

TECHNICAL PROPOSAL FINAL PROPOSAL REVISIONS

Tab 1. Original Technical Proposal (Submitted October 3, 2005)

Tab 2. Answers to Questions (Submitted December 5, 2005)

Tab 3. Task 2 Abstracts (Submitted January 9, 2006)

Note: We have made further minor revisions in Tabs 2 and 3 and placed an index to these revisions as the first page of these tabs.

**Response to
United States Department of Education
Request for Proposal**

**Regional Educational Laboratories
Tasks 1-5**

Proposal Submitted by



**Technical Proposal
October 3, 2005**

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Regional Educational Laboratories

Tasks 1-5

Proposal Submitted by



And Its Partners

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Regional Educational Laboratories Tasks 1-5

1 Executive Summary

1.1 Meeting the New Challenge

Dramatic changes are sweeping through public education in the United States as a result of the *No Child Left Behind* Act and perhaps more importantly for the Regional Educational Laboratories (RELs), the *Education Sciences Reform* Act and the creation of the Institute for Education Sciences (IES). These Acts have raised expectations for the performance of educators at all levels as well as for the performance of the research community. The RELs of the future will have to be quite different from the past. The Educational Laboratory of the Appalachian Region (ELAR), a next generation REL, will provide a new step toward the incorporation of scientifically valid research into the region's schools to improve student achievement.

1.2 The Vision for the Educational Laboratory of the Appalachian Region

The goal of the (ELAR) is to provide a new, robust mechanism for serving the educational research needs of the region's state education agencies (SEAs), local education agencies (LEAs), school districts and schools. It is a laboratory that is dedicated to promoting the Department of Education's (ED's) goals to identify, research, develop, tailor and disseminate research findings that will support continuous improvement in student outcomes, help close the achievement gap between advantaged and disadvantaged students, and achieve the goals of the *No Child Left Behind* (NCLB) Act. Our measure of success will be the implementation of new evidence-based programs for improving educational outcomes. We know that research has the greatest value when it is relevant to the region's needs, and accepted by the region's policymakers, educators, parents and communities. The ELAR we envision will place the highest priority on the value and relevancy of scientifically valid research to the region's education stakeholders. We will achieve these goals through improved laboratory designs and mechanisms – and new and lasting connections to the region's stakeholders, and continuous interaction with them. The ELAR is committed to becoming a part of the regional solution – not just a research organization. In the remainder of this executive summary, we will describe how we will make this vision a reality.

1.3 Who We Are

1.3.1 The Organizations

The ELAR is composed of a team of nationally recognized educational research organizations led by The CNA Corporation (CNAC). CNAC is a 63 year-old non-profit organization located in the Appalachian Region with a tradition of providing high quality research, analysis and technical assistance to federal, state and local agencies. Our research staff of nearly 350, about 2/3 with Ph.D.s, has a wide variety of academic disciplines that provides depth and flexibility in staffing ELAR. We have decades of experience managing a complex organization that provides the type of services envisioned for the ELAR. Although many institutions have experience conducting research, few organizations can match the combination of rigorous research and fast response capabilities we offer. We summarize the members of the ELAR Team and their principal roles in the following Table. The ELAR is made up of long-standing professional research organizations,

universities, innovative professional development leaders, and hands-on practitioners. In selecting our research team members, we recruited leading educational research principal investigators (PIs) in the region.

Table 1.3.1-1: The ELAR Team

Organization	Contributions and Roles
The CNA Corporation	<ul style="list-style-type: none"> • Laboratory management • Cadre of ELAR-dedicated scientists to include principal investigators for fast response and rigorous research studies, and scientists assigned to field operations • Expertise in needs assessment, and dissemination strategy development
University of Virginia	<ul style="list-style-type: none"> • Cadre of scientists and principal investigators for rigorous research study • Expertise in professional development to improve the quality of the classroom environment
University of Kentucky Education Innovations	<ul style="list-style-type: none"> • Cadre of scientists and principal investigators for a rigorous research study • Expertise in math education for special needs students • Principal Investigator for a rigorous research study • Expertise in Early Reading First Program
Center for Applied Linguistics Insights Policy Research	<ul style="list-style-type: none"> • Principal Investigators for a fast response research study • Expertise in English Language Learning • Designing and implementing the needs assessment survey and focus groups • Expertise on the analysis of census data
Collaboration for Teaching and Learning	<ul style="list-style-type: none"> • Expertise in math education and technical assistance • Facilitate selected rigorous studies and participation in school level data collection • Deep relationships with local communities; facilities for needs assessment
The EdVenture Group	<ul style="list-style-type: none"> • Expertise in technical assistance • Facilitate selected rigorous studies and participation in school level data collection • Deep relationships with local communities; facilities for needs assessment
Tierra Del Oro Consulting	<ul style="list-style-type: none"> • Expertise and data on alignment of standards to curriculum
SymTech Corp.	<ul style="list-style-type: none"> • Technical writing to help translate research into layman's language

We selected each team member for particular strengths that have been mapped to ED's statement of work. We have paid special attention to selecting team members with the credentials to support rigorous research applicable to the region's needs and capable of supporting our broader vision, and in particular, contributing to our goal of establishing and sustaining deep connections into local communities. We have a strong commitment to local small businesses that are distributed throughout the region; and we exceed ED's small disadvantaged business subcontracting goals.

Additionally, we will charter the ELAR Governing Board – a group made up of CSSOs, regional policymakers and practitioners, and members with national reputations in the rigorous research community, who will help guide research projects and advise overall management of the ELAR.

1.3.2 The ELAR Staff

To achieve ELAR's goals, we have recruited top-caliber research leadership and staff who are committed to making the ELAR a success.

Laboratory Director - Dr. Sarah L. Friedman

Dr. Friedman has demonstrated truly exceptional skills as a manager of large complex research enterprises. Since 1989, she has served as the National Institute for Child Health and Human Development's (NICHD) scientific manager and one of the principal investigators on the NICHD's Study of Early Child Care and Youth Development, a study of social, emotional, cognitive, linguistic and health development of children from birth through adolescence. For her skill in managing 11 grants and more than 40 investigators, she became the first behavioral scientist to be awarded the prestigious National Institutes of Health (NIH) Merit Award. In addition to her management and scientific responsibilities, Dr. Friedman has led a highly successful effort to ensure that the results of the study have received wide dissemination among parents, physicians and other health care workers, teachers and other education stakeholders, policymakers, and the public. Concurrent to her work on this project she has held other positions at NICHD including management of a large NICHD grant, Special Assistant to the Director, Center for Research for Mothers and Children, and Special Assistant to the Director, Office of Extramural Policy, Office of the Director, NICHD. Dr. Friedman earned her Ph.D. in Developmental and Experimental Psychology from The George Washington University. She will also direct the ELAR's Rigorous Research Unit and devote full time to her roles in managing the ELAR.

Deputy Director – Dr. Donald Cymrot

Dr. Cymrot is a leading practitioner of fast response research projects for Federal agencies. He will serve as the ELAR Deputy Director, and in that role, he will manage both the Fast Response Unit and the Dissemination tasks. Dr. Cymrot has more than 15 years of experience in managing and conducting fast response research projects and in ensuring that research products are accessible to non-technical audiences. He has also served in various positions created by CNAC for our clients that will serve as the leading edge of our Fast Response operating model in the ELAR. Dr. Cymrot has authored peer review journal articles and numerous technical reports. He holds a Ph.D. in Economics from Brown University.

Principal Investigators

Dr. Robert C. Pianta directs the University of Virginia Center for Advanced Study of Teaching and Learning; and he is Professor and Novartis US Foundation chair in the Curry School of Education and Department of Psychology. He is experienced in using diverse and rigorous research methods include randomized control trials. He is a principal investigator on the NICHD Study of Early Child Care and Youth Development and on MyTeachingPartner, a Web-based training in literacy. He directs the IES-funded National Center for Early Development and Learning Multi-State Pre-K Study, a grant from the Foundation for Child Development, and he is one of the senior investigators for the Carnegie-funded Teachers for a New Era effort at UVA. He is the author of more than 150 peer-reviewed papers related to education science and child development, and he is the Editor of the *Journal of School Psychology*. Dr. Pianta holds a Ph.D. in Psychology from the University of Minnesota.

Dr. Steven Ross is the President of Educational Innovations, and a Professor and Director of the Center for Research and Education Policy at the University of Memphis. He has worked extensively with school districts throughout the Appalachian region to develop and evaluate programs for improving student achievement. Currently, he is working on the formative and summative evaluation of state and district initiatives under and related to NCLB, including the evaluation of

Reading First in Tennessee (TN), Title II-D technology in TN and Kentucky (KY), Supplemental Educational Services in TN and Louisiana (LA), and charter schools in TN. He is the editor of *Educational Technology Research and Development* and he is on the editorial boards of *Journal of Education for Students Placed At Risk*, and *Computers and Human Behavior*. Dr. Ross holds a Ph.D. in Educational Psychology from Penn State University.

Dr. Ted Hasselbring is the William T. Bryan Professor of Special Education Technology at the University of Kentucky since 2000. He has a long history in special education technology dating back to the early 1980s, having spent 17 years at Vanderbilt University where he was co-director of the Learning Technology Center (LTC) and Professor of Special Education. He is a pioneer in the development of computer and video-based applications for children who are at-risk of school failure and for students with disabilities. His research and development has focused on the empirical identification of effective software design principles and their transfer from experimental applications to practical use in the classroom. Dr. Hasselbring holds a Ph.D. in Special Education from Indiana University.

Dr. Linda Cavalluzzo is a senior economist with extensive experience in empirically based research. Her work has laid the intellectual foundation for research on several important issues facing educators in the Appalachian Region. She developed a framework for considering the implication for costs, access, and program growth of alternative funding methods and governance structures of virtual schools — that is, schools or programs that offer online courses to supplement curriculum in, or offer an alternative to traditional schools. Her paper “Cost, Financing and the Provision of Online Education” was recently published as part of a volume entitled, *Virtual Schools: Planning for Success*. Dr. Cavalluzzo has also led a pair of empirical research studies on the quality of the teacher workforce funded by the National Science Foundation and the National Board for Professional Teaching Standards. Dr. Cavalluzzo holds a Ph.D. in Economics from the State University of New York Buffalo.

We describe our complete list of principal investigators and key personnel in Section 3.

1.4 New Mechanisms to Ensure Quality and Relevancy

Quality and relevancy are essential attributes of the educational research that will be provided by the ELAR. Dr. Grover Whitehurst observed that the customer surveys that ED had conducted suggested, “that education research is not serving well the practical needs of the field...The people on the front lines of education want research to help them make better decisions.”¹ The National Research Council (NRC) has called for the establishment of a new infrastructure to support the collaboration between researchers and educators – one that will support research being translated into practice. In NRC’s view, “Collaboration with practitioners can bring a form of intellectual capital to research that cannot be obtained in isolation of practice...These partnerships are not always formed, and often take long periods of time to establish.”² The ELAR addresses this issue head-on by forging long-term partnerships between rigorously trained scientists and practitioners and policymakers – providing scientifically valid and empirically based insights

¹ Statement of Grover J. Whitehurst before the Subcommittee on Education Reform Committee on Education and the Workforce, U.S. House of Scientists, February 28, 2002.

² *Scientific Research in Education*, Committee on Scientific Principles for Education Research, National Research Council, National Academy Press, pg 94-95, 2002

for solving real world problems. The ELAR's *emissaries of science* are committed to developing a close bond with the people they support.

The ELAR Research Team

ELAR's Research Team is dedicated to three important concepts: 1) ensuring research meets ED's and ELAR's standards for scientific rigor, 2) research is relevant to the region's needs and 3) can be realistically implemented in the region's environment. The ELAR will employ the concept of deploying a portion of its highly trained research scientists at every level of the region's educational system to provide policymakers and practitioners with a direct connection to research and its benefits – and to integrate research and analysis into operational practice. CNAC has developed and refined this model over more than 60 years in support of government agencies with goals similar to ED's for the RELs. For ELAR, we will tailor this model to the specific needs of the Appalachian Region.

Field Scientists' Direct Support to CSSOs/SEAs. Two of ELAR's scientists will be assigned to work full-time on-site with two of the region's CSSOs for a two- to three-year term, rotating back to the ELAR research team at the end of their terms and being replaced by other field scientists. We plan to rotate field scientists so that all states in the region are covered for some period during the five-year REL contract. These researchers will work directly with the CSSOs on high priority issues by providing analysis and recommendations for the executives' most important and most complex issues. The Kentucky and Virginia CSSOs have already agreed to integrate these scientists into their senior staffs. These scientists will provide scientifically based empirically derived, objective research and analysis that examines the issues and develops alternatives that can be put into action. They are trained and adept at observing, collecting, organizing, cleaning, and analyzing both the problem context and the data to support problem solving. These scientists will support fast response studies primarily, however, they may contribute to selected rigorous research studies applicable to their roles with the CSSO organizations. Importantly, they will provide a bridge between the SEAs and the Research Team to ensure relevancy and responsiveness to those needs.

Scientific Analysts' Direct Support to Local School Districts. Similarly, to the scientists assigned to the SEAs, two to three other ELAR scientists will be assigned to work directly with local school districts and local schools providing analogous analytical support for local practitioners.

These scientists will spend two to three months during each school year in selected school districts facing

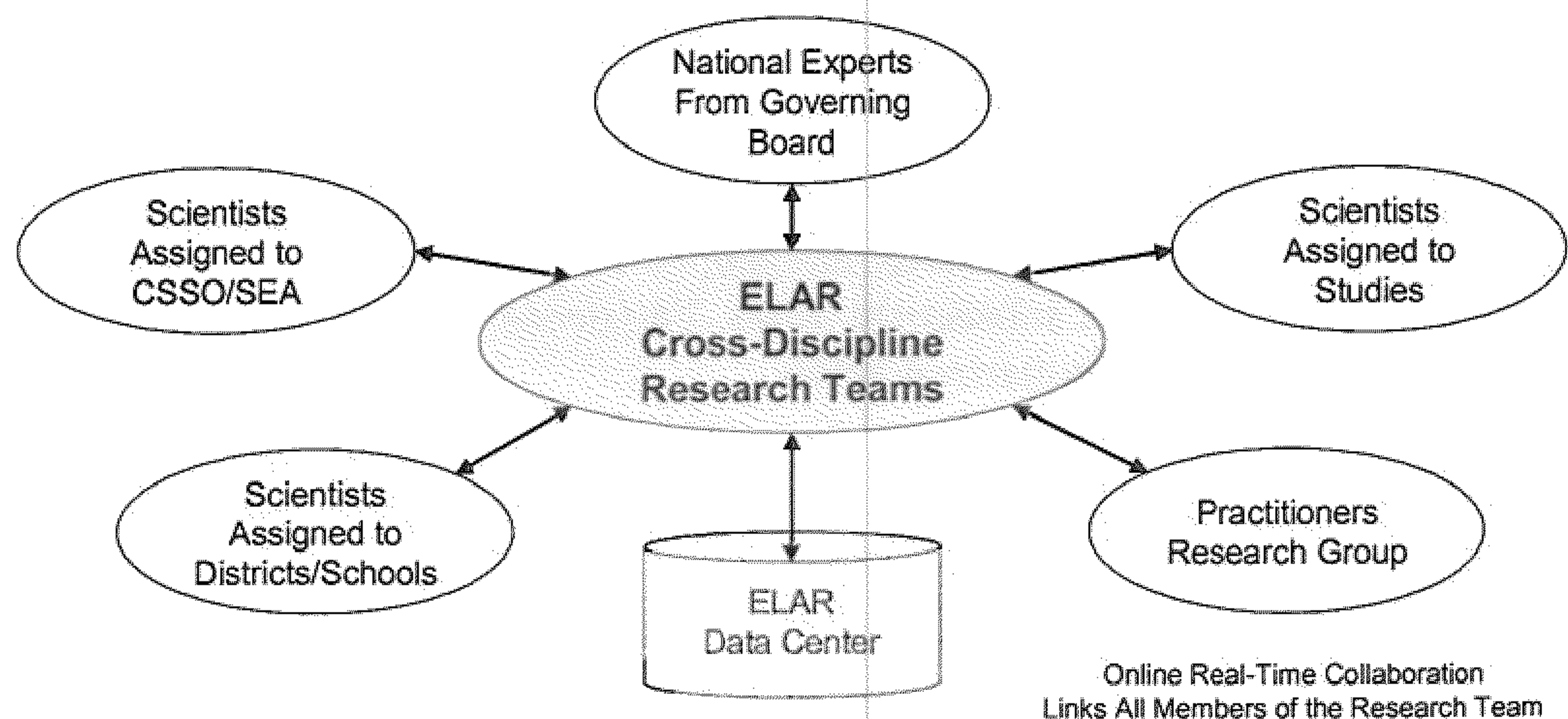


Figure 1-1: The ELAR Research Team

difficulty in meeting AYP and who volunteer for the assistance. These scientists are trained to support local problem solving. They will support fast response studies and selected rigorous research; and they will provide a bridge between the school districts and the Research Team to ensure relevancy and responsiveness to practitioner needs.

The ELAR's concept of using trained scientists in hands-on relationships with education leaders and practitioners brings a new set of skills that complement the capabilities of existing education leaders and practitioners. ELAR's scientists bring the following key advantages: 1) they are trained and experienced in rigorous research, 2) they are involved from the beginning of the research all the way through to implementation and follow-up, 3) they work at the senior level on projects of priority and importance to policymakers, and 4) they bring exceptional fast response experience as field scientists who have matured in CNAC's long and successful heritage of fast response field research. The deployment of ELAR scientists into the field as normal practice will create a critically important benefit to the region – the will facilitate the adoption of scientifically valid research to meet ED's objectives for the RELs.

The Practitioners Research Group (PRG) as Members of the Research Team. The ELAR will invite selected practitioners to participate as research staff for nine to 18 month assignments at the ELAR. This will help to forge close ties between researchers and practitioners, while improving relevancy and tailoring of research to regional needs. The PRG will foster the type of collaboration envisioned by the National Research Council as vital in creating actionable research. Beyond their contribution to research projects, their presence on the research staff contributes to the team's better understand of the culture and environment of the user's of ELAR research. Once these staff members complete their stay and return to their normal assignments, the collaborative bonds formed during their PRG assignment promotes continued dialogue among researchers and practitioners.

Governing Board. ELAR will select several members of the Governing Board from the ranks of trained educational scientists. We will invite these scientists to collaborate as members of the Research Team when appropriate.

ELAR Data Center. The ELAR will reconfigure existing databases from national, state, local and other sources to create a data infrastructure to support the work of the research team, particularly the Fast Response Unit. CNAC has enjoyed excellent success in using this approach to expand the scope and utility of fast response research.

1.5 Summary of Initial Projects

In preparing to create the ELAR envisioned here, the Research Team has developed working plans for first-year and subsequent years. The needs assessment, and fast response and rigorous research studies are summarized below.

Needs Assessment

We conducted a preliminary review of existing needs assessments in preparing this proposal. In performing the initial assessment, we will build upon the existing Appalachian RAC's technical needs assessment, and assessments such as the Virginia Board of Education's Comprehensive Plan, and review of the previous REL's work that might be applicable. In addition, we will up-

date the regional profile developed by the Appalachian RAC. We helped to prepare this profile and are familiar with it.

Fast Response Studies

The ELAR Team developed the initial fast response studies based upon our understanding of current regional needs. CNAC has a significant head start in this effort based on our leading role in providing analytical support to the RACs for needs assessment. The RAC reports identify major problems within the region. While some of these problem areas can be addressed by technical assistance, others may require additional research to identify “what works.” In the Appalachian Region³ the primary needs highlighted in the report were:

1. Improving teacher and principal quality
2. Increasing outreach to and involvement of family/community in the educational system
3. Identification and implementation of evidence-based curricula/programs
4. Building organizational/management capacity
5. Increased collection and use of data for assessment, improvement, and accountability

We also considered individual state assessments, for example, the Virginia Board of Education’s Comprehensive Plan discusses the challenge to the state resulting from the influx of limited English proficient students into the state. Based upon these collective assessments, and the need to build initial supporting structure for the ELAR, we selected the following fast response studies.

- Appalachian Education Data Center
- Field Scientists to Chief State School Officers and Scientific Analysts to School Districts
- Curriculum Quality and Alignment of Appalachian Region Reading First Programs
- Implications of the Growing ELL Population in Appalachian Schools
- School Safety and Security Impacts on Student Achievement
- Understanding the Magnitude of the Increased Student Achievement Required to Reach the NCLB Goal
- Feasibility and Implications of Choice in Rural Areas of the Appalachian Region

Rigorous Research Studies

The ELAR will initiate the following initial rigorous research studies.

- Using **Web-Based Feedback** and Support to Improve Teacher Quality and Student Outcomes: Dr. Robert Pianta, PI, University of Virginia. This study builds on the literature arguing that classroom environment is a crucial measure of teaching quality and an important determinant of student outcomes. It evaluates alternative methods of delivering the professional development to improve classroom environment for the region’s elementary school students.
- Effectiveness of **Hybrid Secondary Courses** for Students and as Embedded Professional Development Experiences for Classroom Teachers: Dr. Linda Cavalluzzo, PI, The CNA Corporation. This study investigates the effectiveness of online courses both as a means

³ *Education Challenges and Technical Assistance Needs for the Appalachia Region*, Appalachia Regional Advisory Committee, March 31, 2005.

of increasing rigorous mathematics offerings in the region's underserved schools and as a method of improving teaching quality.

- An Impact Evaluation of **Early Reading First** Programs: Dr. Steven Ross, PI, Educational Innovations (and the University of Memphis). Early Reading First is a relatively new program that is supposed to improve school readiness and school outcomes for disadvantaged children. This study will be one of the first rigorous evaluations of its effectiveness.
- Enabling Students to Achieve **Math Proficiency** Through a Technology-Based Approach: Dr. Ted Hasselbring, PI, University of Kentucky. This study evaluates the effectiveness of a new curriculum for teaching mathematics in raising student outcomes and closing the achievement gap between special needs and regular students.

In selecting these studies, we were guided by the following principles:

- Issues of regional and national significance – all four studies focus on improving teaching and/or curriculum quality
- Focus on student outcomes and closing the achievement gap – in each study the measure of effectiveness is student achievement
- Focus on core academic subjects – each study deals with literacy, reading or math
- Variation in target grades – the studies cover pre-kindergarten through high school
- Staff familiarity with treatments – leveraging the scientific strengths of the research team
- Cross-study connections – these studies share common elements to add value to the research

1.6 Dissemination – Complementing Traditional Methods With A New Model

Scientifically valid research findings, whether developed by ELAR, or one of the other RELs, or by other sources, will be useful in improving education within the Appalachian Region only if the research is perceived by policymakers, administrators, educators and parents to be relevant and deployable and useable in the local environment. In this context, it is ELAR's responsibility to tailor research findings to be easily understood by the target audience, whether they are policymakers, administrators, teachers or parents.

Our dissemination initiative will draw on what has been learned over the past six decades and from studies supported by the federal government. We do acknowledge that numerous customer surveys of education stakeholders say that education research is not serving their practical needs; that availability of rigorous research by itself will not transform education into an evidence-based field; that education is a complex system that is constantly changing; that success in making use of research in education requires long-term partnerships between researchers and practitioners; and on the degree to which policymakers, practitioners and the public understand and use research, depends heavily on a personal and trusting relationship with researchers. Our dissemination plan builds on these lessons; and incorporates what has been learned about marketing research-based practices in other sectors.

To enhance dissemination we will call upon the emerging science of social marketing. This approach affords ELAR an effective, research-based framework and proven tools to help states and technical assistance providers reach low-income and low-performing communities to affect

change. We believe it is necessary to affect the perceptions and behaviors of the advocates for change about the values of scientifically valid research. Developed over the last several decades, social marketing provides a means for changing beliefs in order to encourage action and promote a successful intervention. We describe this innovative approach in detail.

1.7 Working with the Other RELS

ELAR has developed a comprehensive approach for contributing to the planning and operation of the National Laboratory Network (NLN), and ensuring that ED receives the best value for its investment. We envision the ELAR's principal coordinating mechanisms as four "living" plans:

- ELAR Plan for Joint Training and Technical Activities – updated biannually or more often if required
- ELAR Plan for Collaborating on Common Activities for Fast Response Activities – updated quarterly or more often if required
- ELAR Plan for Collaborating on Common Activities for Rigorous Studies – updated biannually or more often if required
- ELAR Plan for Carrying Out Broad-Based Dissemination Activities – updated quarterly or more often if required

We will work with the NLN Coordinator in developing each plan to ensure that applied research and development activities are coordinated within the network on a timely basis

1.8 How We Will Manage the ELAR

Our approach to managing the ELAR is based upon the highly successful professional management structure shown in Figure 1.8-1, and our mature management processes. Our Management Plan focuses on effective and efficient collaboration among all of the ELAR Team members; and streamlined collaboration with the other REL's through the NLN.

Our approach for organizing, staffing and managing the ELAR builds on six elements: 1) an exceptionally qualified Laboratory Director, 2) a strong plan for managing the ELAR's staff resource pool using a fully integrated approach, 3) online collaboration and knowledgebases to support REL work, 4) a proven approach for managing simultaneous and disparate research activities, 4) an ELAR Online Collaboration and Project Management System for timely monitoring and reporting and, 6) a well-established plan for managing subcontract relationships. Our ELAR Team approach is focused on timely, responsive support and a commitment to superior outcomes.

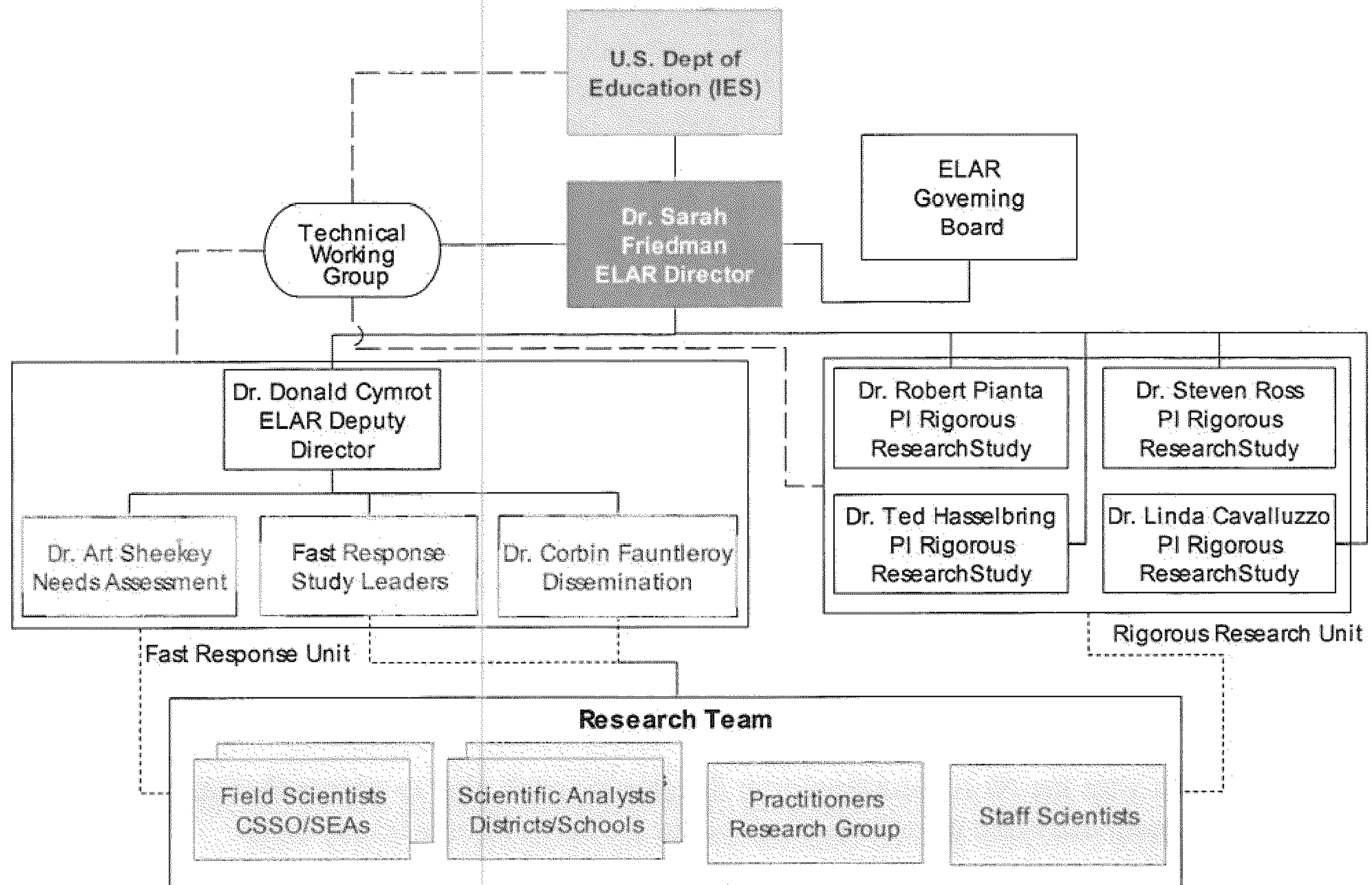


Figure 1.8-1: The ELAR Management Structure

1.9 Our History in Operating a Research Team As We Propose

The ELAR's goal is to provide a new, robust mechanism for serving the educational research needs of the region. The question that evaluators should ask is, "why do we believe we will be successful in achieving our goals?" The answer is simply, "we've been doing it for 63 years and we are doing it today."

CNAC currently develops and executes an annual research plan exceeding \$45 million to conduct numerous rigorous research projects as well as fast response studies resulting from requests initiated by practitioners and policymakers. We are accountable for the scientific merit and the timeliness of the studies, their usefulness to practitioners, and for adherence to budget and other performance targets. The management system we have developed to support these activities will be used for the ELAR.

1.10 Our Team's Commitment to ELAR Success

The ELAR Team embraces the challenge of creating the next generation REL. We are committed to providing ED, the Appalachian Region and the nation with a new emphasis on the incorporation of scientifically valid research into the region's schools to support continuous improvement in student outcomes, help close the achievement gap between advantaged and disadvantaged students, and achieve the goals of the *No Child Left Behind* (NCLB) Act. We believe the new designs and mechanisms we propose will meet those objectives.

