutions
11. Refine outcomes and student learning goals
12. Develop a monitoring plan

#### *Outcome*

- Interventions and plans for implementing and monitoring are of high quality

### **Days 11-12 - Achieve Student Learning**

#### *Learning Goals*

- Use summative and formative assessment data as evidence of achievement

- Apply learning to next cycle of improvement
- Understand conditions that support implementation, institutionalization, and culture change

### *Framing Question*

- Have we achieved our goal?
- What have we learned from the process?

### *Tasks 16-17*

- 16. Ensure specific actions are taken
- 17. Monitor, adjust, and evaluate

### *Outcomes*

- Improvements in student outcomes and narrowing of achievement gaps
- Expansion of culture of data-driven dialogue

### Six Day Intervention (Low Intensity)

The six-session intervention focuses on data literacy, but spends less time on how to facilitate and lead data teams around specific tasks. Data facilitators participate in each of the workshops as learners, but have fewer opportunities to practice and reflect on application. The importance of consulting research and standards in formulating a response to data analysis is emphasized, but workshops do not provide the opportunity for engaging with research during the sessions themselves. The six-session sequence also does not treat equity issues as extensively as the twelve-session sequence.

Day 1: Building the Foundation for the Strategic and Systemic Use of Data (Tasks 1-3)

Days 2-3: Identify Content Focused Student Learning Problem (Tasks 4-10)

Day 4: Verify Causes (Tasks 11-12)

Day 5: Generate Solutions (Tasks 13-15)

Day 6: Achieve Student Learning (Tasks 16-17)

### Content Focus of the *Using Data* Study

The intervention is designed to enable teachers to strategically investigate a specific content domain. This study will focus on elementary math for a number of reasons, including first and foremost the expressed needs of state education commissioners and deputy commissioners within the region. Improving mathematics learning is, along with improving reading achievement, a national priority for elementary education, but it has not yet been addressed as comprehensively as reading has been addressed. The need for improvement is clear: beginning in elementary school, American children fall short in the area of mathematics. Children from China, Japan, and Korea outperform their American counterparts in mathematics achievement as early as kindergarten (Stevenson, Lee, & Stigler, 1986) as well as during the primary school years (Mullis, Martin, Beaton, Gonzalez, Kelly, & Smith, 1997; Mullis, Martin, Gonzalez, & Chrostowski, 2004) and beyond (Mullis, Martin, Gonzalez, Gregory, Garden, & O'Connor, 2000). Within the U.S., low-income children—a group comprised of a disproportionate number

of African-Americans and Latinos (National Center for Children in Poverty, 1996) show lower average levels of academic achievement than do their middle- and upper-income peers (Denton & West, 2002). On a recent international assessment of 15-year-olds' mathematical problem-solving skills, the United States had the smallest percentage of top performers, and the largest percentage of low performers, of all the participating developed countries (U.S. Department of Education, 2004). These shortcomings are of particular concern because success in mathematics learning at the elementary level lays a critical foundation for later mastery of more complex mathematical concepts during middle and high school years—courses which are, in turn, gatekeepers for future achievement in careers related to science and engineering as well as mathematics (Pelavin & Kane, 1990).

### Timeline for Delivery of the Intervention

The *Using Data* project team at TERC will be responsible for providing the ongoing professional development for the intervention. This team has experience working in urban and rural districts throughout the country. The twelve-session intervention will take place over an 18-month period beginning in the late spring of 2007 with a one-day training that builds the foundation for the approach within the school and district and facilitates planning in the district. The second professional development session will occur during the summer of 2007 and consist of four days of activities. These sessions will allow participants to focus on specific student-learning issues in the area of mathematics and work with specific data interrogation strategies. A two-day workshop will take place in early November 2007, during which participants will reflect on progress to date, continue working on their identified student learning problems, and begin to address the topic of verifying causes. Also during the fall, half-day site visits to intervention schools will be conducted. The purpose of the site visits is to provide data facilitators with on-the-ground help in addressing specific issues or challenges they have identified. In March of 2008 there will be a one-day session to finish working on verifying causes and to reflect again on progress. There will be another half-day set of site visits to intervention schools in the spring. The second year of the project will begin with a three-day summer workshop focused on generating solutions and beginning to address the topic of achieving results. There will be no workshops in the fall of 2008. There will be half-day site visits to the intervention schools. The final workshop will occur in the spring of 2009. This session will conclude the achieving results topic. At the time of the spring workshop, the *Using Data* team will make a final, half-day site visit to intervention schools.

The six-session intervention will take place over one year. This intervention also will begin with a one-day introduction in the late spring of 2007 that lays the foundation for the approach within the school and the district and facilitates planning in the district. The summer workshop will be three days long and will focus on the identification of student learning problem and the verification of causes. There will be a one-day session in the fall of 2007 focused on the generation of solutions. In conjunction with the fall workshop there will also be half-day site visits to intervention schools. There will be another set of site visits in the spring of 2008. The final session will be a one-day workshop on achieving results. This session will either be held in the spring or summer of 2008, depending on the preferences of participating schools.

### Target Group

The states and protectorates of the Northeast and Islands region are not unique in their need to use data in more effective ways: this is an issue of national concern. For the purposes of this

study we will target urban schools in the state of New York. There are several reasons why we have chosen to focus on this target group. First, the proposed intervention has shown preliminary but promising results in a number of areas around the country that serve low achieving students in urban settings, a population that is strongly represented in New York State. Second, New York state administrators have specifically identified the need to build capacity among teachers and school administrators in data driven practices as an area of prime concern for their own work and for purposes of policy guidance. In addition, they are keenly interested in helping their urban schools perform more effectively in the area of elementary mathematics instruction. Focusing on a single state also enables us to use a common statewide assessment as the outcome measure and, finally, significantly curtails the overall costs for this Task 2 study.

Thus, the target group for the *Using Data* intervention will be urban elementary school teachers, focusing on grades 3 through 5 in New York. There are 97 high-need urban districts in the state who received Title 1 funds during the 2004-2005, representing a total of 975 elementary schools.

(b)(4) will approach the 97 Title 1 urban districts in New York and solicit their interest in participating in the study. (b)(4)

(b)(4)

Given the level of commitment required for this study, we need to work closely with district leaders who can agree to collaborate with us for four years. As is specified later in the Sample Design section, we will use a multiple-level randomization strategy. We will randomly select districts from among the available pool of interested urban districts. We then will randomly select schools from within each district and assign them to treatment and control groups. We will necessarily over-sample to ensure sufficient sample sizes regardless of potential attrition. Teachers within schools who have expressed interest in participating in the study then will be assigned to one of the direct intervention groups or the control. More specific information is provided in the Sample Design section.

### Fidelity

Fidelity of the direct implementation of the intervention will be a measure of attendance at the professional development workshops. Does each individual teacher attend or fail to attend each of the workshops? We will use this data to calculate an overall attendance rate for each districts' training workshop series. For the indirect intervention, we will document the number of participants in each session, the intended number of participants, and the intended total number of sessions to allow us to calculate an overall attendance rate for sessions led by a data facilitator (teacher trained through the direct intervention process).

### Student Progress

Student progress will be measured using the New York State Testing Program (New York State Department of Education, 2005) mathematics assessments for grades 3 and 4. These tests are administered annually in March, and thus can serve as both baseline and outcome measures. The baseline measure will be students' 3<sup>rd</sup> grade math test score, administered in the spring prior to students entering 4<sup>th</sup> grade with teachers who have been exposed to the intervention. The students' 4<sup>th</sup> grade math test score will serve as the outcome measure.



## Feasibility and Design Considerations

Given that there is no easy direct comparison group that may be trained in some other data interrogation methodology, we will compare the low and high intensity treatment conditions to one another and to what non-participant teachers in the same district typically do in their classrooms with respect to using data to guide instruction. This means the control teachers will continue with their practice as usual, experiencing no intervention. An essential part of the design is to keep the interventions in specific schools, while other schools serve in the control group. The control group schools will be selected from within the same districts and have similar demographics and levels of past achievement as schools in the low and high intensity treatment groups.

The timeline of the study is constructed to allow for examination of the impact of the intervention on two cohorts of 4<sup>th</sup> grade students as their teachers have worked through either the low or high intensity conditions. The overall timeline for the study is as follows:

(b)(4) 2006 – (b)(4): Recruit districts and schools and selecting the sample and obtain necessary IRB approvals.

(b)(4)

(b)(4)

Summer 2007: Train 4<sup>th</sup> grade teachers and a small sample of 5<sup>th</sup> grade teachers.

Spring 2008: Collect 3<sup>rd</sup> grade test scores (b)(4)

(b)(4)

Fall 2008: Teachers taking the low intensity model will complete their training as data facilitators, and those in the high intensity group will be half done.

Spring 2009: Collect 4<sup>th</sup> grade test scores as well as 3<sup>rd</sup> grade test scores.

Spring 2010: Collect 4<sup>th</sup> grade test scores.

## Key Constructs and Measures

Student standardized tests will serve as the baseline and outcome measures for this study, measuring the impact of the *Using Data* intervention on student performance. The baseline measure we will use is the New York State Testing Program's grade 3 mathematics assessment. The outcome measure we will use is the New York State Testing Program's grade 4 mathematics assessment. These assessments are directly linked to the New York State Standards in Mathematics for grades 3 and 4 (New York State Department of Education, 2005). Items on these tests are separated into seven categories of skills and knowledge: mathematical reasoning, number and numeration, operations, model/multiple representation, measurement, uncertainty, and patterns/fractions.

## Power Analysis

(b)(4)

(b)(4)

- Balanced allocation into the study groups and no sampling of students within units
- Eighty percent power at alpha = 0.05, two-tailed
- Values of 0.20 for the between-school and between-classroom ICCs, fixed school district effects and random classroom effects
- No finite population correction (fpc)
- Regression  $R^2$  values of 0.20 to 0.50 for the baseline covariate and that 80 percent of students will provide posttest data
- There is an average of 3 classrooms per school per grade; and an average of 23 students per classroom
- No adjustments for longitudinal observations or repeated measures on students

(b)(4)

(b)(4)

(b)(4)

(b)(4)

### Sampling Design

The targeted sample for this study will be urban districts in the state of New York that are receiving Title 1 funds. We will focus specifically on elementary schools in districts where there are multiple elementary schools housing grades 3, 4, and 5 in the same building. The focus of the study's intervention will be 4<sup>th</sup> grade teachers. Urban schools are likely to have several teachers at each grade level. Because the first form of randomization will occur at the school level, some schools will be assigned to serve as controls, while others will receive either the low or high intensity versions of the intervention. Within the treatment group schools, all 4<sup>th</sup> grade teachers will be randomly and evenly divided between the direct (data facilitator) and indirect (data team) treatment groups.

Thus, randomization will occur at multiple levels. First, we will randomly select the districts from among the 97 urban districts that are receiving Title 1 funds, who also meet specific criteria for participation, and who are willing to collaborate with us. We then will randomly select schools to be either in the control group, the low intensity treatment group, or the high intensity treatment group. Teachers within schools will be nested within those groups since the level of randomization is at the school level. Within each treatment school, teachers will be randomly assigned to either the direct or the indirect treatment groups.

In order to have sufficient power as noted above in the power analysis, the study's design will require multiple districts that have multiple elementary schools, where there are several 4<sup>th</sup> grade classrooms. Through the process of multiple randomizations, we are attempting to minimize any potential differences between the treatment groups and the control teachers and students. All the teachers will be working at the 4<sup>th</sup> grade level (although we will include one 5<sup>th</sup> grade teacher per school in the workshops to provide continuity at the school level for the approach). It is quite likely that there will be variation among the teachers in terms of the number of years taught, credentials, and professional development experiences. However, these differences should even out across the groups and be accounted for by the randomization.

The potential sample contains 97 Title 1 New York districts with 975 elementary schools in urban areas that are eligible to participate in this study. We will contact these districts to determine their interest and willingness to participate in the study. We will provide detailed information about the specifics of what would be entailed in terms of their participation and what benefits they would receive (i.e., workshops and compensation to schools to pay for stipends, release time, and other support). From this pool of potential participants, we will randomly select districts that meet the criteria for participation (i.e., have enough schools and teachers within schools) and are willing to collaborate with us. Each district and school within district will be asked to provide lists of teachers who are willing to participate. We then will randomly select elementary schools from within each district to serve in either the control, the high intensity, or the low intensity group. Teachers in the intervention schools will then be randomly assigned to either the direct or the indirect condition. From the power analysis above, we will need to have: 36 control teachers; 72 direct, high intensity teachers; 72 direct, low intensity teachers; 36 indirect, high intensity teachers; and 36 indirect, low intensity teachers. Assuming an average

(b)(4)

### Data Collection Procedures

Agreements will be made with each district to provide the research staff with standardized test scores for students in the participating schools. (b)(4)

(b)(4). In the spring of 2007, we will obtain 3<sup>rd</sup> grade test scores from each participating school district. (b)(4)

(b)(4) In the spring of 2008, we will obtain 4<sup>th</sup> grade test scores from the districts, as well as scores from the 3<sup>rd</sup> grade test. In the spring of 2009, we will (b)(4)

(b)(4). This means that we will have baseline and outcome scores for three groups of students whose 4<sup>th</sup> grade teachers have participated in the study.

For each cohort of students, we will need to match the baseline and outcome measures to determine if we have complete data on each student. Students for whom we have incomplete data will be eliminated from the database. Student data will be coded to indicate in which group was their 4<sup>th</sup> grade teacher: (1) control; (2) high intensity, direct contact; (3) high intensity, indirect contact; (4) low intensity, direct contact; or (5) low intensity, indirect contact.

Attendance data for the intervention teachers will be collected. For those teachers in the direct condition, we will note how many of the 6 or 12 workshops they attended. For those teachers in the indirect condition, we will note how many of the within school data workshops and activities they attended.

### Field Operation Management and Monitoring

Fidelity of implementation will be monitored through the collection of the teachers' attendance data at *Using Data* workshops for the direct intervention group and at the within school workshops for the indirect intervention. We will collect these data on an ongoing basis to determine, particularly for the direct group, the extent to which the teachers are attending the professional development workshops.

Reminders will be sent to schools and teachers prior to each workshop in an effort to circumvent potential absences. If we note that particular teachers have missed a session, project staff in collaboration with school personnel will follow up with those teachers to encourage future attendance. We will do everything possible to ensure maximum attendance, but with the recognition that there will be a certain amount of non-attendance.

### Procedures to Reduce Participant Burden and Strengthen Response Rates

We recognize that we are asking for a high level of commitment and cooperation from both the districts and the teachers involved in this project. Because of this, we plan to provide stipends to each school to compensate teachers and pay for some release time so that the participating teachers can attend the workshops. (b)(4)

(b)(4)

(b)(4)

We also have attempted to minimize the disruption to normal operating procedures, particularly at the district level. All we will ask of the districts is to provide the test score data in the spring of each year of the study. We will work with the districts' data administrators to ensure that these data are transmitted with as little work as possible on the part of the districts. Due to the nature of the interventions, we will require at least some level of commitment from the treatment group teachers in order to make the study work. We will schedule the workshops at times that are as convenient as possible for the majority of the teachers, mostly in the summer. If the workshops require days away from the classroom, we also will provide support for substitute teachers.

#### Anticipated Difficulties and Challenges

Given that the use of data has become high priority in many districts, we foresee that offering the *Using Data* workshops will have substantial added value for most practitioners. This emphasis can be found at all levels of education, from the federal, to the state, and at the local level. We anticipate little difficulty in soliciting interest among districts that are eagerly seeking solutions to help meet AYP. We have included in our study provisions to train a small number of 5<sup>th</sup> grade teachers during the training for the 4<sup>th</sup> grade teachers. We are including these teachers to provide some continuity within the schools' community of data users. The hope is that these 5<sup>th</sup> grade teachers will in turn facilitate data use more broadly for the grade level in the same indirect manner of facilitation as we have planned at the 4<sup>th</sup> grade level. In order to solicit the broadest possible interest in and support for the study, we will:

- Disseminate TERC's persuasive informational materials on the *Using Data* program.
- Seek support for the study from a wide network of local and state educational agencies, associations, and community leaders.
- Use incentives tailored to the schools and districts to encourage them to participate (described above).

#### Data Analysis

*Unit of Analysis.* The unit of analysis for this study is the individual student. Analyses will be conducted on the students' baseline, standardized achievement test scores from grade 3 and their outcome, standardized achievement test scores from grade 4.

*Intent to Treat Analysis.* Student attrition is built into the power analysis, which assumes a class size of 15 students. Typical urban class sizes are much larger. Estimating 15 students per classes enables us to lose a substantial number of students to either mobility or missing data (either from the baseline or outcome measure), and still have sufficient power for the study.

More difficult to control for, however, is attrition at the level of the teacher. We can expect a certain level of mobility among urban teachers over the course of the study. The only possible way to account for this possibility is to over sample in each of the groups. Because of the nature of the design, it will be most important to over sample in the direct conditions, particularly in the high intensity group, where there is most likely to be attrition over the two years of the intervention.

*Sub-Group Analysis.* The study does not include a plan to formally look for any sub-group differences. For students, the assumption is that because we are using students' initial achievement test scores as a covariate, any differences are part of the score. We will examine the outcome measures relative to the fidelity measures; that is, the level of teachers' attendance at the *Using Data* workshops or within school workshops. We will determine if there is a relationship between the extensiveness of the teachers' participation, as the intervention was intended, on the subsequent performance of their students on the standardized achievement tests.

*Statistical Methodology.* The data collected will be carefully checked for reasonableness of values (i.e. out-of-range scores on the state assessments, number of students grouped to a teacher seem like a reasonable class size, etc.). Students will be linked to the classroom teacher. Variables will then be created that indicate the student was in a classroom whose teacher was either a control, direct participant with 6 sessions, direct participant with 12 sessions, indirect recipient of 6 training sessions, or indirect recipient of 12 training sessions. To check that the randomization of the experiment was adequate, we will get means of baseline student performance for each of these 5 different experimental treatments and check for any significant differences. We will also be finding the means of the student *growth* in each of these cells. The data will be checked for outliers and unduly influential data points.

For this experiment, a mixed linear model will be applied to the data, enabling us to use these fitted models to make statistical inferences about the data. A mixed linear model is a generalization of the standard linear model, the generalization being that the data are permitted to exhibit correlation and non-constant variability. The mixed linear model, therefore, provides us with the flexibility of modeling not only the means of the data (as in the standard linear model) but their variances and co-variances as well. This is particularly important when the experimental units on which the data are measured can be grouped into clusters, and the data from a common cluster are correlated, as is the case of students within classrooms. The primary assumption underlying the analyses performed is that the data are normally distributed. Both the covariate and the dependent variables are student performance on the New York State mathematics assessments. We will normalize each student's score according to the published mean and standard deviation of the population. Under this mixed model, the students will be considered random effects while the contact variable (direct or indirect) and the number of treatments (0, 6, or 12) are both considered fixed effects.

The mixed model generalizes the standard linear model as follows:

$$y = X\beta + Z\gamma + \epsilon$$

In this expression,  $y$  represents a vector of observed data, the final standardized assessment score.  $\beta$  is an unknown vector of fixed-effects parameters with known design matrix  $X$

representing the design of contact and treatment, and epsilon is an unknown random error vector whose elements are no longer required to be independent and homogeneous.

To test for the main effects of treatment and contact, as well as their interaction, significance tests will be constructed. The Type III *F*-statistics and *p*-values will be produced.

We will test the hypotheses that:

- There is a main effect on individual student achievement due to being in the classroom of a direct recipient of the treatment of *Using Data* Training.
- There is a main effect on individual student achievement due to being in the classroom of a teacher with indirect contact to the *Using Data* Program through a Data Leader.

Additionally:

- The hypothesis test for the interaction of these two effects (training and contact) will be tested.
- The contrast of 6-session training versus 12-session training will be tested.
- The contrast of indirect contact versus direct contact will be tested.