2 Technical Plan

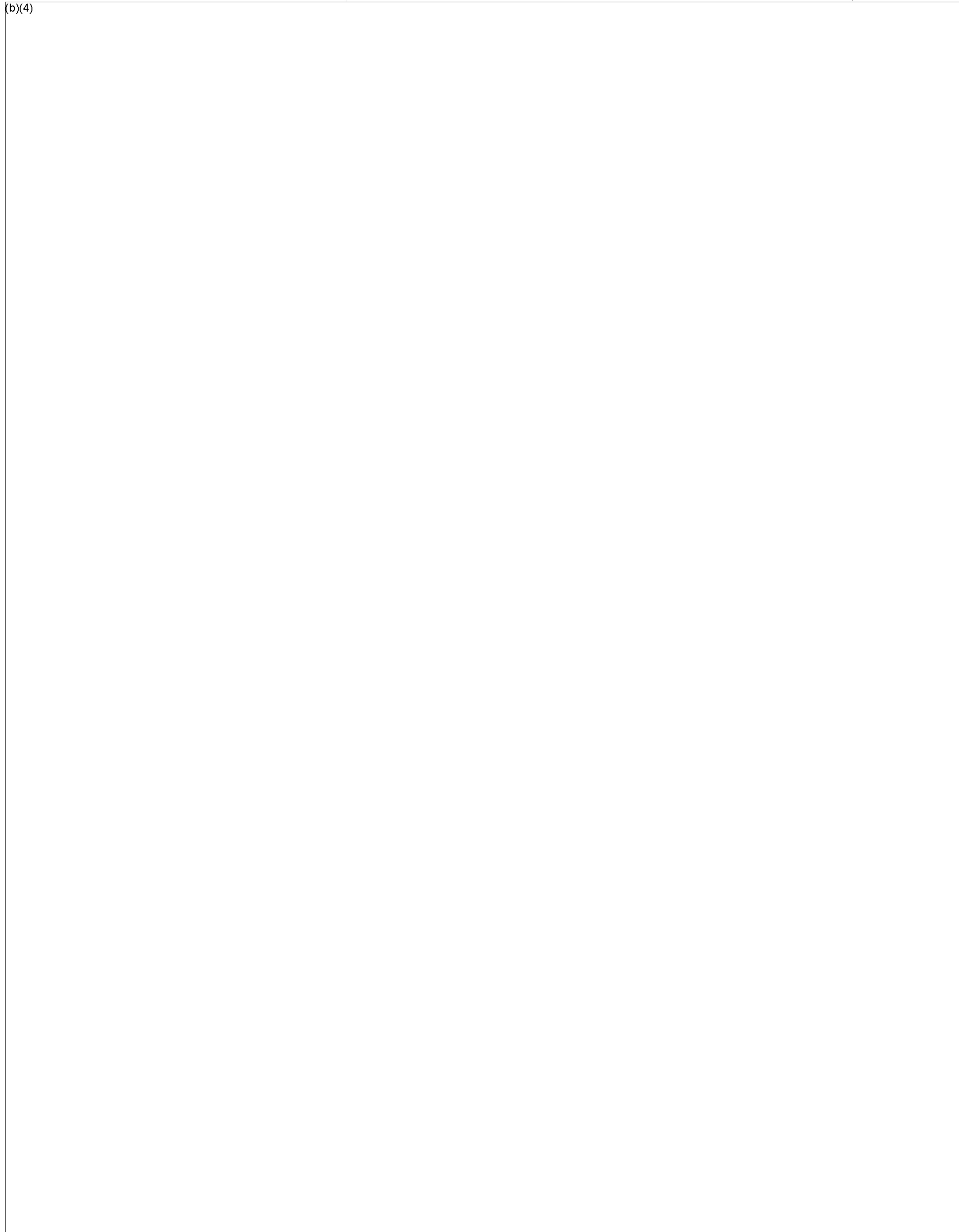
The ELAR we envision is a next generation REL that will provide a bold step toward the incorporation of scientifically valid research into the Appalachian Region's schools to support continuous improvement in student outcomes; a closing of the achievement gap between advantaged and disadvantage students; and the successful implementation of the No Child Left Behind (NCLB) Act. In developing this Technical Plan, we focused on two core concepts: 1) creating and sustaining a robust capability for scientific research relevant to the region's needs and 2) defining new REL designs and mechanisms that will produce superior outcomes.

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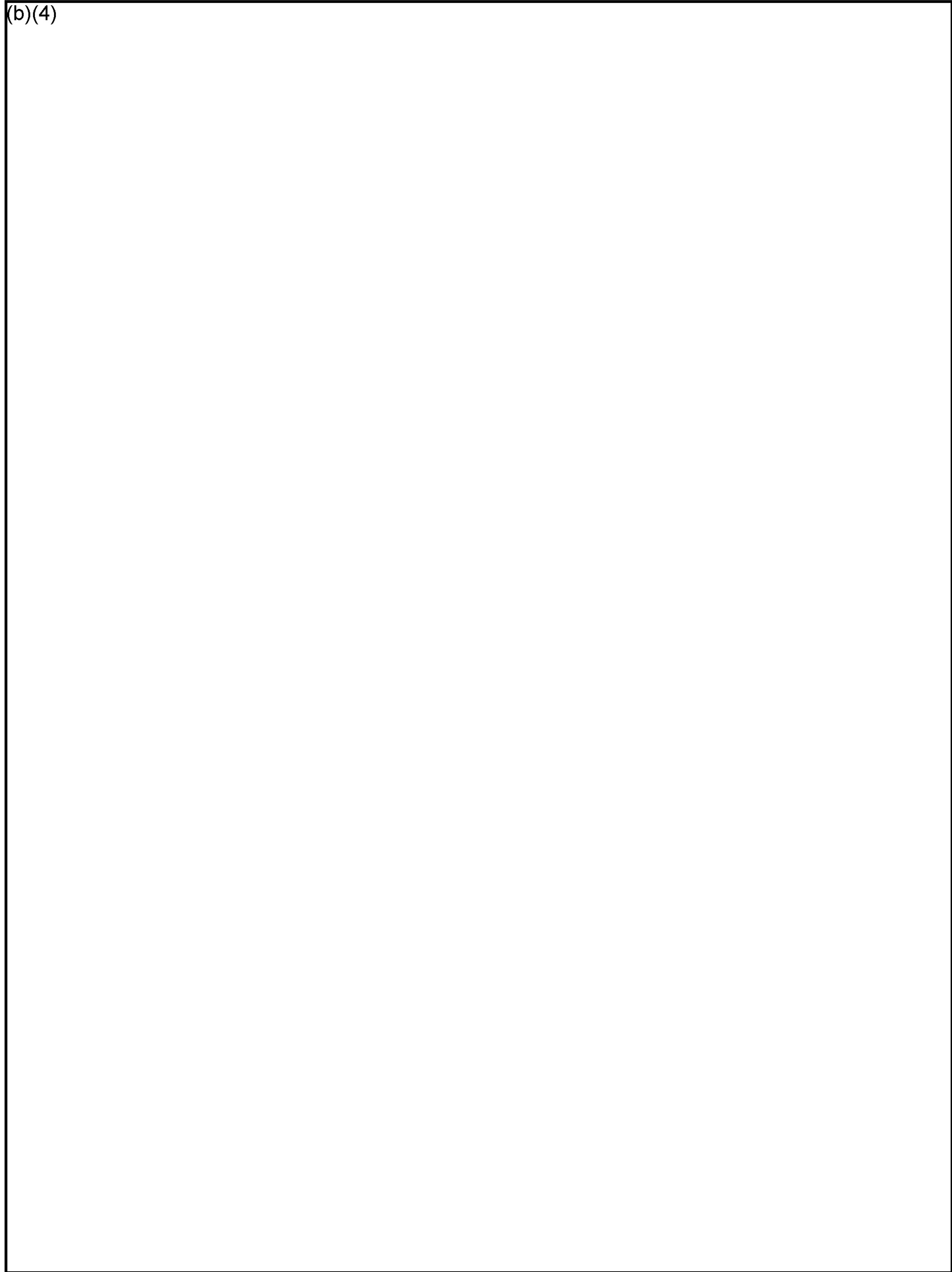
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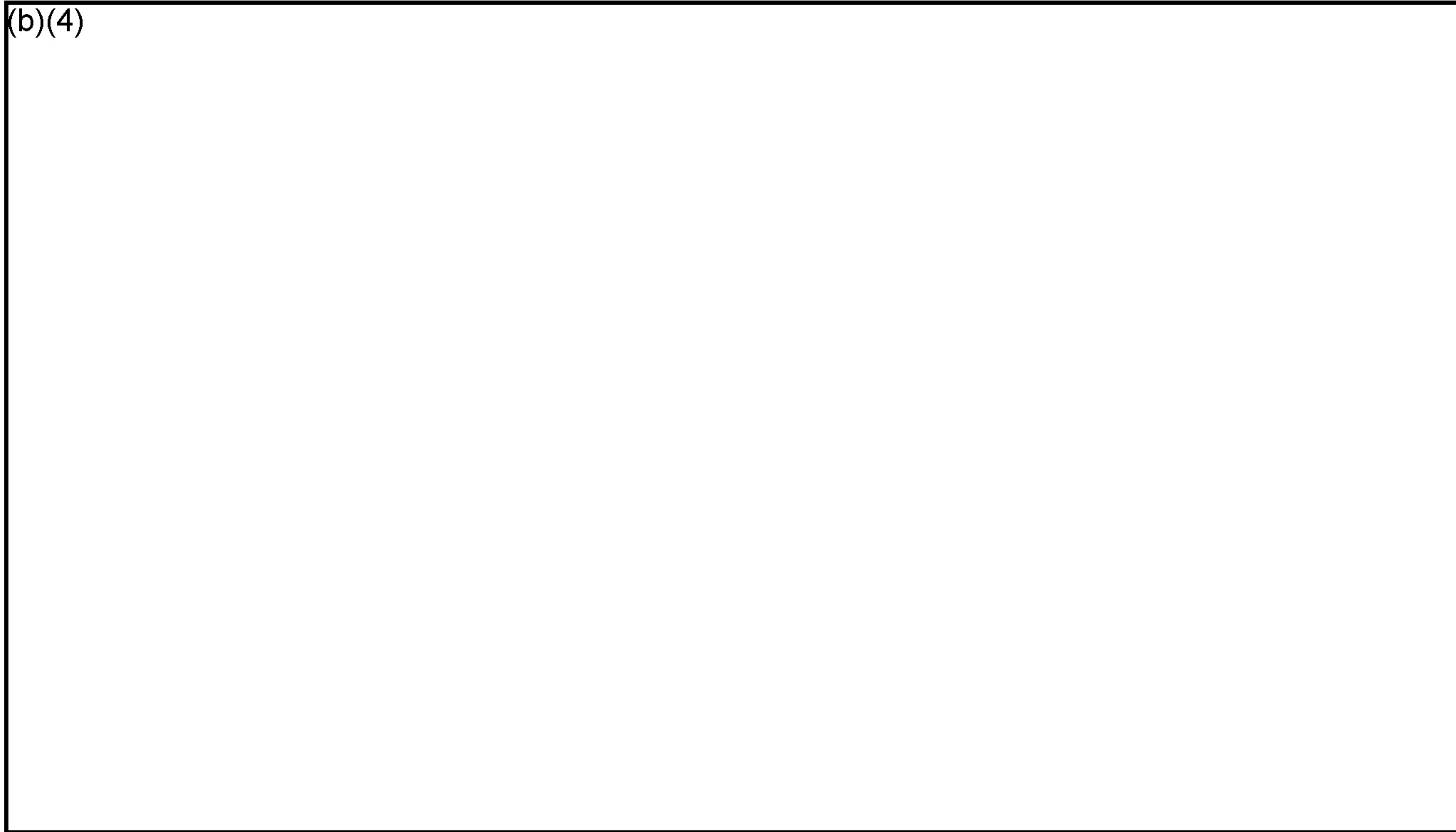
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2.3 Task 3 National Laboratory Network

2.3.1 Understanding the Task – Our Role in Supporting the National Laboratory Network

The National Laboratory Network (NLN) will serve as the single electronic focal point for all RELs. This one common website will provide the medium for coordinating the activities of all ten RELs and the common dissemination point for all REL applied research and development reports and publications. The NLN intranet will provide the communications for close collaboration among the RELs. While the Coordinating Contractor (Task 6) will be responsible for developing the NLN, we understand our role in contributing to the development of the NLN Plan, and our important role in providing and maintaining accurate information to support ED's NLN objectives.

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3 Personnel

In this section of our proposal, we identify our proposed ELAR key personnel and their role on the project. We begin with a narrative description of the qualifications of our proposed Laboratory Director, Dr. Sarah Friedman, and follow that with synopses of our other key staff member's qualifications in relation to their proposed responsibilities on ELAR tasks.

3.1 Key Personnel

Table 3.1-1 identifies our proposed key personnel and describes their role in terms of their function on the contract.

Table 3.1-1 ELAR Key Personnel

Name	Role
Dr. Sarah Friedman	ELAR Director
Dr. Donald Cymrot	ELAR Deputy Director, Principal Investigator, Fast Response Project 1
Dr. Arthur Sheekey	Needs Analysis, Training, and Technical Assistance Leader
Dr. Anne Peterson	Senior Analyst for Needs Analysis
Dr. Robert Pianta	Principal Investigator, Rigorous Research Study 1
Dr. Bridget Hamre	Co-Principal Investigator, Rigorous Research Study 1
Dr. Linda Cavalluzzo	Principal Investigator, Rigorous Research Study 2
Dr. Deborah Lowther	Co-Principal Investigator, Rigorous Research Study 2
Dr. Steven Ross	Principal Investigator, Rigorous Research Study 3
Dr. David Lopez	Co-Principal Investigator, Rigorous Research Study 3, Principal Investigator Fast Response Project 3
Dr. Ted Hasselbring	Principal Investigator, Rigorous Research Study 4
Dr. Janet Zydney	Co-Principal Investigator, Rigorous Research Study 4
Dr. Carol Adger	Principal Investigator, Fast Response Project 4
Dr. Neil Carey	Co-Principal Investigator, Fast Response Project 6
Dr. Joanna Edwards	Principal Investigator, Fast Response Project 5
Dr. Daniel Burke	Principal Investigator, Fast Response Project 6
Dr. Corbin Fauntleroy	Dissemination Leader
Dr. David Rodney	Field Representative, Fast Response Project 2
Dr. Jennie Wenger	Principal Investigator, Fast Response Project 7
Dr. Edward Cavin	Field Representative, Fast Response Project 2
Dr. Apriel Hodari	Scientific Analyst

3.1.1 REL Director

CNAC is proposing an exceptionally well-qualified Lab Director in Dr. Sarah L. Friedman. Prior to joining CNAC specifically to take on this assignment, Dr. Friedman spent most of her career at the National Institutes of Health (NIH), with the exception of three years at the National Institute of Education (NIE). Dr. Friedman's extensive experience in scientifically based research and her in-depth experience managing the conduct of such research are particularly applicable to the ELAR.

Since 1989, Dr. Friedman has served as the National Institute for Child Health and Human Development's (NICHD) scientific coordinator and one of the primary investigators on the NICHD Study of Early Child Care and Youth Development, a collaborative longitudinal research project

on the development of social, emotional, cognitive, linguistic, and health development of children from birth through adolescence. This position provides an excellent foundation for an REL Director. In this project, Dr. Friedman managed 11 grants to over 40 investigators at different universities and other research institutions. Significantly, as one of the primary investigators, she was also personally involved in the research. We believe this hands-on experience is critical for a successful REL Director.

In addition to her management and scientific responsibilities, Dr. Friedman led a highly successful effort to ensure that the results of the study received wide dissemination among parents, physicians and other health care workers, teachers and other education stakeholders, policymakers, and the public. Her comments about the study were quoted in approximately 30 newspaper and magazine articles. Dr. Friedman also made over a dozen radio and television appearances to discuss the study. Her ability to communicate effectively complex technical information in a way that audiences with different backgrounds can understand and utilize is another important characteristic for a successful Lab Director. Reflecting her management abilities, Dr. Friedman received two NIH Merit Awards for her leadership of this project.

Concurrent to her work on the Early Child Care and Youth Development project, Dr. Friedman held several other positions at NICHD including management of a large NICHD grant portfolio pertaining to cognitive, social, and affective development.

Objective indicators of Dr. Friedman's research capabilities are her nearly 100 published articles in such leading peer review journals as *Developmental Psychology*, *Child Development*, *Harvard Educational Review*, *Elementary School Journal*, *Psychological Science*, and *Early Education and Development*. Additionally, she edited nine volumes and made presentations at over 100 professional conferences, seminars, and workshops. Her scientific research spans such topics as (a) the effects of preterm birth on cognitive, educational, and social development of children; (b) the interface of brain, cognition, and education; (c) the development of planning skills; (d) longitudinal follow-up research strategies; (e) environmental influences on psychological development; and (e) child care and children's psychological and health development. Dr. Friedman earned her Ph.D. in Developmental and Experimental Psychology from The George Washington University.

Table 3.1.1-1 provides a synopsis of Dr. Friedman's experience and capabilities in relation to the REL director criteria specified in the RFP.

Table 3.1.1-1. Dr. Friedman is an exceptionally well-qualified REL Director

Required Capability/ Experience	Dr. Sarah Friedman
Demonstrated skills in the management of projects with multiple tasks and specialized staff requirements	<ul style="list-style-type: none"> • Since 1989, Dr. Friedman has managed the National Institute of Child Health and Human Development (NICHD) Study of Early Child Care and Youth Development. She has been responsible for development and implementation of this large longitudinal study focusing on the effects of family, child care, school, and after school on the health, cognitive, language, achievement, and social-emotional functioning of more than 1,000 children from the time they were one month old through age 15. • As an example of the study's multiple tasks and specialized staff requirements, the study actually is a network of projects conducted by about 30 investigators affiliated with

**Required Capability/
Experience**

Dr. Sarah Friedman

10 data collection sites that collaborate with staff at NICHD and at a data coordinating and analysis center.

- Dr. Friedman has demonstrated truly exceptional skills in research management. She has been recognized for her contributions by both the NICHD and by the scientific community. In 1993, Dr. Friedman received the prestigious NIH Merit Award "for exceptional leadership in managing the [study]." At the time, she was the first behavioral scientist at NICHD to receive a Merit Award. In 1998, she received a second NIH Merit award for her outstanding leadership in the development of the program of research being conducted in Phase II of the project. In 2003, the American Psychological Association (APA) awarded Dr. Friedman the highly prestigious Meritorious Research Service Award for her work on this project. Again, this award was a first for a NICHD scientist. She has also been named a Fellow of the Society of General Psychology, the American Psychological Association, the American Psychological Society, and the American Association of Applied and Preventive Psychology.
 - The NICHD Study of Early Child Care and Youth Development managed by Dr. Friedman has a cumulative value (through 2004) of \$111M. On an annual basis, it is about one and one-half times the size of ELAR.
 - The NICHD Study of Early Child Care and Youth Development is noteworthy not only in terms of the breadth and depth of science that it has produced but also in terms of its longevity. The study is scheduled to continue through 2007, with the data center to operate through 2008.
 - Dr. Friedman has substantial experience working with outside contractors on large projects. On the NICHD project, Dr. Friedman has worked with about 30 investigators, most of who were from universities and non-governmental research centers.
 - Dr. Friedman also managed a large grant portfolio pertaining to cognitive, social, and affective development. These grants were issued to outside entities.
 - Dr. Friedman has worked closely with educators as part of her research activities.
 - She also worked directly with educators during her tenure with the National Institute for Education. Along with Dr. Susan Chipman, Dr. Friedman worked with educators in an early attempt to help them implement scientifically based curricula.
 - Dr. Friedman has conducted research on important education issues, including school readiness, the achievement gap by income level, race and gender, classroom and teacher quality, and teaching methods. Many of these issues will be the central focus of ELAR rigorous and fast response studies.
 - Dr. Friedman has published scholarly articles on these issues in such journals as the *Harvard Education Review*, *Developmental Psychology*, *The Elementary School Journal*, and *Child Development*.
 - Dr. Friedman's current research includes projects on closing the achievement gap between African American and Caucasian children and between boys and girls from age 4½ through the 5th grade.
 - Dr. Friedman's professional career has been characterized by the conduct of scientifically valid research and rigorous, high quality research studies.
 - The results of Dr. Friedman's research have been published in well-recognized peer review journals such as *Child Development*, *the Journal of Developmental Psychology*, and the *Journal of Child Psychology and Psychiatry*.
 - One indicator of the level of recognition for her research and analytical skills is that Dr. Friedman serves or has served on the editorial board of some of the highest ranking journals in her field, including *Developmental Psychology*, *Child Development*, *Journal of Ap-*
- Management of large research projects
- Working with other contractors on large research projects
- Experience working with educators
- Familiarity with current education issues
- Understanding and knowledge of the rationale of scientifically valid research and analytical skills required to conduct rigorous, high quality research studies

**Required Capability/
Experience**

Dr. Sarah Friedman

	<p><i>plied Developmental Psychology</i>, and the <i>Journal of Developmental and Behavioral Pediatrics</i>.</p> <ul style="list-style-type: none"> • During graduate training in Developmental Psychology at George Washington University under Richard D. Walk and Jacqueline J. Goodnow, Dr. Friedman studied the design and implementation of rigorous methodologies. She received the Psi Chi (National Honor Society in Psychology) Award, and then received a post-doctoral fellowship from the National Institute for Mental Health for her research design work.
<p>Randomized controlled trials</p>	<ul style="list-style-type: none"> • Dr. Friedman had significant experience with randomized control trials. She has conducted random control experiments on text comprehension and structure, infant tactile, auditory, and visual perceptions, and infant and adult responses to crying patterns in pre-term vs. full-term babies. • Dr. Friedman organized a network of researchers at NICHD to conduct randomized controlled clinical trials.
<p>Quality quasi-experimental studies</p>	<ul style="list-style-type: none"> • Dr. Friedman conducted quasi-experimental design studies on the age of entry into kindergarten as part of her work with the Child Care and Youth Development database, which are natural history longitudinal files. • As a component of her research activities and participation on journal editorial boards, Dr. Friedman has reviewed and evaluated numerous quasi-experimental studies. • In the most recent phase of the NICHD Early Child Care and Youth Development study, Dr. Friedman has assumed the responsibility for overseeing the secondary data analyses. The database generated from this study is a 15-year longitudinal file of 1,000 children, including information about the family, childcare, school and after school programs, health status, cognitive and language ability, achievement, and social-emotional functioning. • Dr. Friedman is conducting research on understanding the achievement gap. Her work on classroom and teacher quality (published in <i>The Elementary School Journal</i> this year) includes the analysis of a database on educational outcomes based on observations in 800 classrooms.
<p>Analysis using large data sets in education</p>	<ul style="list-style-type: none"> • Dr. Friedman has performed analysis using large datasets that include information about teachers' education, experience, instructional behavior, and their management of the classroom. • Dr. Friedman has also worked with large data sets that contain information from school transcripts, as well as performance of students on standardized tests and teachers' reports about students' behavior. • Dr. Friedman will be co-chairing and presenting a paper at a pre-conference workshop on secondary data analyses at the 2006 meetings of the International Society for the Study of Behavioral Development.
<p>Proven track record working with State and Local Education Agencies on technical assistance activities</p>	<ul style="list-style-type: none"> • As part of the NICHD Early Child Care Study data collection, Dr. Friedman worked with investigators and site managers to procure school data about the children included in the study
<p>Broad experience in translating education research into practical and useful strategies for education improvement</p>	<ul style="list-style-type: none"> • Dr. Friedman is experienced in the dissemination of research findings for public consumption. She is skilled in translating research findings into information that can be used by parents, teachers, and policy makers. • As the leading spokesperson for the NICHD Early Child Care and Youth Development study, Dr. Friedman developed strategies for disseminating scientific results to the non-scientific public. Because of her efforts, this study has received widespread publicity in both the print and broadcast media. She has given numerous press interviews and made

**Required Capability/
Experience**

Dr. Sarah Friedman

Knowledge and experience in the challenges and strategies necessary to ensure the successful adoption of new educational interventions

multiple television appearances to discuss the results of the study at various stages of its progress. The NICHD study also has a website to disseminate information about the study progress and results.

- Dr. Friedman has edited 8 volumes aimed at integrating knowledge for the scientific community and at opening up new directions for research, including a volume about the brain, cognition, and education and a volume about follow up research strategies.

- During her employment with NIE, Dr. Friedman worked with Dr. Susan Chipman on implementing new education interventions.

- Dr. Friedman is experienced with the challenges of trying to implement on the regional or national level interventions that were successful in smaller scale studies.

Dr. Friedman will work in Task 5. Table 3.1.1-2 shows her proposed hours by year.

Table 3.1.1-2. Dr. Friedman's Proposed Hours for Task 5

Year 1	Year 2	Year 3	Year 4	Year 5
1,750	1,500	1,600	1,750	1,750

3.1.2 Key Personnel

In this section of our proposal, we describe the responsibilities of each of our proposed key personnel on the tasks and subtasks to which they will be assigned, and we provide a synopsis of their qualifications to conduct those tasks/subtasks. Additionally, we list proposed hours for each key person by task/subtask and contract year. Vitae for all key personnel are provided in Section 3.1.3.

3.1.2.1 Dr. Donald Cymrot

Name: Dr. Donald Cymrot	Role: ELAR Deputy Director, Principal Investigator, Fast Response Study 1					
Responsibilities	Qualifications					
Task/Subtask: 5	HOURS	YR1:180	YR2:180	YR3:180	YR4:180	YR5:180
Dr. Cymrot will serve as Deputy Director of ELAR. In this regard, he will be involved in management of all research and analytical projects will directly manage the conduct of all fast response studies. Dr. Cymrot will directly supervise our field representatives and Scientific Analysts.	<p>Dr. Cymrot is a highly experienced research manager with considerable experience managing both fast response and long-term research projects. He is currently the Director of CNAC's Education business practice. In this role, he has ultimate management responsibility over all of our education projects, including ATEC and RAC. Many of these projects have dealt directly with the four states in the Appalachian region.</p> <p>As the Director of CNAC's Workforce Education and Training Team, Dr. Cymrot managed a research program that was more than twice the size of the REL Fast Response program. In this role, he was responsible for developing CNAC's annual plan in conjunction with client management and executing to it. Dr. Cymrot was also involved in a number of fast response studies. For example, he supported a review of client staff attrition that involved the use of longitudinal databases to analyze both quality and quantity of attrition among new staff. He presented the findings both in the form of policy papers and briefings.</p> <p>In an earlier assignment, Dr. Cymrot served as a field representative in the client's planning shop. He provided on-site support to policymakers and practitioners, including participating in senior staff meetings to shape the office's agenda, undertaking short-term studies to further that agenda, and writing policy papers and briefings. In addition, he initiated a professional development program aimed at helping the staff make better use of analysis in supporting decision making. This course included modules on the effective use of data.</p> <p>Dr. Cymrot served as a scientific analyst, where he conducted numerous fast response studies in response to requests from the client. These studies resulted in either a short policy paper or a briefing. He also participated as a researcher on study groups primarily composed of practitioners. In these cases, he helped frame questions, provided data to support the analysis, and participated in the shaping of solutions based on the data analysis.</p> <p>Dr. Cymrot's first hand experience as both a field representative and Scientific Analyst will enable him to manage the program effectively.</p>					
Task/Subtask: 1.2	HOURS	YR1:200	YR2:200	YR3:200	YR4:180	YR5:200
Dr. Cymrot will manage the conduct of the Fast Response Applied Research and Development Project on the Appalachian Education Data Center. Dr. Cymrot will design the	Dr. Cymrot was the study director of a series of empirically based studies of policies and programs. For example, he developed an empirical model to set retention bonus levels to retain specialty skills in a client organization. In advance of this project, he oversaw the development of the client's first longitudinal database of personnel records. Using individual level					

<p>study, supervise staff, and review and approve all work products. He will integrate data from different sources, manage the development of large, longitudinal databases, and interface with state agencies and enlist their support to provide data.</p>	<p>data, he also estimated the elasticity of supply for personnel in different occupations within another customer organization, which was used to set the level of selected retention bonuses. Previous estimates had relied on aggregated data.</p> <p>Dr. served as Co-Director of the Regional Advisory Committee Project. He prepared an initial set of regional profiles that were used by all ten committees for identifying their region's technical assistance needs. Dr. Cymrot also headed the facilitation team supporting the Advisory Committee for the Mid-Atlantic Region. In this role, he served as the principal technical advisor to the committee chair, facilitated routine online and face-to-face discussions, and assumed responsibility to editing and completing the final report to the Secretary of Education in March 2005.</p>
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3.1.2.2 Dr. Arthur Sheekey

<p>Name: Dr. Arthur Sheekey</p>	<p>Role Needs Assessment Leader</p>					
<p>Responsibilities</p>	<p>Qualifications</p>					
<p>Task/Subtask: 1.1</p>	<p>HOURS</p>	<p>YR1:600</p>	<p>YR2:600</p>	<p>YR3:600</p>	<p>YR4:600</p>	<p>YR5:600</p>
<p>Dr. Sheekey will manage the development of ongoing needs assessment. He will lead document identification and review. He will coordinate regularly with state officials as part of the needs assessment process. Dr. Sheekey will also manage the ELAR technical assistance process and will prepare a weekly summary of applicable research conducted nationally.</p>	<p>Dr. Sheekey served as the Director of the Support to the Regional Advisory Committee project. The Secretary of Education appointed 10 regional advisory committees (RACs) to conduct an educational needs assessment between October 2004 and March 2005. The requirement for the RACs was set in the Education Sciences Reform Act of 2002, Section 206 and referred to in the REL Statement of Work as one of the key needs assessment documents for the RELs.</p> <p>As Director of the RAC Project, Dr. Sheekey oversaw the entire project, and he co-authored the Overview and Synthesis Report. Dr. Sheekey worked closely with the Office of Elementary and Secondary Education (OESE/ED) to assure that the ten advisory committees and its 150 members completed their tasks to identify the critical regional technical assistance needs of states and school districts. He effectively coordinated the efforts of the committee's chairs and technical support staff, communicated routinely with participants, and assured widespread public involvement. He reviewed and edited all of the documents that were distributed to committees and to the public.</p> <p>Dr. Sheekey also served as the Director of the Appalachian Technology in Education Consortium (ATEC). This project provided technical assistance to the states within the Appalachian region. After the passage of the No Child Left Behind Act, the focus of the ATEC shifted toward helping states implement the requirements of Title II D of the Act. Dr. Sheekey had responsibility for the overall management of the project, coordination and monitoring of the work of regional partners, the preparation and review of documents and reports, supervision of individuals responsible for the maintenance of the project's website, and routine communication with state and local education officials in the region.</p> <p>As Director of ATEC for the past four years, Dr. Sheekey worked closely</p>					

	<p>with the Office of Elementary and Secondary Education (OESE/ED) in assisting states in the region to develop statewide educational technology plans and assessments that addressed mandates and requirements in Title 2-D of NCLB. He conducted a series of workshops for the SEAs that included some of the nation's leading experts on research and evaluation.</p> <p>Dr. Sheekey initiated a weekly online report on surveys, studies, and reports relating to applications of advanced telecommunications technologies; the report was subsequently requested and sent to all 50 SEAs. In addition, he prepared periodic policy briefs on various topics of concern, including uses of technology in rural schools, advances in wireless technologies, assessing the impact of technology on student performance, and on how to develop and implement virtual courses of study.</p> <p>Dr. Sheekey served as the Project Director for Learning Technologies Initiative, Council of Chief State School Officers. In this position he was responsible for the coordination of federal and state educational technology initiatives, planning and organization of national educational conferences, the preparation of periodic reports, presentations at national conferences, and for briefing state commissioners of education on matters relating to technology.</p> <p>Dr. Sheekey worked with State Education Agency officials to identify their needs and help them meet requirements established by the Federal government.</p>
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3.1.2.3 Dr. Anne Peterson

Name: Dr. Anne Peterson	Role: Senior Analyst for Needs Assessment					
Responsibilities	Qualifications					
Task/Subtask: 1.1	HOURS	YR1:300	YR2:600	YR3:600	YR4:600	YR5:600
Dr. Peterson will design and conduct surveys and conduct focus groups to assess needs.	<p>Dr. Peterson has spent her career designing and conducting large scale data collection efforts to assess needs for clients. She recently conducted a needs assessment of physicians, nurses, and health care administrators working in underserved areas to provide data for researchers and policy makers to assess the shortage of health care providers in underserved communities and recommend improvements. This project involved conducting fifteen focus groups nationwide and a national survey of 35,000 nurses.</p> <p>She has extensive experience in conducting needs assessment, having recently completed an assessment of the needs of individuals with limited English proficiency for the Social Security Administration. Additionally, she conducted the Adult Literacy Survey, a national survey of 20,000 households to examine literacy by demographic and geographic characteristics. Most recently, Dr. Peterson directed the statistical evaluation of the Ready to Learn program, designed to provide books and educational materials and programming to low-income children and families.</p>					
Task/Subtask: 1.2	HOURS	YR1:	YR2:96	YR3:76	YR4:76	YR5:76

<p>On the Fast Response Applied Research and Development Project on Implications of the Growing ELL Population in Appalachian Schools, Dr. Peterson will examine Census data to determine trends of the non-English speaking population in the Appalachian region.</p>	<p>Dr. Peterson has more than seven years experience in the Census Bureau, where she was a Senior Mathematical Statistician and Branch Chief. She is an expert on Census data and the analysis of that data.</p> <p>She has extensive experience in examining trends in the limited English proficient (LEP) population and recommending best ways for government agencies to communicate with them. For the Social Security Administration, she directed a project to examine the materials needed for LEPs and recommended improvements to the existing materials.</p>
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3.1.2.4 Dr. Robert Pianta

<p>Name: Dr. Robert Pianta</p>	<p>Role: Principal Investigator for Rigorous Research Study 1</p>					
<p>Responsibilities</p>	<p>Qualifications</p>					
<p>Task/Subtask: 2</p>	<p>HOURS</p>	<p>YR1:216</p>	<p>YR2:216</p>	<p>YR3:216</p>	<p>YR4:216</p>	<p>YR5:0</p>
<p>Dr. Pianta will lead the Rigorous Research Study on Using Web-Based Feedback and Support to Improve Teacher Quality and Student Outcomes. He will design the study, manage all assigned staff, manage the data collection activity, lead the data analysis, and lead report preparation.</p>	<p>Dr. Pianta directs the University of Virginia Center for Advanced Study of Teaching and Learning (CASTL), a university-wide research center in the education sciences. He is a nationally recognized leader in the area of school-based research and, in his role at CASTL, is responsible for overall management and strategic direction, research partnerships, and funding.</p> <p>Directly applicable to his proposed role on ELAR, Dr. Pianta is a principal investigator on two NICHD-funded grants (the NICHD Study of Early Child Care and Youth Development and MyTeachingPartner: Web-based training in literacy and relationships), the OERI-IES-funded National Center for Early Development and Learning Multi-State Pre-K Study, and a grant from the Foundation for Child Development. He is also one of the senior investigators for the Carnegie-funded Teachers for a New Era effort at UVA and is the Program Director for the IES-funded UVA Interdisciplinary Predoctoral Training Program in Education Sciences.</p> <p>Each of these projects has involved the design and management of large-scale, multi-site research on young children in classroom settings. For example, the NCEDL study conducted observations in over 700 preschool classrooms in 11 states, with individual data collected on over 2,500 children in these classrooms. Recently, as a part of the MyTeachingPartner project, Dr. Pianta has innovated web-based technology allowing teachers across the state of Virginia to receive ongoing, personalized professional development support. Through this process, Dr. Pianta and his staff at CASTL have gained important insights into the challenges of working with schools around technology issues and have developed effective strategies for responding to, and in many cases preventing, these challenges.</p> <p>Dr. Pianta has also directed four interdisciplinary graduate training projects (OSERS or IES-funded) and is a mentor in the APA/IES sponsored PERT post-doctoral training initiative. Dr. Pianta is a consultant on more than a half dozen NIH-funded projects, is the author of more than 150 peer-reviewed papers related to education science and child development, and is Editor of the <i>Journal of School Psychology</i>.</p>					

3.1.2.5 Dr. Bridget Hamre

Name: Dr. Bridget Hamre	Role: Co-Principal Investigator for Rigorous Research Study 1					
Responsibilities	Qualifications					
Task/Subtask: 2	HOURS	YR1:1040	YR2:1040	YR3:1040	YR4: 1040	YR5:0
Dr. Hamre will assist Dr. Pianta with the Rigorous Research Study on Using Web-Based Feedback and Support to Improve Teacher Quality and Student Outcomes. Dr. Hamre will lead measure development and training efforts on this project and will collaborate with Dr. Pianta on all data analysis and reporting efforts.	<p>Dr. Hamre is a clinical and school psychologist with over 10 years of experience working in education and educational research. She is currently a research associate at the Center for the Advanced Study of Teaching and Learning (CASTL), at the University of Virginia. She leads current development and training efforts related to the Classroom Assessment Scoring System (CLASS) and has collaborated with many state-level education policymakers in the use of standardized classroom observation as a research and professional development tool. For example, she recently led a team of staff from CASTL in providing training to over 60 early childhood college faculty in Massachusetts on how to use the CLASS to provide feedback to teachers in training. She has worked closely with Dr. Pianta in the development of the teacher consultancy component of MyTeaching-Partner, which serves as a model for the proposed project.</p> <p>Dr. Hamre also has strong analytic and writing skills, as evidenced by recent publications, including a first-authored paper that appeared in <i>Child Development</i>, examining ways in which teachers every day interactions with students at risk of school failure may facilitate academic and social development. She has extensive experience in maintaining and analyzing large databases and has advanced training in sophisticated statistical methods, including HLM, growth modeling, and structural equation modeling.</p> <p>Dr. Hamre also has experience in project management and dissemination of research. She worked previously at Policy Analysis for California Education (PACE), a policy analysis institute at the University of California, Berkeley. In this role she led a 3-year evaluation of a statewide initiative aimed at raising levels of retention and training among California's early childhood education staff. This included managing a group of graduate and undergraduate researchers, directing implementation of a 3-year survey of 3,000 early childhood teachers, conducting longitudinal assessment of program outcomes, authoring yearly evaluation reports for the First 5 California Children and Families Commission, and disseminating policy implications of research to legislative staff to inform decisions regarding future child care policy</p>					

3.1.2.6 Dr. Linda Cavalluzzo

Name: Dr. Linda Cavalluzzo	Role: Principal Investigator for Rigorous Research Study 2					
Responsibilities	Qualifications					
Task/Subtask: 2	HOURS	YR1:900	YR2:700	YR3:900	YR4:900	YR5:900
Task/Subtask: 1.2	HOURS	YR1:180	YR2:100	YR3:180	YR4:180	YR5:180
<p>Dr. Cavalluzzo will lead the Rigorous Research Study Effectiveness of Hybrid Secondary School Course for Adolescent Students and as Embedded Professional Development Experiences for Teachers. Dr. Cavalluzzo will design the study, manage all assigned staff, manage the data collection activity, lead the data analysis, and lead report preparation.</p>	<p>Dr. Cavalluzzo has designed and executed a range of research studies and evaluations in K-12 and post-secondary education. As lead researcher of a five-site study of high-school-college collaborations (including middle college high schools and college-based dual enrollment programs), she designed and helped execute a mixed-methods evaluation of program effectiveness that included multivariate statistical analyses of several dimensions of student outcomes as well as document analysis, interviews and focus groups for a full-range of stakeholder groups within each district (including top-level college, district and program administrators, program faculty, guidance counselors, parents and students), and classroom observations. A summary of the project is forthcoming in <i>Community College Journal of Research and Practice</i>.</p> <p>Dr. Cavalluzzo's work over the past few years has laid the intellectual foundation for research on several important issues facing educators in the Appalachian region. She developed a framework for considering the implication for costs, access, and program growth of alternative funding methods and governance structures of virtual schools—that is, schools or programs that offer online courses to supplement curriculum in, or as an alternative to, traditional schools. Her paper "Cost, Financing and the Provision of Online Education" was recently published as part of a volume entitled, <i>Virtual Schools: Planning for Success</i>. She also led a panel in the July 2004 NCLB eLearning Leadership Summit on the implementation of virtual school programs.</p> <p>Dr. Cavalluzzo completed studies that examined the costs associated with the statewide virtual school programs in Kentucky and West Virginia. Based on this work and subsequent analysis of models being developed and implemented in several other states, she prepared several papers and policy briefs and participated on panels and in meetings throughout the region, and in at least four national gatherings, that focused on the cost and effectiveness of online and distance education. She met with top officials in Virginia and advised them on selecting approaches to ensure that online educational services addressed the State's critical educational needs. Because of her knowledge and reputation, Dr. Cavalluzzo continues to provide technical assistance to state and local educational officials in the region and throughout the nation.</p> <p>Dr. Cavalluzzo headed the facilitation team supporting the Advisory Committee for the Southeast Region. In this role, she served as the principal technical advisor to the committee chair, facilitated routine online and face-to-face discussions, and assumed responsibility for editing and completing the final report to the Secretary of Education in March 2005.</p> <p>Dr. Cavalluzzo has also led a pair of research studies on the quality of the teacher workforce. In the first study funded by the National Science Foundation, she created a longitudinal file linking 11 years of teacher records to estimate a</p>					

	<p>model of the association between such factors as pay and school and teacher characteristics, and teacher retention. In the second study, she developed the first large-scale statistical study of the link between National Board Certification of teachers and student achievement in high school mathematics. She used sophisticated multivariate techniques, including individual and school fixed effects models in an analysis of over 100,000 student records. Her work with multiple years of individual student data, linked to specific subject-area teachers for 9th and 10th graders, offers estimates of effect sizes as measured by gains on the state end-of-grade exams in mathematics, for an array of indicators of teacher quality, including experience, state certification in mathematics, primary job assignment, competitiveness of undergraduate school, and National Board Certification status. Dr. Cavalluzzo has published her research in leading peer-reviewed journals such as <i>The Review of Economics and Statistics</i> and in edited volumes.</p> <p>As Co-PI of a NSF-sponsored study of the impact of systemic reform in three medium-sized urban school districts, Dr. Cavalluzzo conducted interviews, focus groups, and classroom observations to help determine the extent to which components of systemic reform were implemented in each district. In addition, she designed and implemented a survey of mathematics and science teachers to evaluate their perceptions of change because of the reforms.</p> <p>As a site observer for the Tennessee EdTech Launch evaluation run by the Center for Research in Education Policy at the University of Memphis, Dr. Cavalluzzo collected data and observed technology use in numerous classrooms, including over 60 in rural Tennessee.</p>
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3.1.2.7 Dr. Debra Lowther

Name: Dr. Debra Lowther	Role: Co-Principal Investigator for Rigorous Research Study 2					
Responsibilities	Qualifications					
Task/Subtask: 2	HOURS	YR1:150	YR2:250	YR3:250	YR4:250	YR5:250
Dr. Lowther will assist Dr. Cavalluzzo with the Rigorous Research Study on Effectiveness of Hybrid Secondary School Course for Adolescent Students and as Embedded Professional Development Experiences for Teachers. Dr. Lowther will have primary responsibility for management, data collection, and analysis of classroom observation data (SOM/RSCA) for the study.	<p>Dr. Lowther is a Senior Faculty Researcher for the Center for Research in Educational Policy (CREP). She served as Project Director for the external evaluation of eight high-profile technology initiatives, including TN's Ed-Tech Launch Program; Schools for Thought Challenge Grant (Vanderbilt University/Metropolitan Nashville Schools; Co-NECT School Reform model – Cambridge, MA/Memphis City Schools; and TN Technology Literacy Challenge Fund.</p> <p>Dr. Lowther served as the Appalachian Technology in Education Consortium's Principal Investigator for Professional Development from 2000-2005. In this role, she provided technical assistance to Kentucky, Tennessee, Virginia, and West Virginia and co-authored Integrating Technology into the Curriculum (3rd Ed. 2005), which is ranked as a leading technology integration textbook and received the Educational Communications and Technology Foundation's 2001 "Outstanding Book in Instructional Technology".</p> <p>Dr. Lowther served on the editorial board of the Educational Technology</p>					

	<p>Research and Development journal for 2000-2002 and is currently a consulting editor for the same journal. She also recently served as an Executive Board Member for the Association for Educational Communications and Technology (AECT) and as President of AECT's Research Division. Her recent publications include: (in production) <i>ID Casebook, The: Case Studies in Instructional Design</i> (3rd Ed, coauthored); (2005) <i>Integrating Computer Technology into the Classroom</i> (3rd Ed., coauthored); (2003) <i>When each one has one: The influences on teaching strategies and student achievement of using laptops in the classroom.</i> (coauthored) <i>Educational Technology Research and Development</i>; and. (2003) <i>Integrating Computers into the Problem-Solving Process. New Directions for Teaching and Learning: Problem-Based Learning for the Information Age.</i></p>
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3.1.2.8 Dr. Steven Ross

Name: Dr. Steven Ross	Role: Principal Investigator for Rigorous Research Study 4					
Responsibilities	Qualifications					
Task/Subtask: 2	HOURS	YR1:600	YR2:1000	YR3:1000	YR4:1000	YR5:1000
<p>Dr. Ross will lead the Rigorous Research Study An Impact Evaluation of Early Reading First Programs. Dr. Ross will design the study, manage all assigned staff, manage the data collection effort in Tennessee, lead the data analysis, and lead report preparation.</p>	<p>During the past ten years, Dr. Ross has worked extensively with school districts, both regionally and locally, to develop and evaluate programs for improving student achievement. A primary focus of these studies has been on schools predominantly serving low-income inner-city minority children. An ongoing research effort involves comparing the academic achievement of children in schools that have adopted different comprehensive school reform models, and examining the effectiveness and impact of the Accelerated Reader Program, a study that employs a truly randomized assignment to treatments.</p> <p>As Executive Director of the Center for Research in Educational Policy (CREP) and Professor of Educational Psychology, Dr. Ross is engaged in more than a dozen research initiatives that cover pre-school through high school levels. He has helped to design studies to effectively prepare children ages 0-3 for entry into kindergarten, a study to determine the effective transition of 9th grade students to the high school environment, a study of the effective integration of technology in the classrooms that support student-centered teaching methods for promoting higher-level learning outcomes, and an experimental study involving ten Memphis City schools using different reading programs.</p> <p>Dr. Ross is the author of six textbooks and over 120 journal articles in the areas of educational technology and instructional design, at-risk learners, educational reform, computer-based instruction, and individualized instruction. He is the editor of the research section of the <i>Educational Technology Research and Development</i> journal, and a member of the editorial board for two other professional journals.</p> <p>Dr. Ross has testified on school restructuring research before the U.S. House of Representatives Subcommittee on Early Childhood, Youth, and Families, and is a technical advisor and researcher on current federal and state initiatives regarding the evaluation of technology usage, supplemental educational</p>					

	<p>services, charter schools, Reading First, and Comprehensive School Reform.</p> <p>Dr. Ross is currently working on the formative and summative evaluation of state and district initiatives under and related to NCLB, including the evaluation of Reading First in TN, Title II-D technology in TN and KY, Supplemental Educational Services in TN and LA, and charter schools in TN. Dr. Ross is a technical advisor on programs for Comprehensive School Reform and Supplemental Educational Services, a national effects study, and the new ERIC.</p>
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3.1.2.9 Dr. David Lopez

Name: Dr. David Lopez	Role: Co-Principal Investigator for Rigorous Research Study 3, Principal Investigator Fast Response Study 3
Responsibilities	Qualifications
Task/Subtask: 2	HOURS YR1:640 YR2:300 YR3:160 YR4:449 YR5:300
Task/Subtask: 1.2	HOURS YR1:400 YR2:200 YR3:400 YR4:400 YR5:400
<p>Dr. Lopez will assist Dr. Ross with the Rigorous Research Study on An Impact Evaluation of Early Reading First Programs. Dr. Lopez will assist with design of the study, data analysis, and report preparation.</p> <p>Dr. Lopez will lead the Fast Response Applied Research and Development Project on Curriculum Quality and Alignment of Appalachian Region Reading First Programs. Dr. Lopez will design the study, supervise staff, and review and approve all work products. He will assemble the necessary data, manage the development of large, longitudinal databases, and interface with state agencies and try to enlist their support to provide data.</p>	<p>Dr. David Lopez has extensive experience designing and managing randomized control studies, analyzing data, and writing research reports and peer-reviewed publications. He has specialized training in multivariate statistics, and his expertise includes planning and conducting statistical analyses, survey construction and validation, and presenting findings at regional and national conferences.</p> <p>Dr. Lopez is particularly skilled at conducting secondary data analyses on multiple data sets using a variety of sophisticated statistical techniques such as hierarchical linear regression, log-linear regression, structural equation modeling, means and covariate structures modeling, and multi-level modeling.</p> <p>Dr. Lopez analyzed the Head Start Family and Child Experiences Survey (FACES: a nationally representative sample of Head Start children) to determine the degree to which attendance influenced literacy and pre-math skills as well as behavior problems of Head Start Program children. He planned and conducted statistical analyses, constructed and validated the survey, trained field staff in child and parent assessments and classroom observations, conducted on-site quality assurance visits, and wrote research reports. Dr. Lopez contributed questions to the re-designed teacher questionnaire, and a new measure of classroom curriculum fidelity.</p> <p>Dr. Lopez analyzed the Head Start Program Information Report (PIR) database to determine trends in demographic characteristics among the Head Start population both nationally and in state. He also analyzed the Head Start National Reporting System (NRS: a database of over 450,000 Head Start children nationwide) to determine the link between teacher and program-level factors (e.g., training, experience, funded enrollment) and literacy and pre-math skills.</p> <p>Dr. Lopez has published empirical research in such journals as <i>Develop-</i></p>

	<p><i>mental Psychology, Journal of Personality & Social Psychology, Personality & Social Psychology Bulletin, Journal of Experimental Social Psychology, Journal of Experimental Child Psychology, and International Journal of Behavioral Development.</i> In addition to his published work, he has extensive familiarity with the NELS, Common Core, NAEP and ECLS databases.</p>
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3.1.2.10 Dr. Ted Hasselbring

<p>Name: Dr. Ted Hasselbring</p>	<p>Role: Principal Investigator for Rigorous Research Study 4</p>					
<p>Responsibilities</p>	<p>Qualifications</p>					
<p>Task/Subtask: 2</p>	<p>HOURS</p>	<p>YR1:700</p>	<p>YR2:670</p>	<p>YR3:670</p>	<p>YR4:670</p>	<p>YR5:660</p>
<p>Dr. Hasselbring will manage the Rigorous Research Study on Enabling Students to Achieve Math Proficiency Through a Technology-Based Approach. He will design the study, manage all assigned staff, manage the data collection activity, lead the data analysis, and lead report preparation.</p>	<p>Dr. Hasselbring has a long history in special education technology dating back to the early 1980s. Prior to joining the University of Kentucky in 2000, Dr. Hasselbring spent seventeen years at Vanderbilt University where he was co-director of the Learning Technology Center (LTC) and Professor of Special Education. As co-director of the LTC, Dr. Hasselbring directed a number of grants that focused on the use of technology for enhancing learning in at-risk and special-needs students.</p> <p>Dr. Hasselbring has served as the Principal Investigator and Executive Director of the National Assistive Technology Research Institute (NATRI) at the University of Kentucky. His work at NATRI has focused on the examination of assistive technology (AT) and AT services as they relate to the education of all students with disabilities. His current focus on technology-based mathematical support for learning is especially relevant to the proposed project since so many students with mild disabilities demonstrate difficulty in mathematics.</p> <p>Dr. Hasselbring has been a pioneer in the development of computer and video-based applications for children who are at-risk of school failure and for students with disabilities. Since 1970 he has been awarded numerous grants and has conducted extensive research and developed a variety of technology-based programs for enhancing learning. Dr. Hasselbring's research and development has focused on the empirical identification of effective software design principles and their transfer from experimental applications to practical use in the classroom.</p> <p>Dr. Hasselbring is particularly well qualified to manage this project. He has been the principal investigator or co-principal investigator of 40 competitive, funded grants dealing with a wide array of technology-related projects from ED, the National Science Foundation, and a number of private foundations.</p>					

3.1.2.11 Dr. Janet Zydney

Name: Dr. Janet Zydney	Role: Co -Principal Investigator for Rigorous Research Study 4					
Responsibilities	Qualifications					
Task/Subtask: 2	HOURS	YR1:1800	YR2:1800	YR3:1800	YR4:1800	YR5:1800
<p>Dr. Zydney will assist Dr. Hasselbring with the Rigorous Research Study on Enabling Students to Achieve Math Proficiency Through a Technology-Based Approach. She will help with design of the study, staff supervision, data collection, data analysis, and report preparation.</p>	<p>Dr. Zydney has focused her research on investigating math and science applications for K-12 settings. She conceptualized a new instructional model that expands upon a learning theory for advanced knowledge acquisition, adapting it to be developmentally appropriate for young learners. The goal of this model is to provide a conceptual framework for the creation of learning environments designed to improve students' understanding of complex problems as well as to reduce their misconceptions.</p> <p>To test the efficacy of this model and directly applicable to her proposed role on ELAR, Dr. Zydney developed a computer-based learning environment based on this model and evaluated its use with middle school and high school students.</p> <p>Dr. Zydney conducted a software evaluation study of the <i>Mad Math Adventures</i> software that used focus groups to determine the design elements that are most appealing to students and the features that are most helpful for teachers in facilitating the use of the software in the classroom. She designed a research study to assess the use of video-based problems within a computer program on students' mathematical achievement. Dr. Zydney wrote several articles for publication and presented papers at conferences.</p> <p>Dr. Zydney redesigned and taught a graduate course, which provided educators with lesson plans and activities for integrating technology into the classroom, strategies for overcoming obstacles to integration, and methods of assessing technology projects. She engaged students in experiential, hands-on lessons that demonstrated a variety of approaches for technology integration.</p> <p>Dr. Zydney conducted focus groups and interviews to evaluate the effectiveness of the Schools Around the World project, an online professional development course for math and science teachers about assessment and standards. She taught technology seminars for educators.</p> <p>Dr. Zydney developed an online course for science teachers about using new media and technology to promote critical thinking and how to use electronic portfolios as a means for assessment. The course included community-building activities to foster a collaborative learning environment and strategies for accommodating diverse learners.</p> <p>Dr. Zydney provided technology staff development to schools. She co-taught with teachers in their classrooms in order to model ways to integrate media and technology into the curriculum. She taught middle school and high school students how to develop multimedia projects during after-school workshops and summer institutes. Dr. Zydney designed and taught a summer institute for educators about the key issues affecting the successful integration of technology into the public schools.</p> <p>All of Dr. Zydney's research has been carried out in the public school system with</p>					

	<p>diverse groups of teachers and students, including those with special needs. She recently published a relevant article in the <i>Journal of Educational Multimedia and Hypermedia</i>: "Eighth-grade students defining complex problems: The effectiveness of scaffolding in a multimedia program". This past spring, she presented her research at the annual meeting of the American Educational Research Association.</p>
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3.1.2.12 Dr. Carolyn Adger

Name: Dr. Carolyn Adger	Role: Principal Investigator for Fast Response Study 4					
Responsibilities	Qualifications					
Task/Subtask: 1.2	HOURS	YR1: 637	YR2: 546	YR3: 546	YR4: 455	YR5: 364
<p>Dr. Adger will manage the conduct of the Fast Response Applied Research and Development Project on Implications of the Growing English Language Learners (ELL) Population in Appalachian Schools. Dr. Adger will design and lead the study, and supervise research staff in identifying and analyzing existing data and reviewing related research. She will manage the development of large, longitudinal databases and interface with state agencies to enlist their support in providing data. She will also lead limited investigations, such as focus groups and interviews. Dr. Adger will participate in writing policy briefs and other materials, and review and approve all other work products that staffs develop.</p>	<p>Dr. Adger's expertise in language learning, language development, and language use in educational settings will make important contributions to this project. She has broad experience conducting research in this area and applying research findings to educational and social problems. At CAL, Dr. Adger has been responsible for designing and conducting a number of research projects, and disseminating the findings from these projects. She has performed a number of qualitative research studies involving extensive data collection and comprehensive, theory-embedded analysis.</p> <p>Much of Dr. Adger's research has focused on ELLs. She led CAL's partnership in the Northeast and Islands Regional Educational Laboratory at Brown University (LAB) and conducted a multi-year qualitative study of standards implementation in urban schools and related product development. Currently, she is developing an on-line toolkit for the LAB on dual language instruction based on program design and language-learning research, in response to requests from districts with new dual language programs.</p> <p>Dr. Adger produced a policy paper on dialects for publication by the international organization, Teaching English to Speakers of Other Languages, and wrote digests and briefs on educating English language learners for the former ERIC Clearinghouse on Languages and Linguistics. She also edited two ERIC books, including <i>What Teachers Need to Know About Language</i> (with Catherine Snow and Donna Christian), which is contributing to the reform of teacher education. She produced a video and a viewer's guide for use in professional development, and a Web site, all titled <i>Why Reading Is Hard</i>. These products use linguistic research and reading research to explicate the challenge that students face in learning to read English. Another of her books, <i>Dialects in Schools and Communities</i> (with Walt Wolfram and Donna Christian), applies linguistic research on language variation to problems of educating children who speak a range of dialects.</p> <p>For the National Center for Research on Education, Diversity and Excel-</p>					

	<p>lence, Dr. Adger conducted a survey of partnerships between schools and community-based organizations that promote academic achievement of at-risk language minority students.</p> <p>She has also led projects that applied research in linguistics to testing. For example, she developed a scheme for text analysis of items on the National Assessment of Adult Literacy. She prepared a structural description of African American English for training speech/language pathologists.</p>
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3.1.2.13 Dr. Neil Carey

Name: Dr. Neil Carey	Role: Co -Principal Investigator for Fast Response Study 6												
Responsibilities	Qualifications												
Task/Subtask: 1.2	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">HOURS</th> <th style="width: 15%;">YR1:400</th> <th style="width: 15%;">YR2:400</th> <th style="width: 15%;">YR3:400</th> <th style="width: 15%;">YR4:400</th> <th style="width: 15%;">YR5:400</th> </tr> </thead> <tbody> <tr> <td colspan="6"> <p>Dr. Carey will assist Dr. Burke with the conduct of the Fast Response Applied Research and Development Project on Understanding the Magnitude of the Increased Student Achievement Required to Reach the NCLB Goal. Dr. Carey will assist Dr. Burke with designing the study and applying his expertise in psychometrics during its execution.</p> </td> </tr> </tbody> </table>	HOURS	YR1:400	YR2:400	YR3:400	YR4:400	YR5:400	<p>Dr. Carey will assist Dr. Burke with the conduct of the Fast Response Applied Research and Development Project on Understanding the Magnitude of the Increased Student Achievement Required to Reach the NCLB Goal. Dr. Carey will assist Dr. Burke with designing the study and applying his expertise in psychometrics during its execution.</p>					
HOURS	YR1:400	YR2:400	YR3:400	YR4:400	YR5:400								
<p>Dr. Carey will assist Dr. Burke with the conduct of the Fast Response Applied Research and Development Project on Understanding the Magnitude of the Increased Student Achievement Required to Reach the NCLB Goal. Dr. Carey will assist Dr. Burke with designing the study and applying his expertise in psychometrics during its execution.</p>													
	<p>Dr. Carey has designed and performed many studies of test scores and test properties for over a period of 20 years, beginning with his training in psychometrics and educational psychology in graduate school. He has performed a number of fast response studies. Dr. Carey has published his work in <i>Educational and Psychological Measurement</i>, <i>Review of Educational Research</i>, <i>Phi Delta Kappan</i>, and <i>Journal of Personnel Evaluation in Education</i>. He has been a reviewer for the journals <i>Educational Analysis and Policy Evaluation</i>, and for <i>Military Psychology</i>.</p> <p>Dr. Carey developed a set of achievement indicators for a project sponsored by the National Science Foundation, focusing on tests and items in the National Assessment of Educational Progress (NAEP). A portion of these results were reported in "Achievement Indicators: Options for a Powerful Policy Instrument," in <i>Phi Delta Kappan</i>.</p> <p>Dr. Carey directed an effort funded by the Ford Foundation to survey teacher trainees and administrators at innovative programs for training mathematics and science teachers. This effort involved design, development, and fielding of a nationwide survey that included paper-and-pencil questionnaires, interview forms, and elite interviews. Dr. Carey presented the results to a conference of the American Association for the Advancement of Science (AAAS).</p> <p>While a consultant for the Connecticut State Department of Education, Dr. Carey designed and directed an effort to determine the generalizability of and psychometric properties of a series of teacher tests. These results were reported in "The Validity of Performance Assessments for Teacher Licensure: Connecticut's Ongoing Research," published in <i>Journal of Personnel Evaluation in Education</i>.</p> <p>While he was still a graduate student, Dr. Carey worked with a professor to review several tests and measurements available for the study of student achievement and behavior, and published the results of that work in an article for the <i>Review of Educational Research</i>.</p>												