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**Schedule: Using Data to Inform Decisions**

*Note: The following is the updated projected timeline for this study. However, this timeline (including starting dates) will be adjusted as necessary based on the revised detailed research plan submitted to ED for review and on the adjustments made in UAP. In addition to the information below, we will submit monthly reports. Any changes will be noted in our updated UAP to be submitted on July 1 of each year of the contract. All other ED, OMB, and IRB requirements will be met.*

|                                  | 2006 |    | 2007 |    |    |    | 2008 |    |    |    | 2009 |    |    |    | 2010 |    |    |    |
|----------------------------------|------|----|------|----|----|----|------|----|----|----|------|----|----|----|------|----|----|----|
| Tasks                            | Q3   | Q4 | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 | Q3 | Q4 |
| Recruit districts and schools    | ■    | ■  | ■    | ■  |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Sample selection                 |      |    |      | ■  |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| 12 Session workshops             |      |    |      | ■  | ■  | ■  | ■    | ■  |    |    |      | ■  |    |    |      |    |    |    |
| 6 Session workshops              |      |    |      | ■  | ■  | ■  | ■    | ■  |    |    |      |    |    |    |      |    |    |    |
| Using data site visits           |      |    |      |    |    | ■  | ■    |    | ■  |    |      | ■  |    |    |      |    |    |    |
| Test score collection: 3rd grade |      |    |      | ■  |    |    |      |    | ■  | ■  |      |    | ■  | ■  |      |    |    |    |
| Test score collection: 4th grade |      |    |      |    |    |    |      |    |    |    |      |    |    |    |      | ■  |    |    |
| Fidelity data collection         |      |    |      | ■  | ■  | ■  | ■    | ■  | ■  | ■  | ■    | ■  |    |    |      |    |    |    |
| Data organization                |      |    |      |    |    |    |      | ■  |    |    | ■    |    |    |    |      | ■  |    |    |
| Statistical analyses             |      |    |      |    |    |    |      | ■  |    |    | ■    | ■  |    |    |      | ■  | ■  |    |
| Reporting                        |      |    |      |    |    |    |      | ■  | ■  |    |      |    | ■  | ■  |      |    | ■  | ■  |

## Accelerating Literacy in the Middle School

Study Leaders: Catherine Morocco (EDC), Teresa Duncan (AIR)

### *Rationale*

#### The need to improve adolescents' literacy

Improving adolescent literacy is a critical step toward improvement adolescent academic achievement more broadly. More than 3,000 students drop out of high school every school day (Biancarosa & Snow, 2004), in part because they lack literacy skills to keep up with an increasingly challenging curriculum (Kamil, 2003; Snow & Biancarosa, 1993). Eight million students in grades 4-12 perform below the proficient level on national assessments, which suggests that many are unable to understand the texts that are required reading in high school (NCES, 2003).

The Northeast region reflects this national problem. Between 30 percent and 43 percent of 8<sup>th</sup> graders scored at the proficient level in the 2003 NAEP (Table D). Those students who did not reach the proficient level have varied reading needs (Biancarosa & Snow, 2004). Up to 25 percent or more of students entering the 6<sup>th</sup> grade in urban districts may lack essential phonemic awareness, decoding, and comprehension strategies (Kotula, 2005). Others struggle to comprehend and learn from the varied texts required in the content areas (RAND Reading Study Group, 2002). A persistent gap between white, black, and Hispanic students who score at the proficient level in the Northeast Region (Table D) reflects similar national results (NCES, 2003).

**Table D. Percent of Students at the Proficient Level, NAEP 2003  
8<sup>th</sup> Grade Reading Assessment**

| State | Overall | White | Black   | Hispanic | Asian/PI |
|-------|---------|-------|---------|----------|----------|
| CT    | 37      | 45    | 12      | 13       | 54       |
| ME    | 36      | 37    | Low (n) | Low (n)  | Low (n)  |
| MA    | 43      | 49    | 18      | 14       | 53       |
| NH    | 40      | 41    | Low (n) | Low (n)  | Low (n)  |
| NY    | 35      | 48    | 14      | 18       | 42       |
| RI    | 30      | 35    | 14      | 9        | 22       |

The majority of students across the region are also below proficient in writing (NCES, 2002), a skill that enables students to connect new learning to their prior knowledge (Santa, 2004). Although the Northeast region has shown some growth in writing since 1998, between 55 and 70 percent of 8<sup>th</sup> graders across each of these states still scored below the proficient level in 2002 (NCES, 2002). Reading and language arts are a priority for all students and particularly for subgroups that did not make Adequate Yearly Progress (AYP) in 2003 and 2004, which includes students with disabilities, low-income students, African-American and Hispanic students, and LEP students.

A prevailing view of this problem is that at a time when students need a high degree of literacy for academic learning, they are not receiving the reading and writing instruction they need. Secondary teachers tend to focus on content more than on the reading process, and many lack the

knowledge and skills to teach reading. Districts lack policies to address students' reading and writing needs, and the effectiveness of many programs has not been established empirically (Kamil, 2003).

While *programs* for improving adolescents' literacy are only beginning to undergo rigorous evaluations, certain *teaching and learning strategies* have a strong empirical base. A robust evidence base supports building motivation (Guthrie & Wigfield, 2000); teaching comprehension strategies (Duke & Pearson, 2002; NICHD, 2000); and engaging students, including those with disabilities, in cooperative learning activities around text (Klingner, Vaughn, Arguelles, Hughes & Leftwich, 2004; Palincsar & Herrenkohl, 2002; RAND Reading Study Group, 2002). The research challenge is to integrate these evidence-based teaching and learning strategies into coherent interventions that address the varied reading needs of adolescents entering middle and high school, and to test those interventions in middle and secondary schools (Biancarosa & Snow, 2004). The Supported Literacy™ intervention (SL) represents that coherent integration of teaching and learning strategies, and the study proposed here will serve as an empirical test of its effectiveness.

### ***Research Questions***

The proposed research study is a well-powered, randomized field trial intended to provide a rigorous test of SL's effectiveness. Our goal is to address the following research questions:

- *What are the effects of SL on student achievement?* We will compare treatment and control schools on students' overall and subscale scores on a standardized reading test, as well as students' scores on a writing assessment.
- *What are the effects of SL on teachers' literacy instruction?* We will ask teachers to complete surveys of their instructional practices three times each school year. We will triangulate these self-report data by collecting mid-year classroom observations, and by asking the literacy coaches to report on the 6<sup>th</sup> and 7<sup>th</sup> grade teachers' instructional practices.
- *Does the effect of SL vary by student or teacher subgroups?* Subgroup analyses will include analyses by student achievement level, teacher grade level, and teacher experience.
- *What is the duration of SL's effect? Are there sustained effects on student achievement or teacher instruction?* We will have two years of data on the students who enter the 6<sup>th</sup> grade in Fall 2007, and on the 6<sup>th</sup> and 7<sup>th</sup> grade teachers at each school. Comparisons of the growth curves for the treatment and control schools will allow us to test the extended effects of SL on students' achievement and teachers' literacy instruction.
- *How are different levels of intervention implementation related to student outcomes?* What factors are most closely associated with level of implementation? Another source of data is the literacy coach in each of the treatment schools, who will be asked to monitor and report on teachers' progress in the program. Data from the literacy coach and teacher practice surveys will allow us to identify which treatment schools were low or high in degree of SL implementation. We will create a third study group post hoc, so that we may examine how low-SL implementation, high-SL implementation, and control group schools vary on student outcomes. We recognize that this analysis of differential implementation is an exploratory correlational analysis and the results will not be

sufficient to establish causality. Correlational data on level of implementation and teacher characteristics are similarly limited. However, we believe the descriptive information from these analyses will be valuable for providing context, (b)(4)

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- *How satisfied is SL school staff with the program?* We will collect satisfaction data from treatment school staff at the end of each school year. These data are not intended to test the effectiveness of the intervention, and instead will be used to inform future program development.

### ***Research Design***

Our discussion of the Supported Literacy study's research design is organized into the following sections:

- *Overview of the Supported Literacy™ Intervention.* This section provides an overview of the content, structure and goals of the intervention, a program designed to improve literacy outcomes for middle-grades students.
- *Pilot Studies.* This section outlines the results of pilot studies of program effectiveness.
- *Study Design.* In this section, we describe our study design and address design considerations, including sampling, levels at which random allocation will occur, sample sizes, statistical power, and issues regarding feasibility.
- *Recruitment.* Here we discuss our plan for recruiting study participants and securing cooperation.
- *Implementation and Training Process.* This section describes the schedule and content of training that teachers, administrators, and literacy coaches at each SL school will experience.
- *Measures and Data Collection Process.* This section reviews the relevant constructs, discuss potential measures of these constructs, and describe our data collection schedule.
- *Field Operation Management and Monitoring.* This is a large and complex study that requires careful coordination of multiple efforts by three organizations and staff dispersed across many sites. In this section, we address our plans for managing the work, ensuring high quality, and adhering to timelines.
- *Statistical Methodology.* This section reviews briefly the types of data analyses that will allow us to answer our research questions.
- *Deliverables.* We have identified four deliverables. AIR will produce interim research reports, and a final research report. EDC will produce a report on the intervention process in the 25 schools and a revised implementation manual for school literacy teams.

### Overview of the Supported Literacy™ intervention

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SL provides a full range of instructional and professional development materials and media to train and guide teachers in the principles and practices that support academically diverse groups of students in understanding texts and expressing their understanding in writing.

SL includes the following components:<sup>6</sup>

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A standardized reading comprehension test is used to identify the range of reading abilities among incoming 6<sup>th</sup> and 7<sup>th</sup> graders. Teachers use this information in planning classroom instruction.

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<sup>6</sup> A fifth program component, currently completing pilot testing, prepares reading teachers to provide intensive tutorial to students who reading below the 25<sup>th</sup> percentile on standardized reading tests. Because of the financial constraints of the Task 2 studies, this study will investigate the efficacy of the classroom component only.



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(4) *Leadership support for school and literacy leaders.* Each school designates a literacy team, headed by the principal, which includes other members of the school's administrative staff, the literacy coach, and representatives from the major content areas of mathematics, science, and social studies. The literacy team meets regularly to monitor teachers' progress in the program and contribute to problem solving with SL teachers. An 8<sup>th</sup> grade teacher from each school is selected to apprentice the SL staff as a literacy coach.

### Pilot studies

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- *Impact of SL versus an independent reading/writing context.* In a study of 278 students in one urban middle school, normally achieving students, students with learning disabilities, and honors students performed better in interpreting a literary text within the context of an SL unit than in an independent testing context (Morocco, Hindin, Mata-Aguilar, & Clark-Chiarelli, 2001). These were the same students, not treatment and control groups. The outcome measures required students to provide a story interpretation by writing answers to open-ended questions. The scoring rubric was adapted from NAEP writing specifications. Results provide encouraging evidence that regularly achieving students and those with disabilities benefit from the instructional support provided in the SL context (Morocco et al, 2001). Two findings stand out.
  - i) In the SL context, students with disabilities performed comparably to the other students. Mean scores on the writing measure for the inclusion, regular, and honors classrooms were 1.64, 1.71, and 1.79, respectively, on a 5-point scale. Results from a one-way ANOVA indicated no difference among groups ( $F(2, 116) = 2.21, p = .11$ ). In contrast, in the independent writing context, mean scores on the quality of interpretation for the inclusion, typically-achieving, and honors class were 1.13, 1.56, and 2.24, respectively. Results from a one-way ANOVA indicated significant differences among groups ( $F(2, 160) = 13, p = .0001$ ). A Duncan's multiple-range test ( $p = .05$ ) revealed that honors students' writing quality was significantly higher than that of typically-achieving students and students with disabilities.
  - ii) Writing scores for students with disabilities were compared across the SL and independent contexts with paired *t*-tests. Students with disabilities performed significantly better on the SL prompt than the independent test prompt ( $p = .0056$ ). A long-term goal of the program was that students would perform competently in an

independent test situation. This interim result suggested that the approach was providing the kind of instructional support students needed in order to reach that goal.

- *Impact on persuasive writing.* A growth modeling study in a second urban middle school included 400 students in 16 ELA classrooms (including 30 students with disabilities in three separate classrooms). The study used writing stimuli and scoring procedures from the National Assessment of Educational Progress (NAEP). Across three administrations of the writing measure, the growth curves of regular education students showed significant gains. The average growth curve was .19 with a standard deviation of .77. This slope was significant ( $t = 4.56, p = .001$ ). Results from two of three special education classrooms showed consistent student improvement (Morocco, Hindin, & Tivnan, (b)(4)).
- *Fidelity of teacher implementation.* Pilot studies have verified that teachers used between 70 and 99 percent of the instructional activities included in the curriculum units, with an average of 84.6 percent. All teachers used at least 57 percent of the journal-based comprehension prompts requiring the application of comprehension strategies, such as predicting and question posing (Morocco et al, 2001).
- *Participation of diverse learners in comprehension activities.* In a detailed analysis of student conversation in an SL classroom, students with disabilities and second language learners demonstrated skill in applying comprehension strategies to understanding a challenging literary text (Morocco & Hindin, 2002).
- *Teacher collaboration and learning.* Detailed case studies were developed for three SL teachers, two language arts teachers and one teacher of cognitively delayed students, drawing on coding and analysis of teacher meeting transcripts and classroom observations. The teachers, with varied teaching backgrounds and expertise, actively participated in cooperative activities with other SL teachers, implemented the major components of the approach, and developed new expertise in literacy instruction, although in different areas (b)(4).

*Limitations of these studies.* Although these findings suggest that participation in SL is associated with positive gains, the focus on only two schools and the absence of random assignment of schools to SL versus an alternative treatment hinder our ability to establish causality between the intervention and the observed gains of teachers and students. The proposed research design has been carefully crafted to address these concerns.

### Study design

Supported Literacy™ is a school-wide intervention that requires administrators, reading coaches-in-training, ELA teachers, and the special education teachers associated with the ELA teachers' classrooms to receive instruction and mentoring in the SL principles and practices. All of these personnel will receive ongoing support from SL staff and will be creating a SL environment across the school. (b)(4)

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Because SL relies on school-wide changes in teaching and infrastructure in order to impact change on 6<sup>th</sup> and 7<sup>th</sup> graders' literacy practices, the *school* is the most appropriate unit for random assignment into study conditions.

Our goal is to recruit 50 schools total, 25 in each of the two conditions. (b)(4)

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. In order to reduce the design effect caused by nested data, we have chosen to follow three strategies. First, we will use a balanced random allocation of schools to treatment and control conditions. Second, we will match prior to randomization, closely matching schools within each district on demographic factors and assigning one school in each pair to the treatment condition.<sup>7</sup> Third, we will collect pretest data to use as covariates in our analyses. The pretest covariate boosts our minimum detectable effect (see discussion below) and allows us to present statistics adjusted for pretest differences, because random assignment does not ensure that students in each school will be perfectly comparable on reading skills.

The instructional intervention will take place during the (b)(4) academic years. We will have two years of longitudinal data from students who begin 6<sup>th</sup> grade in Fall 2007, as well as from teachers, school principals, and literacy coaches (in treatment schools only). We will have cross-sectional data from students who begin 7<sup>th</sup> grade in Fall (b)(4), and from students who begin 6<sup>th</sup> grade in Fall (b)(4). We assume that there will be:

- An average of 225 6<sup>th</sup> graders and 225 7<sup>th</sup> graders in each school (n=22,500). These numbers are based on available data from state departments of education in the two implementation states. It assumes that on the average there will be 100+ students per teacher, with teachers each having 5 classes.
- Approximately 2 English/Language Arts (ELA) teachers and 1 special education teacher at each grade level (6 teachers per school, (b)(4))
- 1 principal at each school (n=50)
- 1 literacy coach in each treatment school (n=25)

### *Sampling*

We will define eligible schools as those that: (1) are situated in the Northeast Region on the U.S. mainland, (2) are eligible for Title I funds; and (3) enroll 6<sup>th</sup> through 8<sup>th</sup> graders.<sup>8</sup> We have excluded Puerto Rico and the Virgin Islands because the cost of including these in our study design would be prohibitive. Based on the 2003-2004 Common Core of Data preliminary dataset, a total of 538 schools in the NEIREL states fit these criteria (202 elementary schools and 336 middle schools, in 83 districts that have two or more eligible schools). To balance the other research activities that are planned in the region, we will initiate our recruitment efforts in Connecticut and Massachusetts before expanding to other New England states. Connecticut has 46 eligible schools in 11 districts, and Massachusetts has 129 schools in 28 districts.

Before we initiate any recruitment activities, we will explore further these districts' and schools' characteristics, to identify districts that have pairs of comparable schools. It may be that despite a district having been identified as having several eligible schools, none of the schools are comparable in key characteristics such as number of students eligible for free or reduced price

<sup>7</sup> We acknowledge that the matching of schools reduces the degrees of freedom for statistical tests, which may offset the gains made by the other two strategies.

<sup>8</sup> Although the intervention is directed toward 6<sup>th</sup> and 7<sup>th</sup> graders, 8<sup>th</sup> grade teachers will serve as literacy coaches.

lunch, or percent minority (b)(4)

(b)(4)

*Power analysis and assumed minimal detectable effect (MDE)*

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Recent work on statistical power in clustered randomized trials by Schochet (2005) and Bloom and his colleagues (Bloom, Bos, & Lee, 1999; Bloom, 2003) suggests that a design that randomizes 50 schools within districts will yield a minimum detectable effect size in the 0.30 range. (b)(4)

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According to the MDE tables presented by Schochet (2005; see Tables 1 and 8), random allocation of 42-66 schools into the study groups will allow us to detect an MDE of 0.33 assuming:

- Balanced allocation into the study groups and no sampling of students within units
- Eighty percent power at alpha = 0.05, two-tailed
- Values of 0.20 for the between-school and between-classroom ICCs, fixed school district effects and random classroom effects
- No finite population correction (fpc)
- Regression  $R^2$  values of 0.20 to 0.50 for the baseline covariate and that 80 percent of students will provide posttest data

(b)(4)

- The intervention is being tested in a single grade; an average of 3 classrooms per school per grade; and an average of 23 students per classroom
- No adjustments for longitudinal observations or repeated measures on students

Because our study does involve two grades, larger student samples in each grade, sampling students for the writing measure, and longitudinal data, our MDE will diverge from the 0.33 estimate. Our preliminary analyses suggest that our MDE will likely fall in the neighborhood of 0.20, once we have adjusted for multiple grades and the longitudinal nature of the design:<sup>11</sup>

**Table E. Preliminary MDE Analysis of SL Study Design**

| ICC  | MDE    |
|------|--------|
| 0.10 | 0.1788 |
| 0.15 | 0.2182 |
| 0.20 | 0.2516 |

We will conduct a precise power analysis as part of finalizing the study design.

### Recruitment

Although we believe there will be a great deal of interest in this intervention (considering current trends in literacy test results, many schools not making AYP in reading, and the national emphasis on adolescent literacy), recruitment and retention of study sites will be one of the most challenging aspects of the study. The process of identifying districts with comparable pairs of schools to allocate into study conditions will decrease the numbers of eligible districts and schools. Other factors that will affect our recruitment efforts include:

- Each school's need for an intensive middle school literacy intervention
- Ability/willingness of school personnel to commit to a two-year literacy intervention
- Willingness to forego or abandon the use of other core or supplemental reading programs
- Willingness of district/school personnel to commit to a new rigorous research study (including possibility of other school-wide reform efforts or current, ongoing studies)

We will address these challenges to recruiting by implementing several strategies.

- EDC has established relationships with state- and district-level personnel in the Northeast region, and we intend to capitalize on these existing relationships during the recruitment phase. Having support at the state and district level will make it easier to randomize and have buy-in for randomization at the school level.
- We will also seek support for the study from a wider network of related education agencies, associations, and community leaders.

<sup>11</sup> Also assuming 50 schools, balanced allocation into conditions, 80 percent power, alpha = 0.05, two-tailed, an n of 450 in each school, no fpc, fixed school district effects, random classroom effects, and a covariate R<sup>2</sup> of 0.50. The use of a pretest covariate increases our precision and allows us to adjust for pretest differences if, for some reason, “unhappy randomization” occurs, in which treatment and control students are disparate at the baseline.

- We will develop persuasive informational materials, including samples of the SL curricula to include in our recruitment letters.
- The main incentive we offer schools is that ultimately, all schools that participate in this study will receive the intervention. While only half the schools will receive the treatment *during* the two years of the study, control schools will be offered professional development training on Supported Literacy practices *after* the two years of data collection have been completed. At this point, teachers and literacy coaches in the treatment schools will have had two full years' practice using SL strategies, and can serve as local resources to their peers. Our recruitment efforts will emphasize that by participating in this study and providing professional development to treatment and control schools, we are "seeding" the district with agents of literacy instruction change. These agents of change will remain in the district long after the SL evaluation, to help the district grow and improve its students' reading and writing achievement.
- Based on our experience working in middle schools in the NEIREL region, we expect that most schools will not have a well-defined literacy program in use. However, should a small number of control schools have a program, our classroom observation procedures and teacher surveys will capture that information as well as "business as usual" instructional practices. We will include these data in our analyses and use them to interpret our findings.

#### Implementation and training process

*Phase One. Planning & Orientation.* During Spring/Summer (b)(4)

(b)(4) SL project staff and school staff will conduct several activities that lay the groundwork for instructing teachers and implementing the program:

- Each school will ensure that a leadership team is in place that includes the principal, key administrative staff, one or more content area teachers, and an 8<sup>th</sup> grade ELA teacher who will serve as literacy coach-in-training.
- SL staff will conduct a two-day leadership orientation with the leadership teams. The agenda includes introducing SL principles and practices and explaining the tools and procedures. School leadership teams will identify their schools' literacy assets and identify obstacles to a successful program. Some school libraries lack age-appropriate books for lower readers; some schools have more capacity in writing instruction than others. SL staff will work with leadership teams to design an orientation to the program for all school staff. SL evaluation staff will also provide an overview of the study's data collection procedures and schedule at the leadership orientation.
- SL staff will conduct a four-day apprenticeship institute for literacy coaches. The focus will be on coaches' own detailed understanding of reading and literacy development and their ability to implement SL principles and practices with students. A yearlong pilot of the SL program with coaches from several states (Clark, 2004) found that teacher-coaches need six months to experience SL as a teacher while they build coaching skills. Coaches will be trained to use a peer discussion site on EDC's *Literacy Matters* website, explicitly for communicating with each other and with SL staff about their experiences, questions, and suggestions for other coaches. This site is fully compliant with federal requirements regarding accessibility for all.

*Phase Two. Year One and Year Two Full Program Implementation.* During the full, two-year classroom implementation ((b)(4)), major activities will involve literacy assessment, professional development through both instruction and mentoring, and classroom literacy instruction.

- *Literacy Assessment:* As early as possible in the first program year, pretest reading and writing measures are administered to all 6<sup>th</sup> and 7<sup>th</sup> graders. The pre-intervention reading test will provide teachers with general information about their incoming 6<sup>th</sup> and 7<sup>th</sup> grade students to guide their instructional planning.<sup>12</sup>
- *Professional Development, Year One:* In the one or two months preceding the onset of the intervention, 6<sup>th</sup> and 7<sup>th</sup> grade ELA and special education teachers will attend a four-day summer institute to prepare for using SL in all of their classrooms. The professional development approach, discussed above, will introduce them to the SL principles, meaning-making cycle, and literacy practices. It will prepare them to use a set of start up activities with students, including classroom reading and writing assessments that teachers can evaluate themselves, and a short story unit that introduces key learning strategies to students. In addition, teachers will work with an extended curriculum unit that they will use across all 6<sup>th</sup> and 7<sup>th</sup> grade classrooms in the school in the spring semester. In the fall and spring, classroom teachers will assemble for a daylong workshop to refine their literacy teaching strategies. SL staff will make periodic school visits to meet with the leadership teams and the literacy coach, to observe in classrooms, and to provide feedback and coaching to the teachers in that school.
- *Professional Development, Year Two:* After the first full year of implementation, all 6<sup>th</sup> and 7<sup>th</sup> grade teachers and associated special education teachers at the 25 schools will participate in a two-day summer institute to refine their SL teaching skills and work with new curriculum units for the fall for 6<sup>th</sup> and 7<sup>th</sup> grade. Institutes will be held in two or three sites, depending again on the geographical spread of the participating schools. At this workshop the literacy coach will assist the SL facilitators. Teacher instruction and mentoring will continue through the second year, with literacy coaches taking increasing responsibility for conducting mid-semester workshops and providing support and feedback to their colleagues. School literacy teams will discuss implementation challenges and strategies at those school visits and will receive feedback from the SL team on teachers' and students' progress.
- *Instruction:* Over two full years of learning SL, from Fall Year One through Spring Year Two, 6<sup>th</sup> and 7<sup>th</sup> grade students will learn the SL approach in their ELA classrooms as they engage in a series of thematic curriculum units.

#### Measures and data collection process

Three main constructs are important for assessing the impact of the SL intervention: (1) students' (b)(4) achievement, (2) teachers' literacy practices, and (3) teacher satisfaction with the intervention. We will compare treatment and control schools on student reading achievement and teacher reading instruction, the key outcomes of this evaluation, as well

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<sup>12</sup> As part of the program evaluation, additional data will be collected on students and teachers after this pretest; see discussion in subsequent sections.

as document school staff satisfaction with the program. Our plans for measuring these constructs are discussed below.

*Students' literacy achievement.* SL focuses on cultivating comprehension and persuasive writing strategies. To assess the intervention's impact on reading achievement, we plan to administer a general test of reading skills and a writing test to all 6<sup>th</sup> and 7<sup>th</sup> graders at the beginning and end of each school year.

- *Reading Assessment.* There are several standardized general reading tests that might be used in the study to measure and compare student progress in reading. It will be important to consider all of them carefully and to select the test that can provide the fullest, most useful profile of students' strengths and weaknesses. To limit the burden on both students and data collectors, the test must be group administered, relatively brief, easy to score, and easy to interpret. The test should provide information on students' comprehension, as well as more fine-grained information on other reading skills. It should be age-appropriate in terms of the content, vocabulary, and concept load of the passages students must read. Ideally, the test should have two equivalent forms for use at the beginning and end of the school year. Key elements of tests that might be considered are presented in Table F. The study team will consult with USED and the Technical Working Group to select the general reading test. AIR will obtain the appropriate technical and administration documents, and then train field staff in data collection procedures. AIR and Sun Associates field staff will administer the reading assessments as early as possible in the fall and again in the late spring of each study year. Because of the large number of students involved, the reading test will be scored by machine.



**Table F. Potential Reading Measures for 6<sup>th</sup> and 7<sup>th</sup> Grade Students**

| <b>Tests</b>                                  | <b>California Diagnostic Reading Test</b>  | <b>Gates-MacGinite, 4<sup>th</sup> Edition</b>                             | <b>Group Reading Assessment and Diagnostic Evaluation (GRADE)</b>  | <b>Stanford Diagnostic</b>   |
|---|--|--|--|--|
| <b>Publisher/ Date</b>                        | CTB/McGraw Hill, 1990  | Riverside, 2000  | American Guidance Service, 2001  | Harcourt-Brace Educational Measurement, 1995   |
| <b>Grade-level appropriate form available</b> | Yes  | Yes  | Yes  | Yes  |
| <b>Subtests</b>                               | Vocabulary<br>Comprehension<br>Applications<br>Reading rate  | Vocabulary<br>Comprehension<br><br>Provides information as Lexile measures | Verbal concepts<br>Sentence completion<br>Passage comprehension<br>Listening comprehension<br>Word meaning<br>Word reading<br>Vocabulary       | Vocabulary<br>Comprehension<br>Scanning for information<br><br>Provides information as Lexile measures                           |
| <b>Equivalent form available</b>              | Not specified  | Yes  | Yes  | Yes  |
| <b>Reliable/valid</b>                         | Reliable for students scoring below 50 <sup>th</sup> percentile; consult CAT manual for technical adequacy             | Yes – documentation provided   | Yes – documentation provided   | Yes – documentation provided   |
| <b>Norm-referenced Scores</b>                 | Scale score that is basic score for CAT; can use CAT norms for percentile ranks, NCEs, stanines, and grade equivalents | NCEs, percentile ranks, grade equivalents and Extended Scale Scores        | Standard scores, percentile ranks, NCEs, stanines, and grade equivalent scores for individual subtests, composite scores, and total test score | Scaled scores, percentile ranks, stanines, NCEs, grade equivalent scores   |
| <b>Administration Length</b>                  | Not available  | 60 minutes   | Untimed; approximately 45 – 90 minutes   | 100 minutes  |
| <b>Negative factors</b>                       | Does not support development of diagnostic program   | Does not provide information on distinct comprehension skills              |  | No evidence of stability of scores over time; no psychometric information on subgroups; unclear internal consistency information |

- *Writing Assessment.* Because the SL intervention involves teaching students to represent literary interpretations in writing, we will also administer a writing assessment. Writing assessments are lengthier and costlier to administer, so to limit student burden and study costs, we intend to randomly sample 10 percent of control and treatment students for this measure. We will select one of two approaches to the writing assessment, both of which were used in pilot studies of SL. One approach is to use the NAEP persuasive writing assessment stimuli and scoring procedures. NAEP gives students an open-ended, controversial situation and asks the student to take a position and support their position with arguments. This is NAEP's standard persuasive writing assessment. It was on this measure that we got significant student growth in a growth modeling study without a comparison group. NAEP has a variety of stimuli with established validity and reliability that can be used for repeated administrations of this measure.

The other approach provides students an excerpt of a literary text to interpret. Students are asked multiple choice questions that test literal comprehension and vocabulary knowledge and provided an essay question that requires the student to support an interpretive claim drawing on a close reading of the text. This is not a standard measure. In our pilot, we selected text excerpts at the same reading level to provide materials for repeated assessments. This measure would require further piloting to improve the reliability, specifically, the comparable difficulty of the reading excerpts. The first measure is a standardized measure of persuasive writing, which is a more distant outcome measure. The second measure is more closely related to the intervention goals but would require piloting the measures. We will consider this choice closely, consult with the TWG, and make a final selection during the first weeks of the study. AIR will train field staff to administer and score the writing assessment. Writing samples will be collected and scored in the fall and spring of each study year.

*Teachers' literacy practices.* The SL intervention relies on teachers learning and using research-supported strategies for adolescent learners (e.g., building motivation, teaching comprehension strategies, using cooperative learning around texts, integrating writing into the reading process). It also relies on developing literacy leaders who will actively support teachers as they learn these practices and eventually sustain the program with local resources. To assess the effects of SL on teachers' literacy practices, we plan to collect several types of survey data and to conduct classroom observations.

In developing our survey instruments, we will focus on writing items that are concrete, behavioral indicators, rather than attitudinal measures such as agreement with a target statement. Behavioral indicators have proven to be a more reliable form of measurement than attitudinal questions (Schuman & Presser, 1981; Sudman, Bradburn & Schwarz, 1996). For example, measuring a construct such as the extent to which teachers' classroom practices are consistent with SL program principles using an intensity scale (not at all/very little/a moderate amount/a great deal) is likely to invite error in measurement, due in part to social desirability response bias. Instead, we plan to ask questions about the *frequency of behaviors during specific timeframes* to measure teachers' literacy practices and infer level of implementation. We envision the surveys and observations to be checklists of concrete behaviors, which will help not only to increase the validity and reliability of the reports, but also to decrease the burden on

respondents and observers. The surveys and observation protocol will be based on a classroom practice checklist developed, piloted, and previously used by EDC.

- *Teacher Practice Survey.* To capture potential change in teaching culture as a result of this unique school-wide approach, we plan to survey teachers in treatment and control schools on their literacy instruction. This survey will include questions asking how frequently teachers use SL instructional strategies, such as engaging students in a thematic inquiry to build motivation to read, teaching comprehension strategies, using cooperative peer discussions of text, engaging in a full cycle of meaning-making activity, integrating writing into the reading process modeling thinking processes, and others.) The survey will also measure several contextual, demographic factors important to the study, such as teachers' classroom experience and training as an ELA or special education teacher, and class-level student characteristics as perceived by the teacher. AIR will develop the instrument and train AIR and Sun Associates data collectors to administer it in the fall, winter, and spring of each academic year.
- *Principal Survey.* Principals will be surveyed about the challenges they have experienced in implementing SL across their school, their solutions to these challenges, and the results of their problem solving. We will ask them about the challenge they perceive for teachers and ways that the literacy team has assisted teachers. We will also use the survey to elicit, through fixed choice formats, principals' perceptions of the educational benefits and limitations of the SL approach for students, teachers, and the school as a whole. The principal survey will also offer us the opportunity to gather information about the school from the local administrator's perspective. Examples of the school culture we are considering include: degree of teacher collaboration, faculty motivation to work with high-risk students, use of standards and assessments in selecting and designing curricula, parent involvement, clear and agreed-upon goals, the use of student assessment data in planning, and perceptions of what strong school leadership means.
- *Literacy Coach Survey.* The literacy coach at each of the intervention schools will be a key source of data on changes to teachers' instruction and level of SL implementation. As part of their responsibilities, literacy coaches will be asked to report on each teacher's use of SL strategies three times each academic year, in the fall, winter, and spring. In addition, literacy coaches will be asked about perceived changes in their own instruction and in their approach and effectiveness in supporting their peers in implementing SL.
- *Classroom Observations.* We plan to conduct annual classroom observations, where we spend entire days observing individual teachers within a school. The observations will yield detailed information on content covered and pedagogical practices in reading in the classrooms, permitting us to characterize the classroom instruction observed in terms of consistency with the SL intervention's goals. The data collected from classroom observations will also be a rich source of information about the content of literacy instruction for students in the SL treatment schools and for students in the counterfactual or control schools. Observations will ensure that ELA treatment classrooms are indeed indicative of the *SL* approach and that ELA control classrooms are indeed distinct (that is, do not use strategies indicative of the *SL* approach). AIR will train field staff to use an observation checklist. These observations will occur in each class in the late winter/early spring of each study year.

*Satisfaction with the intervention.* Satisfaction with the intervention is an important process outcome that we believe is necessary to refine SL for scale-up. This is an attitudinal measure that will ask teachers, literacy coaches, and principals to evaluate their SL experiences, including the quality and effectiveness of the professional development provided, including the instruction in the SL approach, the ongoing mentoring provided, and their own ability to implement SL strategies. We will ask teachers to evaluate the helpfulness of the coaching from the literacy coach and specific strengths and limitations of the role in a school engaged in reform. We will also ask respondents to identify challenges with both the SL approach and the intervention process and to offer their suggestions for improving the intervention. We plan to administer the SL satisfaction survey at the end of each academic year to staff in SL treatment schools.


*Data collection schedule.* Our anticipated field administration schedule is displayed in Table G. AIR will train all field staff; AIR and Sun Associates staff members will serve as data collectors. AIR will work with school personnel to make every effort to minimize burden and disruption to schools. For example, we will guard against collecting data at inopportune times (e.g., testing periods, periods prior to school breaks, professional development days).

**Table G. Supported Literacy Data Collection Schedule**

| SL Data Collection Schedule  | (b)(4)                               |     |     |  |     |     |
|--|--------------------------------------|-----|-----|--|-----|-----|
| <b>Fall (b)(4) 6<sup>th</sup> graders (Group A)</b>  | (in 6 <sup>th</sup> grade)           |     |     | (in 7 <sup>th</sup> grade; assume attrition from previous year, and addition of new students who were at a different school for 6 <sup>th</sup> grade) |     |     |
| <i>All 6<sup>th</sup> graders (~225 per school)</i>  | 1                                    |     | 1   | 1  |     | 1   |
| <i>10% sample (~23 per school)</i>   | 2                                    |     | 2   | 2  |     | 2   |
| <b>Fall (b)(4) 7<sup>th</sup> graders (Group B)</b>  | (in 7 <sup>th</sup> grade)           |     |     | (in 8 <sup>th</sup> grade)   |     |     |
| <i>All 7<sup>th</sup> graders (~225 per school)</i>  | 1                                    |     | 1   |  |     |     |
| <i>10% sample (~22 per school)</i>   | 2                                    |     | 2   |  |     |     |
| <b>Fall (b)(4) 6<sup>th</sup> graders (Group C)</b>  | (in 5 <sup>th</sup> grade elsewhere) |     |     | (in 6 <sup>th</sup> grade)   |     |     |
| <i>All 6<sup>th</sup> graders (~225 per school)</i>  |                                      |     |     | 1  |     | 1   |
| <i>10% sample (~23 per school)</i>   |                                      |     |     | 2  |     | 2   |
| <b>School Staff</b>  |                                      |     |     |  |     |     |
| <i>6<sup>th</sup> grade ELA and special education teachers (~3 per school)</i>   | 3                                    | 3,4 | 3,5 | 3  | 3,4 | 3,5 |
| <i>7<sup>th</sup> grade ELA and special education teachers (~3 per school)</i>   | 3                                    | 3,4 | 3,5 | 3  | 3,4 | 3,5 |
| <i>Literacy coaches (1 per school)</i>   | 6                                    | 6   | 5,6 | 6  | 6   | 5,6 |
| <i>Principals (1 per school)</i>   | 7                                    |     | 5,7 |  |     | 5,7 |
| 1 = General test of reading ability, e.g., GRADE, Gates-MacGinitie<br>2 = Writing measure<br>3 = Teacher practice survey<br>4 = Classroom observation<br>5 = Satisfaction with SL<br>6 = Literacy coach survey<br>7 = Principal/administrator survey |                                      |     |     |  |     |     |

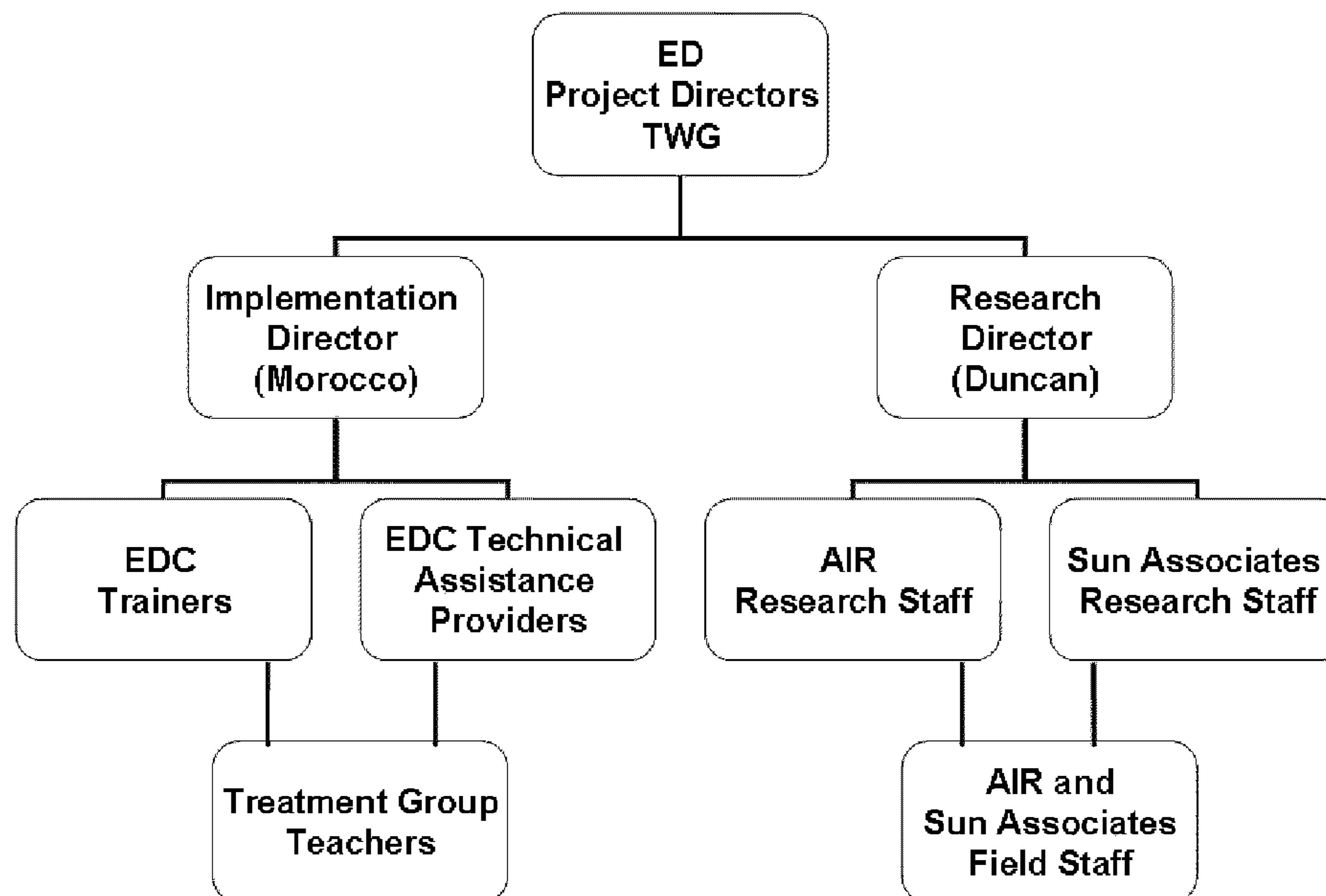
Field operation management and monitoring

(b)(4)



The SL study management structure is displayed in Figure D.