3.1.2.14 Dr. Joanna Edwards

Name: Dr. Joanna Edwards	Role: Principal Investigator for Fast Response Study 5					
Responsibilities	Qualifications					
Task/Subtask: 1.2	HOURS	YR1:600	YR2:600	YR3:600	YR4:600	YR5:600
Dr. Edwards will manage the conduct of the Fast Response Applied Research and Development Project on School Safety and Security Impacts on Student Achievement. Dr. Edwards will design the study, supervise staff, and review and approve all work products.	<p>Dr. Edwards combines subject matter expertise in safe schools and student achievement with in-depth research experience in the Appalachian region. Directly relevant to her role on the current project, Dr. Edwards was Project Manager on an ED, Office of Elementary and Secondary Education, Safe and Drug-Free Schools Program, Model Alternatives Data Collection project. This was a 3-year national study designed to provide educators and members of community-based organizations with resources to develop, implement, or expand programs that prevent youth violence in school settings.</p> <p>Dr. Edwards was Project Manager on the School Improvement in Petersburg project funded by the Appalachian Educational Laboratory to examine the extent to which the Virginia Governor's Partnership for Achieving Successful Schools intervention to improve student achievement was implemented with fidelity as measured by the Virginia State Standards of Learning test in the Petersburg, VA School Division. The study used a mixed-methods qualitative and quantitative evaluation approach.</p> <p>Dr. Edwards was Project Manager and evaluator on three Teaching American History grants in the Appalachian region.</p> <p>Dr. Edwards served as program trainer on the Study of Student Achievement as It Relates to Implementation of Effective Questioning Strategies by Teachers engaged in the QUILT (Questioning and Understanding to Improve Learning and Thinking) Professional Development Program funded by Appalachian Educational Laboratory.</p>					

3.1.2.15 Dr. Daniel Burke

Name: Dr. Daniel Burke	Role: Principal Investigator for Fast Response Study 6					
Responsibilities	Qualifications					
Task/Subtask: 1.2	HOURS	YR1:184	YR2:100	YR3:100	YR4:100	YR5:100
Dr. Burke will manage the conduct of the Fast Response Applied Research and Development Project on Understanding the Magnitude of the Increased Student Achievement Required to Reach the NCLB Goal. Dr. Burke will design the study, supervise staff, and review and approve all work products. He will integrate data from different sources, manage the development of large, longitudinal databases, and	<p>Dr. Burke serves as CNAC's Deputy Director for Education and has over 30 years of experience in the field of education. As the Principal Investigator for Research of the Appalachian Technology in Education Consortium, Dr. Burke gained substantial expertise in the problems and challenges of schools in the Appalachian Region.</p> <p>As research director of the ATEC project, Dr. Burke played a leading role in more than a dozen workshops that were held throughout the region to help state and local educators to effectively measure the impact of technology on the performance of schools and on student achievement. He worked with the Tennessee Department of Education in developing a successful proposal for measuring the effectiveness of school-based technol-</p>					

<p>interface with state agencies and try and enlist their support to provide data.</p>	<p>ogy coaches and in using instructional materials that foster increased student achievement. The project is comparing the effectiveness of approaches in 37 intervention and 37 matched schools with the intention to develop a replicable, validated evaluation protocol for use in all Tennessee schools, and disseminate the results and instruments, nationally.</p> <p>Dr. Burke headed the facilitation team that supported the Advisory Committee for the Appalachian Region. In this role, he served as the principal technical advisor to the committee chair, facilitated routine online and face-to-face discussions, and assumed responsibility for editing and completing the final report to the Secretary of Education in March 2005.</p> <p>Dr. Burke served as Co-Principal Investigator on several National Science Foundation grants, one to evaluate the theory of systemic reform in education and a second to identify the critical factors in recruiting and retaining high quality teachers. In each of these studies, he led the effort to collect and analyze student, school, and school district data including student achievement measures, student and teacher demographics, and data concerning school and district performance</p> <p>While at the National Science Foundation, Dr. Burke served as Senior Staff Associate for Systemic Reform, Directorate for Education and Human Resources. Dr. Burke had responsibility for the oversight and management of the NSF Systemic Initiative Programs (State Systemic Initiatives, Urban Systemic Initiatives, and Rural Systemic Initiatives) and played a key role in gathering and evaluating data to determine the effectiveness of the Systemic Initiative Programs.</p>
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3.1.2.16 Dr. Corbin Fauntleroy

Name: Dr. Corbin Fauntleroy	Role: Dissemination Leader					
Responsibilities	Qualifications					
Task/Subtask: 4	HOURS	YR1:400	YR2:400	YR3:400	YR4:400	YR5:400
<p>Dr. Fauntleroy will manage dissemination of information from the study program. She will ensure that relevant information is communicated to the Lab network. Additionally, Dr. Fauntleroy will ensure that information is translated into a form that is most accessible to practitioners. She will be responsible for developing systems to facilitate dissemination and for creating informational and marketing material to ensure that state and local officials, practitioners, and stakeholders are aware of the Lab and its capabilities.</p>	<p>Dr. Fauntleroy specializes in the design and use of information technology to help organizations accomplish their goals and missions. She has extensive experience working with federal, state, and local government agencies. Her skills are crucial for the successful dissemination of information from ELAR, and she will oversee the implementation and integration of a number of advanced information technologies.</p> <p>Of particular relevance to her role on ELAR, Dr. Fauntleroy was the Technology Coordinator for the Regional Advisory Committees (RACs) for educational needs and technology assistance. For this project, she designed, developed, and implemented a technology infrastructure that allowed the RACs to work in a collaborative online environment and minimize the amount of required travel. The infrastructure included a web site for public input and information dissemination, a webcast of the initial orientation meeting, and online conferencing. Dr. Fauntleroy coordinated with the individual RAC support teams to ensure that documentation was completed in a timely manner and posted to the website.</p>					

	<p>Dr. Fauntleroy is currently the Director of Information Dissemination for CNAC's Appalachian Technology in Education Consortia (ATEC). She promotes awareness of the ATEC within the four state ATEC region, and she identifies ways to extend technical assistance and ATEC products across the region. She directed the development of the ATEC website (www.the-atec.org) and provides on-going management and oversight of its content.</p> <p>As Director of Information Dissemination, Dr. Fauntleroy developed the dissemination plan for the ATEC to reach educators at all levels across the region. She was responsible for developing material on ATEC and its partners to promote awareness of its mission and activities, planned and developed sessions at regional conferences, supported training workshops held periodically across the regions. Dr. Fauntleroy reviewed all materials published by the ATEC.</p> <p>Dr. Fauntleroy has extensive experience developing and producing technical assistance materials to support information dissemination requirements, managing numerous information dissemination activities (including website design, on-going website maintenance, and publication production), and coordinating conference participation.</p>
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3.1.2.17 *Dr. David Rodney*

Name: Dr. David Rodney	Role: Field Scientist					
Responsibilities	Qualifications					
Task/Subtask: 1.2	HOURS	YR1:1440	YR2:1200	YR3:1200	YR4:1440	YR5:1440
Task/Subtask: 4	HOURS	YR1:180	YR2:180	YR3:180	YR4:180	YR5:180
<p>Dr. Rodney will serve as a Field Scientist to a Chief State School Officer. He will become a senior science advisor to the Chief and his/her staff. He will provide research and analytical support on high priority issues facing the State Department of Education. Depending on the issue and the level of understanding of the staff, he will review scientific and technical literature, organize and analyze data, provide briefings and research materials, and in general improve the quality of information available for making decisions. Dr. Rodney will also communicate</p>	<p>Of direct relevance to his proposed role on ELAR, Dr. Rodney is currently a field scientist to the Chancellor of New York City Department of Education. His main assignment is to support the Chancellor's initiative to create a School Report Card for New York City Schools. He is working with the Chancellor's senior staff to develop the methodology for implementing a "value added" system in creating the Report Card. As the only member of the senior staff with requisite background in mathematics and statistics, he is playing a central role in the design and implementation of the prototype report. He has reviewed the technical literature on value added systems, examined the availability and quality of the data within the NYC IT systems, analyzed the data to find useful indicators, and drafted informational briefings for the Chancellor. In describing Dr. Rodney's progress in his assignment, the Chancellor has stated, "David's facility with data, his practical understanding of institutional challenges and constraints, and his dedication to the task are all adding value to this important project." (The Appendix includes a copy of this letter.)</p> <p>Dr. Rodney has spent much of the past ten years in a wide variety of field scientist assignments. He has served on staffs with quite different functions, including operational training and planning, strategic planning and political analysis, budgeting and resource allocation, and personnel planning. Some specific examples of his contributions are:</p>					

<p>the education needs of the State back to ELAR headquarters, and disseminate information about ELAR research to the State Department of Education.</p>	<p>He directed a team of ten analysts on an evaluation of a major training exercise. The evaluation included a performance assessment of key players, and critique of the implementation of new strategies and tactics. In the analysis, he combined sophisticated statistical/mathematical techniques with subject matter expertise.</p> <p>Dr. Rodney developed a variety of simulation models to assist staffing planners. These models simulated various groups of personnel, and provided personnel managers with a "what if" capability, that allowed them to analyze the likely impact of prospective policies before they were implemented. Some of the models were based on Markov Chains, while others were discrete entity simulations, utilizing Monte Carlo techniques.</p> <p>Dr. Rodney analyzed budget allocation options employing a variety of statistical techniques to analyze budget submissions. He analyzed the risks associated with possible budget reductions. Risks were expressed in terms of the required staff skills and numbers of personnel to effectively carry out the organization's functions and the objective of the analysis was to determine the minimal funding required operating satisfactorily.</p>
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3.1.2.18 *Dr. Jennie Wenger*

<p>Name: Dr. Jennie Wenger</p>	<p>Role: Principal Investigator for Fast Response Study 7</p>					
<p>Responsibilities</p>	<p>Qualifications</p>					
<p>Task/Subtask: 1.2</p>	<p>HOURS</p>	<p>YR1:550</p>	<p>YR2:425</p>	<p>YR3:500</p>	<p>YR4:525</p>	<p>YR5:525</p>
<p>Dr. Wenger will manage the conduct of the Fast Response Applied Research and Development Project on Feasibility and Implications of Choice in Rural Areas. Dr. Wenger will design the study, supervise staff, and review and approve all work products. She will integrate data from different sources, manage the development of large, longitudinal databases, and interface with state agencies and try and enlist their support to provide data.</p>	<p>Dr. Wenger combines the technical sophistication of a rigorously trained researcher with the practical understanding of a former schoolteacher. She was co-principal investigator on a Quality of Life Study that linked national data sets on education to Navy surveys. This study linked housing locations to characteristics of school districts, revealing what characteristics are important to those Navy service members who do not live in on-base housing. The study also explored how the level of school choice and of specific school characteristics influence satisfaction with schools.</p> <p>Dr. Wenger is currently undertaking an evaluation of a Congressionally mandated pilot program on the recruitment of home schooling graduates in the military. In both of these studies, she has demonstrated her facility to work with both survey data and administrative records to evaluate the effectiveness of government programs and report on results in a form that is accessible both to technical experts and a more general audience.</p> <p>As part of our ATEC project, Dr. Wenger designed and managed an evaluation of a unique Kentucky program to involve students in technology learning. She performed much of the data analysis for this project, including accessing and analyzing a national dataset, results from a web-based survey, and results from on-site qualitative interviews/focus groups.</p> <p>Dr. Wenger also participated on a study examining retention of teachers in a large urban school district.</p>					

3.1.2.19 Dr. Edward Cavin

Name: Dr. Edward Cavin	Role: Field Scientist					
Responsibilities	Qualifications					
Task/Subtask: 1.2	HOURS	YR1:1440	YR2:1200	YR3:1200	YR4:1440	YR5:1440
Task/Subtask: 4	HOURS	YR1:180	YR2:180	YR3:180	YR4:180	YR5:180
<p>Dr. Cavin will serve as a Field Scientist to a Chief State School Officer. He will become a senior science advisor to the Chief and his/her staff. He will provide research and analytical support on high priority issues facing the State Department of Education. Depending on the issue and the level of understanding of the staff, he will review scientific and technical literature, organize and analyze data, provide briefings and research materials, and in general improve the quality of information available for making decisions. Dr. Cavin will also communicate the education needs of the State back to ELAR headquarters, and disseminate information about ELAR research to the State Department of Education.</p>	<p>Dr. Cavin is a highly experienced field scientist having served in four different assignments in settings dealing with a wide variety of issues and problems including the architecture of information systems, resource allocation and operational trade-offs, organizational integration and coordination, and logistics and infrastructure. During his tour in the Office of the Secretary of Defense, he was awarded the "Decoration for Exceptional Civilian Service." The citation for this award stated that Dr. Cavin "applied [his] experience to addressing a multitude of interagency and integration issues. His success is a tribute, in part, to his outstanding leadership and management skills, his programmatic insight, and his exceptional capacity to build effective coalitions between many agencies...and repeatedly distinguished himself in solving unique, sensitive, and complex issues."</p> <p>Dr. Cavin served for two years as a research manager. The scope of the project portfolio of his research team included operational concepts and systems integration. His responsibilities during this period included the supervision of field scientists.</p> <p>Dr. Cavin has a Ph.D. in Economics from the University of Michigan and has 25 years of experience conducting research and analysis for public decision-making. His graduate training gave him a deep understanding of econometrics and other data analysis techniques. He has honed these skills over the course of his subsequent career by designing numerous studies and analyzing data using sophisticated techniques.</p> <p>Prior to joining CNAC, Dr. Cavin worked as a Senior Economist at Mathematica, Inc. During this period, he conducted research on issues of welfare and work, and his research results were published in prestigious peer review journals, such as <i>American Economic Review</i> and the <i>Journal of Human Resources</i>.</p>					

3.1.2.20 Dr. Apriel Hodari

Name: Dr. Apriel Hodari	Role: Scientific Analyst					
Responsibilities	Qualifications					
Task/Subtask: 1.2	HOURS	YR1:600	YR2:1200	YR3:1200	YR4:1440	YR5:1440
Task/Subtask: 4	HOURS	YR1:180	YR2:180	YR3:180	YR4:180	YR5:180
<p>Dr. Hodari will be assigned to clusters of schools in the Appalachian Region that are failing to make Adequate Yearly Progress (AYP). She will work with school leadership to assess the school's needs, to identify fast response projects addressing those needs, and then conduct research at ELAR. Once completed, Dr. Hodari will disseminate the results of the research back into the school community.</p>	<p>Dr. Hodari analyzes education policy, including the implementation of technology into K-12 education, the influence of education policy and practice on the lives and careers of individuals, the impact of educational background on career attrition, and the impact of mathematics content knowledge on middle school principals' instructional leadership.</p> <p>Dr. Hodari provides both qualitative and quantitative analysis for the Thinking about Mathematics Instruction (TMI) project (a partnership between CNAC the Education Development Center (EDC) and Temple University). TMI is a national study of 600 K-8 principals' leadership content knowledge in mathematics, structured as a clinical trial of EDC's Lenses on Learning (LOL) course. LOL teaches principals to examine how their mathematics knowledge and beliefs about mathematics teaching and learning impact their instructional leadership. TMI uses pre-post surveys consisting of short qualitative responses, Likert-scale responses, and math computations as well as in-depth case studies of selected principals.</p> <p>Dr. Hodari serves as subject matter expert in CNAC's examination of workforce diversity for a large client. In this work, the CNAC team acts as a strategic partner in the client's efforts to maximize the contributions of all personnel. In addition to participating in overall project activities, Dr. Hodari has led the design, implementation, and analysis of focus group interviews with all categories of personnel) to produce a baseline characterization of the client culture.</p> <p>Dr. Hodari served as lead author and methodology expert for an analysis of Kentucky's Student Technology Leadership Program (STLP). STLP provides opportunities for K-12 students to learn about technology and use their knowledge and skills to benefit their schools and communities. In this evaluation, Dr. Hodari led the qualitative data collection and analysis activities, and helped disseminate the results.</p> <p>Dr. Hodari performed quantitative and qualitative analyses on the influence of educational background on career attrition, with emphasis on students who were home-schooled or earned GED diplomas. The purpose of this project was to assess specific conditions under which people with varying education background can succeed.</p> <p>Dr. Hodari maintains strong collaborations with education researchers outside of CNAC. The primary focus of these collaborations is examining science education research and reform from a social justice perspective, including analyses of successful schools for under-represented students and assessing the alignment between reform goals and instructional practices.</p>					

3.2 Vitae

3.2.1 Sarah L. Friedman, Ph.D.

Sarah L. Friedman, Ph.D.

Project Director

Qualifications Summary

While employed by the National Institute of Mental Health (NIMH), the National Institute of Education (NIE) and the National Institute of Child Health and Human Development (NICHD), Dr. Friedman has published scientific papers and edited books addressing (a) the effects of pre-term birth on cognitive, educational, and social development of children; (b) the interface of brain, cognition, and education; (c) the development of planning skills; (d) longitudinal follow-up research strategies; (e) environmental influences on psychological development; and (e) child care and children's psychological and health development. Between January 1987 and July 1998 she was responsible for a large NICHD grant portfolio pertaining to cognitive, social and affective development. In 1998, she became a Special Assistant to the Director, Center for Research for Mothers and Children, NICHD and in 2002 she became Special Assistant to the Director, Office of Extramural Policy, Office of the Director, NICHD. In parallel, from 1989 through the present she has continuously served as the NICHD scientific coordinator and one of the primary investigators of a collaborative longitudinal research project on the development of social, emotional, cognitive, linguistic, and health development of children from birth through adolescence (The NICHD Study of Early Child Care and Youth Development). The project is supported through 11 grants to more than 40 investigators. Most recently, Sarah Friedman has assumed additional responsibilities as the Project Officer for a program of secondary data analyses based on the NICHD Study.

Role

Dr. Friedman will serve as ELAR Director.

Education

The George Washington University, Ph.D. Developmental and Experimental Psychology
 Cornell University, M.A. Educational Psychology
 Hebrew University of Jerusalem, Israel, B.A. English Literature and Political Science

Relevant Experience

Special Assistant to the Director, Office of Extramural Policy, Office of the Director, NICHD	2002-Present
Special Assistant to the Director, Center for Research for Mothers and Children, NICHD	1998-2001
Director, Program on Cognitive Social and Affective Development, Child Development and Behavior Branch, National Institute of Child Health and Human Development	1997-1998

Health Scientist Administrator, National Institute of Child Health and Human Development (responsible for a large grant portfolio in cognitive social and affective development)	1987-1997
Grants Associate, National Institute of Health	1986-1987
Research Psychologist, Laboratory of Development Psychology, National Institute of Mental Health	1983-1986
Associate - National Institute of Education	1980-1983
Research Associate, Children's Hospital National Medical Center, Washington, DC - Adjunct appointment	1979-1980
Research Assistant Professor of Psychiatry and Behavioral Science, The George Washington University School of Medicine, Washington, DC - Adjunct appointment	1979-1980
Neonatal Research Psychologist, Department of Perinatal/Neonatal Pediatrics, Washington Hospital Center, Washington, DC - Adjunct appointment	1977-1979
Research Psychologist, Laboratory of Developmental Psychology, National Institute of Mental Health	1976-1979
Research Fellow, Laboratory of Developmental Psychology, National Institute of Mental Health	1974-1976
Guest worker at the Social and Behavioral Sciences Branch of NICHD of the National Institutes of Health	1972-1973
Teaching Assistant (instructor in psychology laboratory), The George Washington University	1971-1973
Teaching Assistant (leading discussion groups and reading students' papers), Cornell University	1970-1971
Research Assistant, Cornell Testing and Guidance Center	1969-1970

Awards and Fellowships

1974	Psi Chi Research (National) Award (Shared with Marguerite B. Stevenson)
1974-1976	Postdoctoral Research Fellowship awarded by National Institute of Mental Health
1989	Quality Step Increase, National Institute of Child Health and Human Development

1993 NIH Merit Award "for exceptional leadership in managing the National Institute of Child Health and Human Development Study of Early Child Care" Quality Step Increase, National Institute of Child Health and Human Development; Staff Recognition Award
NIH Merit Award "for your outstanding leadership in the development of the program of research being conducted in Phase II of the NICHD Study of Early Child Care"
2000 Quality Step Increase, National Institute of Child Health and Human Development
2003 Quality Step Increase, National Institute of Child Health and Human Development.

Honors

Phi Kappa Phi - Cornell University
Phi Lambda Theta - Cornell University
The Psi Chi Prize - The George Washington University
Sigma Xi - The George Washington University
Psi Chi - The George Washington University
Member of the John D. and Catherine T. MacArthur Foundation Network on the transition from infancy to early childhood, 1983-1986
Fellow - American Psychological Society (nominated in 1991)
Fellow - The American Association of Applied and Preventive Psychology (nominated in 1995)
Fellow - American Psychological Association (nominated in 1996)
Fellow- Society for General Psychology (January 2003)
Fellows Committee (2 years term). Developmental Psychology Division of American Psychological Association. Nominated on November 1999
Advisory Board of Child Research Net(work), c/o Benese Corporation, Tokyo, Japan. Nominated in March 2001
Scientific and Policy Advisory Group, Longitudinal Study of Australian Children
American psychological Association (APA) Meritorious Research Service Commendations. 2003.

Memberships in Professional Associations

American Association of Applied and Preventive Psychology
American Psychological Association
American Psychological Society
International Society for the Study of Behavioral Development
International Society for Infant Studies
Jean Piaget Society
Society for Psychological Study of Social Issues
Society for Research in Child Development

Selected Publications

Note: In 1993 Dr. Friedman started publishing as a member of a group of investigators known as the NICHD Early Child Care Research Network. The author of the group's publications is the network, not any one individual investigator. Dr. Friedman's name appears in the footnote of each network publication as one of the contributing authors under the banner of the network.

Friedman, S.L., under the banner of the NICHD Early Child Care Research Network (2004). Are child developmental outcomes related to before-and after-school care arrangements? Results from the NICHD Study of Early Child Care. *Child Development*, 75, 280-295.

Friedman, S.L., under the banner of the NICHD Early Child Care Research Network (2004). Does Class Size in First Grade Relate to Children's Academic and Social Performance or Observed Classroom Processes? *Developmental Psychology*, 40(5), 651-664.

Friedman, S.L., under the banner of the NICHD Early Child Care Research Network (2004). Father's and Mother's Parenting Behavior and Beliefs as Predictors of Child Social Adjustment in the Transition to School. *Journal of Family Psychology*, 18(4), 628-638.

Friedman, S.L., under the banner of the NICHD Early Child Care Research Network (2004). Multiple pathways to early academic achievement. *Harvard Educational Review*, 1-29.

Friedman, S.L., under the banner of the NICHD Early Child Care Research Network (2004). Social Functioning in First Grade: Associations with Earlier Home and Child Care Predictors and with Current Classroom Experiences. *Child Development*, 74(6), 1639-1662.

Friedman, S.L., under the banner of the NICHD Early Child Care Research Network (2004). Type of child care and children's development at 54 months. *Early Childhood Research Quarterly*, 19(2), 203-230.

Friedman, S.L., under the banner of the NICHD Early Child Care Research Network (2005). A Day in Third Grade: A Large-Scale Study of Classroom Quality and Teacher and Student Behavior. *The Elementary School Journal*, 105, 305-323.

Friedman, S.L., under the banner of the NICHD Early Child Care Research Network (2005). Predicting Individual Differences in Attention, Memory, and Planning in First Graders From Experiences at Home, Child Care, and School. *Developmental Psychology*, 41(1), 99-114.

Friedman, S.L., under the banner of the NICHD Early Child Care Research Network. (in press). The Relations of Classroom Contexts in the Early Elementary Years to Children's Classroom and Social Behavior. In A.C. Huston and M.N. Ripke (Eds.). *Developmental contexts in middle childhood: Bridges to adolescence and adulthood*. New York: Cambridge University Press.

Welsh, M.C. Friedman, S.L. & Spieker S. J. (in press) Executive Functions in Developing Children: Current Conceptualizations and Questions for the Future. In K. McCartney and D. Phillips (Eds.). *Blackwell's Handbook of Early Childhood Development*.

3.2.2 Donald J. Cymrot, Ph.D.

Donald J. Cymrot, Ph.D.

ELAR Deputy Director/Principal Investigator

Qualifications Summary

Dr. Cymrot is currently the Director of the Education Center at CNAC. He provides management oversight over all of our education projects, including the Appalachian Technology in Education Consortium and the Regional Advisory Committee (RAC) support that we provided to the Department of Education (ED). Dr. Cymrot has more than 15 years experience conducting and managing the type of fast response research and development projects envisioned as a component of the Regional Education Laboratory. He has repeatedly demonstrated the ability to provide pertinent and timely data to support decision-making on a wide variety of topics. In this regard, he has regularly identified and analyzed data to support a specific decision. Once he assumed management responsibilities, he developed a data infrastructure to support the activities of his staff. As part of the preparation for such projects he helped to ensure the creation and maintenance of databases that contain information that can be quickly pulsed to meet study requirements. As an example, he led the creation of a benchmarking report to help senior decision makers monitor the quantity and quality of attrition and retention of their workforce. In addition to monitoring regular attrition and retention rates, Dr. Cymrot prepared quarterly reports that contain highlight analyses in which a particular issue coming out of the data is analyzed in greater detail. He has written about the applicability of other compensation systems to the teacher workforce, and on reforming compensation systems by developing an integrated strategy that considers the role of professional development in retention. He previously served as the director of CNAC's Workforce, Education and Training Team. In 2001, Dr. Cymrot was awarded a Superior Public Service Medal by the customer for his analytical as well as leadership support.

Dr. Cymrot served as Co-Director of the Regional Advisory Committee Project. He prepared an initial set of regional profiles that were used by all ten committees for the purpose of identifying their region's technical assistance needs. Dr. Cymrot also headed the facilitation team supporting the Advisory Committee for the Mid-Atlantic Region. In this role, he served as the principal technical advisor to the committee chair, facilitated routine online and face-to-face discussions, and assumed responsibility to editing and completing the final report to the Secretary of Education in March 2005.

Role

Dr. Cymrot will serve as ELAR Deputy Director and Principal Investigator, of the Fast Response Study on the Appalachian Education Data Center.

Education

Ph.D., Economics, Brown University
A.M., Economics Brown University
B.S., Economics, Lehigh University

Relevant Experience

The CNA Corporation

1985 - Present

Director, CNAC Education

1999 - Present

Dr. Cymrot has directed CNAC's education practice since its inception to provide research, evaluation, and technical assistance to a variety of clients. Under his leadership, CNAC managed the Appalachian Technology in Education Consortium to help states in the region meet the technology requirements under No Child Left Behind. CNAC recently managed the support contract for the Secretary of Education's Regional Advisory Committee (RAC) for Technical Needs Assessment. Dr. Cymrot served as the coordinator for the Mid Atlantic RAC and co-authored the final overview report. The research component of CNAC's education practice includes systemic reform, the teacher workforce, and transitions into postsecondary schooling and the labor force. CNAC Education is also conducting a variety of evaluations including a National Science Foundation Math Science Partnership Grant, several Teaching American History grants, and the Ford Partnerships in Advanced Studies Program.

Director, Workforce, Education and Training Team

1992-2003

Over the course of the more than 11 years that he served as the director of this research program focused on military manpower, Dr. Cymrot guided this team of researchers through a cycle of changing circumstances and shifting challenges, and he adjusted the research program to meet emerging needs. When he first took over the program in the midst of a sharp downsizing, studies focused mostly on reducing the size and cost of personnel in the short run without creating deleterious effects in the long run. During this period he coauthored a review of the Navy's higher education system's resource requirements and effectiveness. This review resulted in the convening of the Navy's executive panel for reforming the system. In the late 1990s, he and his staff were among the first to recognize a growing crisis in recruiting and retention. After working closely with the senior leadership in characterizing the crisis, the study program changed toward expanding the recruiting market, to reducing attrition and improving retention. This work culminated in a series of briefings for the Chief of Naval Operations. Following these briefings, Dr. Cymrot led the design of a quarterly report to monitor attrition and retention against Navy goals. After September 11, 2001 the research shifted again toward the personnel challenges associated with a protracted conflict with high operational tempos. Among the accomplishments in this period were the redesign of various compensation elements to address the new challenges of recruiting and retaining key personnel.

Dr. Cymrot has also organized an annual conference including senior policymakers and their staffs from the personnel community and the supporting research community to review policy initiatives and research studies as a means of strengthening the ties between policymakers and research. In 2001, the Navy awarded Dr. Cymrot a Superior Public Service Medal both for his research accomplishments and for his leadership in effectively guiding CNAC's research program to meet Navy's needs.

CNA representative to General Planning and Programming Division for the Chief of Naval Operations (OP-80) **1990-1992**

Dr. Cymrot was the first CNA staff member to serve in this position. He provided analytical support to the development of the Navy's Future Years Defense Program during a period of diminishing resources. He wrote a series of policy papers on alternatives for reducing the size and cost of the Navy force. He also attended senior staff meetings and organized a professional development program to improve the analytical capabilities of the staff. As a legacy of this effort, he lectured on the role of analysis in decision making as part of the orientation program for new Navy staff officers over the next six years.

Scientific Analyst to the Deputy Chief of Naval Operations (Manpower, Personnel, and Training)(OP-01) **1988-1990**

Dr. Cymrot served as the corporate liaison with the Vice Admiral and his staff. In this role, he attended staff meetings, conducted fast response studies, served on committees, wrote policy briefings and memoranda, and disseminated information about ongoing CNA studies.