**Figure D. SL Study Management Structure**



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### Statistical methodology

Because the unit of assignment is the school, we will conduct and report analyses done at the aggregate school level (e.g., mean student writing scores; mean levels of various teacher literacy practices). But we do want to examine individual-level data and analyze data at the teacher and student levels, as well as over time. We will conduct HLM and growth curve models that allow us to analyze these nested data appropriately.

For each year of the study, the first set of analyses will measure the impacts of the overall SL intervention on students' reading proficiency, as measured by standardized tests of reading achievement, and their persuasive writing skills, as measured by a writing test. Using hierarchical modeling, we will measure program effects on overall literacy scores, the specific dimensions of literacy that are tapped in the assessment, and on writing scores. Because of the relatively large sample size, we can be confident about the inferences drawn from these analyses. We will also assess whether the effects of the intervention differ for subgroups of students (e.g., race, socio-economic status, prior achievement).

We are also interested in the degree to which SL strategies are implemented in the treatment and possibly the control schools. Our classroom observation data will help verify that literacy instruction in treatment and control schools is indeed distinct. If for some reason, they are not or if degree of treatment varies, these data can be entered into our model or used in sub-group analyses. To further contextualize the results, we will examine the teacher survey data. The data will again allow for the comparison of literacy instruction in treatment and control schools through the perception of teachers and their understanding of research-supported literacy practices. The study occurs over two years which will enable us to conduct longitudinal analyses to determine whether more extensive doses of training and teaching under the SL model results

in larger observable changes for the students from Year 1 to Year 2 or whether results remain consistent for Year 1 and Year 2.

While the above illustrates our overall approach to analyzing the wealth of data we will collect in this study, a data analysis plan will be developed after award of the contract and will tie specific data analyses to each data element and each research question.

*Intent-to-treat analysis.* Attrition from the sample can undermine the validity of a study, causing groups to be non-comparable on factors unrelated to the treatment. An intent-to-treat analysis is used to preserve the effects of the randomization procedure: i.e., “as randomized, as analyzed.” In this study, our unit of assignment is the school, and so an intent-to-treat analysis would involve obtaining reasonable proxies of our outcome data for schools that drop out, so that we may include them in our analyses of student reading achievement. If a school should drop from the study, we will look to the district to collect whatever student reading achievement data may be publicly available. The challenge here is that these aggregate data may include grades other than 6<sup>th</sup> and 7<sup>th</sup>, and that the reading achievement measure may not be current. We do not have recourse with regard to substituting the literacy instruction outcome, because these are not data that are typically collected. We recognize the difficulties that would be caused by school attrition and will make every effort to keep all 50 schools in the study through its entirety. Based on previous experience in evaluating the SL program, we do not expect attrition of schools from the study. We recognize that we may have attrition at the student and teacher levels, and so at each data collection point, we will compute attrition rates (overall and between study groups) to monitor possible selection bias. (b)(4)

(b)(4)

### Deliverables

AIR will provide interim research reports at the end of Year One, Two, and Three, as well as a final report during the final quarter of Year Four. EDC will provide an intervention report that describes the progress of the implementation across the 25 schools and identifies the challenges that EDC SL staff observes and which school literacy teams and teachers report to them, as well



as the problem solving strategies that schools use in response. EDC staff will draw on that report in a revision of the current implementation guide for literacy teams. Schools find the experiences and examples of other school leaders and teachers to be a helpful and powerful source of information for their own reform process. The revised guide will contribute to further research on this adolescent literacy program and to dissemination of Supported Literacy™ beyond the life of this study.

(b)(4)

***Schedule: Accelerating Literacy in the Middle School***

*Note: Following is the updated projected timeline for this study. However, this timeline (including starting dates) will be adjusted as necessary based on the revised detailed research plan submitted to ED for review and on the adjustments made in UAP. In addition to the information below, we will submit monthly reports. Any changes will be noted in our updated*

UAP to be submitted on July 1 of each year of the contract. All other ED, OMB, and IRB requirements will be met.

| Tasks   | 2006 |    |    |    | 2007 |    |    |    | 2008 |    |    |    | 2009 |    |    |    | 2010 |    |    |    |
|---|------|----|----|----|------|----|----|----|------|----|----|----|------|----|----|----|------|----|----|----|
|   | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 | Q3 | Q4 |
| <b>Finalize study plan</b>                    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| <b>Finalize measures</b>                      |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| <b>Prepare OMB Package</b>                    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| <b>School Selection</b>                       |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| <b>Prepare sites</b>                          |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Get student permissions                       |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Identify key staff                            |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Train leadership teams                        |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| <b>Train and Mentor Teachers</b>              |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Train literacy coaches                        |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Train teachers                                |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Mentor Teachers/ Coaches                      |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| <b>Implement in Classroom</b>                 |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| <b>Data Collection</b>                        |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Reading test (students)                       |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Writing test (students)                       |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Teacher survey                                |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Literacy coach survey                         |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Principal survey                              |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Classroom observations                        |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Satisfaction with SL                          |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| <b>Data Preparation, Analysis, Reporting</b>  |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Score tests                                   |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Enter survey & observation data               |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Prepare, analyze & report Fall 2007 dataset   |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Prepare, analyze & report Winter 2008 dataset |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Prepare, analyze & report Spring 2008 dataset |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Analyze Year 1 data                           |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Report Year 1 data                            |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Prepare, analyze & report Fall 2008 dataset   |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Prepare, analyze & report Winter 2009 dataset |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Prepare, analyze & report Spring 2009 dataset |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Analyze Year 1-Year 2 data                    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Report Year 1-Year 2 data                     |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Prepare data for archiving                    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| <b>Deliverables</b>                           |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Interim Research Reports                      |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Final Research Report                         |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Implementation Reports                        |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Refined Implementation Guide                  |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |

### **Additional Plans for All Rigorous Studies**

The following plans apply to all of the studies described above.

#### ***Protocols for obtaining cooperation and formal approval from state, local, and school officials:***

During the first six months of the grant period the Team Leaders for each study will work together to align and standardize their procedures for approaching, recruiting, and gaining formal approval from state, local and school officials. These procedures will draw on existing protocols and policies already established in each of the lead institutions, each of which has a long track record in building research partnerships with individual schools, school districts, and state departments of education. This process will result in the internal publication of a set of standardized templates for presentation of study information and information about the Regional Lab, and for documentation of the terms of agreements reached with administrators for cooperation in the research studies.

#### ***Dissemination:***

All plans for dissemination of findings from the Task 2 studies are presented in Task 4, Dissemination.

#### ***Deliverables:***

We will comply with all Department of Education expectations regarding deliverables, submitting all required items, including instrumentation, report drafts, and progress reports, according to the schedule outlined in the Statement of Work.

## 2.2 Technical Working Group

The technical working group (TWG) will assemble eight leading researchers who can provide invaluable expertise in the fields most relevant to the proposed work. In particular, we have selected a number of individuals who have specific methodological expertise in the design, conduct, and analysis of randomized controlled field trials and to whom other researchers look for guidance and cutting edge techniques. Other members of the TWG are experts and leaders in particular content fields that will inform the work of the proposed center.

The following individuals (listed in alphabetical order) have agreed to serve on the Technical Working Group:

- **Dr. J. Lawrence Aber**  
*Professor of Applied Psychology and Public Policy, New York University*  
Dr. Aber brings expertise in the area of high-risk children.
- **Dr. Anthony Bryk**  
*Spencer Chair in Organizational Studies, School of Education and the Graduate School of Business, Stanford University*  
Dr. Bryk is a leader in the field of educational statistics, having written what has become the primary reference on hierarchical linear modeling.
- **Dr. Larry Hedges**  
*Board of Trustees Professor, Department of Statistics, the Institute for Policy Research, and the School of Education and Social Policy, Northwestern University*  
One of the foremost authorities in the area of educational statistics and methodology, Dr. Hedges currently serves as the chair of the Technical Advisory Committee for IES's What Works Clearinghouse, among many other technical advisory groups. His participation will assure not only consistency with the What Works Clearinghouse's criteria for rigorous research in education but also access to advisement of the highest technical quality.
- **Dr. Stephen Klein**  
*Senior Research Scientist, RAND Corporation*  
Dr. Klein is an expert in testing and assessment and has written widely on the topic for both professional and lay audiences.
- **Dr. Richard Murnane**  
*The Juliana W. and William Foss Thompson Professor of Education and Society, Graduate School of Education, Harvard University*  
*Dr. Murnane is an expert in the economics of education and has published widely on using data in education and the new basic skills.*
- **Dr. Michael Nettles**  
*Vice President, Policy Evaluation and Research Center, Educational Testing Service*  
Dr. Nettles is an expert in diversity and research on students from disadvantaged backgrounds.
- **Dr. Aline Sayer**  
*Associate Professor of Psychology, University of Massachusetts, Amherst*  
Dr. Sayer's work on quantitative methods of modeling and analyzing change, and in particular the use of hierarchical linear modeling, is particularly informative for the proposed work.

- **Dr. Barbara Schneider**

*John A. Hannah Chair University Professor in the College of Education and Sociology  
Department, Michigan State University*

Dr. Schneider, an expert in the social organizations of schools, has directed the Data Research and Development Center, funded by IERI.

### ***Annual Meetings***

Each TWG member will devote eight days of his or her time per year to the proposed work. There will be one two-day, face-to-face meeting in Boston each year where attendance will be expected. This meeting, which will focus on design and substantive issues, will allow research staff to obtain critical guidance from TWG members on the lab's ongoing work and studies under development. We will also convene a half-day meeting during the American Education Research Association's annual conference, which most TWG members already attend. This meeting will provide another opportunity to gain feedback and guidance from key experts in the field.

### ***Quarterly Meetings***

Quarterly meetings, no more than 1-2 hours in length, will be convened using videoconferencing to make maximize the TWG members' time. These meetings will enable project staff to take advantage of the TWG's expertise on a specific project basis and provide updates to the TWG on project work. The frequency of the videoconference meetings will ensure that the TWG has sufficient opportunity to provide feedback and advice on issues that may arise in the course of the research and center activities.

### ***Individual Consultation***

We will also call upon TWG members for periodic individual or small group consulting, when their particular expertise is required. We will communicate with these individuals by phone and email, sending them proposed designs and instruments for their reactions and critical feedback, as well as requesting direction toward relevant literature that might inform our work.

### ***Dissemination***

TWG members will be asked to review reports and manuscripts that we intend to submit for publication. We will also include members, as much as possible, in proposed conference presentations and symposia.

## **2.3 Forms Clearance**

### ***Compliance with Privacy Act requirements.***

For each of the proposed studies, all data collection activities will be conducted in full compliance with Department of Education regulations for maintaining the confidentiality of data collected and for protection of the rights and welfare of human research subjects. Research participants will sign written consent forms. The consent materials will inform respondents about the nature of the information requested, that the data will be confidential and used only for research purposes by researchers that have signed confidentiality agreements, and that the information will only be reported in aggregate form.

All data collection forms will contain no names but only an arbitrary, unique identifying number. For each of the proposed studies, these forms will be returned directly to the respective lead

institution in sealed envelopes or via secure Web servers. The respective lead institution will assign all key informants a unique identifying number, and respondents' names and other public identifiers linked to their identification numbers will be kept in a secure location, separate from the databases used for statistical analyses. Respondent names will be used for administration of tests (i.e., to know which tests to distribute to which respondents, although only the study identification number will appear on the test itself), for checking returns, and following up on missing tests. For each study, access to the file linking study identification numbers with the respondents' identification and contact information will be limited to a small number of individuals who have a need to know this information. Across all proposed studies, access to hard copy documents will be strictly limited. Finally, each lead institution will store and archive all respondent record data on a dedicated data server separate from public servers. Computer data files will be protected with passwords, with access limited to specific users. Computer storing data will be secured at all times that they are not being used for data entry and analysis.

***Institutional Review Board clearances for protection of human subjects.***

All data collection activities will be conducted in full compliance with Department of Education regulations for maintaining the confidentiality of data collected and for protection of the rights of human research subjects. Each of the lead institutions for the proposed studies has an established internal Institutional Review Board that will be the guiding authority for determining adequate protection for all human subjects for each of the proposed studies. Additionally, each study will refer to the federal guidelines for the ethical treatment of human subjects throughout the implementation of each study.

According to the requirements of each lead institution's Institutional Review Board, all study instrumentation will be reviewed and modifications recommended as soon as instruments are developed. For each study, no data collection will occur until all human subject approvals are provided. As required by the Institutional Review Boards, consent forms will be provided to subjects to inform them about the study and to obtain parental permissions (in the case of K-12 students) and participating teacher permissions. Data collection will contain no names after the initial coding, using only an ID number for each student to maintain confidentiality. Data will be stored in a secure location with access granted only to project staff. Computer files will be password protected.

For each study, documentation of IRB approval will be shared with the Department of Education within a month of the Department's approval of the study design.

***Office of Management and Budget clearances for data collections.***

For each proposed study, the first six months of the project plan will include discussions with, and submission of appropriate documentation to, the Office of Management and Budget to secure OMB clearances for all data collection instruments. This process will proceed in coordination with securing Institutional Review Board approval for instrumentation internally, within each of the lead institutions.

***Compliance with Section 508 of the Rehabilitation Act of 1973, as amended, 29 U.S.C794(d).***

All electronic resources produced as a result of these studies, including website resources and electronic documents, will be in accordance with this directive. Study directors will work in collaboration with the coordinators of the shared Regional Lab Network website to ensure that

all resources are submitted to that website in appropriate forms to support compliance with the directive.

***Plans for coordination and/or collaboration with other laboratories***

The research director of the Laboratory, as well as the Study Leaders for each study, will draw upon the structures and resources of the National Laboratory Network to maintain close contact with the Study Leaders from all other relevant Task 2 studies being conducted at other regional labs. Study teams also will provide all needed resources and information to the Project Manager to support the creation of cross-Laboratory web-based resources.

***Procedures for providing public use and/or restricted-use data files with documentation***

For all experiments conducted within each proposed study, the lead institutions will produce a carefully documented archival data files including all the data collected. These data files will contain anonymous student-level, test administrator-level, and site-level data as appropriate. They will include labels, sample weights (if used), and well-identified flags for survey response, experimental condition, site, etc. The public use files will be edited as necessary to eliminate small cells that might enable someone to identify individual students. The decision on what data to release for public use and what data to omit or mask will be based on a careful analysis of disclosure risk, for which each lead institution will seek guidance from its respective Institutional Review Board.

**2.4 Planning for data collection, site selection, and site visits**

We will comply with all Department expectations for the process of developing and reviewing data collection plans and instrumentation. All original data collection instruments will be submitted to the Department of Education for review and, after revisions are made, revised versions will be re-submitted to the Department. Lists of proposed sites for site visits involved in each study will be shared with the Department of Education and input from the Department will be incorporated before site contacts are made.

**2.5 Data analysis and report preparation**

The research teams will comply with all Department expectations regarding the development and revision of both technical and non-technical research reports and the incorporation of Department feedback into revised versions of report drafts. In the interest of facilitating educators' use of research to drive educational practice, we will place particular emphasis on producing materials for a popular, non-technical audience. In all cases, reports will present abstracts and executive summaries as necessary.

## Schedule for Task 2

| Item         | RFP Language  | Due Date   |
|--------------|---|--|
| Deliverable  | Revised Detailed Research Plans and Schedules for Each Rigorous Study (for years 1 through 5) (2.1 – 2.5) | Within 26 weeks from the start of the contract   |
| Deliverable  | Monthly Progress Reports (2.1)  | Monthly  |
| Deliverable  | Updates to Annual Fast Response Plan (2.1, required in Subtask 5.1)                                       | July 1 of each contract year   |
| Milestone    | Form TWG (2.2)  | Upon start of the project  |
| Deliverable  | Draft TWG Plan (2.2)  | ED approved schedule   |
| Deliverable  | Final TWG Plan (2.2)  | Within 2 weeks of receiving comments from ED   |
| Milestone    | TWG Meetings (2.2)  | ED approved schedule   |
| Deliverable  | Draft and Revised Agendas for TWG Meetings (2.2)  | Draft to ED 3 weeks before scheduled meeting, final to TWG 1 week before scheduled meeting; ED approved schedule |
| Deliverable  | Draft and Revised Minutes of TWG Meetings (2.2)   | Draft to ED within 1 week of meeting, revised to TWG once comments from ED incorporated; ED approved schedule    |
| Deliverable  | Draft OMB Forms Clearance Package (2.3)   | Within 8 weeks after ED has approved the study plan; ED approved schedule  |
| Deliverable  | Revised OMB Forms Clearance Package (2.3)   | Within 4 weeks of receiving comments from ED; ED approved schedule   |
| Deliverables | Documentation of IRB Approvals (2.3)  | Within 4 weeks after ED approved the rigorous study plan; ED approved schedule                                   |
| Deliverables | Preparation of Privacy Act System of Records Notice (if required) (2.3)                                   | ED approved schedule   |
| Deliverables | Draft data collection instruments (2.4)   | As outlined in study plans; ED approved schedule   |
| Milestones   | Pilot tests of instruments (2.4)  | As outlined in study plans; ED approved schedule   |
| Deliverables | Revised data collection instruments (2.4)   | As outlined in study plans; ED approved schedule   |
| Deliverables | Proposed list of sites with explanation (2.4)   | As outlined in study plans; ED   |



| <b>Item</b>  | <b>RFP Language</b>                     | <b>Due Date</b>                                      |
|--------------|---|--|
|              |   | approved schedule                                    |
| Deliverables | Final list of participating sites (2.4) | As outlined in study plans; ED approved schedule     |
| Deliverables | Draft protocols (2.4)                   | As outlined in study plans; ED approved schedule     |
| Deliverables | Revised protocols (2.4)                 | As outlined in study plans; ED approved schedule     |
| Deliverables | Draft Technical Report(s) (2.5)         | As outlined in study plans; ED approved schedule     |
| Deliverables | Revised Technical Report(s) (2.5)       | 8 weeks after comments from ED; ED approved schedule |
| Deliverables | Final Technical Report(s) (2.5)         | 4 weeks after comments from ED; ED approved schedule |
| Deliverables | Draft Non-Technical Report(s) (2.5)     | As outlined in study plans; ED approved schedule     |
| Deliverables | Revised Non-Technical Report(s) (2.5)   | 3 weeks after comments from ED; ED approved schedule |
| Deliverables | Final Non-Technical Report(s) (2.5)     | 2 weeks after comments from ED; ED approved schedule |
| Deliverables | Monthly progress reports (2.5)          | Monthly  |

### **Task 3: National Laboratory Network**

NEIREL will collaborate fully with the coordinating contractor for Task 6. We will share needs assessment results, draft and final activity plans, research methods, final products as approved by IES, and dissemination plans. We will coordinate activities with those of the Labs in other regions, in order to both better serve our region and to contribute to improving student achievement nationally. This collaboration will both maximize IES's investment in the research and technical assistance infrastructure and a large set of rigorous and relevant products for the field. We will participate in quarterly NLN planning meetings to share experiences from our region, feedback from our Governing Board and Technical Working Group, and insights about what products and services are proving most effective in the field. As needed, we will provide content and information to support the development of both the public NLN website and the intranet. We will designate the NEIREL Project Manager to serve as the Management Liaison to the NLN, providing input to the Website Plan and participating actively in ongoing joint decision-making about the effectiveness of the NLN as it evolves. That individual will also be responsible for providing guidance on critical issues related to the validation of research designs and products, consulting with the Project Directors, Director of Research, and Technical Working Group as needed. The NEIREL Project Directors will work actively with the NLN and leaders from the other Labs to develop a coherent national agenda for applied research and development studies. We will also designate a member of our Dissemination Team with expertise in website development and digital libraries as the Technical Liaison to work with the implementers of the NLN websites on technical issues.