Project Director **1986-1988**

Dr. Cymrot directed a variety of studies to help support the management of the Navy and Marine Corps workforces including sophisticated empirical analyses as well as high-level policy analyses. For example, he developed an empirical model to set retention bonus levels for pilots and naval flight officers by aircraft type. The Navy implemented his recommendations in total. Using individual level data he also estimated the elasticity of supply for enlisted personnel in different occupations within the Marine Corps, which was used to set the level of selected reenlistment bonuses. Previous estimates had relied on aggregated data. Shortly after the passage of the Goldwater Nichols Defense Reorganization Act, he developed a simulation model of the implications of the Act for the management of the Navy's officers' corps. He also served on Navy Committees to review the active duty service obligations of aviators and to respond to the Skelton Panel Report on Professional Military Education. In each case he received letters of commendation.

Visiting Fellow **1985-1986**

Dr. Cymrot participated in studies on the graduate education needs of the officer corps, and on developing fast response models for Navy manpower planners. He also wrote a review of the military retirement system.

Navy Human Resources Board of Directors, Member **2000-2003**

Dr. Cymrot was the only non-governmental member of this Board designed to coordinate policy and decision-making regarding Navy personnel. Other members of the Board included the senior military and civilian leadership within the Department of the Navy on personnel issues. Dr. Cymrot's service spanned the life of the Board.

Miami University, Department of Economics **1978-1985**
Associate Professor (with tenure 1982-1985), Assistant Professor (1978-1982)

University of North Carolina at Chapel Hill, Department of Economics **1976-1978**
Visiting Assistant Professor (1978), Visiting Instructor (1976-1977)

Awards and Honors

Superior Public Service Medal (2001)
Phi Beta Kappa (1972)

Selected Publications

Refereed Journals and Book Chapters

- "Transforming the Enlisted Force," in *Filling the Ranks: Transforming The U.S. Military Personnel System*, Cindy Williams, Editor, Harvard University Press (2004) (coauthored)
- "Who's on First? An Empirical Study of the Coase Theorem." *Applied Economics Vol. 33* (2001): 593-603 (coauthored)
- Technology for the United States Navy and Marine Corps, 2000-2035 Becoming a 21st-Century Force: Volume 4: Human Resources, Naval Studies Board, National Research Council, (1997) (112 pp) (coauthored)
- "Misperceptions of Reproductive Ideals Among American Husbands and Wives." *Life Styles: Family and Economic Issues*, Vol. 9 (1988): 21-32 (coauthored)
- "Are Free Agents Perspicacious Peregrinators?" *Review of Economics and Statistics*, Vol. LXIX (1987): 45-54 (coauthored)
- "Does Competition Lessen Discrimination? Some Evidence." *Journal of Human Resources*, Vol. XX (1985): 605-612
- "A New Approach to Household Fertility Decisions." *Eastern Economic Journal*, Vol. 10 (1984): 31-41 (coauthored)
- "Migration Trends and Earnings of Free Agents in Major League Baseball 1976-79." *Economic Inquiry*, Vol. XXI (1983): 545-556
- "Tax Incentives, Turnover Costs and Private Pensions." *Southern Economic Journal*, Vol. 48 (1981): 365-376
- "Private Pension Saving: The Effect of Tax Incentives on the Rate of Return." *Southern Economic Journal* Vol. 47 (1980): 179-190

Commentary and Reviews

- "Bidding for Talent," *Education Week*, February 11, 2004
- "Making the Case for Longer Officer Careers," *The Navy Times*, January 19, 1998

Technical Reports and Publications

- Overview and Synthesis of the Regional Advisory Committee (RAC) Reports on Education Challenges and Technical Assistance Needs (coauthored), March 2005
- Winning the Recruiting, Attrition, Compensation and Education Race in the War for Talent: The CNO Workforce Briefings, Editor, Briefing 3425.A1, March 2001
- The Quantity and Quality of Attrition (coauthored) (22P) CNA, Annotated Briefing 1981.A1, July 2000
- Revolution in Personnel Affairs: Rethinking the Military Personnel System for the 21st Century (coauthored) (29 P) CNA, Research Memoranda 98-168, Nov 1998
- Rethinking the Recruiting of High School Dropouts: The B-Cell/C-Cell Tradeoff (coauthored), (20 P) CNA, Annotated Briefing 95-105, December 1995

3.2.3 Arthur D. Sheekey, Ph.D

Arthur D. Sheekey, Ph.D.

Project Director

Qualifications Summary

Dr. Arthur Sheekey has more than 30 years experience managing major educational research and improvement programs and projects. He is a recognized authority on federal, state, and local efforts to use advanced telecommunications technology for improving and extending educational opportunities. At ED he held various management and staff positions relating to the planning, implementation, and evaluation of discretionary grant programs. Over the past decade, he has edited several books and reports and written numerous policy briefs on a wide range of topics relating to telecommunications technologies and their impact on education. Dr. Sheekey's recent experience as Project Director for the U.S. Secretary of Education's Regional Advisory Committee (RAC) initiative, Appalachian Technology in Education Consortium (ATEC), and Learning Technologies Initiative at the Council of Chief State School Officers (CCSSO) has offered him a wide range of opportunities to assist education officials at all levels of education who are involved in implementing federal and state educational reform initiatives.

As Director of the Appalachian Technology Consortium (ATEC) for the past four years, Dr. Sheekey worked closely with the Office of Elementary and Secondary Education (OESE/ED) in assisting states in the region to develop statewide educational technology plans and assessments that addressed mandates and requirements in Title 2-D of NCLB. He conducted a series of workshops for the SEAs that included some of the nation's leading experts on research and evaluation.

Dr. Sheekey initiated a weekly online report on surveys, studies, and reports relating to applications of advanced telecommunications technologies; the report was subsequently requested and sent to all 50 SEAs. In addition, he prepared periodic policy briefs on various topics of concern, including uses of technology in rural schools, advances in wireless technologies, assessing the impact of technology on student performance, and on how to develop and implement virtual courses of study.

As Director of the RAC Project, Dr. Sheekey worked closely with the Office of Elementary and Secondary Education (OESE/ED) to assure that the ten advisory committees and its 150 members completed their tasks to identify the critical regional technical assistance needs of states and school districts. He effectively coordinated the efforts of the committee's chairs and technical support staff, communicated routinely with participants, and assured widespread public involvement. He reviewed and edited all of the documents that were distributed to committees and to the public, and wrote the final Overview and Synthesis report with Dr. Don Cymrot.

Role

Dr. Sheekey will manage the development of ongoing needs assessment and the ELAR technical assistance process.

Education

Stanford University, postdoctoral study
Catholic University of America, Washington, DC, Ph.D. Instructional technology
Seton Hall University, South Orange, NJ, MA in history and secondary education
New Jersey City University, BS in science education/biology

Relevant Experience

The CNA Corporation

2001 - Present

Project Director, Appalachian Technology in Education Consortium.

Dr. Sheekey is responsible for the overall management of the project, coordination and monitoring the work of regional partners, the preparation and review of documents and reports, supervision of individuals responsible for the maintenance of the project's website, and routine communication with state and local education officials in the region. During this period, he prepared a weekly online report for state educational technology directors in all 50 states, edited a book that was distributed widely to the field, and prepared project materials, including several policy briefs and periodic reports on trends and developments relating to the use of educational technology and telecommunications networks.

Project Director, Regional Advisory Committees (RACs)

The RACs were appointed by the U.S. Secretary of Education to determine the educational technical assistance needs of state and local education agencies. This position involved the overall management of the project, including the supervision of a team of twenty facilitators and recorders that were assigned to work with the regional committees. As Director, he met regularly with U.S. Department of Education officials to plan the agenda for face-to-face and online conferences, and assure that all of the project's activities and reporting requirements were carried and successfully completed. He also assumed responsibility for the preparation and submission of final program and financial reports.

Council of Chief State School Officers

1998-2001

As Project Director for Learning Technologies Initiative, Council of Chief State School Officers, Dr. Sheekey's responsibilities involved the coordination of federal and state educational technology initiatives, planning and organization of national educational conferences, the preparation of periodic reports, presentations at national conferences, and meetings for state commissioners of education. During this period, he was successful in preparing a number of proposals for grants from the National Science Foundation, independent foundations, and private firms.

Public Service Telecommunications Corporation

1995-1998

As Senior Associate, Dr. Sheekey worked with the president of the corporation, served on peer review panels for the U.S. Department of Education, National Science Foundation, and National Telecommunications and Information Administration, and consulted with clients involved in applications of telecommunications technologies.

Office of Educational Research and Improvement (OERI)**1980-1995**

As Senior Policy Analyst in OERI, Dr. Sheekey served in several planning, management, and program specialist positions, including special assistant to the Assistant Secretary, senior program manager for the Office of Research, acting director for the Division of Higher Education Research, and director of the Office of Program Planning.

Office of the Assistant Secretary for Education**1974-1980**

As Planning Officer/Policy Analyst (DHEW) in the U.S. Department of Education, Dr. Sheekey served as the principal program planning officer for the Assistant Secretary and as an education analyst reporting to the Deputy Assistant Secretary for Policy Development.

Bureau of Elementary and Secondary Education**1967-1974**

As Director for Program Planning and Education Specialist, Dr. Sheekey reported to the Deputy Commissioner of Education and assumed responsibility for the planning and coordination of all major elementary and secondary education programs, including ESEA Titles 1-7.

Junior High School and Wallington High School, Wallington, NJ**1960-1966**

Science and History Teacher

Honors and Professional Affiliations

Postdoctoral Fellow, Graduate School of Education, Stanford University, 1970-71

Senior Fellow, Consortium of Universities of the Washington Area, 1976

Phi Delta Kappa, 1971- present

Senior Associate, American Association for Higher Education, 1981

Board Member, Alliance for Public Technology, 1984-1988

Guest Lecturer at the University of St. Thomas in St. Paul, MN, 1982 – present

ComSci Fellow, Office of Technology, U.S. Department of Commerce, in 1991-1992

Selected Publications

Improving Educational Access: Wireless to the Rescue, Alliance for Public Technology Newsletter, June/July 2003. www.apt.org/

How to Ensure Ed/Tech is Not Oversold and Underused, editor. Scarecrow, Rowman & Littlefield Press, Mar 2003

Digital Television's Role to Extend Opportunities for Education, a report published by the Benton Foundation, Washington, DC, 2000.

Preparing Teachers to Meet the Challenges of New Standards with New Technologies, editor. A report on the CCSSO Educational Technology Leadership Conference, Mar 2000

Investing, Assessing and Communicating Results of Learning Technologies, editor. A report on the CCSSO State Educational Technology Leadership Conference, Feb. 1999

A New Federal-State Partnership to Equalize Access to Education and Information, *The Journal of Information Policy*, Vol. 1, No. 2, Sept. 1998

Education and Telecommunications: Critical Issues and Resources, author. Published by IGI Press, Boston, Sept. 1997

Public and Private Interests in Networking Schools, Households, and Communities, *Tech Trends*, April/May 1997

Telecommunications Services for Education: Abundant Choices, *CORPS Report*, Youth Policy Institute, Jan. 1997

The Electronic Village: Telecommunications is Changing the School Board's Role, *The American School Board Journal*, Jan. 1997

Create Testbeds to Learn About Electronic Learning, *Youth Record*, Youth Policy Institute, Oct. 15, 1996

Telecommunications Technologies for Education: Measuring Outcomes, a commissioned paper for the Montgomery County Public School System (MD), July 1996

To Equalize Educational Opportunities: A Networked Community vs. A Collection of Wired Schools, *Youth Record*, Youth Policy Institute, Feb. 15, 1996

Equalize Educational Opportunity: Linking the School and Home, *Youth Record*, Dec 15, 1995

Telecommunications Development for Schools: Implications for Governance, Finance, Policy Making and Management of Schools. A commissioned paper prepared with Richard Hezel for the Office of Educational Research and Improvement, U.S. Department of Education, 1995

Hispanic Americans Compete Successfully in the Global Economy, *Youth Record*, Oct 31, 1995

If They Build It, Will You Come? *The American School Board Journal*, April 1995

Relating the Visions of Telecommunications to the Realities of Families, Schools, Libraries and Public Service Agencies, *Youth Record*, Jan. 31, 1995

Remaking Public TV, *The American School Board Journal*, May 1994

3.2.4 Anne C. Peterson, Ph.D.

Anne C. Peterson

Senior Analyst

Qualifications Summary

Dr. Peterson has spent her career designing and conducting large scale data collection efforts to assess needs for clients, large scale complex surveys, and quick response policy studies. She recently conducted a needs assessment of physicians, nurses, and health care administrators working in underserved areas to provide data for researchers and policy makers to assess the shortage of health care providers in underserved communities and recommend improvements. This project involved conducting fifteen focus groups nationwide and a national survey of 35,000 nurses.

She has extensive experience in conducting needs assessment, having recently completed an assessment of the needs of individuals with limited English proficiency for the Social Security Administration. Additionally, she conducted the Adult Literacy Survey, a national survey of 20,000 households to examine literacy by demographic and geographic characteristics. Most recently, Dr. Peterson directed the statistical evaluation of the Ready to Learn program, designed to provide books and educational materials and programming to low-income children and families.

Dr. Peterson has extensive experience in conducting successful large-scale multi-faceted evaluations of major government program initiatives. She has designed numerous evaluations using a wide mix of designs and approaches ranging from complex sample surveys to experimental designs involving random assignment or pre/post measures of impacts. She is adept at utilizing common statistical techniques such as multivariate regression analysis, ANOVA, cluster/factor analysis, and hazard/survival analysis to detect impacts at the least cost to the clients. She brings a unique perspective, having served as a senior mathematical statistician at the U.S. Bureau of the Census for ten years, directing and ensuring the statistical and methodological validity of large-scale complex national surveys such as the Current Population Survey and the Adult Literacy Survey. She is actively involved in the American Statistical Society, currently serves as program chair for the Washington Statistical Society, and has received top-level awards for her outstanding leadership and data analysis skills.

Role

Dr. Peterson will serve as a Senior Analyst for needs assessment

Education

George Washington University, Washington, D.C., Ph.D. Statistics

George Washington University, Washington, D.C., M.S. Statistics

Miami University, Oxford, OH, B.S. Mathematics

Relevant Experience

Principal, Insight Policy Research, Inc.

2001 – Present

Dr. Peterson directs Insight Policy Research, Inc., a data collection and policy research company serving federal agencies, state and local governments, foundations, universities, professional associations, and businesses. She provides expertise to clients in analyzing data, evaluating program effectiveness, and preparing policy analysis.

Recent projects

Optimizing the Impact of the National Health Service Corps Dr. Peterson is project director for this evaluation assisting the NHSC in determining how to achieve the best possible outcomes given: (a) recent changes in program legislation, (b) an increase in the program funding level, and (c) and the resultant increase in the number of available awards.

Evaluation of HRSA's Nursing Education Loan Repayment Program (NELRP) and the Nursing Scholarship Program (NSP). Dr. Peterson lead and directed this five year project involving the comprehensive evaluation of the impact of two key national programs. The most recent report is titled "HRSA Responds to the Nursing Shortage: Results from the Nursing Scholarship Program and The Nursing Education Loan Repayment Program, January, 2005.

The 2004 National Sample Survey of Registered Nurses. Dr. Peterson is project lead for the National Sample Survey of Registered Nurses, an evaluative survey conducted every four years to a) monitor the number and characteristics of the Registered Nurse (RN) population and b) develop supply and demand projections needed to inform policymakers about RN workforce needs. Approximately 54,000 RNs are selected across the U.S. to participate in the study. The survey is conducted primarily by mail, with an Internet reporting option available and telephone follow-up for non-respondents.

Assessing the Social Security Administration's Effort to Meet the Information and Service Needs of Persons with Limited English Proficiency. Dr. Peterson directed this project designed to recommend enhancements to the multi-language materials, determine which information/services now offered on the English SSA online should also be offered on the multi-language gateway, recommend ways in which Social Security can use existing technology available in the market to better meet the public information needs of the target populations, determine the socio-economic, demographic, and statistical data on web use by the target populations, and perform cost/benefit analysis supporting all recommendations.

Mathematica Policy Research, Inc., Senior Statistician

1998-2001

Dr. Peterson led and directed the statistical design and survey methodology of research and program evaluations for federal agencies, professional associations, and businesses. Samples of her projects include:

Evaluation of the State Children's Health Insurance Program Dr. Peterson designed the sample program evaluation methodology for the assessment of states' enactment of the children's health insurance program.

National Alcohol Policy Survey Dr. Peterson designed and directed this national random-digit-dialing (RDD) survey of 32,000 households designed to provide information on public attitudes towards alcohol control issues. The survey was conducted under a contract with the Robert Wood Johnson Foundation to provide information to the grantees of the Coalition for Reducing Underage Drinking Program. Dr. Peterson led the sample design, selecting the sample, designing the within-household respondent selection method, monitoring data collection and response rates, conducting weighting and variance estimation, analyzing data, and presenting the final report.

State Law Enforcement Alcohol Policy Surveys Dr. Peterson directed the design and implementation of state surveys to provide information on opinions of law enforcement officers, including police chiefs, police officers, and justices, toward various practices established to reduce underage drinking. She worked with states to determine objectives, establish sample sizes, and develop sampling lists. Dr. Peterson directed sampling, weighting, and variance estimation, managed data collection, and provided reports to member-state grantees of the Coalition for Reducing Underage Drinking Program. These surveys were sponsored by the Robert Wood Johnson Foundation.

Evaluation of the PBS Ready to Learn Program Dr. Peterson designed the sample program evaluation methodology for the assessment of PBS's Ready to Learn program. Through its member stations, this program provides up to six hours of educational television programming, conducts workshops for parents and caregivers, and provides books and educational materials to low-income families. This evaluation entailed a longitudinal survey of 132 ready-to-learn coordinators and a randomized experiment to evaluate the effects of the workshops on parent and child outcomes.

U.S. Department of Agriculture. Section Head

1996-1998

Dr. Peterson directed a staff responsible for designing and implementing the 1997 Census of Agriculture and all follow-on surveys and censuses. She directed research and evaluated new automated technologies for reducing respondent burden and improving accuracy and efficiency of agricultural surveys. Dr. Peterson led the design and implementation of an automated program using new techniques for editing and imputation of data.

U.S. Bureau of the Census. Senior Mathematical Statistician

1989-1996

Dr. Peterson managed the statistical design and methodology of on-going large-scale demographic surveys including the American Housing Survey (AHS), Current Population Survey (CPS), the Survey of Income and Program Participation (SIPP), and the National Health Interview Survey (NHIS). She designed and implemented new demographic surveys for one-time clients.

Dr. Peterson designed, coordinated, and tested all field procedures and materials used to conduct demographic surveys. She authored instruction manuals for field office personnel, trained field representatives and clerical staff on sampling activities for all new surveys, and initiated and organized field tests to evaluate new automated materials and procedures. Dr. Peterson studied the impact of new procedures on bias and validity of data, and she resolved all field problems related to survey methodology.

Selected Publications

- “HRSA Responds to the Nursing Shortage: Results from the Nursing Education Loan Repayment Program and the Nursing Scholarship Program.” Washington DC: Health Resources and Services Administration, January, 2004.
- “Prenatal Screening for Substance Abuse, Tobacco and Domestic Violence: Assessing Effective Strategies for Improving Screening and Intervention, January, 2004.
- “Training Primary Care Providers in Culturally Competent, High Quality Healthcare for all Americans: The Essential Role of Title VII: Section 747 in the Elimination of Healthcare Disparities.” Washington DC: Health Resources and Services Administration, November 2003.
- “Medically Underserved Communities: Recommendations and Resources for Grantees.” Washington DC: Health Resources and Services Administration, November 2002.
- “Recommendations for the Redesign of the Electronic Data Collection Instrument.: Washington DC: Health Resources and Services Administration, June 2002.
- “A Comparison of Design Options to Evaluate the PBS Ready to Learn Program.” Washington, DC: Mathematica Policy Research, January 2001.
- “Evaluation and Recommendations for Nonresponse Follow-Up in the 1997 Census of Agriculture.” Washington, DC: U.S. Department of Agriculture, October 1996.
- “A Comparison of VPLX and SUDAAN for Variances of Totals Involving Ratio Estimation.” Washington, DC: U.S. Bureau of the Census, August 1994.
- “Evaluation of Listing Errors in Area Segments.” Washington, DC: U.S. Department of Agriculture, June 1994.
- “Logistic Regression--Applications in Forming Noninterview Clusters in the National Longitudinal Alcohol Epidemiologic Survey.” Washington, DC: U.S. Bureau of the Census, May 1994.
- “Recommendation for Sample Design and Survey Methodology for U.S. Ports of Entry.” Washington, DC Immigration and Naturalization Service, April 1993.

3.2.5 Robert C. Pianta, Ph.D.

Robert C. Pianta, Ph.D.

Principal Investigator

Qualifications Summary

Robert C Pianta, Ph.D., directs the University of Virginia Center for Advanced Study of Teaching and Learning (CASTL) and is Professor in the Curry School of Education and Department of Psychology, holding the Novartis US Foundation chair. Dr. Pianta is a principal investigator on two NICHD-funded grants (the NICHD Study of Early Child Care and Youth Development (NICHD SECCYD) and MyTeachingPartner: Web-based training in literacy and relationships), the OERI-IES-funded National Center for Early Development and Learning Multi-State Pre-K Study, and a grant from the Foundation for Child Development. He is one of the senior investigators for the Carnegie-funded Teachers for a New Era effort at UVA and is the Program Director for the IES-funded UVA Interdisciplinary Predoctoral Training Program in Education Sciences. These projects reflect diverse and rigorous methods of education science, including RCTs. He is a consultant on more than a half dozen NIH-funded projects, is the author of more than 150 peer-reviewed papers related to education science and child development, and is Editor of the *Journal of School Psychology*.

Over the past 20 years, Dr. Pianta has applied developmental theory and rigorous research and analytic methodology to the study of young children's development in school contexts. His work has led to a greater understanding of the ways in which social processes in classrooms and child-care settings support child adjustment in school. His work on the NICHD SECCYD and NCEDL Multi-State study has focused national attention on the mediocre level and high degree of variation in classroom quality. Of particular concern in these findings is consistent evidence of little to no relation between observed quality and teacher credentialing, training, or the nature of the curriculum being used.

These findings led to Dr. Pianta's current interest in developing new mechanisms for teacher training that may more directly affect classroom quality. As a part of the NICHD-funded MyTeachingPartner project, he has innovated web-based technology allowing teachers across the state of Virginia to receive ongoing, personalized professional development support. In the first year of implementation of this project, teachers received an average of 10 contacts with a consultant, with each contact consisting of individualized feedback based on shared viewing (via the web) of the teachers' actual classroom practices. Through this process, Dr. Pianta and his staff at CASTL have gained important insights into the challenges of working with schools around technology issues and have developed effective strategies for responding to, and in many cases preventing, these issues.

Importantly Dr. Pianta has extensive experience in all aspects of conducting multi-site research at scale. For example, the NCEDL study conducted observations in over 700 preschool classrooms in eleven states, with individual data collected on over 2,500 children in these classrooms. He has led the development of multiple classroom observational systems and has recently validated an approach to more cost-effective observation through use of videotaping.

Dr. Pianta has also directed four interdisciplinary graduate training projects (OSERS or IES-funded) and is a mentor in the APA/IES sponsored PERT post-doctoral training initiative. He is a member of the Federal Advisory Committee of the National Children's Study, a member of the Head Start National Reporting System Technical Work Group, the Foundation for Child Development P-3 Mapping Group, and a consultant to the Kellogg Foundation, High Scope Foundation, and Wm T Grant Foundation.

Role

Dr. Pianta will lead the Rigorous Research Study on Using Web-Based Feedback and Support to Improve Teacher Quality and Student Outcomes.

Education

University of Minnesota, Ph.D. Psychology
University of Connecticut, M.A. Special Education
University of Connecticut, B.S. Special Education

Relevant Experience

University of Virginia

1986 - Present

Director, The Center for the Advanced Study of Teaching and Learning.

Dr. Pianta directs a University-wide research center in the education sciences. He is responsible for overall management and strategic direction, research partnerships, and funding.

Professor, Department of Psychology, College of Arts and Sciences.

Awarded a joint appointment in the Department of Psychology, involves supervision and mentoring of graduate and undergraduate student research.

Professor, Department of Human Services, Curry School of Education.

Dr. Pianta teaches courses in research design in education, school-based interventions with children, and social processes in development. He provides supervision of graduate student research and mentorship opportunities and also is active in program development. Dr. Pianta currently directs the Curry School of Education Interdisciplinary Doctoral Program in Risk and Prevention in the Education Sciences.

Stavanger University College, Stavanger, Norway

2002 - Present

Dr. Pianta is Adjunct Professor providing consultation to the Centre for Behavioral Research. His responsibilities involve program evaluation, consultation on strategic vision, research planning and design mentoring of individual faculty members, and supervision of doctoral students' research.

University of Minnesota Institute of Child Development**1993-1994**

Dr. Pianta was Visiting Associate Professor with a focus on longitudinal research in high risk populations.

Awards and Honors

Novartis US Foundation Professor of Education, University of Virginia.
Outstanding Professor of the Year 2003, Curry School of Education
William Clay Parrish Jr. Chair, University of Virginia.
AERA Review of Research Award, 2002
National Early Childhood Accountability Task Force, The Pew Charitable Trusts.
Learner-Centered Principles Task Force, American Psychological Association
Advisory Board, National Research Center for Rural Education Support
Editor, *Journal of School Psychology*

Selected Publications

(Coauthored) (in press) Can instructional and emotional support in the first grade classroom make a difference for children at risk of school failure? *Child Development*.

(Coauthored) (in press). Ready to learn? Children's pre-academic achievement in pre-kindergarten programs. *Developmental Psychology*.

(Coauthored) (in press). Empirically-derived, person-oriented patterns of school readiness in typically-developing children: Description and prediction to first grade achievement. *Applied Developmental Science*.

(Coauthored) (in press). Features of pre-kindergarten programs, classrooms, and teachers: Do they predict observed classroom quality and child-teacher interactions? *Applied Developmental Science*.

(Coauthored) (in press). The contribution of classroom setting and quality of instruction to children's behavior in the kindergarten classroom. *Elementary School Journal*.

(Coauthored) (in press). Teacher-student relationships. *Encyclopedia of School Psychology*.

(Coauthored) (2004). Teacher-child relationships and children's success in the first years of school. *School Psychology Review*, 33(3), 444-458.

(Coauthored) (2004). Classroom Assessment Scoring System (CLASS): Findings from the pre-k year. *Elementary School Journal*, 104(5), 409-426..

(Coauthored) (2003). Teacher-rated family involvement and children's social and academic outcomes in kindergarten. *Early Education & Development*, 14(2), 179-198.

(Coauthored) (2003). Preschool to kindergarten transition activities: Involvement and satisfaction of families and teachers. *Journal of Research in Childhood Education*, 17(2), 147-158.

(Coauthored) (2003). Improving early school success. *Educational Leadership*, 60(7), 24-29.

(Coauthored) (2002). Development of academic skills from preschool through second grade: Family and classroom predictors of developmental trajectories. *Journal of School Psychology*, 40(5), 415-436.

(Coauthored) (2002). Special education eligibility: Developmental precursors over the first three years of life. *Exceptional Children*, 69(1), 55-66.

(Coauthored) (2002). Early behavioral attributes and teachers' sensitivity as predictors of competent behavior in the kindergarten classroom. *Journal of Applied Developmental Psychology*, 23, 451-470.

(Coauthored) (2002). Teachers' narratives about their relationships with children: Associations with behavior in classrooms. *School Psychology Review*, 31(2), 148-163.

(Coauthored) (1999). *The transition to kindergarten*. Baltimore: Brookes Publishing Co.

Pianta, R. (in press). Classroom management and relationships between children and teachers: Implications for research and practice. In C. Evertson, C. Weinstein, & T. Good (Eds.), *Handbook of Classroom Management: Research, Practice, & Contemporary Issues*.

Pianta, R. (in press). Teacher-child relationships and early literacy. In D. Dickinson & S. Newman (Eds.), *Handbook of Early Literacy Research*.

Pianta, R. (in press). Schools, schooling, and developmental psychopathology. In D. Cicchetti (Ed.), *Handbook of Developmental Psychopathology*, Vol. 2.

NICHD Early Child Care Research Network. (in press). Duration and developmental timing of poverty and children's cognitive and social development from birth through third grade. *Child Development*

NICHD Early Child Care Research Network. (2005). A day in third grade: A large-scale study of classroom quality and teacher and student behavior. *The Elementary School Journal*, 105, 305-323.

NICHD Early Child Care Research Network. (2004). Type of child care and children's development at 54 months. *Early Childhood Research Quarterly*, 19, 203-230.

NICHD Early Child Care Research Network. (2004). Social functioning in first grade: Associations with earlier home and child care predictors and with current classroom experiences. *Child Development*, 74(6), 1639-1662.

NICHD Early Child Care Research Network. (2004). Does class size in first grade relate to changes in child academic and social performance or observed classroom processes? *Developmental Psychology*, 40(5), 651-664

3.2.6 Bridget K Hamre, Ph.D.

Bridget K Hamre, Ph.D.

Co-Principal Investigator

Qualifications Summary

Dr. Hamre is a clinical and school psychologist with over 10 years of experience working in education and educational research. She is currently a research associate at the Center for the Advanced Study of Teaching and Learning (CASTL) at the University of Virginia. She leads current development and training efforts related to the Classroom Assessment Scoring System (CLASS) and has collaborated with many state-level education policymakers in the use of standardized classroom observation as a research and professional development tool. For example, she recently led a team of staff from CASTL in providing training to over 60 early childhood college faculty in Massachusetts on how to use the CLASS to provide feedback to teachers in training. She has worked closely with Dr. Pianta in the development of the teacher consultancy component of MyTeachingPartner, which serves as a model for the proposed project.

Dr. Hamre also has strong analytic and writing skills, as evidenced by recent publications, including a first-authored paper that appeared in *Child Development*, examining ways in which teachers everyday interactions with students at risk of school failure may facilitate academic and social development. She has extensive experience in maintaining and analyzing large databases and has advanced training in sophisticated statistical methods, including HLM, growth modeling, and structural equation modeling.

Dr. Hamre also has experience in project management and dissemination of research. She worked previously at Policy Analysis for California Education (PACE), a policy analysis institute at the University of California, Berkeley. In this role she led a 3-year evaluation of a state-wide initiative aimed at raising levels of retention and training among California's early childhood education staff. This included managing a group of graduate and undergraduate researchers, directing implementation of a 3-year survey of 3,000 early childhood teachers, conducting longitudinal assessment of program outcomes, authoring yearly evaluation reports for the First 5 California Children and Families Commission, and disseminating policy implications of research to legislative staff to inform decisions regarding future child care policy.

Role

Dr. Hamre will lead measure development and training efforts in the rigorous research study Using Web-Based Feedback and Support to Improve Teacher Quality and Student Outcomes. She will collaborate with Dr. Pianta on all data analysis and reporting efforts.

Education

Ph.D., Clinical and School Psychology, University of Virginia, Charlottesville, VA
 M.Ed., Psychology, University of Virginia, Charlottesville, VA
 B.A., Psychology, University of California, Berkeley, CA

Relevant Experience

University of Virginia, Charlottesville, VA. 2004-Present

Research	Associate/	IES/APA	Postdoctoral	Education
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Research Training Fellow, Curry School of Education.
 Dr. Hamre led development and training on an observational measure of classroom quality (CLASS) including collaborating with state-level education policymakers in implementation of quality improvement efforts. She led a team of graduate student researchers in coding of videotape from 180 preschool classrooms over two years. She conducts analysis and writes scholarly articles on early academic achievement and student-teacher interactions. Dr. Hamre designs and disseminates new professional development tools intended to improve the quality of social and instructional interactions in the classroom.

Policy Analysis for California Education, University of California, Berkley 2002-Present

Post-Doctoral Researcher
 Dr. Hamre led a 3-year evaluation of a statewide initiative aimed at raising levels of retention and training among California's early childhood education staff. She directed implementation of a 3-year survey of 3,000 ECE staff members. Dr. Hamre conducted longitudinal assessment of program outcomes and authored yearly evaluation reports for the First 5 California Children and Families Commission. She disseminated policy implications of research to legislative staff to inform decisions regarding future child care policy. She managed a \$2.3 million evaluation budget and supervised graduate student researchers. Dr. Hamre collaborated on a large, longitudinal NIH grant proposal on the development of Latino preschoolers.

National Center for Early Development and Learning, University of Virginia 1997-2001

Research Associate
 Dr. Hamre worked on a variety of projects concerning children's early relationships and adjustment in school. She conducted analyses using a large, national data set from the NICHD Study of Early Child Care. She assisted in the development, implementation, and evaluation of an ecological intervention for the transition to kindergarten. Dr. Hamre co-developed a coding system for an interview assessing teachers' views of the quality of their relationships with specific children. She co-wrote and implemented intervention aimed at improving the quality of teacher-child relationships.

Research Assistant

Dr. Hamre aided in research on infant language acquisition within the Early Cognitive Development Laboratory. She recruited and screened potential subjects and briefed subjects on testing procedures. Dr. Hamre coded and assisted in data analysis.

Selected Publications**Refereed Journal Articles**

Hamre, B. K., & Pianta, R. C. (in press). Can instructional and emotional support in the first grade classroom make a difference for children at risk of school failure? *Child Development*.

Hamre, B. K., & Pianta, R. C. (2004). Nonfamilial caregiver self-reported depression: prevalence and associations with caregiver behavior in child care settings. *Early Childhood Research Quarterly*, 19, 297-318.

Konold, T., Hamre, B. K., Pianta, R. C. (2003) Measuring problem behaviors in young children. *Behavioral Disorders*, 28, 111-123.

Hamre, B. K., & Pianta, R. C. (2001). Early teacher-child relationships and the trajectory of children's school outcomes through eighth-grade. *Child Development*, 72, 625-638.

Book Chapters

Hamre, B. K. & Pianta, R. C. (in press) Student-teacher relationships as a source of support and risk in schools. Children's Needs III. National Association of School Psychologists.

Pianta, R.C., Hamre, B. K., & Stuhlman, M. (2003). Relationships between teachers and children. In W. Reynolds & G. Miller (Eds.), *Comprehensive Handbook of Psychology (Vol. 7) Educational Psychology* (pp. 199-234). New York: John Wiley & Sons.

Pianta, R.C., Stuhlman, M., & Hamre, B. K., (2002). How schools can do better: Fostering stronger connections between teachers and students. In J. E. Rhodes (Ed.), *New Directions for Youth Development: A Critical View of Youth Mentoring* (pp. 91-107). San Francisco: Jossey-Bass.

Other Publications

Hamre, B. (2003). Enhancing relationships with teachers. *School Psychology in Virginia: The Newsletter of the Virginia Academy of School Psychologists*, Fall.

Hamre, B.K., Grove, R. and Louie, J. (2003). *Progress Report: Matching Funds for Retention Incentives for Early Child and Education Providers*. Available on Policy Analysis for California Education, U.C. Berkeley Web site: http://pace.berkeley.edu/pace_eval_matching_funds.html.

Stuhlman, M., Hamre, B. K., & Pianta, R.C. (2002). Building supportive relationships with adolescents. *Middle Matters*, 6, 1-2.

Pianta, R.C., & Hamre, B. K. (2001). *Students, Teachers, and Relationship Support [STARS]: User's Guide*. Lutz, FL: Psychological Assessment Resources, Inc.

Presentations

Hamre, B. K. (2005, July). Transitions to School: Policy, Practices, and Research. An invited presentation to the Indiana Ready Schools Initiative. Brown County, Indiana.

Hamre, B. K. (2005, June). *Large scale observations of early education settings*. A paper presented at the annual meeting of the Society for the Scientific Study of Reading. Toronto, Canada.

Hamre, B. K. (2005, May). *Daily interactions in the classroom as a prevention tool*. A paper presented at the annual meeting of the Society for Prevention Research. Washington, DC.

Hamre, B. K. (2005, April). *Multi-level modeling of the student-teacher relationship*. A paper presented at the biennial meeting of the Society for Research in Child Development. Atlanta, Georgia.

Hamre, B. K. (2001, April). *Predictors of Mother-Diagnosed Disruptive Behavior Disorders At 36-Months: Are There Multiple Pathways to Diagnosis?* A poster presented at the biennial meeting of the Society for Research in Child Development. Albuquerque, NM.

Hamre, B. K., LaParo, K., & Pianta, R. C. (2000, June). *Development of a Measure of Observed Quality in Early Elementary Classrooms*. Poster session presented at the NAEYC 2000 National Institute for Early Childhood Professional Development Spotlight Forum, San Francisco, CA.

Hamre, B. K. (1999, June). *Kindergarten Quality: The Role of Teacher-Child Relationships*. A poster presented at the Early Childhood Institute Project Directors' Meeting. Washington, DC.

Hamre, B. K. (1999, April) *Predicting Academic and Disciplinary Outcomes from Early Teacher-Child Relationships*. A poster presented at the biennial meeting of the Society for Research in Child Development. Albuquerque, NM.

La Paro, K. & Hamre, B. K. (1998, July) *The Transition to School: Building Connections*. An invited presentation at the Best Practices for High-Risk Kids Conference, Curry School of Education, Charlottesville, VA.

3.2.7 Linda Cavalluzzo, Ph.D.

Linda Cavalluzzo, Ph.D.

Principal Investigator

Qualifications Summary

Dr. Linda Cavalluzzo is a senior economist with extensive experience in empirically based research and in disseminating results of research and policy analysis to both technical and non-technical audiences. Her work over the past few years has laid the intellectual foundation for research on several important issues facing educators in the Appalachian region. She developed a framework for considering the implication for costs, access, and program growth of alternative funding methods and governance structures of virtual schools—that is, schools or programs that offer online courses to supplement curriculum in, or as an alternative to, traditional schools.

Dr. Cavalluzzo completed studies that examined the costs associated with the statewide virtual school programs in Kentucky and West Virginia. Based on this work and subsequent analysis of models being developed and implemented in several other states, she prepared several papers and policy briefs and participated on panels and in meetings throughout the region, and in at least four national gatherings, that focused on the cost and effectiveness of online and distance education. Her paper “Cost, Financing and the Provision of Online Education” was recently published as part of a volume entitled, *Virtual Schools: Planning for Success*. She also led a panel in the July 2004 NCLB eLearning Leadership Summit on the implementation of virtual school programs. She met with top officials in Virginia and advised them on selecting approaches to ensure that online educational services addressed the State’s critical educational needs. As a result of her knowledge and reputation, Dr. Cavalluzzo continues to provide technical assistance to state and local educational officials in the region and throughout the nation.

Dr. Linda Cavalluzzo headed the Regional Advisory Committee facilitation team supporting the Advisory Committee for the Southeast Region. In this role, he served as the principal technical advisor to the committee chair, facilitated routine online and face-to-face discussions, and assumed responsibility to editing and completing the final report to the Secretary of Education in March 2005.

Dr. Cavalluzzo has also led a pair of research studies on the quality of the teacher workforce. In the first study funded by the National Science Foundation, she created a longitudinal file linking 11 years of teacher records to estimate a model of the association between such factors as pay, school, and teacher characteristics, and teacher retention. In the second study, she developed the first large-scale statistical study of the link between National Board Certification of teachers and student achievement in high school mathematics. Her work with multiple years of individual student data, linked to specific subject-area teachers for 9th and 10th graders, offers estimates of effect sizes as measured by gains on the state end-of-grade exams in mathematics, for an array of indicators of teacher quality, including experience, state certification in mathematics, primary job assignment, competitiveness of undergraduate school, and National Board Certification status. Using sophisticated multivariate techniques, including individual and school fixed effects models, she found that each of these indicators was positively associated with student achievement. Dr. Cavalluzzo has published her research in leading peer-reviewed journals such as *The Review of Economics and Statistics* and in edited volumes.

Role

Dr. Cavalluzzo will be the principal investigator on the project Effectiveness of Hybrid Secondary School Courses for Adolescent Students and as Embedded Professional Development Experiences for Classroom Teachers proposed as part of the rigorous research and development program.

Education

State University of New York, Buffalo, NY, Ph.D. Economics
State University of New York, Buffalo, NY, M.A. Economics
State University of New York, Buffalo, NY, B.A. Economics and Political Science

Relevant Experience

The CNA Corporation

1979-1985, 1994 - Present

Dr. Cavalluzzo has designed and executed a range of research studies and evaluations in K-12 and post-secondary education. As lead researcher of a five-site study of high-school-college collaborations (including middle college high schools and college-based dual enrollment programs), she designed and helped execute a mixed-methods evaluation of program effectiveness that included multivariate statistical analyses of several dimensions of student outcomes as well as document analysis, interviews and focus groups for a full-range of stakeholder groups within each district (including top-level college, district, and program administrators, program faculty, guidance counselors, parents, and students), and classroom observations. That study found strong qualitative evidence of program quality with some quantitative evidence of improvement for students who entered vocational programs. A summary of the project is forthcoming in *Community College Journal of Research and Practice*.

As Co-PI of a NSF-sponsored study of the impact of systemic reform in three medium-sized urban school districts, Dr. Cavalluzzo conducted interviews, focus groups, and classroom observations to help determine the extent to which components of systemic reform were implemented in each district. In addition, she designed and implemented a survey of mathematics and science teachers to evaluate their perceptions of change as a result of the reforms. These data complement an econometric examination of change in attainment and achievement in high school mathematics during the reform period.

As a site observer for the Tennessee EdTech Launch evaluation run by the Center for Research in Education Policy at the University of Memphis, Dr. Cavalluzzo collected data and observed technology use in numerous classrooms, including over 60 in rural Tennessee.

Before pursuing her research into issues in K-12 education, Dr. Cavalluzzo conducted analyses of training and education programs for the Department of the Navy. Recommendations from her *Bottom-Up Assessment of Navy Flagship Schools*, which incorporated both qualitative and quantitative analyses of the quality, cost, and effectiveness of the Navy's four post-secondary schools,

led to the formation of an Executive Panel Task Force, and ultimately, to a reshaping of the Navy's education system.

Union College

1987-1993

Visiting Faculty, Department of Economics. While at Union College, Dr. Cavalluzzo maintained an active research agenda that focused on topics in labor compensation and productivity. In addition, she was an active participant in a Pew Foundation Workshop Series on Productivity Measurement.

Resource Consultants Inc.

1985-1987

Director, Manpower, Personnel and Training Analyses Group (Feb- Aug 1987)

Dr. Cavalluzzo supervised six professionals plus associated support staff. She prepared the technical approach for proposals and was principal investigator and program manager for selected studies. (Total budget, approximately. \$75 million per year).

Awards and Honors

Richard H. Barchi Prize for General and Specific Contributions to Military Operations Research, Military Operations Research Society, March 1983

Best presentation, 49th Military Operations Research Symposium, 1982.

Selected Publications and Presentations

- "Unionization and Productive Efficiency," *Efficiency Measurement: Techniques and Applications*, Eds. Harold Fried, Knox Lovell and Shelton Schmidt, Oxford University Press, 1993, (coauthored)
- "Nonpecuniary Rewards in the Workplace: Demand Estimates Using Quasi-Market Data," Vol 73(3) *Review of Economics and Statistics*, 1991
- Is National Board Certification an Effective Signal of Teacher Quality? IPR 11204, The CNA Corporation, 2004
- A Study of Perceptions and Changes in Knowledge, Practice, and Student Achievement as a Result of AEL's Online Professional Development in Reading in Tennessee, Interim Report, AEL, Inc., 2004, (coauthored)
- Reading Teachers First: Statewide Implementation of ePD. Paper prepared for the Association for Advancement of Computing in Education, Washington, D.C., 2004
- Critical Issues in Recruiting and Retaining the Mathematics and Science Workforce: Summary of Research in Miami-Dade County Public Schools. CNAC EIM 03-0106 CNA Education, 2004, (coauthored)
- Relative Pay and Teacher Retention in Miami-Dade County Public Schools. CNA Education, 2003, (coauthored)
- Organizational Models for Online Education: District, State, or Charter School? Appalachian Technology in Education Consortium, The CNA Corporation, www.the-atec.org, 2004
- Does Education Reform Improve Job Performance? CRM D0008781.A2 The CNA Corporation, 2003, (coauthored)
- Case Studies of High Schools on College Campuses: An Alternative to the Traditional High School Program. AEL Inc. and The CNA Corporation, 2002, (coauthored)

- Who Should Fund Virtual Schools? Appalachian Technology in Education Consortium, The CNA Corporation, www.the-atec.org, 2001 (coauthored)
- Library and Lab Costs at Postsecondary Schools: Benchmarks for the Naval Postgraduate School, The CNA Corporation, CAB D0000482, 2000, (coauthored)
- Navy Line Officer Advanced Education Requirements for the 21st Century, Report by the CNO's Executive Panel Task Force on Advanced Education, The CNA Corporation, 1998, (coauthored)
- A Bottom-Up Assessment of Navy Flagship Schools, The CNA Corporation, CRM 97-24, 1998, (coauthored)
- Planning A Virtual School? An Open Discussion, National Educational Computing Conference, Philadelphia, June 2005
- "Can Teachers with National Board Certification Help Reduce the Achievement Gap?" *American Education Research Association*, Montreal, April, 2005
- Advancing Achievement for All Students, panel session: *Highly Qualified or Highly Effective?* The Business Coalition for Excellence, NJ Chamber of Commerce, Woodbridge, NJ, April, 2005
- Is National Board Certification an Effective Signal of Teacher Quality? *American Education Finance Association*, Louisville, March, 2005
- Is National Board Certification an Effective Signal of Teacher Quality? *American Association of Colleges of Teacher Education*, Washington, D.C., February, 2005
- National Board Certification: A Look at How Their Students Stack Up. *National Conference on Teacher Compensation and Evaluation*, CPRE-UW, Chicago, Nov 2004
- Organizational Models for Online Schools, *Secretary's NCLB Leadership Summit—Increasing Options Through e-Learning*, Orlando, July, 2004
- A Model of Teacher Retention: *AERA Meetings*, San Diego, April, 2004
- Teacher Workforce Issues in Miami-Dade County Public Schools, *American Education Finance Association*, Salt Lake City, March, 2004
- Empirical Research on Critical Issues in Recruiting and Retaining the Mathematics and Science Teaching Workforce, *National Conference on Teacher Compensation and Evaluation*, CPRE-UW, Chicago, November, 2003
- Access, Achievement and Attainment in a CPMSA District, *AERA Meetings*, Chicago, April, 2003
- Contemplating a Public Virtual School in Your District, *Virginia Society for Technology in Education*, March 2003
- Systemic Reform and Student Achievement: A Preliminary Analysis of Reform and Outcomes in Mathematics, *AERA Meetings*, New Orleans, April, 2002
- Funding Virtual Schools, Who Should Pay? *Center for Internet Technology in Education Virtual High School Symposium* Chicago, Il October 16-17, 2001.

Professional Memberships

American Economics Association
 American Education Research Association
 American Education Finance Association
 North American Council for Online Learning

3.2.8 Deborah L. Lowther, Ph.D.

Deborah L. Lowther, Ph.D.

Co-Principal Investigator

Qualifications Summary

Dr. Deborah L. Lowther is a Senior Faculty Researcher for the Center for Research in Educational Policy (CREP). She served as Project Director for the external evaluation of eight high-profile technology initiatives, including TN's EdTech Launch Program; Schools for Thought Challenge Grant (Vanderbilt University/Metropolitan Nashville Schools; Co-NECT School Reform model – Cambridge, MA/Memphis City Schools; and TN Technology Literacy Challenge Fund.

Dr. Lowther served as the Appalachian Technology in Education Consortium's Principal Investigator for Professional Development from 2000-2005. In this role, she provided technical assistance to Kentucky, Tennessee, Virginia, and West Virginia and co-authored *Integrating Technology into the Curriculum* (3rd Ed. 2005), which is ranked as a leading technology integration textbook and received the Educational Communications and Technology Foundation's 2001 "Outstanding Book in Instructional Technology".

Dr. Lowther served on the editorial board of the *Educational Technology Research and Development* journal for 2000-2002 and is currently a consulting editor for the same journal. She also recently served as an Executive Board Member for the Association for Educational Communications and Technology (AECT) and as President of AECT's Research Division. Her recent publications include: (in production) *ID Casebook, The: Case Studies in Instructional Design* (3rd Ed, coauthored); (2005) *Integrating Computer Technology into the Classroom* (3rd Ed., coauthored); (2003) *When each one has one: The influences on teaching strategies and student achievement of using laptops in the classroom.* (coauthored) *Educational Technology Research and Development*; and. (2003) *Integrating Computers into the Problem-Solving Process. New Directions for Teaching and Learning: Problem-Based Learning for the Information Age.*

Role

Dr. Lowther will assist Dr. Cavalluzzo with the rigorous research study on Effectiveness of Hybrid Secondary School Course for Adolescent Students and as Embedded Professional Development Experiences for Teachers.

Education

Arizona State University, Ph.D. Educational Technology
University of Texas at El Paso, M.A. Curriculum and Instruction
University of Texas at El Paso, B.S. Secondary Education

Relevant Experience

University of Memphis

1995-Present

Associate Professor with tenure, Instructional Design and Technology
Assistant Professor, Instructional Design and Technology

Maricopa County Community College District (MCCCD)

1991-1995

Program Evaluator for the Phoenix Urban Systemic Initiative (NSF), MCCCD
Program Evaluator for the Comprehensive Regional Center for Minorities (NSF)

Selected Publications

Lowther, D. L., Grant, M. M., & Ross, S. M. (in production). Tina Sears. In P. Ertmer and J. Quinn (Eds.) *ID Casebook, The: Case Studies in Instructional Design* (3rd Ed.). Englewood Cliffs, NJ: Merrill/Prentice Hall.

Morrison, G. R. & Lowther, D. L. (2005). *Integrating Computer Technology into the Classroom* (3rd Ed.). Englewood Cliffs, NJ: Merrill/Prentice Hall.

Lowther, D. L., Ross, S. M., & Morrison, G. R. (2003). When each one has one: The influences on teaching strategies and student achievement of using laptops in the classroom. *Educational Technology Research and Development*.

Lowther, D. L. & Morrison, G. R. (2003). Integrating Computers into the Problem-Solving Process. *New Directions for Teaching and Learning: Problem-Based Learning for the Information Age*, 95(03), 33-38.

Ross, S. M. & Lowther, D. L. (2003). Impacts of the Co-nect school reform design on classroom instruction, school climate, and student achievement in inner-city schools. *Journal for Educational Research on Students Placed At Risk*, 8(3), 215-246.

Ross, S. M., Alberg, M., Smith, L. & Lowther, D. (2002) Using Classroom Observations as a Research and Formative Evaluation Tool in Educational Reform: The School Observation Measure. In S. Hilberg and H. Waxman (Eds.) *New Directions for Observational Research in Culturally and Linguistically Diverse Classrooms*. Santa Cruz, CA: Center for Research on Education, Diversity & Excellence.

Jones, G. R., Harmon, S. W., & Lowther, D. L. (2002). Internet-based learning and Technology Integration: A Systemic Approach. In R. Reiser and J. Dempsey (Eds.) *Foundations, Trends, & Issues in Instructional Technology*; Englewood Cliffs, NJ: Prentice Hall.

Morrison, G. R. & Lowther, D. L. (2001). Information management. In A. Costa (Ed.) *Developing Minds*: ASCD Publications.

Lowther, D. L., Jones, M. G., & Plants, R. (1999). Impact of Web-based Education on Teacher Education Programs. In B. Abbey (Ed.) *Instructional and Cognitive Impacts of Web-Based Education*. Harrisburg, PA: Idea Group Publishers.

Lowther, D. L. & Morrison, G. R. (1998). The NTeQ model: A framework for technology integration. *TechTrends*, 43(2), 33-38.

Recent Presentations

Lowther, D. L., Ross, S. M. & Morrison, G. R. (October, 2003). The Laptop Classroom: The Effect on Instruction and Achievement. Paper to be presented at the 2003 Association for Educational Communications and Technology Convention, Anaheim, CA.

Ross, S. M, Lowther, D. L.. & Morrison, G. R. (April 2003). Chicago, IL. When Each One Has One: The Influences on Teaching Strategies and Student Achievement of Using Laptops in the Classroom. Paper presented at the 2003 American Educational Research Association National Conference, Chicago, IL.

Collaborators & Other Affiliations

Collaborators

Steven M. Ross (U of Memphis), Gary R. Morrison, (Old Dominion University), Sharon Smaldino (University of Northern Iowa), Jim Russell (Purdue University), Bruce Montgomery and Leslie Wilson (Michigan Freedom to Learn); Michael Grant (U of Memphis), Jill Ballthrop (Director of Applied Technology, TN State DOE), Art Sheekey (CNAC, DC), Stephen Henderson (Appalachian Math and Science Partnership), David Wallace (Brazos-Sabine Consortium, TX), Robert Reiser (Florida State University)

Graduate and Postdoctoral Advisor

Howard J. Sullivan (Arizona State University)

3.2.9 Steven M. Ross, Ph.D.

Steven M. Ross, Ph.D.

Principal Investigator

Qualifications Summary

During the past ten years, Dr. Ross has worked extensively with school districts, both regionally and locally, to develop and evaluate programs for improving student achievement. A primary focus of these studies has been on schools predominantly serving low-income, inner-city minority children. An ongoing research effort involves comparing the academic achievement of children in schools that have adopted different comprehensive school reform models, and examining the effectiveness and impact of the Accelerated Reader Program, a study that employs a truly randomized assignment to treatments.

As Executive Director of the Center for Research in Educational Policy (CREP) and Professor of Educational Psychology, Dr. Ross is engaged in more than a dozen research initiatives that cover pre-school through high school levels. He has helped to design studies to effectively prepare children ages 0-3 for entry into kindergarten, a study to determine the effective transition of 9th grade students to the high school environment, a study of the effective integration of technology in the classrooms that support student-centered teaching methods for promoting higher-level learning outcomes, and an experimental study involving ten Memphis City schools using different reading programs.

Dr. Ross is the author of six textbooks and over 120 journal articles in the areas of educational technology and instructional design, at-risk learners, educational reform, computer-based instruction, and individualized instruction. He is the editor of the research section of the Educational Technology Research and Development journal, and a member of the editorial board for two other professional journals.

Dr. Ross has testified on school restructuring research before the U.S. House of Representatives Subcommittee on Early Childhood, Youth, and Families, and is a technical advisor and researcher on current federal and state initiatives regarding the evaluation of technology usage, supplemental educational services, charter schools, Reading First, and Comprehensive School Reform.

Dr. Ross is currently working on the formative and summative evaluation of state and district initiatives under and related to NCLB, including the evaluation of Reading First in TN, Title II-D technology in TN and KY, Supplemental Educational Services in TN and LA, and charter schools in TN. Dr. Ross is a technical advisor on programs for Comprehensive School Reform and Supplemental Educational Services, a national effects study, and the new ERIC.

Role

Dr. Ross will serve as Principal Investigator on the rigorous research study An Impact Evaluation of Early Reading First Programs.

Education

The Pennsylvania State University, Ph.D.
 The Pennsylvania State University, M.S.
 The Pennsylvania State University, B.A.

Relevant Experience

The University of Memphis
 Director, Center for Research in Educational Policy

2001 to Present

The University of Memphis
 Professor, Educational Psychology

1985 to Present

The University of Memphis Senior Researcher, Center for Research in Educational Policy	1995 – 2001
The University of Memphis Associate Professor, Educational Psychology	1980 – 1985
Lock Haven State College, Lock Haven, PA Instructor, Psychology	Spring 1974
Mitre Corporation Evaluator, McLean, Virginia	Summer 1974
The Pennsylvania State University Instructor, Continuing Education,	1973 – 1974
The University of Memphis Assistant Professor, Educational Psychology	1974 – 1979

Courses Recently Taught

Theories of Learning
Individual Differences and Learning
Educational Statistics
Educational Research
Computers in Education
Thesis Writing
Educational Assessment

Professional Associations

American Psychological Association Fellow
American Educational Research Association Member
Mid-South Educational Research Association Member
Association for Educational Communications & Technology Member
International Congress for School Effectiveness and School Improvement Member

Honors And Distinctions

NDEA Fellowship for graduate study at the Pennsylvania State University, 1971-1973.
Distinguished Teaching Service Award, University of Memphis, 1980.
Phi Delta Kappa Professional Research Award, Memphis Chapter, 1983.
Elected Fellow, Division 15, American Psychological Association, 1986.
Visiting Scholar, National Center for Research on Improving Postsecondary Teaching and Learning. University of Michigan, Summer 1987.
Distinguished Research Award, University of Memphis, 1987.

Distinguished Teacher Service Award, University of Memphis, 1988.
Memphis State University nominee, CASE Professor of the Year Award, 1989
Superior Performance in University Research (SPUR) Award, University of Memphis, 1990, 1991, 1992
Distinguished Research Award, University of Memphis, 1993.
Board of Visitors Eminent Faculty Award, University of Memphis (first recipient), 1993
Editor, *Educational Technology Research and Development*, 1993-present
Editorial Board, *Journal of Education for Students Placed At Risk*. 1995-present
Editorial Board, *Computers and Human Behavior*, 1994-present
Invited testimony, U.S. House of Representatives Subcommittee on Early Childhood, Youth, and Families, Committee on Education and the Workforce, June 26, 1998.
Invited panelist on comprehensive school reform, discussion with Secretary of Education Richard Riley, March 16, 1999.
Lillian and Morrie Moss Chair of Excellence in Urban Education, 2001
Provost's Professorship, 2004-2005, The University of Memphis
College of Education Outstanding Research Award, 2002, The University of Memphis
AERA Distinguished Journal Reviewer, 2005
Invited Testimony to the TN Senate Education Committee, April 2005

Scholarships

Publications in Refereed Journals, 122 Books, 7 Book Chapters, 28 Papers Presented at Professional Meetings

Selected Recent Publications

(Co-authored) (1999). "Bridging the gap": The effects of the Success For All Program on elementary school reading achievement as a function of student ethnicity and ability level. School Effectiveness and School Improvement, 10(2), 129-150.
Morrison, G. R., Ross, S. M., & Kemp, J. E. (2000). Designing effective instruction (3rd ed.). New York, NY: Macmillan College Publishing.

(Coauthored) (2000). Using whole-school restructuring to improve educational outcomes: The Memphis story at year 3. Teaching and Change, 7(2), 111-126.

(Coauthored) (2001). The influence of a peer tutoring training model for implementing cooperative groupings with elementary students. Educational Technology, Research and Development, 49(2), 41-56.

(Coauthored) (September 2001). Two- and three-year achievement results from the Memphis Restructuring Initiative. School Effectiveness and School Improvement, 12, 323-346.

(Coauthored) (2002). A comparison of Teachers' assessment practices in school restructuring models by year of implementation. Journal of Educational Research for Students Placed at Risk, 7(4), 407-423.

(Coauthored) (2002). Teacher retention, teaching effectiveness, and professional preparation: A comparison of professional development school and non-professional development school graduates. Teaching and Teacher Education, 18, 289-303.

(Coauthored) (2002). Introductory Statistics: An Individualized Approach Third Edition. Boston, MA: Pearson Custom Publishing.

(Coauthored) (2003). Impacts of the Co-nect school reform design on classroom instruction, school climate, and student achievement in inner-city schools. Journal for Educational Research on Students Placed at Risk, 8(3), 215-246.

(Coauthored) (2003). Inside systemic Elementary school reform: Teacher effects and teacher mobility. School Effectiveness and School Improvement, 14(1), 73-110.

(Coauthored) (2003). Experimental research methods. In D. H. Jonassen (Ed.), Handbook of Research for Education Communications and Technology, 2nd Ed. Mahwah, NJ: Lawrence Erlbaum Associates.

(Coauthored) (In press). Fourth-year achievement results in the Tennessee value-added assessment system in restructuring schools in an inner-city district. Education Administration Quarterly.

(Coauthored). (2003). When each one has one: The influences on teaching strategies and student achievement of using laptops in the classroom. Educational Technology Research and Development, 51(3), 23-44.

(Coauthored) (2004). Designing Effective Instruction 4th Edition. Hoboken, NJ: Wiley & Sons.