Our monthly reports to the NLN contractor will comply with all USED expectations for timeliness, completeness, and accuracy. We will contribute to and review as needed the Draft Biannual Report on Network Collaboration to ensure that our region is fully and clearly represented, and we will participate in an analysis of national trends, emerging issues, and research directions as initiated by the NLN contractor.

### ***Schedule for Task 3***

| <b>Item</b> | <b>RFP Language</b>            | <b>Due Date</b> |
|-------------|--------------------------------|-----------------|
| Deliverable | Monthly Progress Reports (3.1) | Monthly         |

#### **Task 4: Regional Dissemination**

The NEIREL partners are committed to ongoing and active dissemination of research evidence that meets rigorous scientific standards. We recognize that while there has been a wealth of resources in education, many of which have been research-based, there is still a shortage of scientifically valid studies to inform policy and practice. As new scientifically rigorous evidence emerges, it is essential that this knowledge be shared both broadly and deeply in order to improve student achievement, reduce the achievement gap, and improve schooling.

The NEIREL dissemination system will build on the core partners' lengthy experience in disseminating research and promoting its use. Every year, each of the partners develops and disseminates scores of research-based reports, briefs, guides, and other products in order to enhance educational policy and practice. In addition to standard dissemination strategies, such as publishing books and articles, making presentations, and convening stakeholders, EDC, AIR, and WestEd have been pioneers in innovative uses of technology, such as creating digital libraries, using video- and teleconferencing, hosting Webcasts, facilitating online discussions, and conducting online courses. These dissemination vehicles have dramatically expanded the number of people we are able to reach. Moreover, we have learned very difficult lessons about what it takes to move from too much emphasis on the dissemination side to more emphasis on the *knowledge use* side of the equation, as Seashore Louis (2003) depicts.

Kahn and Baume (2003) describe three different levels of dissemination: *scattering* (widespread sending out of information through the Web and mass media), *sowing* (directing information to selected audiences such as state policymakers and district administrators), and *propagating* (promoting the use of information through T/TA and peer networks). Similarly, Hood (2003) distinguishes between two types of paradigms—"The Dissemination Paradigm" and "The Systemic Change Process Paradigm."

Traditional dissemination, much like the scattering approach described by Kahn and Baume, is one in which "some form of knowledge, produced someplace, is broadly disseminated to many users, often at some distance, physically and sometimes culturally, from the point of knowledge production" (p. 4). This form of dissemination, while important in raising awareness, does not necessarily result in knowledge utilization.

The main focus of the Systemic Change Process Paradigm, like Kahn and Baume's propagation, is knowledge use. Hood views this process as "local, complex, and dynamic," in which externally produced ideas, products, programs, and technologies may stimulate change, but are often incidental or subordinate to the internal change process. According to the author, the systemic change process requires local disciplined inquiry and reflection, rather than simply reading and digesting externally produced research products.

Neither paradigm is sufficient in itself, however. Sharing knowledge and research reports is important in order to provide scientifically-based evidence and lay the groundwork for future action, but it is generally not enough. Knowledge-based changes in practice require an evidence-based knowledge community characterized by inquiry, action, and reflection. Our proposed dissemination plan will include a mixture of the three levels of information dissemination suggested by Kahn and Baume and a melding of the two paradigms on knowledge use suggested by Hood.

### **Task 4.1: Design Dissemination System**

Effective dissemination can be achieved only through effective communication. Effective communication requires an understanding of both the content to be communicated and the audiences to be reached. The NEIREL's Dissemination System begins with the creation of knowledge and the products that capture the knowledge we and others create in order to meet the needs of the region. Our dissemination system is linked closely with the needs assessment tasks described in Task 1. The key audiences with whom we will collaborate to identify the region's needs will also be primary audiences for consumption of the research-based knowledge and products. The Unit Director of Coordination and Dissemination will work closely with the Needs Analysis, Training, and Technical Assistance Unit, as described in the Management section, to ensure that dissemination is part of training and assistance efforts. Support for knowledge use with various stakeholder communities is key to reaching the goals of NEIREL.

This section describes our approach to creating a dissemination system—goals, client dissemination analysis, product development and quality assurance, dissemination strategies, and relevance of information—by which we will ensure that evidence-based research and research-based products are disseminated and used throughout the region and the country.

In developing and executing this plan, we will keep three things foremost in our minds.

1. We know that people look to trusted sources for information they integrate and use. Everyone today is inundated with information from a wide variety of sources. Educators, elected officials, parents, and other stakeholders find it difficult to sort through the amount and kinds of research available in order to find answers to specific questions. EDC, WestEd, and AIR have well-established reputations throughout the region. Through early and ongoing outreach efforts, as well as timely response to requests, we will ensure that NEIREL is seen as a trusted source of rigorous and relevant knowledge.
2. We will work closely with other intermediaries in the region, and nationally, who also serve as trusted knowledge brokers. These include the various ED-funded T/TA providers, like the Regional CCs and the Regional Resource Centers. It also includes state level intermediaries, such as the Connecticut Alliance of Regional Education Service Centers and the New York Board of Cooperative Educational Services, as well as various professional organizations. It is critically important that these providers have access to the most current, evidence-based knowledge so that they can help clients across the region put it to good use.
3. We will leverage all the existing networks in the region to help various audiences understand, contextualize, and utilize knowledge. Some of these cross-state networks are already convened by the partners. For example, EDC facilitates the New England Compact (Maine, Vermont, New Hampshire and Rhode Island), which is working to develop common standards and statewide assessments that accommodate students with disabilities and English Language Learners. Learning Innovations at WestEd convenes seven of the state special education directors, as well as other communities of practice through the New England Regional Resource Center. And, for the past nine years, EDC and WestEd have hosted meetings for the deputy commissioners, state Title I directors, and state technology directors through the New England Comprehensive Assistance Center and the New England and Islands Regional Technology Education Center (NEIRTEC). We expect many of these to continue.

## ***Preliminary Dissemination System Plan***

The goals of our dissemination plan are to:

1. create a regional “community of knowledge,” where evidence-based knowledge is valued, understood, shared, and used for the improvement of the education system;
2. communicate evidence-based knowledge in ways that effectively reach education leaders and those who influence education policy and practice to enhance student outcomes;
3. provide intermediaries with the knowledge they need to provide evidence-based training and technical assistance and to promote knowledge use; and
4. develop in education practitioners, policymakers, and others, an appetite for research-based knowledge in order to increase the demand for it and to enhance its use.

EDC houses a full-service Office of Communications comprised of five staff members specializing in communications strategy, writing, editing, web development, and media relations. The Communications team will be available to the Lab program to ensure that all publications, communications, reports, and web related communications are of the highest quality, targeted for usefulness and rigor, and are disseminated in the most appropriate forms and channels. The Office of Communications publishes organizational brochures, an annual report, an online report, and a periodic report series, titled Mosaic, which focuses on key cross-cutting issues in the field, such as high school reform, literacy, online learning, and sustainable school reform. Mosaic is sent out to a mailing list of nearly 5,000 key leaders, including foundation executives and program officers; federal and state government officials, researchers, academics, and executive directors. The EDC Online Report is an e-newsletter sent out to more than 1,500 subscribers and featuring news articles and reports from the EDC website. The report averages 100-150 new subscribers each month. These vehicles along with some of those parallel institutionally supported vehicles of our partners, will be available to support the dissemination plan of the regional laboratory program.

### ***Phase 1: Client Dissemination Analysis***

A regional laboratory has many potential audiences for its work, from educators at all levels to policymakers to the community at large. Each group has a legitimate interest in having and using evidence-based knowledge, albeit for different purposes. Yet, any regional laboratory has limited resources and must allocate them wisely.

In order to use our resources wisely, we have chosen first to identify our primary target audiences and then to focus our first year dissemination efforts on the Fast Response studies described in Task 1.2. These studies show the close connection between needs assessment and dissemination, as they were chosen and designed out of the preliminary needs assessment we conducted in preparation for this proposal. Each year, additional Fast Response study results will be added to the dissemination plan, along with results from other Labs’ work, and other sources such as the WWC. The results of the rigorous Task 2 studies will be added to the dissemination plan as they become available in later years.

The primary audiences for our dissemination plan include the following:

- Education intermediaries at the state and regional levels (e.g., comprehensive centers, in-state collaboratives and professional development providers)

- State policymakers and administrators
- District policymakers and administrators
- School administrators
- Representatives of Higher Education Institutions
- Education researchers
- Education writers in mass media
- Teachers
- Policymakers at the national level
- Parents and parent-serving organizations

## ***Phase 2: Dissemination Product Planning***

In writing this proposal we have developed a preliminary dissemination plan, which will be finalized as part of the early work of the NEIREL. Soon after the lab contract is awarded and proposed plans are approved, we will begin to conduct our needs assessment and outreach, as described in Task 1. As part of this work, we will develop the database described in Task 1, which will serve as a source of information about audiences and their needs, and preferred modes of communication for audience types, as well as a repository for Lab products and dissemination activities. As NEIREL staff work with stakeholders in the region to define needs, staff will also establish relationships and conditions to support the use of the research-based knowledge products of the Lab, as they become available.

We will tailor the products developed to meet the target audience's needs and contexts. For example, district administrators are looking for programs and practices that work best to meet their students' needs. These may differ depending on whether the district serves a small rural community in Vermont or a large city such as New York City or Boston. In contrast, governors and legislators need information to guide legislation and convince constituencies of the efficacy, feasibility, and cost-effectiveness of various state level policies and programs. The work being done in the Fast Response and rigorous research projects will have multiple products and services developed and "packaged" to reach and interest the different kinds of constituencies and meet their needs. We will also tailor the dissemination plans to suit the type of knowledge being disseminated, e.g. more complex knowledge requires more supported dissemination (Hood, 2003).

## **System Planning Process**

Following are steps in the process of finalizing and implementing the dissemination system:

1. *Set priorities*: Identify high priority audiences, themes, and vehicles for getting out the results of the work, drawing on learnings from discussions with key stakeholders (e.g. our Governing Board, TWG, TA Centers) as part of our regional needs assessment. Match these results with the Task 1.1 work and Task 1.2 studies and with the rigorous research studies.
2. *Coordinate activities with the Lab Coordination Network* and meet all the requirements of submission to IES and the Lab Coordination Network.
3. *Develop a final five-year Dissemination Plan*. Revise and finalize the timeline for Fast Response studies and other projects, major events and activities, and products. Incorporate a

set of strategies and a system for generating interest and awareness of new products and alert audiences to NEIREL products on the Laboratory website.

4. Carry out Dissemination Activities:

- Identify key opportunities to link dissemination activities with ongoing activities of each stakeholder group (i.e., conferences, workshops)
- Identify key leaders in each state for different capacity building activities for each stakeholder group (i.e., how to access, use, apply and conduct rigorous research that improves student outcomes)
- Plan regional conferences and events, working with the Technical Assistance Unit
- Plan dissemination of products to be developed by the Fast Response and Task 2 studies, working with research project staff. Plans will include submission of journal articles to peer-reviewed journals and conferences, as well as web-supported conferencing, where appropriate.

5. *Evaluate the impact* of each major dissemination activity

6. *Revise plans and publicize the growth and success* of the evidence-based knowledge community that will emerge at state, local, regional levels. Invite thought leaders from the region to join in selected activities to learn about the emerging developments that the Lab is helping to create.

## **Product Development and Quality Assurance Process**

EDC has produced thousands of products for educators and others in its 40-year history, as have WestEd and AIR. We have developed a quality assurance process that will be used in NEIREL to ensure that each product meets stringent standards and is usable by the target audience. The process includes the following steps:

1. Ensure the quality of content. As a first step, review the research on which the product will be based to ensure that it meets rigorous scientific standards, as determined by the Technical Working Group and other experts.
2. Identify topic, audience, and type of product needed. Review needs assessment data, reports from the field, available resources and plans from other Labs and organizations. For each product, we will identify key findings from research, key questions and concerns of the target audience, and the type of report most suitable to the audience and question. For example, a research summary on early reading research would be written differently for state policymakers than for parent organizations.
3. Create product. Develop a prospectus for each product, e.g., size, design, etc., and assign writing and production staff, and timeline.
4. Set up review procedures that will ensure responsive and timely delivery of quality materials. Identify criteria for reviews, e.g., responsiveness to need, readability, value to stakeholder, and appropriateness of format.
5. Define a selection and preparation process for the review panels.



6. Provide two levels of internal review, by senior staff and another by outside experts with substantive knowledge of the issue.
7. Identify a pool of consumers/users to serve as “user experts” representing the perspectives of the intended target audiences and researchers.
8. Submit for Federal Review. After incorporating feedback, the final draft product will be sent to our program officers for federal review. After receiving and incorporating our federal program officers’ feedback, the final product will be created and ready for dissemination.

## **Dissemination Strategies**

*Scattering for widespread outreach.* Approved products will be featured on the REL Network website, and also through the NEIREL partners’ websites and other dissemination vehicles. EDC’s award-winning family of websites, WestEd’s Schools Moving Up website and AIR’s What Works Clearinghouse are used by millions of educators across the country. Each organization also produces and disseminates newsletters and reports that will feature findings of NEIREL studies. Following are some examples of websites and other vehicles that we will use to widely share information about research findings:

- EDC’s organizational website [<http://www.edc.org>] serves as an informational site for the entire organization and as a portal to over 100 project sites. *Tech Horizons* named EDC the “Project of the Month” in April 1999 and called it “a treasure chest of information, ideas, and tools.” EDC also produces an periodic report series, *Mosaic*, which features work on a specific topic; the most recent edition was on high school reform.
- AIR’s What Works Clearinghouse [<http://www.whatworks.ed.gov>] reviews studies that have the strongest design, and reports on the strengths and weaknesses of those studies against the WWC Evidence Standards. The clearinghouse is organized by topics, such as math, beginning reading, character education, English language learning, and is a valuable resource for policymakers and practitioners.
- Literacy Matters website [<http://www.literacymatters.org>], one of EDC’s project websites, is an online professional development environment focusing on adolescent literacy development in middle grades and high schools. It reaches over six million people a month, primarily ELA, content area, special education, ELL, and Title 1 teachers, specialists, and supervisors at the state, district, and school levels. It also has dedicated sections for parents and for students.
- WestEd’s Schools Moving Up website [<http://www.schoolsmovingup.net>] is an extensive resource for practitioners and others, featuring Webcasts, research summaries, ideas for action, profiles of schools and districts, and tools for school improvement.

News of products will also be sent (prospectively and upon completion) to the NEIREL client data base, which will include SEA staff, regional service providers, and school district personnel, as well as professional associations, university researchers and service centers, and others. Features of new research in newsletters and other mailings of professional associations and networks will reach many educators.

We will also develop a group of interested regional education writers, targeted to receive information, and nurtured to be prepared to receive and feature it in the mass media (press releases, editorials, radio, TV, cable, podcasting). The mass media is an untapped target audience

for the work of the lab in this region, one that can help reach parents, elected officials, and community members, as well as educators.

*Sowing the information to target audiences.* Our database will allow for the selection of targeted lists of people and organizations with interest in specific topics on which we are working. From the work on diffusion of research-based policy innovations, we have some hints that strong networks, both formal and informal, permit and support more rapid spread of research of particular kinds (Mintrom & Vergari, 2003 in Louis, 2003). Two examples from our past work follow, which show ways we have begun working with networks to share information.

A regional network of state education technology directors, each of whom has extensive and targeted distribution lists, recently was able to rapidly reach district and school technology coordinators with the news (September 28, 2005) about the \$100 laptop for children being developed at the MIT Media Lab. This example demonstrates the power of this type of network to rapidly disseminate relevant information through a regional professional community of interest.

In the spring of 2005, the New England Adolescent Literacy Network requested that EDC's comprehensive center provide training and resources on evidence-based uses of technology to support struggling readers and writers in grades 4-12. As an extension of the training, the center also designed a new section to EDC's Literacy Matters website that included information about how technology tools can be integrated into reading, writing, and communicating. The information takes the form of links to articles, lesson plans, and free, downloadable software programs. This example demonstrates how high priority requests (in this case, it was from six SEAs) can result in specific TA (face-to-face workshop) as well as an electronic product that is available in a highly useable format to practitioners nationwide. At the October, 2005 meeting of the group, all participants will receive a guidebook, titled *Technology Integration for Literacy*, with a PowerPoint overview, support materials, and downloads from key websites.

NEIREL will use our established connections with key leaders, intermediaries, and networks in the region, and will continue to reach out to others. High priority examples include:

- State education agencies and specific offices such as assessment and accountability, special education, school improvement, technology directors.
- State intermediaries such as the education collaboratives in Massachusetts and Rhode Island, BOCES and others in New York state, and regional education service centers in Connecticut and New Hampshire.
- University-based leadership development and teacher development centers and programs, and research centers, such as those at SUNY-Albany, NYU, University of Southern Maine, Harvard, and Columbia.
- Professional associations, such as state affiliates of NEA, AFT, AASA, and NSBA.
- Networks of role-alike and interest groups, such as the Deputy Commissioners, urban superintendents, EDC's own Urban Special Education Leadership Collaborative, and WestEd's Teacher Certification Working Group, made up of the Directors of Teacher Education and Certification from all states in New England and New York.

Information will also be shared with target audiences via conferences, online events (e.g. Webcasts), journals, meetings of various groups, and integrated into project work of NEIREL partner organizations.

*Propagating to support the effective use of the information.* We will support use of our research-based reports and tailored products in four ways: (1) in the design of the research itself, (2) in the development of products, (3) through coordination with regional intermediaries and service providers, and (4) by integrating the products into our own T/TA activities. By considering the needs and interests of the end user in the design of our studies, and by building in reviews by target audience members of our products, we will ensure that products meet the needs of stakeholders in the region. In addition, we will establish efficient and effective channels of communication with intermediaries whose job is to support the use of research-based products and practices to ensure that they know about the latest findings and are able to translate research findings into useful and usable practices by their client groups. Examples include:

- Interactive online sessions focused on information giving, problem solving, and community building: forums, mini-events, teleconferences, videoconferences.
- Formal online courses and face-to-face workshops, including knowledge sharing with TA providers.
- Ongoing personal contact, through state Liaison Teams, to help translate research findings for and with the networks and service providers, such as those listed earlier, to change policy and practice at state and local levels.

### ***Phase 3: Ensuring Relevance of Information***

Policymakers need up-to-date and scientifically-based knowledge if their decisions are to be of high quality and able to be implemented effectively. Policymakers include governors, state legislative education committees, state education agency leaders and their staffs, and local school boards and superintendents. People in these positions often ask for information, but have limited time to read and process it. They need information to be accurate and current, directly targeted to their needs, and presented in a readable and succinct format.