3.2.10 David F. Lopez, Ph.D.

David F. Lopez, Ph.D.

Principal Investigator/Co-Principal Investigator

Qualifications Summary

Dr. David Lopez has extensive experience designing and managing randomized control studies, analyzing data, and writing research reports and peer-reviewed publications. He has specialized training in multivariate statistics, and his expertise includes planning and conducting statistical analyses, survey construction and validation, and presenting findings at regional and national conferences.

Dr. Lopez is particularly skilled at conducting secondary data analyses on multiple data sets using a variety of sophisticated statistical techniques such as hierarchical linear regression, log-linear regression, structural equation modeling, means and covariate structures modeling, and multi-level modeling.

Prior to joining CNAC, he analyzed the Head Start Family and Child Experiences Survey (FACES: a nationally representative sample of Head Start children) to determine the degree to which attendance influenced literacy and pre-math skills as well as behavior problems of Head Start Program children. He also analyzed the Head Start Program Information Report (PIR) database to determine trends in demographic characteristics among the Head Start population both nationally and state. Finally, he analyzed the Head Start National Reporting System (NRS: a database of over 450,000 Head Start children nationwide) to determine the link between teacher and program-level factors (e.g., training, experience, funded enrollment) and literacy and pre-math skills. He has published empirical research in such journals as *Developmental Psychology*, *Journal of Personality & Social Psychology*, *Personality & Social Psychology Bulletin*, *Journal of Experimental Social Psychology*, *Journal of Experimental Child Psychology*, and *International Journal of Behavioural Development*. In addition to his published work, he has extensive familiarity with the NELS, Common Core, NAEP, and ECLS databases.

Role

Dr. Lopez will serve as Principal Investigator on the fast response applied research and development project Curriculum Quality and Alignment of Appalachian Region Reading First Programs and Co-Principal Investigator on the rigorous research study An Impact Evaluation of Early Reading First Programs

Education

Center for Lifespan Psychology, Max Planck Institute for Human Development and Education, Berlin, Germany, Post-Doctoral Research Fellow
Kent State University, Kent, Ohio, Ph.D. Psychology (Social)
Kent State University, Kent, Ohio, M.A., Psychology (Social)
University of Waterloo, Waterloo, Ont., Canada, B.A. (Hons), Psychology

Relevant Experience

The CNA Corporation

2005 - Present

As a Research Scientist, Dr. Lopez's main responsibility is to design and manage research studies, analyze data, and write research reports. This work includes planning and conducting statistical analyses, survey construction and validation, and presenting findings at regional and national conferences.

Xtria, LLC

2003 - 2005

As a Senior Research Analyst in the Research and Program Services Division of Xtria, Dr. Lopez's main responsibility was to design and manage research studies, analyze data, and write research reports. This work included planning and conducting statistical analyses, survey construction and validation, conducting training seminars and on-site quality control visits of research sites, and presenting findings at regional and national conferences. Sample projects include:

Flood Insurance Policy Acquisition and Retention among Recipients of Federal Disaster Assistance (FEMA) -- Project Director: Dr. Lopez served as the director of this project, which had two components: (a) a nationally representative survey of recent recipients of Federal Flood Disaster Assistance; and (b) a compliance and monitoring evaluation of both the Federal Emergency Management Agency (FEMA) and the Small Business Administration (SBA). Dr. Lopez oversaw all aspects of this contract, from the development of the sampling frame, sample selection, questionnaire design and implementation, data analysis, and report writing.

Head Start Family and Child Experiences Survey (FACES) -- Project Team Member: Dr. Lopez's duties included planning and conducting statistical analyses, survey construction and validation, training field staff in child and parent assessments and classroom observations, conducting on-site quality assurance visits, and writing research reports. Dr. Lopez contributed questions to the re-designed teacher questionnaire, and a new measure of classroom curriculum fidelity. Dr. Lopez analyzed the degree to which children's classroom attendance influenced the cognitive and social functioning of Head Start children in the FACES 2000 cohort. Dr. Lopez co-authored a chapter in the FACES 5th Progress Report focusing on the relationship between curriculum choice, literacy activities, and child outcomes.

Head Start Program Information Report (PIR) -- Project Team Member: Dr. Lopez's duties included planning and conducting descriptive analyses on data from the Head Start's Program Information Report and writing research reports. Dr. Lopez was a member of the team conducting descriptive and qualitative analyses of Head Start Program Executive Staff's compensation packages. This project involved collecting and analyzing detailed fringe and benefit package information from each of the Head Start programs for the past three fiscal years.

Head Start Performance Measures Center (PMC) -- Project Team Member: Dr. Lopez planned, designed, and conducted analyses on data from Head Start's Quality Research Consortium and wrote research reports. Dr. Lopez conducted power analyses for each of the eight research consortium sites and presented his findings at the most recent Quality Research Consortium Meeting. Dr. Lopez conducted descriptive analyses for, and co-authored the NRS Technical Report.

Bard College

1997 - 2003

Dr. Lopez served as Program Evaluator on two research grants. The first project was funded by the New York State Department of Education and involved assessing the design, structure, implementation, and cost-effectiveness of a new arts-based curriculum in local elementary schools. Dr. Lopez also served as Chair of the Psychology Program, and directed Bard College's Human Subjects Review Board.

Riverton Management Consulting Group, Inc.

1995 - 2003

Dr. Lopez's responsibilities in designing the *Organizational Flexibility Profile* (OFP) included survey construction, sample design, validation analyses, and writing publications, and presenting research reports to the company and at regional and national conferences.

Selected Publications and Reports

Coauthored. (2003). Children's action-control behaviors (coping): A longitudinal validation of the behavioral inventory of strategic control. *Anxiety, Stress and Coping*.

Lopez, D. F. (2002, June). *The good, the bad, and the Web: How technology has changed what I do (and how I do it)*. Paper presented at the annual meeting of the Association of Small Computer Users in Education (ASCUE), Myrtle Beach, S.C.

Lopez, D. F. (2002, June). *An ecological systems approach to self-regulated learning*. Paper presented in the symposium Ecological Approaches to Classroom Learning: Why Context Matters (D.F. Lopez, Chair) at the Annual Conference of the American Psychological Society, New Orleans, LA.

Coauthored. (2001). A comparative-longitudinal study of action-control beliefs and school performance: On the role of context. *International Journal of Behavioural Development*, 25, 237-245.

Lopez, D. F. (2001, June). *Social psychology and education: How basic research can (and should) inform public policy*. Poster presented at the annual meeting of the American Psychological Society, Toronto, Ont., Canada.

Lopez, D. F. (2000). Social cognitive influences on self-regulated learning: The impact of action-control beliefs and academic goals on achievement-related outcomes [T. Garcia (Ed.), Special Issue: Self-Regulation: Maintaining the Motivation to Learn]. *Learning and Individual Differences*, 11, 301-319.

Coauthored. (2000, April). *Why art education? Academic implications of teaching art in school*. Paper presented in the symposium Self-Concept Research and Intervention (D. M. McInerney, Chair) at the annual meeting of the American Educational Research Association, New Orleans, LA.

Lopez, D. F. (2000, April). *Toward a multiaxial model of self-regulated learning: The role of gender and ethnicity*. Paper presented in the symposium The Role of Gender and Ethnicity in Self-Regulated Learning (P. R. Pintrich, Chair) at the annual meeting of the American Educational Research Association, New Orleans, LA.

Lopez, D. F. (1999, April). *Action-control beliefs and academic goals: Unique and shared influences on achievement*. Paper presented in the symposium Individual Differences in the Use of Management Strategies and Motivation to Achieve Academic Goals (H. Bembenuddy & S. Karabenick, Co-Chairs) at the annual meeting of the American Educational Research Association, Montreal, Canada.

Lopez, D. F. (1998, May). *Enhancing perceived control as a means to enhancing minority achievement*. Poster presented at the annual meeting of the American Psychological Society, Washington, DC.

Coauthored. (1998, May). *How do action-control beliefs and academic goals influence motivation and performance*. Poster presented at the annual meeting of the American Psychological Society, Washington, DC.

Coauthored. (1998). Self-regulation and school performance: Is there an optimal level of action-control? *Journal of Experimental Child Psychology*, 70, 54-74.

Coauthored. (1997). Regularities in the development of children's causality beliefs about school performance in six sociocultural contexts. *Developmental Psychology*, 33, 165-175.

Coauthored. (1996). Children's action-control beliefs and emotional adjustment in the social domain. *Developmental Psychology*, 32, 299-312.

Coauthored. (1994). *A Manual on the Theoretical Development and Empirical Validation of The Behavioral Inventory of Strategic Coping (BISC)*. (Action Control and Child Development Project Technical Report No. 3). Berlin, Germany: Max Planck Institute.

3.2.11 Dr. Ted Hasselbring, Ph.D.

Dr. Ted Hasselbring, Ph.D.

Principal Investigator

Qualifications Summary

Dr. Ted Hasselbring is the William T. Bryan Professor of Special Education Technology at the University of Kentucky. Dr. Hasselbring has a long history in special education technology dating back to the early 1980s. Prior to accepting the position at the University of Kentucky in 2000, Dr. Hasselbring spent seventeen years at Vanderbilt University where he was co-director of the Learning Technology Center (LTC) and Professor of Special Education. As co-director of the LTC, Dr. Hasselbring directed a number of grants that focused on the use of technology for enhancing learning in at-risk and special-needs students. As a result of this work, Dr. Hasselbring and his colleagues have published six commercially available software programs specifically designed for learners who struggled to learn to read and compute.

Dr. Hasselbring has been a pioneer in the development of computer and video-based applications for children who are at-risk of school failure and for students with disabilities. Since 1970 he has been awarded numerous grants and has conducted extensive research and developed a variety of technology-based programs for enhancing learning. Dr. Hasselbring's research and development has focused on the empirical identification of effective software design principles and their transfer from experimental applications to practical use in the classroom.

Dr. Hasselbring brings a wealth of experience to this project. He has been the principal investigator or co-principal investigator of 40 competitive, funded grants dealing with a wide array of

technology-related projects from the U. S. Department of Education, the National Science Foundation, and a number of private foundations. Total funding of these projects is in excess of 25 million dollars.

Role

Dr. Hasselbring will serve as Principal Investigator on the Enabling Students to Achieve Math Proficiency Through a Technology-Based Approach project proposed as part of the rigorous research and development program.

Education

Ed.D., Special Education, Indiana University-Bloomington
M.A.T, Biology, Indiana University-Bloomington
B.S., Secondary Education - Biology, Indiana University-Bloomington

Relevant Experience

University of Kentucky

2000 - Present

Since joining the faculty as the William T. Bryan Professor of Special Education Technology at the University of Kentucky in January of 2000, Dr. Hasselbring has served as the Principal Investigator and Executive Director of the National Assistive Technology Research Institute (NATRI). The work at NATRI has focused on the examination of assistive technology (AT) and AT services as they relate to the education of all students with disabilities. His current focus on technology-based mathematical support for learning is especially relevant to the NATRI mission since so many students with mild disabilities demonstrate difficulty in mathematics.

Vanderbilt University

1982- 2000

Dr. Hasselbring spent seventeen years at Vanderbilt University where he was co-director of the Learning Technology Center (LTC) and Professor of Special Education. As co-director of the LTC, Dr. Hasselbring directed a number of grants that focused on the use of technology for enhancing learning in at-risk and special-needs students. His work in mathematical fluency and mathematical problem solving began at Vanderbilt in the mid 80s, with grants from the Department of Education and the National Science Foundation. His interest in these areas continues today and is reflected in the current proposed research.

North Carolina State University

1977-1982

Dr. Hasselbring began his work in special education technology at NCSU. He received his first grant allowing him to begin developing software for students with disabilities as an assistant professor. This early work provided a foundation for technology based learning that continues today and is relevant to the current work being proposed.

Selected Publications

Hasselbring, T.S. & Bausch, M.E. (in press). Assistive Technology for Students with Learning Disabilities: Two Solutions to the Same Problem. *Educational Leadership*.

Hasselbring, T.S. A possible future of special education technology. (2001). *Journal of Special Education Technology*. 16(4), 19-26.

Christle, C.A., Hess, J.M., & Hasselbring, T.S. (2001). Technology research in practice: Taking a virtual trip to the mall to learn math. *Special Education Technology Practice*, 3(2), 23-31.

Bottge, B. A., & Hasselbring, T.S., (1999). Teaching Mathematics to Adolescents with Disabilities in a Multimedia Environment. *Intervention in School, & Clinic*.35(2), 113-116.

Goldman, S. R., Hasselbring, T. S., and the Cognition and Technology Group at Vanderbilt. (1997). Achieving meaningful mathematics literacy for students with learning disabilities. *Journal of Learning Disabilities*, 30(2), 198-208.

Hasselbring, T.S. & Moore, P.R. (1996). Developing mathematical literacy through the use of contextualized learning environments. *Journal of Computing in Childhood Education*, 7(3/4), 199-222.

Hasselbring, T.S. with Zech, L., Vye, N. J., Bransford, J. D., Swink, J., Mayfield-Stewart, Goldman, S. R., & the Cognition and Technology Group at Vanderbilt. (1994). Bringing geometry into the classroom with videodisc technology. *Mathematics Teaching in the Middle School*, 1(3), 228-233.

Bottge, B. A., & Hasselbring, T.S. (1993). Taking word problems off the page. *Educational Leadership*, 50(7), 36-38.

Bottge, B. A., & Hasselbring, T.S. (1993). A comparison of two approaches for teaching complex, authentic mathematics problems to adolescents with learning difficulties. *Exceptional Children*, 59(6), 556-566.

Hasselbring, T.S. with the Cognition and Technology Group at Vanderbilt. (1993). The Jasper experiment: Using video to furnish real-world problem-solving contexts. *Arithmetic Teacher*, 4, 474-478.

3.2.12 Janet Mannheimer Zydney, Ph.D.

Janet Mannheimer Zydney, Ph.D.

Co-Principal Investigator

Qualifications Summary

Dr. Janet Zydney is a Post-Doctoral Fellow at the University of Kentucky in Special Education Technology. She received her doctorate in educational communication and technology from New

York University. Her research expertise is in evaluating how computer-based scaffolding and instructional supports can be used to assist students in scientific and mathematical problem solving. Her strong technical skills as well as her deep knowledge of math and science come from her undergraduate background in engineering. She has channeled these skills to her research investigating math and science applications for K-12 settings. As part of her research, she conceptualized a new instructional model that expands upon a learning theory for advanced knowledge acquisition, adapting it to be developmentally appropriate for young learners. The goal of this model is to provide a conceptual framework for the creation of learning environments designed to improve students' understanding of complex problems as well as to reduce their misconceptions. To test the efficacy of this model, she developed a computer-based learning environment based on this model and evaluated its use with middle school and high school students. She compared the base learning environment (without the experimental scaffolds) to different scaffolded learning environments. Using sophisticated parametric and nonparametric statistical analyses, she found that the scaffold which provided an organizing template significantly improved students' problem understanding and questioning skills. The results were confirmed by two studies which were conducted at different schools in different grades with different teachers. All of her research has been carried out in the public school system with diverse groups of teachers and students, including those with special needs. Her manuscript "Eighth-grade students defining complex problems: The effectiveness of scaffolding in a multimedia program" was recently published in the *Journal of Educational Multimedia and Hypermedia*. This past spring, she presented her research at the annual meeting of the American Educational Research Association.

Role

Dr. Zydney will be a Co-Principal Investigator on the Enabling Students to Achieve Math Proficiency Through a Technology-Based Approach project proposed as part of the rigorous research and development program.

Education

New York University, Ph.D. Educational Communication and Technology
New York University, M.A. Educational Communication and Technology
Washington University, B.S. Chemical Engineering

Relevant Experience

University of Kentucky

2004 - Present

Post-Doctoral Fellow, Department of Special Education and Rehabilitation Counseling. Dr. Zydney conducted a software evaluation study of the *Mad Math Adventures* software that used focus groups to determine the design elements that are most appealing to students and the features that are most helpful for teachers in facilitating the use of the software in the classroom. She developed a prototype of the *Mad Math Adventures* software. She designed a research study to assess the use of video-based problems within a computer program on students' mathematical achieve-

ment. Dr. Zydney pursued grant funding to support the research and development of this project. She wrote several manuscripts for publication and presented papers at conferences.

New York University

2000- 2004

Adjunct Professor, Department of Educational Communication and Technology. Dr. Zydney redesigned and taught a graduate course, which provided educators with lesson plans and activities for integrating technology into the classroom, strategies for overcoming obstacles to integration, and methods of assessing technology projects. She facilitated small group discussions and activities related to readings and engaged students in experiential, hands-on lessons that demonstrated a variety of approaches for technology integration. Dr. Zydney moderated online discussions about thought-provoking media.

Research Assistant, Professional Development Laboratory. Dr. Zydney conducted focus groups and interviews to evaluate the effectiveness of the Schools Around the World project, an online professional development course for math and science teachers about assessment and standards. She taught technology seminars for educators. Dr. Zydney collaboratively wrote grant proposals and reports for funders and the advisory council. She maintained the web site and conducted usability tests of the new design.

Johns Hopkins University

2003-2004

Online Course Developer, Center for Technology in Education. Dr. Zydney developed an online course for science teachers about using new media and technology to promote critical thinking and how to use electronic portfolios as a means for assessment. The course included a variety of online communication methods, community building activities to foster a collaborative learning environment, meaningful assignments to provide teachers with real applications of the concepts covered, and strategies for accommodating diverse learners.

Media Workshop, a project of the Bertelsmann Foundation

2000-2004

Technology and Media Consultant for Public Schools. Dr. Zydney provided technology staff development to schools. She co-taught with teachers in their classrooms in order to model ways to integrate media and technology into the curriculum. Dr. Zydney taught middle school and high school students how to develop multimedia projects during after-school workshops and summer institutes. She designed and taught a summer institute for educators about the key issues affecting the successful integration of technology into the public schools. She participated on a collaborative grant writing team. Dr. Zydney co-led the redesign of the web site and managed a team to develop a searchable online database of technology-integration projects.

Selected Publications

Zydney, J. M. (in press). Role-playing the web. *Leading & Learning with Technology*.

Zydney, J. M. (2005). Eighth-grade students defining complex problems: The effectiveness of scaffolding in a multimedia program. *Journal of Educational Multimedia and Hypermedia*, 14(1), 61-90.

Zydney, J. M. (2005, May). *Using technology to develop conceptual understanding*. Keynote presentation at the symposium for the Commonwealth Consortium for Teacher Education Model Programs, Lexington, KY.

Zydney, J. M. (2005, April). *Deepening our understanding through multiple perspectives: The effectiveness of scaffolding in a learning environment*. Paper presented at the annual meeting of the American Educational Research Association, Montreal, Canada.

Zydney, J. M. (2005). *Computer-based scaffolds for supporting students with problem finding*. Manuscript submitted for publication.

Roberts, M. & Zydney, J. M. (2004). Students as environmental consultants: Simulating life science problems. *Learning & Leading with Technology*, 32(1), 22-25.

Zydney, J. M. & Holovach, R. (2004). What happens when teachers collaboratively look at student work? *Science Scope*, 27(5), 20-22.

Zydney, J. M. (2004, Nov.). *Using technology to promote critical thinking: Analyzing problems from multiple perspectives*. Presentation at the regional conference of the National Science Teachers Association, Indianapolis, IN.

Zydney, J. M. (2004). The effect of different types of scaffolding in a multimedia program on students' problem finding. Doctoral dissertation, New York University, New York. (UMI No. 3124970).

Zydney, J. M. (2004, February). *Students defining complex problems through questioning: The effectiveness of scaffolding in a multimedia program*. Paper presented at the annual meeting of the Eastern Educational Research Association, Clearwater, FL.

Zydney, J. M. (2003, February). *The effect of different types of scaffolding on students' ability to define complex problems: A pilot study*. Paper presented at the annual meeting of the Eastern Educational Research Association, Hilton Head, SC.

3.2.13 Carolyn Temple Adger, Ph.D.

Carolyn Temple Adger

Principal Investigator

Qualifications Summary

Dr. Carolyn Temple Adger directs the Language in Society Division at the Center for Applied Linguistics. Trained as a sociolinguist, she devotes her attention to conducting applied research on language learning, language development, and language use in educational settings and

applying research findings to educational and social problems. At CAL, Dr. Adger has been responsible for conducting research and development projects, and dissemination. She has carried out a number of qualitative research studies involving extensive data collection and comprehensive, theory-embedded analysis. For example, she conducted research on standards implementation in culturally diverse middle schools and developed related products for professional development which are distributed by the Northeast and Islands Regional Educational Laboratory at Brown University (LAB). In line with CAL's focus on dissemination of language-related information, she produced a policy paper on dialects for publication by the international organization, Teaching English to Speakers of Other Languages, and wrote digests and briefs on educating English language learners for the former ERIC Clearinghouse on Languages and Linguistics, housed at CAL. She also edited two ERIC books, including *What Teachers Need to Know About Language* (with Catherine Snow and Donna Christian), which is contributing to the reform of teacher education. She produced a related video and viewers guide for use in professional development, and a Web site, all titled *Why Reading Is Hard*. These products use linguistic research and reading research to explicate the challenge that non-native English speakers face in learning to read English. Another of her books, *Dialects in Schools and Communities* (with Walt Wolfram and Donna Christian), applies linguistic research on language variation to problems of educating children who speak a range of dialects.

Role

Dr. Adger will serve as Principal Investigator on the Fast Response Applied Research and Development Project on Implications of the Growing English Language Learners (ELL) Population in Appalachian Schools.

Education

Ph.D. Georgetown University
M.S. Georgetown University
M.S. University of Maryland
B.A. Ball State University

Relevant Experience

Center for Applied Linguistics

1994 - Present

Dr. Adger has led activities for CAL's partnership in the LAB for the past ten years. At a time when schools were asking for insights on implementing standards in culturally diverse schools, she conducted the LAB's multi-year qualitative study of standards implementation in urban schools and related product development. Currently, she is developing an on-line toolkit for the LAB on dual language instruction based on program and language-learning research, in response to requests from districts in the region with new dual language programs. For the National Center for Research on Education, Diversity and Excellence, Dr. Adger conducted a survey of partnerships between schools and community-based organizations that promote academic achievement of at-risk language minority students. She has also led projects that applied research in linguistics to assessment. In one of them, she developed a scheme for text analysis of items on

the National Assessment of Adult Literacy. She also prepared a structural description of African American English for training speech/language pathologists.

**University of Maryland
Institute for the Study of Exceptional Children and Youth**

1985-1988, 1990-1993

For the Office of Special Education Programs, USED, Dr. Adger conducted an intensive qualitative study of African American Vernacular English in special education contexts and speech/language services aimed at understanding the role of dialect in the over-representation of African Americans in special education placement. This study has been reported in several book chapters and conference proceedings. This project also produced guidelines for equitable interpretation of standardized language assessments at the request of Baltimore City Public Schools, which have since been published by the American Speech-Language-Hearing Association. In another project, Dr. Adger conducted a qualitative study to inform development of an expert system to support special education referral in culturally diverse schools.

Prince George's County (MD) Public Schools

1989-1990

In cooperation with the Institute for the Study of Exceptional Children and Youth at the University of Maryland, the Prince George's County Public School District conducted a survey of graduates and drop-outs of their special education programs so that the field could better understand their transition to work and post-secondary education. Dr. Adger led this work.

**Oil Companies School, Tripoli, Libya
Syosset High School, Syosset, New York**

1965-1971

1961-1964

Dr. Adger began her career as a teacher of secondary English language arts and remains active in this professional community.

Selected Publications

Applied dialectology. (In Press). In Ammon, U., Dittmar, N., Mattheier, K., & Trudgill, P. (Eds/) *An international handbook of the science of language and society*. Berlin: Walter De Gruyter. (With D. Christian.)

Language varieties in the school curriculum: Where do they belong and how will they get there? (2005). In: Ramirez, J. D., Wiley, T. G., De Klerk, G. Lee, E., & Wright, W. E. (Eds.) *Ebonics: The Urban Education Debate*. 2nd ed. Clevedon, England: Multilingual Matters.

Locating learning in in-service education for preschool teachers. (2004). *American Educational Research Journal*, 41:4, 867-900. (with S. Hoyle and D. Dickinson)

African American English: Structure and clinical implications. (2003). CD and Users Guide. Rockville, MD: American Speech-Language-Hearing Association. (with N. Schilling-Estes)

- Standards-based teaching in culturally diverse schools.* (2002). Video and viewers guide. Providence, RI: Brown University. (with N. Clair)
- What teachers need to know about language.* (2002). Washington, DC, & McHenry, IL: Center for Applied Linguistics and Delta Systems. (Co-edited with C. E. Snow & D. Christian)
- Discourse in educational settings. (2001). In D. Tannen, D. Schiffrin, & H. Hamilton (Eds.), *Handbook of discourse analysis*, pp. 503-517. Malden, MA: Blackwell.
- School--community-based organization partnerships for language minority students' school success. (2001). *Journal of Education for Students Placed at Risk*, 6:1&2, pp. 7-26.
- Why reading is hard.* (2001). Video. Washington, DC, and McHenry, IL: Center for Applied Linguistics and Delta Systems.
- Demythologizing the home/school dichotomy: Sociolinguistic reality and instructional practice. (2000). In P. Griffin, J. Peyton, W. Wolfram, & R.W. Fasold (Eds.), *Language in action: New studies of language in society*, pp. 391-407). Cresskill, NJ: Hampton. (With W.Wolfram)
- Sustainable strategies for professional development in education reform. (2000). In K. Johnson (Ed.), *Teacher Education. Case Studies in TESOL Practice Series*, pp. 29-50. Alexandria, VA: TESOL. (With N. Clair).
- Making the connection: Language and academic achievement among African American students.* (1999). Washington, DC, and McHenry, IL: Center for Applied Linguistics and Delta Systems Co. (Co-edited with D. Christian, & O. L. Taylor)
- Enhancing the education of immigrant students in secondary school: Structural challenges and directions. (1999). In C. Faltis & P. Wolfe (Eds.), *So Much to Say: Adolescents, Bilingualism, and ESL in the Secondary School*, pp. 205-224. New York: Teachers College Press. (With J. K. Peyton)
- Dialects in schools and communities.* (1999). Mahwah, NJ: Erlbaum. (With W. Wolfram, & D. Christian)
- Register shifting with dialect resources in instructional discourse. (1998). In Hoyle, S., & Adger, C. T., (Eds.), 151-169. *Kids talk: Strategic Language Use in Later Childhood.* New York: Oxford.
- Implementing standards with English language learners: Initial findings from four schools. (1998). Providence, RI: Northeast and Islands Regional Laboratory at Brown University. (With N. Clair, D. Short, & E. Millen)
- Kids talk: Strategic language use in later childhood.* (1998). New York: Oxford. (Co-edited with S. Hoyle)

- Promoting achievement: Special issue on immigrant students in secondary school. (1998). *TESOL Journal*, 7:5. (Co-edited with J. K. Peyton)
- Appropriate instruction for English language learners: Emphasis on oral interaction. (1998). In B. Williams, (Ed.), *Educating culturally and linguistically diverse students: Inquiry kit*. Alexandria, VA: ASCD. (With J. K. Peyton)
- Issues and implications of English dialects for teaching English as a second language*. 1997. Alexandria, VA: TESOL.
- Conversational patterns across gender, class, and ethnicity: Implications for classroom discourse. (1997). In B. Davies (Ed.) *Oral discourse and education*, (pp. 75-85), volume 3, D. Corson (Ed.) *Encyclopedia of language and education*. New York: Kluwer. (With D. Tannen, & S. Kendall)
- Engaging students: Thinking, talking, cooperating*. (1995). Thousand Oaks, CA: Corwin Press. (With M. Kalyanpur, D. Peterson, & T. Bridger)
- Ethical issues for applying linguistics. (1994). *Issues in Applied Linguistics*, 4:2, special issue. (Co-edited with J. Connor-Linton)
- No talking is no good: Student voices in academic discourse. (1993). *LD Forum*, 18, 2:26-28.
- Language differences: A new approach for special educators. (1993). *Teaching Exceptional Children*, 26 (1), 44-47. (With W. Wolfram & J. Detwyler)
- Confronting dialect minority issues in special education: Reactive and proactive perspectives. (1993). In *Proceedings of the third national research symposium on limited English proficient student issues*, 737-762. Washington, DC: USED, Office of Bilingual Education and Minority Language Affairs. (With W. Wolfram, J. Detwyler, & B. Harry)
- Computer-assisted planning for educational resources: An expert system application in a complex domain. (1992). In Liebowitz, J. (Ed.), *Operational Expert System Application in the U.S.* New York: Pergamon. (With J. A. Haynes, & S. B. Dreifuss, S. B.)

3.2.14 Neil Carey, Ph.D.

Neil Carey

Co-Principal Investigator

Qualifications Summary

Dr. Carey has been active in the field of testing and measurement of change in psychological processes for over 20 years. He has been a reviewer for several scholarly publications, and has long experience using multivariate techniques to determine the factor structure of tests, quality of data collection, the need for data imputation, reliability of measurement, and the predictive relationships among variables. He has published this work in *Educational and Psychological Meas-*

urement, Review of Educational Research, Phi Delta Kappan, and Journal of Personnel Evaluation in Education.

Dr. Carey is an experienced psychometrician and project director. He was the psychometric lead on CNAC's Doctor's Office Quality project for the Centers for Medicare and Medicaid Services. In this project he assisted in developing physician office level quality of care measure for chronic diseases. He used existing Medicare claims data to examine the validity and reliability of alternative quality measures that can be supported by administrative data. This project demonstrates his expertise in utilizing factor analyses, item analyses, and developing and validating quality measures. This project compared the utility of alternative data sources (claims and medical records) in supporting quality measurement.

In other recent projects, Dr. Carey developed system-wide performance metrics for a large healthcare delivery system. In this project, he used principal components, item scaling procedures, and regression analyses to develop composite measures of system performance. Earlier projects involved extensive work in test validation, data imputation, and measuring the appropriateness of different modes of data collection for particular purposes (e.g., hands-on performance tests vs. administrative records).

While at the RAND Corporation, Dr. Carey developed a set of achievement indicators for a project sponsored by the National Science Foundation, focusing on tests and items in the National Assessment of Educational Progress (NAEP). This work was published in several RAND reports and in an article in *Phi Delta Kappan*.