The chart titled, *Primary Audiences and Dissemination: Task 1.2 Studies* shows how we plan to provide these target audiences with information and assistance on scientifically valid research to meet identified needs. A similar, and more thorough, process will be conducted each year in order to identify needs that can be met through Fast Response studies, and, when results are available, for the larger scale long term studies described in Task 2.

#### **Task 4.2 Dissemination of Research Based Reports**

All products will be submitted to the funder for review and approval prior to dissemination. After approval, NEIREL will send research reports and other products for posting on the National Laboratory Network Website, as well as to the What Works Clearinghouse, and ERIC. All study reports and publications will meet ED requirements for formatting and publishing, including printing through GPO and submitting documents to ERIC. NEIREL will submit 5 copies and an electronic file in MS Word to ED in a timely manner according to our yearly plan. Each report and product will include a structured abstract. All Web products and reports will adhere to the requirements stated in IES/NCES *Standards for Web Publishing*.

## ***Types of Products***

In the first year of Lab operations, our RCT studies will just be beginning. Therefore, first year products will, of necessity, be reviews of research, reports based on data mining, results of Fast Response studies, and relevant resources from other respected sources. As part of our final dissemination plan we will codify the Lab's product format and the full product line, including web and other formats and vehicles. In addition to a full research report, each Task 1.2 study and Task 2 study will be detailed as to the various product packages that match the content and intended audiences for the study. A preliminary list includes the following:

- *Research findings*: These 10-20 page products will report the results of data analysis projects from Task 1.2 (after approval by IES) as each is completed. The document will include the study questions, methods, statistical findings and implications and are appropriate for researchers and analysts informing policy development.
- *Knowledge Briefs*, including Research Syntheses of Scientifically Based Studies and literature reviews on research findings of projects summarizing research to identify scientifically valid information. These reports will be tailored to the subject and appropriate audience and will be most useful for the research community, technical assistance providers, intermediary service providers, and trainers.
- *Policy Briefs*, will be shorter reports that summarize research findings for policymakers and other decision makers and focus on implications of the research findings.
- *Interim and Final Reports of Task 2 Rigorous Research Studies*: These full research reports will include a full treatment of the research undertaken in each of the Task 2 studies, with one or more interim reports published on each as appropriate findings become available. The initial reports will detail the intervention or problem being studied and the questions being asked. The full reports will include all aspects of the methodology, procedures used to work with sites or participants, plans for reducing participant burden, procedures for compliance with the Privacy Act, data analysis plans, including all sub analysis, and the various methods for disseminating findings. All reports on Task 2 studies will be done with approval from IES.
- *Results of Needs (and Strengths) Assessments* across the Region will be an annual report of the state of the needs and resources in the region and will be available via the Web. Variations and more in depth issues may be reported from time to time, based on the level of interest in the topic in the region.
- Highlights of regional, state, and local progress in meeting the goals of NCLB for all students and for students who are ELL, SWD, Homeless, Rural and from diverse race and class demographics will be available in various forms, to be determined, but will be easily accessible to stakeholders and clients in the region.
- Guides for strategies, tools, and methodologies that build the capacity of educators to design and carry out their own evidence-based and rigorous research through data mining, data management, and randomized control trials. (formats to be determined based on information, and audience needs)
- Summaries and proceedings documents from interactive forums, workshops, and conferences conducted through Lab activities and other laboratories' work that relates to issues in the northeast and islands region. (formats to be determined based on information, and audience needs)
- All products and full research reports will be filed electronically with ERIC

In addition, we intend to make research digests and other accessible and searchable data sources available to all audiences, so that information can be accessed via the Web in increasing levels of detail, depending on the end users' needs. We know that document length and level of "user friendly" language will be a major factor in whether our products will be used. A factor that must be weighed heavily in determining the format and packaging of each product is the extent to which the particular evidence-based knowledge can be conveyed with accuracy and integrity to the intended audiences within certain constraints. Oversimplification of complex information will not serve the region well. Our quality control process and product planning and review will help to ensure the accuracy and validity of our reporting in various formats.

## ***Evaluation***

As part of the Dissemination Plan to be finalized after award of the contract, we will submit a final set of objectives and indicators for guiding our work and evaluating our dissemination over the course of the contract. This evaluation plan will be aligned with the overall performance indicators of the Lab. Our goals for dissemination include: (1) Providing research-based products and services that are considered to be relevant and of high quality by regional stakeholders; and (2) Providing research-based products and services that are used by regional stakeholders to improve practice and policy in the region. We will use client surveying, via the products themselves or web pop ups, as well as our needs assessment process to collect data from our client base about the products and their use. We expect that we will be asking the degree to which clients find the products to (a) be clear, (b) meet their needs and address regional problems, (c) be of high quality, and (d) be a trusted and sought after resource. Regarding the use of the products, we will seek to understand further (e) the extent to which clients report they use the information, and, (f) the extent to which stakeholders report that the use of the information has contributed to improvements in practice.

### Primary Audiences and Dissemination: Task 1.2 Studies

Each study will generate a complete research report, as well as documents targeted to specific audiences. After federal approval is received, research reports and documents will all be sent to the National Laboratory Network, posted on NEIREL partner Web sites, shared with Comprehensive Centers and other TA-providers, and featured in partner organizations' project work. Below we describe specific dissemination plans for each Fast Response study proposed in Task 1.2.

| Task 1.2 Studies  | Primary audiences  | Products  | Targeted Dissemination Strategies  |
|---|--|---|--|
| 1. Practices that promote school connectedness and reduce drop-out rates in high poverty urban high schools | Education researchers<br>Policymakers and education leaders<br>Education practitioners | Working Paper<br>Journal article<br>Research and policy briefs                                    | Peer-reviewed education journal<br>Regional and national meetings  |
| 2. Supported electronic text and the reading comprehension of struggling readers                            | Adolescent literacy specialists<br>Special educators<br>Technology TA providers        | Research brief and accompanying guide with list of tools and vignettes<br>PowerPoint presentation | Meetings, conference calls, and Web casts of service organizations, e.g.<br>National Adolescent Literacy Coalition and New England Adolescent Literacy Group<br>Special Education TA and Dissemination Center<br>National Technology Centers |

| Task 1.2 Studies  | Primary audiences   | Products  | Targeted Dissemination Strategies  |
|---|---|---|--|
| 3. Effective practices in mathematics education for students with special needs | District administrators<br>Education researchers  | Research Briefs<br>PowerPoint presentation  | Presentations to at conferences, e.g. National Council of Supervisors of Mathematics<br>Council of Exceptional Children<br>Urban Special Education Leadership Collaborative  |
| 4. Improving reading comprehension in Spanish and English in Puerto Rico        | Puerto Rico DoE and other SEAs serving Spanish-speaking populations<br>Teacher developers | Final report and summary in English and Spanish   | Conferences and meetings of senior SEA staff, university and other teacher educators   |
| 5. Retention of qualified science and mathematics teachers                      | State and district policymakers   | Profiles of 9 participating LEAs<br>Cross-district report of findings and implications for policy and research<br>Manual for collecting, cleaning, and analyzing data | Meeting of participating districts and states to review findings and discuss implications<br>Meetings of the NEIREL Board and other policymakers to develop recommendations<br>Presentations at professional associations of school personnel and other administrators, science and mathematics teacher associations, and LEA directors of research and assessment |

| Task 1.2 Studies   | Primary audiences  | Products   | Targeted Dissemination Strategies   |
|--|--|--|---|
| 6. Impact of QTEL professional development program on the academic achievement of English learning students in NYC                                   | ELL researchers, practitioners, and policymakers   | Research Briefs  | Regional research seminar of study participants and researchers, and invited stakeholders (e.g. deans of schools of education) to explore critical issues                 |
| 7. Approaches to strengthening the education workforce, with studies of mentoring programs for new teachers and of professional learning communities | SEAs/LEAs<br>Mentoring program leaders & participants<br>Professional learning community leaders & participants<br>Education researchers | Research and policy briefs<br>Guide that will include summary of research steps, and case studies of successful implementation<br>Detailed summary of the findings | Sub-regional forums and online events to discuss findings   |
| 8. Deepening analysis of large-scale assessment data to address predictors of performance for ELL students   | SEAs<br>Urban educators through e.g. Urban Special Education Collaborative, La Raza<br>Universities                                      | Journal articles<br>Report summaries   | Professional journals<br>Report disseminated to SEAs, LEAs, parents and community<br>Facilitated discussion of use of the data at New England Compact meetings            |
| 9. Impact of benchmark assessments aligned to state standards on student achievement   | SEA accountability and curriculum staff<br>Local superintendents and curriculum directors  | Technical research brief   | Sharing with SEAs in the region<br>Presentations at SEA-sponsored conferences and events, as well as events sponsored by other TA providers and professional associations |



## Regional Dissemination Timeline

### **Year 1 (Assume mid-February start date)**

(Years 2-5 will proceed as Year 1 unless adjustments are made by ED. Task 5 Year 3 Evaluation and Final Reports at end of contract appear on later years' timelines)

|                                      | M | J | J | A | S | O | N | D | J | F | M | A |
|--------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| <b>Task 4.1</b>                      |   |   |   |   |   |   |   |   |   |   |   |   |
| Revised Dissemination Plan           |   |   | • |   |   |   |   |   |   |   |   |   |
| Dissemination System Plan            |   |   |   | • |   |   |   |   |   |   |   |   |
| Monthly Progress Reports             | • | • | • | • | • | • | • | • | • | • | • | • |
| Status Report (UAP)                  |   |   |   |   |   |   | • |   |   |   |   |   |
| Task 1.2 Studies Dissemination       |   |   |   |   |   |   |   |   | • | • | • | • |
| Task 2 Studies Interim Dissemination |   |   |   |   |   |   |   |   |   |   | • | • |
| <b>Task 4.2</b>                      |   |   |   |   |   |   |   |   |   |   |   |   |
| Revised Product Plans                |   |   | • |   |   |   |   |   |   |   |   |   |
| Updated Product Plans Years 2-5      |   |   |   |   |   |   | • |   |   |   |   |   |
| Final Report TBD                     |   |   |   |   |   |   |   |   |   |   |   |   |
| Electronic Copy to ERIC TBD          |   |   |   |   |   |   |   |   |   |   |   |   |

### **Schedule for Task 4**

| <b>Item</b> | <b>RFP Language</b>  | <b>Due Date</b>  |
|-------------|--|--|
| Deliverable | Revised dissemination system plan (4.1)                                | Within 12 weeks of the start of the contract                                   |
| Deliverable | Dissemination System Plan (4.1)  | Within 2 weeks of receiving ED comments (within 17 weeks of start of contract) |
| Deliverable | Monthly progress reports (4.1)   | Monthly  |
| Deliverable | Status report on dissemination activities (4.1, due under Subtask 5.1) | July 1 of each contract year   |
| Deliverable | Revised Products Plan for Year 1 (4.2)                                 | Within 12 weeks of the start of the contract                                   |
| Deliverable | Updated Products Plan for Years 2-5 (4.2, see subtask 5.1)             | July 1 of each contract year   |
| Deliverable | File of Final Report/Product (4.2)                                     | ED approved schedule   |
| Deliverable | Electronic file to ERIC (4.2)  | To accompany all reports   |

## **Task 5: Planning, Management and Reporting**

This section addresses the project's meeting and reporting requirements, purposes and functions of the Governing Board, required financial reporting, performance monitoring, and the Year 3 evaluation. A separate section, Management Plan, addresses NEIREL's strategies for implementing the proposed Technical Plan through administrative structures and operating procedures, including a description of how NEIREL plans to meet USED requirements, milestones and deliverables as outlined in the separate Task sections, including this Task 5 section. The Management Plan also describes the proposed quality assurance systems and includes an organizational chart. EDC and its partner organizations understand the value of frequent reporting and thorough planning, both to keep USED fully informed about our work and also as a method of ensuring all staff on the NEIREL have the same high expectations and standards for the work. We share the high expectations USED is setting for the REL program and will use the tools outlined here to optimize the timeliness, rigor, usefulness, and quality of NEIREL work.

EDC, along with its partner organizations in NEIREL, is committed to completing all tasks outlined in the contract on time, within budget, and to high standards. EDC has a well-established track record of successfully working with USED on a variety of long-term contracts, and will bring this experience, expertise and commitment to this project. The partners have successfully worked together on a number of projects, and this long-established working relationship will be of tremendous importance as the project staff work to meet and complete USED requirements. The NEIREL project will be housed in EDC's President's Office, ensuring full commitment, cooperation and support of EDC as an organization, including the Executive Committee, and providing access to all the research and development centers within EDC. The two Co-Project Directors are both EDC vice presidents and members of the Executive Committee, and thus can easily draw upon the full complement of EDC's resources to support this project.

### ***5.1 - Updated Annual Plan***

By July 1<sup>st</sup> of each contract year, EDC will submit an Updated Annual Plan (UAP) that addresses each task in the five-year plan, reports on current fast response applied research and development studies, the progress on the longer-term rigorous experimental studies, and updates our proposed activities for each task in the Statement of Work for the next year of the contract. The UAP will include an updated budget for the upcoming year (including those related to rural areas), reflecting any revisions and further specifications that are necessary to carry out the work. The UAP will also include summary updates on current year activities, including any changes that have been agreed upon by EDC and ED, an annotated list of contractor products and/or publications and the use of small business consultants, and any other relevant information that will assist USED in its oversight and monitoring role.

NEIREL sees the development and refinement of the UAP as part of the Quality Assurance Process and will use the development of the plan to review all aspects of our research, work to date, products, and services to ensure that they are of the highest quality and level of utility.

## **5.2 – Formation and Functions of a Governing Board**

The work of NEIREL will be guided by a Governing Board (the Board), composed of Chief State School Officers or their designees, along with representatives from the policy, research, superintendent, principal, teacher, and parent constituencies, broadly representing our region. The Board membership, which will include representatives of urban and rural areas, will also be diverse in gender, race and ethnicity, and will be finalized within 8 weeks from the start of the contract and convened within 12 weeks (120 days). Its purpose will be to set policies, establish regional priorities, and oversee the NEIREL activities in accordance with program legislation and requirements of the contract.

As the governing structure for the Regional Laboratory, the Board will provide strategic leadership for the Regional Lab, share information about how NEIREL is carrying out its activities, plan joint activities that include multiple regions, create a strategic plan to reduce unnecessary and/or redundant activities, and increase collaboration and resource sharing. The Board will allocate NEIREL's resources in a manner that reflects the need for assistance, taking into account factors such as the increased cost burden of service delivery in areas of sparse populations, the proportion of economically disadvantaged students and any special initiatives that might require special assistance.

More specifically, the Board will:

- guide and direct NEIREL in satisfying the terms and conditions of the award;
- determine NEIREL's regional agenda;
- determine NEIREL's mission over the contract period;
- ensure that this mission is consistent with the duties required by the program statute;
- engage in an ongoing dialog with the Commissioner of the National Center for Education Evaluation and Regional Assistance;
- ensure a high level of quality in NEIREL's work and products;
- establish standards for NEIREL's effective governance and administration, including staff selection;
- direct NEIREL to carry out its duties in a manner that will make progress toward reforming schools and educational systems; and
- conduct a continuing survey of the needs of the region, including a process of open hearing to solicit views from schools and teachers.

The Board will be made up of approximately 18 members, including the Commissioner from each of the nine jurisdictions (New England states, New York, Puerto Rico and the Virgin Islands) and one other member from each jurisdiction to represent a cross-role group of parents, teachers, school and district administrators, educational researchers, and others, as designated in the legislation establishing the Regional Education Laboratories. The Governing Board members have been selected (listed below) as representative of both the jurisdictions in which each resides, and of the client group each person represents, to act both as informants and emissaries to the project. This selection process ensures that there will be two representatives from each jurisdiction. Invitations were extended to individuals in leadership positions who have access to the constituency for whom they were selected to represent, such as the state chapter presidents of AFT and NEA. No staff of NEIREL or EDC will serve as a voting Board member or officer.

Following this proposed structure, NEIREL’s Governing Board will consist of:

- Chief State School Officers (or designees) from all 9 jurisdictions
- 1-2 researchers
- 2-3 teachers (NEA, AFT, teacher of the year)
- a Parent Advocate
- a Rural Superintendent
- an urban elementary principal
- a Business and/or Foundation representative
- 1-2 policy makers, such as a School Board member, state senator or legislator

The following chart shows the proposed membership of NEIREL’s Governing Board:

| <b>State</b>          | <b>CSSO or Designee</b>        | <b>Representatives from other client groups</b>                                | <b>Client Group</b>                |
|-----------------------|--------------------------------|--|------------------------------------|
| <b>Connecticut</b>    | <b>Bette Sternberg</b>         | <b>Donald Leu, UConn</b>   | <b>Researcher</b>                  |
| <b>Massachusetts</b>  | David Driscoll                 | <b>Kathleen Kelly, MFT/AFT</b>   | <b>Teachers</b>                    |
| <b>Maine</b>          | <b>Sue Gendron</b>             | <b>Robert Walker, MEA (NEA)</b>  | <b>Teachers</b>                    |
| <b>New Hampshire</b>  | <b>Lyonel Tracy</b>            | <b>Judith Adams, Principal, Manchester</b>                                     | <b>Urban Elementary Principals</b> |
| <b>New York</b>       | <b>James Kadamus</b>           | <b>Lourdes Rivera-Putz, Director, Parent Advocacy, NYC</b>                     | <b>Parents</b>                     |
| <b>Rhode Island</b>   | <b>Peter McWalters</b>         | David Caprio, Legislator   | <b>Policy Makers</b>               |
| <b>Puerto Rico</b>    | <b>Waldo A. Torres Vasques</b> | <b>Nelson Colon, President &amp; CEO, Fundacion Comunitaria de Puerto Rico</b> | <b>Business/ Foundation</b>        |
| <b>Virgin Islands</b> | <b>Noreen Michael</b>          | To be named  | To be determined                   |
| <b>Vermont</b>        | <b>Richard Cate</b>            | <b>Alice Angney, Superintendent, S. Lamoille</b>                               | <b>Rural Superintendents</b>       |

Key: **Confirmed as members of Governing Board or agreed to send designee**  
 Invited members not yet confirmed

In accordance with the Board’s by-laws (which will be developed by the Board in conjunction with the NEIREL Leadership Team), terms on the Board will be for three years; however, the initial Board members’ terms will be staggered from 1 to 3 years in order to establish a balanced rotation. The Board will be called to convene an initial meeting within 12 weeks after the commencement of the contract. At the initial meeting the Board will establish the governance policies, meeting schedule and dates, and determine other matters. The Board will meet quarterly. Twice each year the Board will convene for two-day retreats; the other two meetings will be ‘virtual,’ using web casting, video conferencing, or conference call technologies. Other responsibilities of Board members may include service on ad hoc Committees constituted by the Board on an as-needed basis. Governing Board members will participate in the bi-annual cross-constituency hearings for each jurisdiction. These meetings will describe the Lab’s current priorities and ongoing activities and invite public comment and feedback. Every 6 months, a

representative from the Board or its designee will meet with the COR and other USED staff in Washington, DC. Every 12 months, the Co-Project Directors and a representative of the Board will meet with each state's CSSO and other SEA staff as designated by the CSSO, to provide an update on Lab accomplishments and discuss the priorities of the SEA. Governing Board members will also read and respond to Updated Annual Reports prior to being sent to ED.

Members of the NEIREL Leadership Team will attend all Governing Board meetings, as will the EDC member of the Senior Advisory Team. At the biannual retreats, the Board will engage in a needs assessment process, beginning with the first Board meeting, to identify, clarify, and prioritize regional needs.

Within 12 weeks of the start date of the contract, a report on the establishment of the Governing Board, by-laws, a listing of members will be submitted to ED. Minutes and materials along with action steps that address issues from the Board, will be submitted to USED following each meeting.

Information describing the ways in which NEIREL staff will work with and through the Governing Board to conduct project work is described in the Management Plan section.

### ***5.3 – USED Performance Monitoring***

By September 1<sup>st</sup> of each year, EDC will provide USED with relevant information required to monitor performance, particularly for Applied Research and Development activities under Tasks 1 and 2, to ensure they comply with IES standards for scientifically valid research. EDC will actively work with IES to supply all requested information to meet GPRA requirements and other uses. NEIREL's internal data collection processes will be developed with this requirement in mind, to ensure alignment with IES information needs and to facilitate and coordinate the Performance Monitoring process. In all ED-funded projects managed by EDC, we have consistently supplied USED with required information based on performance indicators and we are fully prepared to provide data on indicators that are established by IES for this project. One of our partners, WestEd, has served in a leadership role in the development of indicators for prior REL contractors, including the development of data and quality control systems for indicator data, and will bring this experience and knowledge to NEIREL's work in this area.

Quality, utility and relevance are important criteria for NEIREL work. Monitoring of the quality of research tasks will be supported through a combination of procedures described in the Management Plan section of this proposal. Quality will also be measured in part by GPRA and other IES reviews of Laboratory work. EDC will incorporate quality as one of the measures it uses in obtaining input from Technical Working Groups for research studies, clients and intended users of products and services, and experts in the respective fields. Utility and relevance are particularly important for products and services. Client and user feedback in this area will be critical and part of the information gathered by NEIREL.

### ***5.4 – Meetings with ED***

Four members of the NEIREL Leadership Team (the two Co-Project Directors, the Project Manager, and the Director of Research) will meet with USED staff in Washington, DC for the initial contract kick-off meeting within two weeks of the contract being awarded. Throughout the course of the contract, the NEIREL Leadership Team, senior staff, project advisors, EDC executives and Governing Board members will be available to meet with USED as needed. In

addition to providing monthly and annual reports and participating in meetings, EDC will provide information as requested to keep USED apprised of key accomplishments, progress in accomplishing tasks, major upcoming activities, actual or potential problem areas, and services/products completed. NEIREL proposes to conduct periodic conference calls with USED staff to supplement regular written reports. EDC will send a follow-up memo to USED within two weeks of each meeting or call which will summarize the key issues and concerns addressed at the call/meeting and plans for how these will be addressed.

### **5.5 – Biannual Meetings**

Twice each year over the duration of the contract, NEIREL's Co-Project Directors, Project Manager, Director of Research, at least one representative and/or designee of the Governing Board, and others (including Senior Partner representatives and Senior Advisor representatives as determined through consultation with ED) will meet with the COR and other appropriate USED staff in Washington, D.C. to brief USED on the progress being made on the tasks and to discuss issues as they arise. EDC will communicate with the COR before and after each meeting or conference call to discuss main points and follow-up as needed. We will provide written summaries of the main points of each conference call, including recommendations from the Governing Board, to the COR within two weeks after each meeting or conference call. The written summary will include key issues and concerns raised at the meeting and how each will be addressed. Immediately following these meetings, information will be shared with NEIREL's Leadership Team and other key staff, as outlined in the Management Plan section.

### **5.6 – Monthly Progress Reports**

Within ten workdays after the end of each month, EDC will submit monthly progress reports (Monthly Reports) to ED. The monthly reports will summarize NEIREL's major activities under each task and accomplishments for the reporting period, and will provide information for each project task regarding significant findings and events, problems encountered and our resolution of these problems, and utilization of staff. The Monthly Reports will also briefly describe the activities planned for the next month.

In these reports, EDC will specify the extent to which the work is on schedule and within budget. Any significant deviations from the Management Plan, including time allocations or activities, will be noted and discussed in detail, as will any exceptions, problems or decisions which may be needed from USED in the future. If there are deviations indicated, the Monthly Report will describe the plan for resolving the problems. If there are no deviations, we will indicate that in the Monthly Reports. After the Updated Annual Plan is submitted July 1 of each year, EDC will ensure that the Monthly Reports reflect plans for both the current and the upcoming year and will highlight any new or evolving issues that may affect implementation of the next year's Annual Plan. Processes for timely and ongoing collection of information needed for these Monthly Reports are outlined in the Management Plan section.

### **5.7 – Monthly Financial Reports**

Within ten workdays after the end of each month, EDC will submit to COR and the Contracting Officer a Monthly Financial Report reporting expenditures organized by task. This report will include a chart showing a running balance of funds, reflecting the total funds available, less the

current month's expenditures, resulting in the available balance of contract funds. As required, information about expenditures will be provided for the following categories:

- Salaries
- Fringe Benefits
- Consultant Services
- Subcontracts
- Staff Travel
- Consultant Travel
- Meetings and Conferences
- Publications and Printing
- Communications
- General Supplies
- Other Direct Costs
- Indirect Costs
- Fee, if applicable
- Expenditures for rural areas
- Additional categories corresponding with EDC's financial systems

If and when requested by ED, other financial information required for proper oversight of the project will be provided on a timely basis. Information on EDC's financial monitoring systems and reporting is detailed in the Management Plan section.

### ***5.8 – Year 3 Evaluation***

EDC will support ED's work to prepare for and conduct an independent evaluation of NEIREL in Year 3. Requests from USED for information and other types of assistance needed to conduct the evaluation will receive careful and prompt attention. Staff time will be allocated to review ED's recommendations and to refine the scope of work based on the recommendations. NEIREL's Leadership Team and Governing Board will review the results of the Year 3 evaluation to ensure that ED's requests and/or recommendations are incorporated into the management of NEIREL's contract and the implementation of its work. As previously stated and as outlined in the Management Plan section, ongoing quality assurance/formative evaluation work will be conducted internally by EDC and its partners. The Year 3 Evaluation report will provide important information that will inform the work of project and will support and supplement this ongoing assessment.

### ***5.9 – Final Report***

A draft Final Report will be submitted to USED at least 16 weeks before the end of the contract. As required, and in accordance with ED's content and format requirements, the report will address the accomplishments, results and benefits of NEIREL's work for the five-year contract period. Following ED's review and input, EDC will incorporate ED's comments into the Final Report, and will submit this report on or before the last day of the contract period. Input for this report will be solicited from all project staff, Senior Advisors, Governing Board members, and key clients. The draft Final Report will also be reviewed with the Governing Board, the Senior Partners, the Senior Advisors, and the Leadership Team. The Final Report will be made available to the above mentioned groups, as well as key regional stakeholders.



## Planning, Management & Reporting Timeline

### **Year 1 (Assume mid-February start date)**

(Years 2-5 will proceed as Year 1 unless adjustments are made by ED. Task 5 Year 3 Evaluation and Final Reports at end of contract appear on later years' timelines)

|   | F | M | A | M | J | J | A | S | O | N | D | J |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| <b>Task 5.1</b>                                   |   |   |   |   |   |   |   |   |   |   |   |   |
| Updated Annual Plan                               |   |   |   |   |   |   | • |   |   |   |   |   |
| <b>Task 5.2</b>                                   |   |   |   |   |   |   |   |   |   |   |   |   |
| Report on Forming Governing Board                 |   | • |   |   |   |   |   |   |   |   |   |   |
| Board Meeting                                     |   |   | • |   |   |   |   |   |   |   |   |   |
| Board Meeting Reports, following meetings         |   |   | • |   |   | • |   |   |   | • |   | • |
| <b>Task 5.3</b>                                   |   |   |   |   |   |   |   |   |   |   |   |   |
| Annual Performance Indicators Report              |   |   |   |   |   |   |   |   | • |   |   |   |
| Additional Performance Data (as required)         |   |   |   |   |   |   |   |   |   |   |   |   |
| <b>Task 5.4</b>                                   |   |   |   |   |   |   |   |   |   |   |   |   |
| Initial meeting with ED                           | • |   |   |   |   |   |   |   |   |   |   |   |
| Other Meetings (TBD)                              |   |   |   |   |   |   |   |   |   |   |   |   |
| Meeting summary memos (within 2 weeks of meeting) |   |   |   |   |   |   |   |   |   |   |   |   |
| Biannual Meetings and memos within 6 weeks (TBD)  |   |   |   |   |   | • |   |   |   |   |   |   |
| <b>Task 5.6</b>                                   |   |   |   |   |   |   |   |   |   |   |   |   |
| Monthly Progress Report by task                   | • | • | • | • | • | • | • | • | • | • | • | • |
| <b>Task 5.7</b>                                   |   |   |   |   |   |   |   |   |   |   |   |   |
| Monthly Financial Reports                         | • | • | • | • | • | • | • | • | • | • | • | • |

Note: timelines for each Task appear at the end of each section.

## Schedule for Task 5

Note: Task-specific timelines are included in each task section

| Item        | RFP Language  | Due Date   |
|-------------|---|--|
| Deliverable | Updated Annual Plan (UAP) (5.1)   | July 1 of each contract year   |
| Milestone   | Formation of Governing Board (5.2)  | Within 8 weeks from the start date of the contract                     |
| Deliverable | Report on Forming Governing Board, By-Laws, and Members (5.2)               | Within 12 weeks of the start date of the contract                      |
| Milestone   | First Board Meeting (5.2)   | Within the first twelve weeks of award.                                |
| Milestone   | Board Meetings (5.2)  | TBD  |
| Deliverable | Report on each Governing Board Meeting, including minutes and actions (5.2) | Immediately following each Board meeting                               |
| Deliverable | Annual Performance Indicators Data Report (5.3)                             | No later than September 1 of each year                                 |
| Deliverable | Additional Performance Data, if requested by ED (5.3)                       | As requested by ED   |
| Milestone   | Initial Meeting with ED (5.4)   | Within two weeks after contract award                                  |
| Deliverable | Meeting Summary Memos (5.4)   | Within two weeks following a meeting or conference call                |
| Milestone   | Other Meetings with ED (5.4)  | As indicated in the subtasks   |
| Milestone   | Biannual Meetings with COR/ED (5.5)   | Two times each year over the duration of the contract                  |
| Deliverable | Issues Memos/Summaries (5.5)  | Within two weeks following each meeting or conference call with ED/COR |
| Deliverable | Monthly Progress Reports by Task (5.6)                                      | Within ten workdays after the end of each month                        |
| Deliverable | Monthly Financial Reports (5.7)   | Within ten workdays after the end of each month                        |
| Deliverable | Draft Final Report (5.8)  | Sixteen weeks before the end of the contract                           |
| Deliverable | Revised Final Report with Electronic File (5.8)                             | Last day of the contract period  |

## **Schedule for Tasks 1-5**

| <b>Item</b>  | <b>RFP Language</b>   | <b>Due Date</b>                                |
|--------------|---|--|
| Deliverable  | Report on the Establishment of a Needs Analysis and Training and Technical Assistance Response Unit (1.1) | 10 weeks from start of contract                |
| Deliverable  | Create Regional Needs and Responses Database (1.1)  | 3 weeks from start of contract                 |
| Deliverable  | Maintain Regional Needs and Responses Database (1.1)  | Ongoing through duration of contract           |
| Deliverable  | Revised Fast Response Plan (1.1)  | 10 weeks from start of contract                |
| Deliverable  | OMB Clearance Package (if required) (1.1)   | ED approved schedule                           |
| Deliverable  | Documentation of IRB Approvals (if required) (1.1)  | ED approved schedule                           |
| Deliverable  | Updates to Annual Fast Response Plan (1.1, required in Subtask 5.1)                                       | July 1 of each contract year                   |
| Deliverable  | Monthly Progress Reports (1.1)  | Monthly  |
| Deliverables | Revised Plans and Schedules for Year 1 Fast Response Applied Research and Development Projects (1.2)      | Within 10 weeks from start of the contract     |
| Deliverables | Updated Plans and Schedules for Years 2 through 5 for Fast Response (1.2)                                 | July 1 of each contract year                   |
| Deliverables | OMB Clearance Package (if required) (1.2)   | ED approved schedule                           |
| Deliverables | IRB Documentation (if required) (1.2)   | ED approved schedule                           |
| Deliverables | Monthly Progress Reports on Applied Research and Development Projects (1.2)                               | Monthly  |
| Deliverables | Draft Policy Briefs and/or Products for each Fast Response Project (1.2)                                  | ED approved schedule                           |
| Deliverables | Final Policy Briefs and/or Products for each Fast Response Project (1.2)                                  | ED approved schedule                           |
| Deliverable  | Revised Detailed Research Plans and Schedules for Each Rigorous Study (for years 1 through 5) (2.1 – 2.5) | Within 26 weeks from the start of the contract |
| Deliverable  | Monthly Progress Reports (2.1)  | Monthly  |
| Deliverable  | Updates to Annual Fast Response Plan (2.1, required in Subtask 5.1)                                       | July 1 of each contract year                   |
| Milestone    | Form TWG (2.2)  | Upon start of the project                      |
| Deliverable  | Draft TWG Plan (2.2)  | ED approved schedule                           |

| <b>Item</b>  | <b>RFP Language</b>   | <b>Due Date</b>  |
|--------------|---|--|
| Deliverable  | Final TWG Plan (2.2)  | Within 2 weeks of receiving comments from ED   |
| Milestone    | TWG Meetings (2.2)  | ED approved schedule   |
| Deliverable  | Draft and Revised Agendas for TWG Meetings (2.2)                        | Draft to ED 3 weeks before scheduled meeting, final to TWG 1 week before scheduled meeting; ED approved schedule |
| Deliverable  | Draft and Revised Minutes of TWG Meetings (2.2)                         | Draft to ED within 1 week of meeting, revised to TWG once comments from ED incorporated; ED approved schedule    |
| Deliverable  | Draft OMB Forms Clearance Package (2.3)                                 | Within 8 weeks after ED has approved the study plan; ED approved schedule  |
| Deliverable  | Revised OMB Forms Clearance Package (2.3)                               | Within 4 weeks of receiving comments from ED; ED approved schedule   |
| Deliverables | Documentation of IRB Approvals (2.3)                                    | Within 4 weeks after ED approved the rigorous study plan; ED approved schedule                                   |
| Deliverables | Preparation of Privacy Act System of Records Notice (if required) (2.3) | ED approved schedule   |
| Deliverables | Draft data collection instruments (2.4)                                 | As outlined in study plans; ED approved schedule   |
| Milestones   | Pilot tests of instruments (2.4)  | As outlined in study plans; ED approved schedule   |
| Deliverables | Revised data collection instruments (2.4)                               | As outlined in study plans; ED approved schedule   |
| Deliverables | Proposed list of sites with explanation (2.4)                           | As outlined in study plans; ED approved schedule   |
| Deliverables | Final list of participating sites (2.4)                                 | As outlined in study plans; ED approved schedule   |
| Deliverables | Draft protocols (2.4)   | As outlined in study plans; ED approved schedule   |
| Deliverables | Revised protocols (2.4)   | As outlined in study plans; ED approved schedule   |
| Deliverables | Draft Technical Report(s) (2.5)   | As outlined in study plans; ED approved schedule   |
| Deliverables | Revised Technical Report(s) (2.5)                                       | 8 weeks after comments from  |

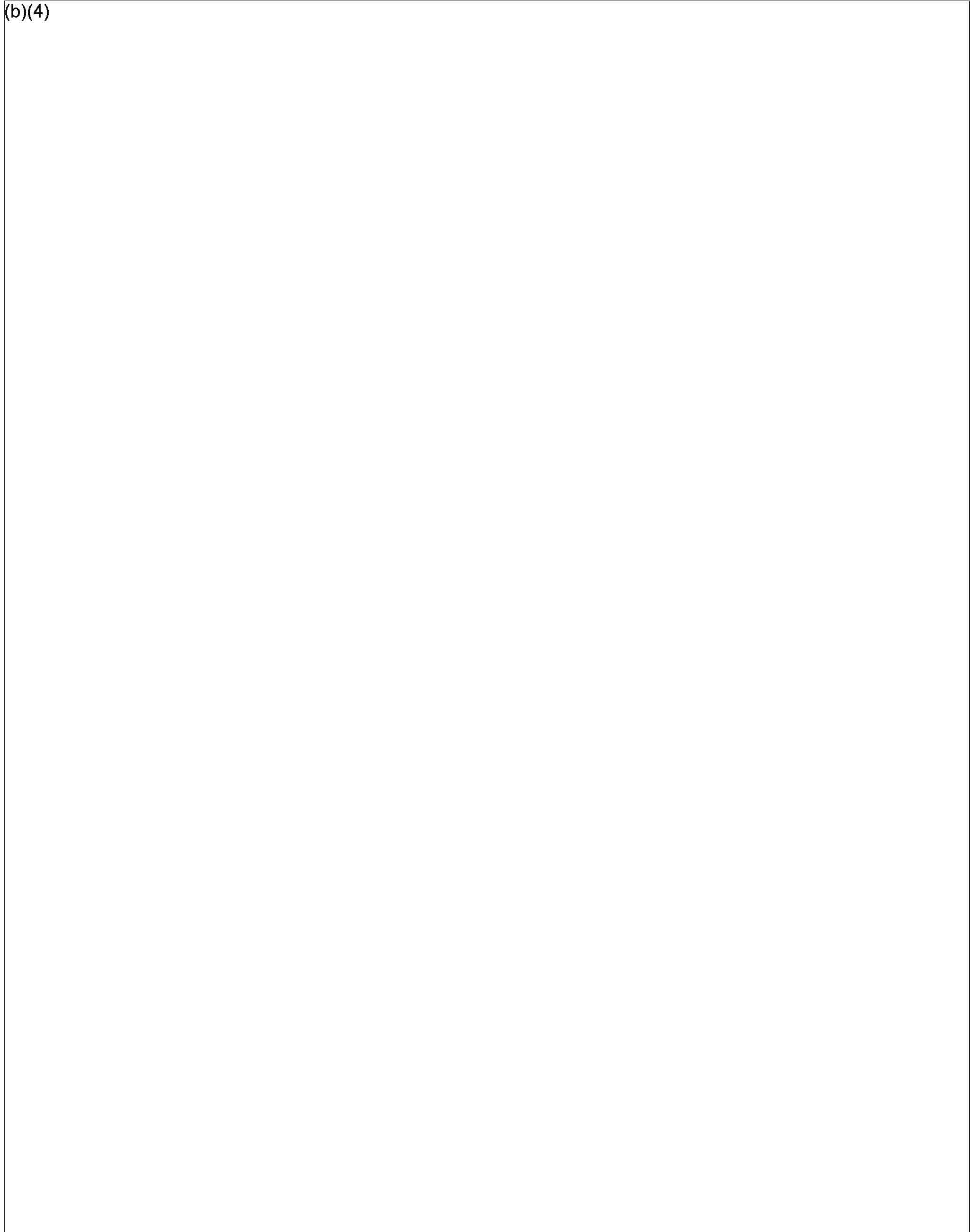
| Item         | RFP Language  | Due Date   |
|--------------|---|--|
|              |   | ED; ED approved schedule   |
| Deliverables | Final Technical Report(s) (2.5)   | 4 weeks after comments from ED; ED approved schedule                           |
| Deliverables | Draft Non-Technical Report(s) (2.5)   | As outlined in study plans; ED approved schedule                               |
| Deliverables | Revised Non-Technical Report(s) (2.5)                                       | 3 weeks after comments from ED; ED approved schedule                           |
| Deliverables | Final Non-Technical Report(s) (2.5)   | 2 weeks after comments from ED; ED approved schedule                           |
| Deliverables | Monthly progress reports (2.5)  | Monthly  |
| Deliverable  | Monthly Progress Reports (3.1)  | Monthly  |
| Deliverable  | Revised dissemination system plan (4.1)                                     | Within 12 weeks of the start of the contract                                   |
| Deliverable  | Dissemination System Plan (4.1)   | Within 2 weeks of receiving ED comments (within 17 weeks of start of contract) |
| Deliverable  | Monthly progress reports (4.1)  | Monthly  |
| Deliverable  | Status report on dissemination activities (4.1, due under Subtask 5.1)      | July 1 of each contract year   |
| Deliverable  | Revised Products Plan for Year 1 (4.2)                                      | Within 12 weeks of the start of the contract                                   |
| Deliverable  | Updated Products Plan for Years 2-5 (4.2, see subtask 5.1)                  | July 1 of each contract year   |
| Deliverable  | File of Final Report/Product (4.2)  | ED approved schedule   |
| Deliverable  | Electronic file to ERIC (4.2)   | To accompany all reports   |
| Deliverable  | Updated Annual Plan (UAP) (5.1)   | July 1 of each contract year   |
| Milestone    | Formation of Governing Board (5.2)  | Within 8 weeks from the start date of the contract                             |
| Deliverable  | Report on Forming Governing Board, By-Laws, and Members (5.2)               | Within 12 weeks of the start date of the contract                              |
| Milestone    | First Board Meeting (5.2)   | Within the first twelve weeks of award.  |
| Milestone    | Board Meetings (5.2)  | TBD  |
| Deliverable  | Report on each Governing Board Meeting, including minutes and actions (5.2) | Immediately following each Board meeting                                       |
| Deliverable  | Annual Performance Indicators Data Report                                   | September 1 of each year   |

| <b>Item</b> | <b>RFP Language</b>                                   | <b>Due Date</b>  |
|-------------|---|--|
|             | (5.3)   |  |
| Deliverable | Additional Performance Data, if requested by ED (5.3) | As requested by ED   |
| Milestone   | Initial Meeting with ED (5.4)                         | Within two weeks after contract award                                  |
| Deliverable | Meeting Summary Memos (5.4)                           | Within two weeks following a meeting or conference call                |
| Milestone   | Other Meetings with ED (5.4)                          | As indicated in the subtasks   |
| Milestone   | Biannual Meetings with COR/ED (5.5)                   | Two times each year over the duration of the contract                  |
| Deliverable | Issues Memos/Summaries (5.5)                          | Within two weeks following each meeting or conference call with ED/COR |
| Deliverable | Monthly Progress Reports by Task (5.6)                | Within ten workdays after the end of each month                        |
| Deliverable | Monthly Financial Reports (5.7)                       | Within ten workdays after the end of each month                        |
| Deliverable | Draft Final Report (5.8)                              | Sixteen weeks before the end of the contract                           |
| Deliverable | Revised Final Report with Electronic File (5.8)       | Last day of the contract period  |

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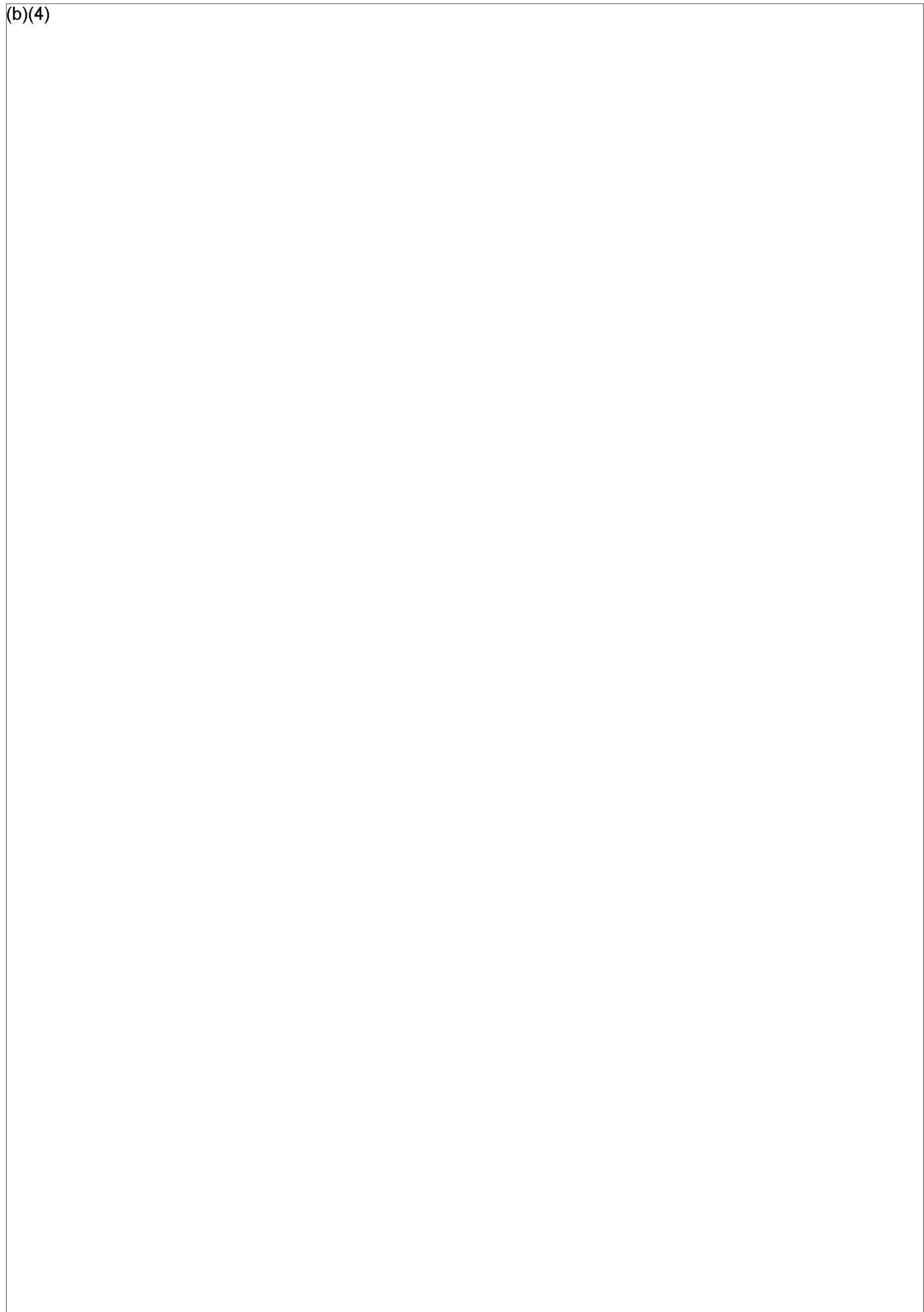
**Figure A: Staff Fulfilling Key Functions – Year 1**

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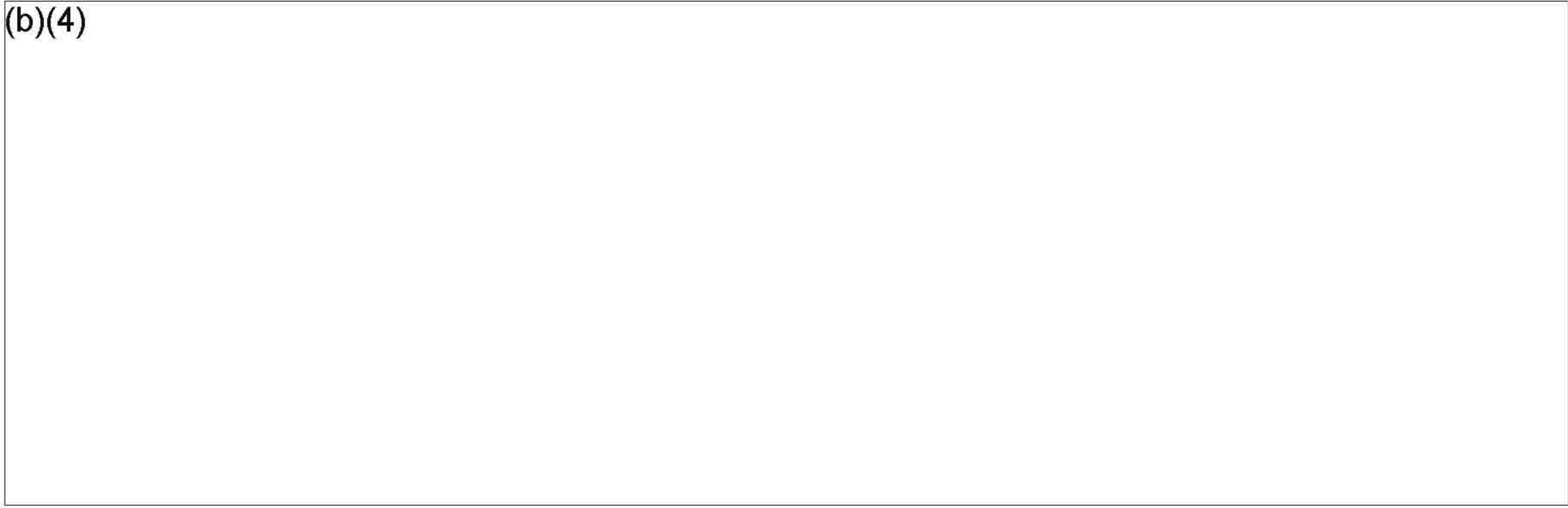


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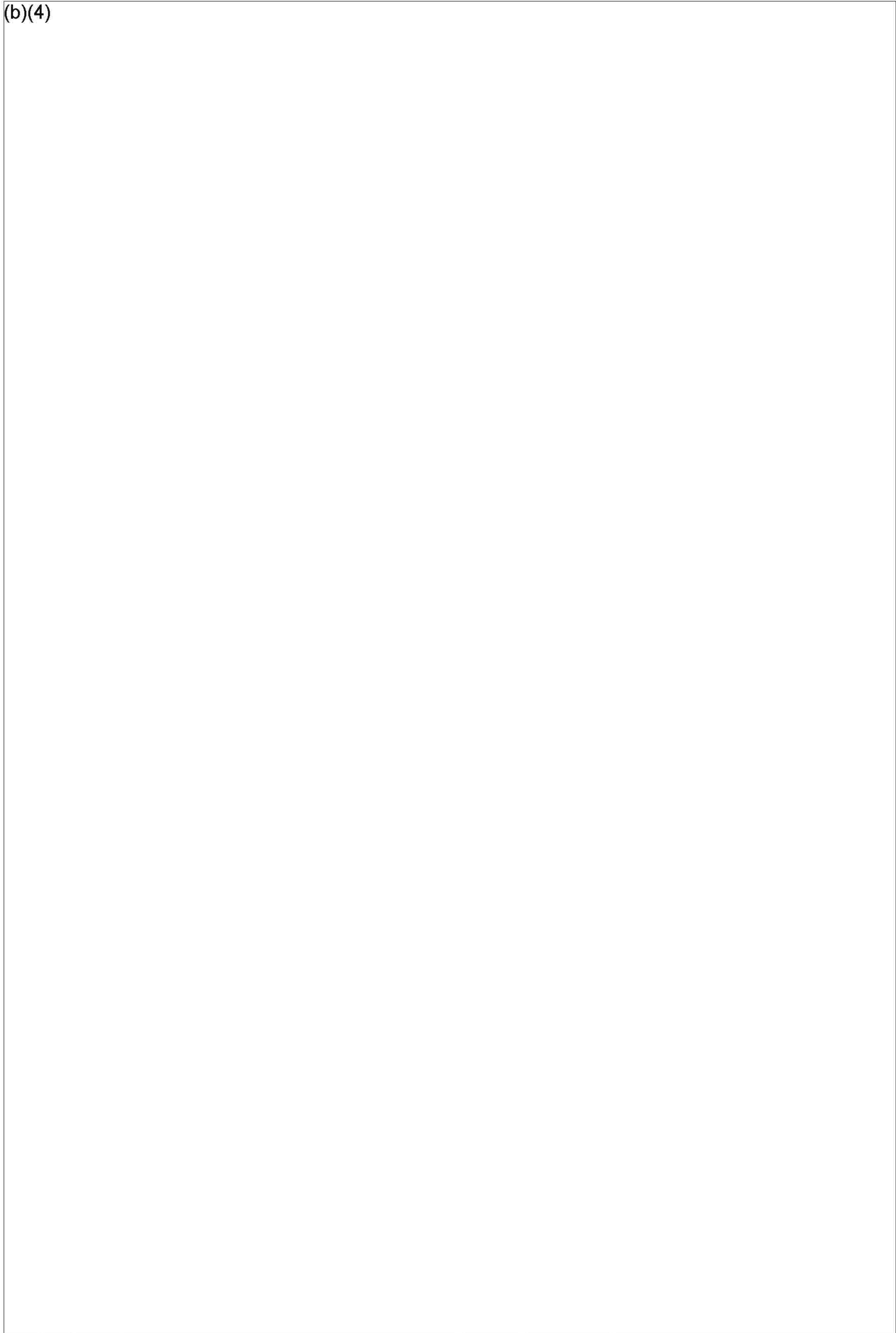
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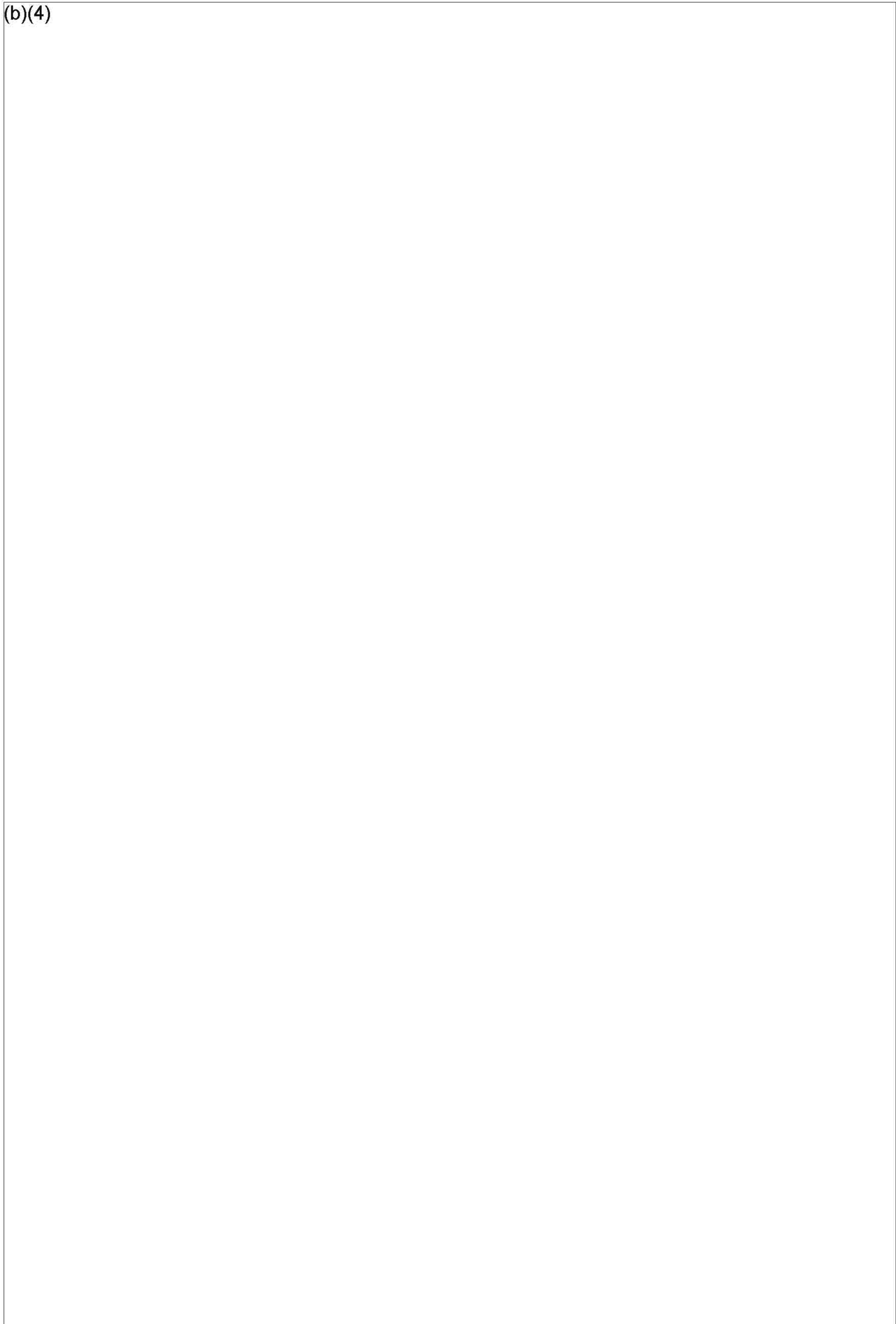
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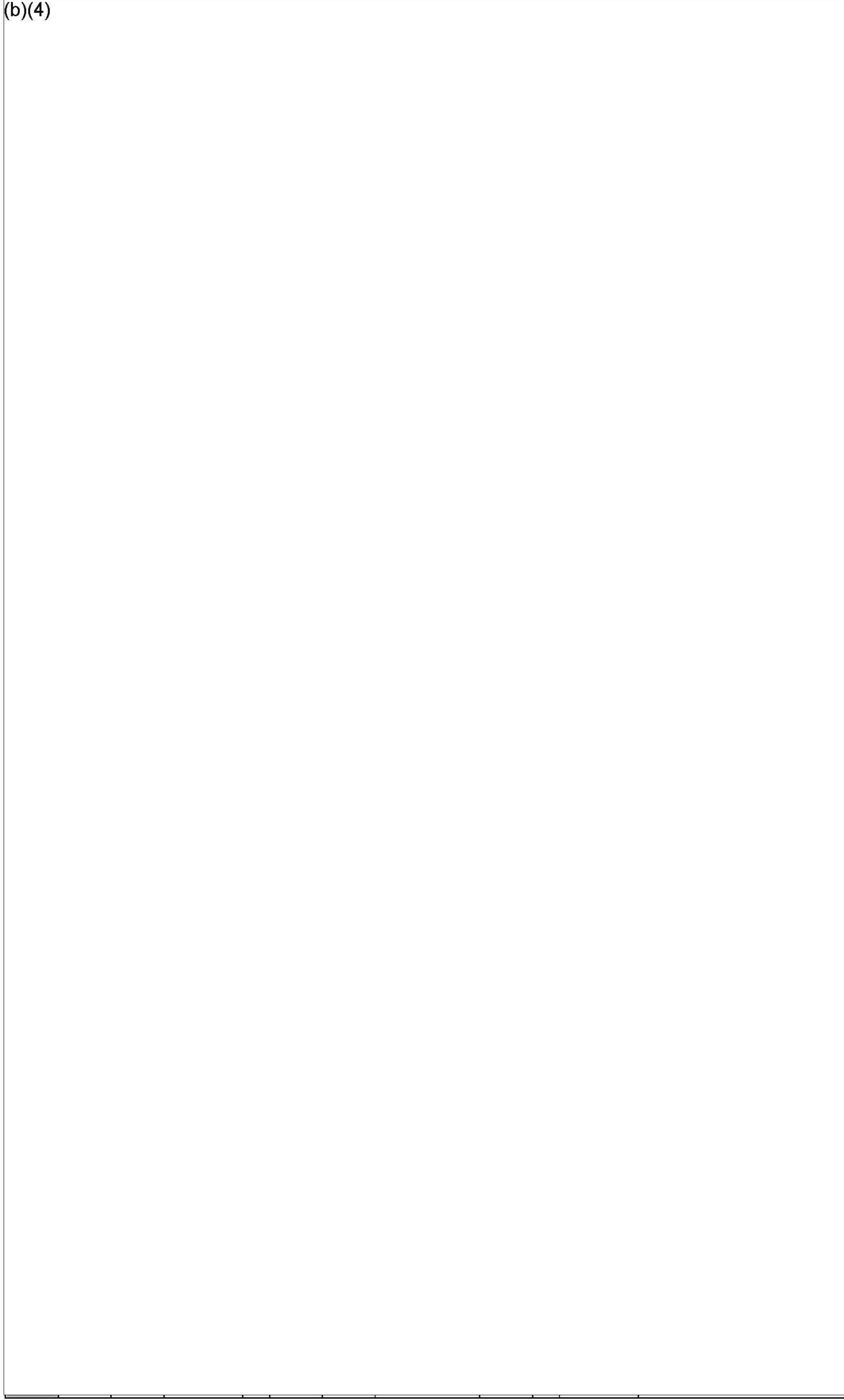


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**Figure B: Staff Fulfilling Key Functions – Years 2-5**



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