Role

Dr. Carey will serve as Co-Principal Investigator of the Fast Response Applied Research and Development Project Understanding the Magnitude of the Increased Student Achievement Required to Reach the NCLB Goal

Education

Ph.D. Educational Psychology, Stanford University, Palo Alto, CA

M.S. Statistics, Stanford University, Palo Alto, CA

B.A. Psychology, *with highest honors*, University of California, Santa Cruz, CA

Relevant Experience

CNA Corporation

1989 – Present

In the *Doctor's Office Quality* Project, Dr. Carey interviewed and collaborated with physicians to develop alternative definitions of diabetes care quality, using medical chart data and Medicare claims data. Dr. Carey's work involved frequent discussions with physicians concerning their skepticism about the validity of quality of care measures, and how physicians' work environ-

ments impact the usefulness of quality measures. He discussed whether physicians would accept quality measures, how much weight to place on a measure, and whether particular measures had implications for continuing education of physicians.

Dr. Carey planned the research, designed an interview guide, developed selection criteria, and conducted site visits to six hospitals. During these visits he interviewed physicians, nurses, and case managers about the impact of various demand management initiatives on the quality and efficiency of providing healthcare. Interviews determined whether physicians were aware of these initiatives, what they saw as the good and bad features of demand management, and whether they would recommend these initiatives to their patients.

Dr. Carey worked as the project director with a council of highly-ranked physicians, nurses, and allied medical professionals to determine statistical measures of the quality of care at hospitals. This project involved developing a research plan, creating alternative statistical definitions of the quality of care, presenting them to the council, and making changes in the composite metrics based on the council's judgments of the validity, breadth, and depth of particular measures of hospital quality.

Dr. Carey planned and led an extensive survey of medical providers and patients concerning quality of medical care. He also planned and led numerous focus groups of medical professionals and patients to discuss their concerns and recommendations for improving the quality of healthcare.

RAND

1985 – 1988

Dr. Carey developed a set of achievement indicators for a project sponsored by the National Science Foundation, focusing on tests and items in the National Assessment of Educational Progress (NAEP). This work was published in several RAND reports and in an article in *Phi Delta Kappan*.

Dr. Carey directed an effort funded by the Ford Foundation to survey teacher trainees and administrators at innovative programs for training mathematics and science teachers. This effort involved design, development, and fielding of a nationwide survey that included paper-and-pencil questionnaires, interview forms, and elite interviews. The results were published as two RAND reports and were presented to a conference of the American Association for the Advancement of Science (AAAS).

Dr. Carey participated in planning for the sampling, questionnaire design, and reporting of surveys of the nation's schools, funded by the Department of Education. He identified variables to be measured, gathered alternative item forms for measuring those variables, and then revised questionnaires on the basis of feedback from focus groups.

The Center for Policy Research in Education (CPRE) was a consortium of educational researchers that studied the enactment and implementation of state education reforms made in response to the Nation at Risk report. Dr. Carey interviewed and reported the observations of principals,

teachers, and parents in several districts across the country. Results were recounted in several RAND reports.

Selected Publications

Paul W. Mayberry and Neil B. Carey, The Effect of Aptitude and Experience on Mechanical Job Performance, Educational and Psychological Measurement, Vol. 57(1), February 1997.

Neil B. Carey, Computer predictors of mechanical job performance: Marine Corps Findings, Military Psychology, 6(1), 1-30, 1994.

Neil B. Carey, Does Choice of a Criterion Matter?, Military Psychology, 4(2), 103-117, 1992.

Neil B. Carey, Setting Standards and Diagnosing Training Needs with Surrogate Job Performance Measures, Military Psychology, 3(3), 135-150, 1991.

Shavelson, R.J., Carey, N.B., & Webb, N. (1990). Achievement indicators: Options for a Powerful Policy Instrument. *Phi Delta Kappan*, 71(9), 692-697.

Pecheone, R., & Carey, N.B. (1989). The validity of performance assessments for teacher licensure: Connecticut's Ongoing Research. *Journal of Personnel Evaluation in Education*, 3, 115-149.

Carey, N.B. (1989). Instruction. In Shavelson, R.J., L.M. McDonnell, & J. Oakes (Eds.), *Indicators for Monitoring Mathematics and Science Education*, pp. 123-146. Santa Monica, CA: The RAND Corporation. RAND/R-3742-NSF/RC.

Carey, N.B., & Shavelson, R.J. (1989). Outcomes, achievement, participation, and attitudes. In Shavelson, R.J., L.M. McDonnell, & J. Oakes (Eds.), *Indicators for Monitoring Mathematics and Science Education*, pp. 147-191. Santa Monica, CA: The RAND Corporation. RAND/R-3742-NSF/RC.

Oakes, J., & Carey, N.B. (1989). Curriculum. In Shavelson, R.J., L.M. McDonnell, & J. Oakes (Eds.), *Indicators for Monitoring Mathematics and Science Education*, pp. 96-122. Santa Monica, CA: The RAND Corporation. RAND/R-3742-NSF/RC.

Carey, N.B., Mittman, B.S., & Darling-Hammond, L. (1988). *Recruiting Mathematics and Science Teachers Through Nontraditional Programs: A Survey*. Santa Monica, CA: The RAND Corporation. RAND/N-2736-FF/CSTP.

Hudson, L., Kirby, S.N., Carey, N.B., Mittman, B.S., & Berry, B. (1988). *Recruiting Mathematics and Science Teachers Through Nontraditional Programs: Case Studies*. Santa Monica, CA: The RAND Corporation. RAND/N-2768-FF/CSTP.

Shavelson, R.J., McDonnell, L.M., Oakes, J., & Carey, N.B. (1987). *Indicator Systems for Monitoring Mathematics and Science Education*, Santa Monica, CA: The RAND Corporation. RAND/R-3570.

Shavelson, R.J., Oakes, J., & Carey, N.B. (1987). Developing a National Indicator System for Monitoring Mathematics and Science Education: A Thorny Curriculum Problem. In A. Champagne & L. Hornig (Eds.), *This year in school science, 1986: The Science Curriculum*. Washington, DC: American Association for the Advancement of Science.

Shavelson, R.J., Oakes, J., & Carey, N.B. (1987). A Conceptual Indicator Model of Changes in School Mathematics. In T.A. Romberg & D.M. Stewart (Eds.), *The Monitoring of School Mathematics: Background Papers*. Wisconsin Center for Education Research, University of Wisconsin-Madison.

Shulman, L., & Carey, N.B. (1984). Psychology and the Limitations of Individual Rationality: Implications for the Study of Reasoning and Civility, *Review of Educational Research*, 1984, 54(4), 501-524.

Professional Associations

Washington DC Statistical Association
National Council for Measurement in Education
American Psychological Association Division 19

3.2.15 Joanna Tyler Edwards, Ph. D.

Joanna Tyler Edwards, Ph. D.

Principal Investigator

Qualifications Summary

Dr. Edwards combines subject matter expertise in safe schools and student achievement with in-depth research experience in the Appalachian region. Directly relevant to her role on the current project, Dr. Edwards was Project Manager on an ED, Office of Elementary and Secondary Education, Safe and Drug-Free Schools Program, Model Alternatives Data Collection project. This was a 3-year national study designed to provide educators and members of community-based organizations with resources to develop, implement, or expand programs that prevent youth violence in school settings.

Currently she is Project Manager on a three-year evaluation study of School Improvement in Petersburg funded by the Appalachian Educational Laboratory to examine the extent to which the Virginia Governor's Partnership for Achieving Successful Schools intervention to improve student achievement was implemented with fidelity as measured by the Virginia State Standards of Learning test in the Petersburg, VA School Division. The study used a mixed-methods qualitative and quantitative evaluation approach which included interviews with school and division leaders and school improvement specialists, analyses of school climate and school capacity to improve survey data and school improvement plan data, and a least squares analysis of SOL stu-

dent pass rates for Petersburg and Richmond comparison schools during the four years prior to the study and the three years of the study.

Dr. Edwards is project manager and evaluator on three Teaching American History grants in the Appalachian region designed to improve student achievement in history. All three evaluation studies measure program implementation fidelity and outcomes for teacher effectiveness for improving history knowledge and using primary source materials as part of delivering history curriculum as measured by the baseline and end-of-year Teacher Survey designed by the project. In Newport News student achievement outcomes are being measured using the Virginia Standards of Learning test scores.

Dr. Edwards served as program trainer on the Study of Student Achievement as It Relates to Implementation of Effective Questioning Strategies by Teachers engaged in the QUILT (Questioning and Understanding to Improve Learning and Thinking) Professional Development Program funded by Appalachian Educational Laboratory. She assisted in designing a workshop format for training teachers to teach critical thinking skills to students by framing questions using the QUILT system. Recently, Dr. Edwards served as Project Director on a fast response study for the U.S. Department of Health and Human Services where she managed all aspects of this project, including the conduct of interviews with senior agency officials, generation of research problem solutions, and preparation of a bi-weekly progress reports and briefings.

Role

Dr. Edwards will serve as Principal Investigator on the Fast Response Applied Research and Development Project School Safety and Security Impacts on Student Achievement

Education

University of Maryland, Ph.D., Human Development Psychology

Loyola College, Sellinger School of Business and Management, M.B.A.

San Jose State University, M.A., Experimental Psychology

San Jose State University, B.A. Psychology (major) and American History (minor), cum laude

Relevant Experience

The CNA Corporation

2002 - Present

Dr. Edwards is serving as Project Manager on a three-year evaluation study of the School Improvement in Petersburg project funded by Appalachian Educational Laboratory to examine the extent to which the Virginia Governor's Partnership for Achieving Successful Schools (*PA+SS*) Model IV intervention to improve student achievement as measured by the Virginia State Standards of Learning test in the Petersburg School Division was implemented with fidelity. The study uses a mixed-methods qualitative and quantitative evaluation approach.

Dr. Edwards is a Project Manager on three Teaching American History grants. The first two are awarded to George Mason University with its partners the Alexandria City Public Schools and

Fauquier County Public Schools. The third is awarded to the Newport News Public Schools. All three evaluation studies measure program implementation fidelity and outcomes for teacher effectiveness for improving their history knowledge and using primary source materials as part of delivering history curriculum as measured by the baseline and end-of-year Teacher Survey designed by the project. In Newport News student achievement outcomes are being measured using the Virginia Standards of Learning test scores.

Dr. Edwards is Program Trainer on the Study of Student Achievement as It Relates to Implementation of Effective Questioning Strategies by Teachers engaged in the QUILT (Questioning and Understanding to Improve Learning and Thinking) Professional Development Program funded by Appalachian Educational Laboratory.

Dr. Edwards was a Project Manager on the U.S. Department of Education, Office of Elementary and Secondary Education, Safe and Drug-Free Schools Program, Model Alternatives Data Collection project. This was a 3-year national study designed to provide educators and members of community-based organizations with resources to develop, implement, or expand programs that prevent youth violence in school settings. The three topics studied were: (1) Engaging Out-of-School Youth and Returning Them to the Classroom, (2) Promising Approaches to Improving School Climate and Discipline, and (3) Alternative Education Programs for Expelled Students.

Dr. Edwards was a Project Director on a project for the DHHS Assistant Secretary for Public Health and Emergency Preparedness (OASPHEP). She managed all aspects of this fast response task including the conduct of interviews with senior agency officials, research of problem solutions, preparation of a bi-weekly progress reports, and delivery of OASPHEP briefings.

Dr. Edwards was Task Leader on a Department of Homeland Security Performance Metrics project responsible for developing a series of reports on the 2003 State Homeland Security Assessment process.

Northrop Grumman (formerly ROW Sciences)

1998-2002

Dr. Edwards was Project Director on the Center for Mental Health Services funded contract for the Production of the first ever *Mental Health: A Report of the Surgeon General* released in December 1999, and managed the production of its supplement titled *Surgeon General's Report on Mental Health Disparities Among Minority Populations*, Nov, 2000.

Dr. Edwards was Project Director on the Center for Substance Abuse Treatment (CSAT) funded national feasibility evaluation and technical assistance contract to improve delivery of services by the Family Drug Treatment Courts.

Private Psychological Practice
Sole Proprietor

1980-Present

Professional Affiliations

Practitioner in attendance at the Invitational Meeting of the Coordinating Council on Juvenile Justice and Delinquency Prevention, The White House Conference Center, February 3, 1998.

Member of Task Force on Employment and Training for High-Risk Youth and Juvenile Offenders sponsored by the U.S. Office of Juvenile Justice and Delinquency Prevention and the U.S. Department of Labor

American Evaluation Association
American Psychological Association

Honors

Phi Kappa Phi (Academic Honor Society)
Psi Chi (Honor Society in Psychology)

Publications and Presentations

(Joanna T. Edwards formerly Joanna Tyler)

Coauthored. School Improvement in Petersburg: A Study of the Partnership for Achieving Successful Schools, Model IV Intervention—Final Evaluation Report. CNAC/IPR Report 11553, September 2005

Coauthored. Creating a More Perfect Community: Improving the Teaching of Traditional American History in Alexandria, Virginia—Year Two Evaluation Report. CNAC/IPR Report 11573 September 2005

Coauthored. Peopling the American Past: Focusing on Key Individuals, Events, and Documents in U.S. History—Year One Evaluation. CNAC/IPR Report 11574, September 2005

Coauthored. Creating a More Perfect Community: Improving the Teaching of Traditional American History in Alexandria, Virginia—Year One Evaluation Report. CNAC/IPR Report 11189, October 2004.

Coauthored. Peopling the American Past: Focusing on Key Individuals, Events, and Documents in U.S. History—Year One Evaluation. CNAC/IPR Report 11190, September 2004

Coauthored. Foundations of Freedom II—Year One Evaluation CNAC/IPR Report 11499 June 2005

Coauthored. December 2004. School Improvement in Petersburg: A Study of the Partnership for Achieving Successful Schools, Model IV Intervention—Years One and Two Evaluation Report. CNAC/IPR Report 11200, November, 2004.

Coauthored. November 1999. Promising Approaches to Improving School Climate and Discipline: Dealing with Disruptive Students in the Regular Classroom. Paper presented at American Evaluation Association annual meeting, Orlando, Florida.

Coauthored. November 1998. Evaluation of How Educators Are Engaging Out-of-School Youth in Attaining a High School Diploma/Equivalency. Paper presented at American Evaluation Association annual meeting, Chicago, Illinois.

Tyler, J. November 1997. Evaluation of Nine Principal Components for Designing Promising Alternative Education Programs for Expelled Youth. Paper presented at American Evaluation Association annual meeting, San Diego, California.

Coauthored. June 1997. Promising Alternative Education Programs: Best Practices. Panel presentation at Creating Safe and Drug-Free Schools: Turning Research into Action Conference, Arlington, Virginia.

Coauthored. 1997. Risk, Protective, and AOD Knowledge, Attitude, and AOD Behavior Factors Associated with Characteristics of High Risk Youth. *Evaluation and Program Planning: An International Journal*, Vol. 20, No. 1, pp. 27-45.

3.2.16 Daniel D. Burke, Ph.D.

Daniel D. Burke, Ph.D.

Principal Investigator

Qualifications Summary

Dr. Burke serves as CNAC's Deputy Director for Education and has over 30 years of experience in the field of education with extensive experience in universities, government, and non-profit institutions. Dr. Burke brought his expertise as a research scientist in molecular biology to the creation, testing, and implementation of a number of curriculum innovations in mathematics and science education, especially in curriculum and teaching laboratories that incorporate mathematical, writing, and critical thinking skills in the learning experience, particularly for under-prepared students. Dr. Burke has held a variety of leadership positions at several postsecondary institutions including serving as Chairman of the Department of Biology at two institutions, Mercer and Seton Hall Universities. He is knowledgeable in inquiry-based instruction, collaborative group, constructivist approaches to learning and curriculum, computer simulation of educational programs and systems, and the evaluation and measurement of the success of educational innovations.

As research director of the ATEC project, Dr. Burke played a leading role in more than a dozen workshops that were held throughout the region to help state and local educators to effectively measure the impact of technology on the performance of schools and on student achievement. He worked with the Tennessee Department of Education in developing a successful proposal for measuring the effectiveness of *school-based technology coaches* and in using instructional materials that foster increased student achievement. The project is comparing the effectiveness of approaches in 37

intervention and 37 matched schools with the intention to develop a replicable, validated evaluation protocol for use in all Tennessee schools, and disseminate the results and instruments, nationally.

Dr. Burke headed the Regional Advisory Committee facilitation team that supported the Advisory Committee for the Appalachian Region. In this role, he served as the principal technical advisor to the committee chair, facilitated routine online and face-to-face discussions, and assumed responsibility to editing and completing the final report to the Secretary of Education in March 2005.

Dr. Burke served at the National Science Foundation as a program officer in the Urban Systemic Initiatives Program and then as Senior Staff Associate for Systemic Reform, Directorate for Education and Human Resources. As Senior Staff Associate, Dr. Burke had responsibility for the oversight and management of the NSF Systemic Initiative Programs (State Systemic Initiatives, Urban Systemic Initiatives, and Rural Systemic Initiatives). In this position he played a key role in evaluating the effectiveness of the Systemic Initiative Programs.

Role

Dr. Burke will serve as Principal Investigator on the Fast Response Applied Research and Development Project on Understanding the Magnitude of the Increased Student Achievement Required to Reach the NCLB Goal.

Education

Ph.D. Microbiology, Purdue University, West Lafayette, IN
B.A. Biology, Earlham College, Richmond, IN

Relevant Experience

The CNA Corporation

2001 - Present

Deputy Director for Education. Dr. Burke served as Co-Principal Investigator on several National Science Foundation grants to evaluate the theory of systemic reform in education and to identify the critical factors in recruiting and retaining high quality teachers. In each of these studies, he led the effort to collect and analyze student, school, and school district data including student achievement measures, student and teacher demographics, and data concerning school and district performance. Dr. Burke served as the PI for Research of the Appalachian Technology in Education Consortium and as research staff for many other education projects.

National Science Foundation

1993-2001

Senior Staff Associate for Systemic Reform Programs. Dr. Burke reviewed Systemic Initiative proposals and prepared reports for the National Science Board on funding systemic reform awards. He reviewed budgets and oversaw implementation and assessment of the Systemic Initiative awards.

3.2.17 Corbin Fauntleroy, Ph.D.

Corbin Fauntleroy, Ph.D.

Dissemination Leader

Qualifications Summary

Dr. Fauntleroy specializes in the design and use of information technology to help organizations accomplish their goals and missions. She has extensive experience working with federal, state, and local government agencies. Her skills are crucial for the successful dissemination of information from ELAR, and she will oversee the implementation and integration of a number of advanced information technologies.

Of particular relevance to her role on ELAR, Dr. Fauntleroy was the Technology Coordinator for the Regional Advisory Committees (RACs) for educational needs and technology assistance. For this project, she designed, developed, and implemented a technology infrastructure that allowed the RACs to work in a collaborative online environment and minimize the amount of required travel. The infrastructure included a web site for public input and information dissemination, a webcast of the initial orientation meeting, and online conferencing. Dr. Fauntleroy coordinated with the individual RAC support teams to ensure that documentation was completed in a timely manner and posted to the website.

Dr. Fauntleroy is currently the Director of Information Dissemination for CNAC's Appalachian Technology in Education Consortia (ATEC). She promotes awareness of the ATEC within the four state ATEC region, and she identifies ways to extend technical assistance and ATEC products across the region. As Director of Information Dissemination, Dr. Fauntleroy developed the dissemination plan for the ATEC to reach educators at all levels across the region. She was responsible for developing material on ATEC and its partners to promote awareness of its mission and activities, and she planned and developed sessions at regional conferences and supported training workshops held periodically across the regions. Dr. Fauntleroy reviewed all materials published by the ATEC. She directed the development of the ATEC website (www.the-atec.org) and provides on-going management and oversight of its content.

Dr. Fauntleroy has extensive experience developing and producing technical assistance materials to support information dissemination requirements, managing numerous information dissemination activities (including website design, on-going website maintenance, and publication production), and coordinating conference participation.

Role

Dr. Fauntleroy will manage dissemination of information from the study program. She will ensure that relevant information is communicated to the Lab network. Additionally, Dr. Fauntleroy will ensure that information is translated into a form that is most accessible to practitioners. She will be responsible for developing systems to facilitate dissemination and for creating informational and marketing material to ensure that state and local officials, practitioners, and stakeholders are aware of the Lab and its capabilities.

Education

George Mason University, Ph.D. Computation Science/Computation Statistics
Syracuse University, M.S. Computer Science
Radford University, B.S. Theater

Relevant Experience

The CNA Corporation

1985 - Present

Appalachian Technology in Education Consortia (ATEC)

As Director for Information Dissemination (ID), Dr Fauntleroy focuses on promoting awareness of the ATEC within the Appalachian region and identifying ways to extend the reach of ATEC products and services across the region. Her responsibilities include developing and producing ATEC material to support information dissemination requirements, managing information dissemination activities (i.e., website and publication production), and coordinating conference participation by the ATEC partners. In addition, she works closely with the project director to prepare status reports required by the Department of Education and with the external evaluation team to coordinate data collection for evaluation of ATEC products and services for submittal to the U.S. Department of Education.

Logistical and Administrative Support to the Regional Advisory Committees (RACs)

As Technology Coordinator, Dr Fauntleroy was responsible for developing and implementing the technology plan for supporting the 10 RACs as they worked to complete their assessment of educational needs and technical assistance within their regions. This plan included a web site for information dissemination, collection of public input, and collaborative work with the RAC; online conferencing capabilities for facilitating public meetings, and a webcast of the initial orientation meeting. Her responsibilities include oversight of the web site development team and content manager for the website, coordination of the online public meetings including support and training, and coordination of the webcast provider. In addition, she worked closely with the project director to prepare status reports required by the Department of Education, managed the individual RAC support teams to ensure that documentation was completed in a timely manner and posted to the website, and provided technical support to the project's meeting planner.

Information Technology Architecture Analyses

Dr. Fauntleroy directed a review of current architecture efforts across the Department of the Navy (both Navy and Marine Corps), the Department of Defense, other military Services and Joint commands, and outside government agencies. As project director, she coordinated a variety of research efforts simultaneously, developed an understanding of the current state of the architecture and an evolutionary path toward the new architecture, and examined the use of architecture in determining compliance with regulation.

Assessment of a FAA Database Management System

Dr. Fauntleroy directed CNAC's review of the Federal Aviation Administration's (FAA's) underlying database management system (DBMS) for managing air traffic control (ATC) personnel to determine whether it had the capability to support the database workload expected at very

large facilities across the FAA. This project had two phases; the analyses of the DBMS design and operational testing of the system. Her contributions to this project include project management, oversight of the operational test, participation in the analysis of results of the test, and preparation of the final report.

Support to the Command Transition Team

Dr. Fauntleroy provided technical assistance in the creation of a new Navy command, which integrated the information technology, information operations, and space operations components of the Navy. She conducted interviews with the component organizations to develop an understanding of the current business processes, documented those processes, and then developed recommendations on how to better integrate processes to support headquarters. She participated in working sessions from the initial inception of the new organization, undertaking interviews with the component commands that she used to conduct an organizational analysis.

Navy Marine Corps Internet (NMCI) Risk Assessment

Dr. Fauntleroy performed a risk assessment to help Navy and Marine Corps leaders understand the implication of different NMCI implementation options. She examined four generic courses of action and assessed the risks associated with each. She also looked at the risks that were not contract related, such as the transition of the legacy systems. Dr. Fauntleroy participated in all aspects of this effort including the identification of options, consideration of risks, analysis of data, and the development of reports.

National Airspace System TMS Systems and Operations

Dr. Fauntleroy developed a prototype system that would demonstrate the capabilities of open-system/open-architecture concepts for providing equipment more quickly to air traffic personnel to help overcome the slow and costly development of new air traffic software and hardware. She managed a large-scale computer operation, including oversight of FAA contractors; design and implementation of the prototype system; and integration of Commercial-off-the-Shelf (COTS) and Government-off-the-Shelf (GOTS) software.

Selected Publications

Overview and Synthesis on the Regional Advisory Committee Reports on Educational Challenges and Technical Assistance Needs, coauthored

Building a Business Architecture for the Navy, coauthored, (CRM D0010823.A2), Oct 2004.

FORCEnet Architecture Analysis, coauthored, CRM DD0009317.A2, Jan 2004.

Appalachian Technology in Education Consortium Annual Performance Report for Year 4, coauthored, Apr 2004.

Enterprise Architecture: Supporting Anti-submarine Warfare, coauthored, (CRM D0008999.A1) Sep 2003.

Analysis of the Operational Test Results of the CRU-X Database Management System, coauthored, (IRP 10953), Jul 2003.

CRU-X Operational Test: Technical Parameters, Briefing, coauthored, (IPR 10776), Aug 2002.

Guide for Testing Operational Performance of the Federal Aviation Administration CRU-X Database Management System, coauthored, (IPR 10825), Dec 2002.

3.2.18 David Rodney, Ph.D.

David Rodney, Ph.D.

Field Scientist

Qualifications Summary

Of direct relevance to his proposed role on ELAR, Dr. Rodney is currently a field scientist to the Chancellor of New York City Department of Education. His main assignment is to support the Chancellor's initiative to create a School Report Card for New York City Schools. He is working with the Chancellor's senior staff to develop the methodology for implementing a "value added" system in creating the Report Card. As the only member of the senior staff with requisite background in mathematics and statistics, he is playing a central role in the design and implementation of the prototype report. He has reviewed the technical literature on value added systems, examined the availability and quality of the data within the NYC IT systems, analyzed the data to find useful indicators, and drafted informational briefings for the Chancellor. In describing Dr. Rodney's progress in his assignment, the Chancellor has stated that "David's facility with data, his practical understanding of institutional challenges and constraints, and his dedication to the task are all adding value to this important project." (The Appendix includes a copy of this letter.)

Dr. Rodney has spent much of the past ten years in a wide variety of field scientist assignments. He has served on staffs with quite different functions, including operational training and planning, strategic planning and political analysis, budgeting and resource allocation, and personnel planning. Some specific examples of his contributions are:

He directed a team of ten analysts on an evaluation of a major training exercise. The evaluation included a performance assessment of key players, and critique of the implementation of new strategies and tactics. In the analysis, he combined sophisticated statistical/mathematical techniques with subject matter expertise.

Dr. Rodney developed a variety of simulation models to assist staffing planners. These models simulated various groups of personnel, and provided personnel managers with a "what if" capability, that allowed them to analyze the likely impact of prospective policies before they were implemented. Some of the models were based on Markov Chains, while others were discrete entity simulations, utilizing Monte Carlo techniques.

Dr. Rodney analyzed budget allocation options employing a variety of statistical techniques to analyze budget submissions. He analyzed the risks associated with possible budget reductions. Risks were expressed in terms of the required staff skills and numbers of personnel to effectively carry out the organization's functions and the objective of the analysis was to determine the minimal funding required to operate satisfactorily.

Role

Dr. Rodney will serve as a Field Scientist to a Chief State School Officer.

Education

Ph.D. Mathematics, Keele University
M.Sc. Mathematics, London University
B.Sc. Mathematics, City University, London

Relevant Experience

CNAC 1986 - Present

Dr. Rodney is currently assigned to the New York City Department of Education, where he provides on-site analytic support to the Chancellor's Office. Dr. Rodney is supporting an initiative by the NYC Department of Education to implement a value added analysis approach to assessing school performance. He is developing the methodology for this initiative, which entails extensive data analysis, statistical modeling, and psychometrics.

Previously, Dr. Rodney had numerous assignments to Navy staffs, where he worked directly for the commanding admiral, providing analysis of current issues.

From 2004 to 2005, he was a member of the Strategic Studies Group, an exclusive Navy organization which explores new concepts in Naval operations, and reports directly to the head of the Navy. He took part in a major analysis of long term operating concepts for the Navy in the global war on terrorism.

From 2002 to 2004, he was assigned to Commander, Third Fleet. Dr. Rodney led the analysis of major training exercises, directing a team of 10 analysts. Objectives of exercise analyses included performance assessment, and evaluation of new strategies and tactics. Analyses were a fusion of statistical/mathematical techniques with subject matter understanding. The mathematics varied widely, and included traditional and Bayesian statistics, geometry and calculus.

The scheduling of Pacific Fleet ships is a complex process, requiring the coordination of many timetables. Dr. Rodney developed a discrete entity simulation model of the scheduling process, which will allow policy decision makers to rapidly analyze the impact of prospective decisions on ship schedules.

During 2001 and 2002, Dr. Rodney worked with the Navy Headquarters office that develops the Navy's \$90+ billion annual budget. He provided analysis in support of budget decisions, employing a variety of statistical techniques to analyze budget submissions. He analyzed the risks associated with possible budget reductions. Risks were expressed in terms of operational readiness and the objective of the analysis was to determine the minimal funding required for satisfactory readiness. The analysis was statistical in nature, employing inferential statistical techniques to determine resources to readiness relationships.

From 1998 to 2001, Dr. Rodney was assigned to support the Commander of U.S. Naval Forces in Europe, who also commands NATO's Southern Region. Dr. Rodney observed and analyzed the U.S. participation in Kosovo operations. Initially, he analyzed the set up, organization, and functioning of the U.S. Headquarters staff. This work was based on organizational analysis and established doctrine. He also took part in a large study of the entire operation, where CNAC analyzed decision processes. He employed statistics where and as appropriate, using techniques of exploratory data analysis. Subsequently, he assisted in the design and analysis of a major exercise, which revisited the Kosovo operations scenario, helping to learn and disseminate further strategic and tactical lessons.

Military diplomacy with other countries is an important, poorly understood, aspect of military operations. Dr. Rodney developed and applied a couple of methodologies to analyze the effects of military diplomacy. The first approach was empirical and statistical: he analyzed a wide variety of data, showing the correlation between military engagement activities and observed changes in behavior in the concerned countries. He also developed a complex adaptive system model of military diplomacy, following the work of people such as Robert Axelrod ("Prisoner's Dilemma").

In 1997, Dr. Rodney deployed with an aircraft carrier and accompanying ships. He analyzed the readiness of the ships; "readiness" is a well-used but ill-defined term. He reviewed a proposed methodology to measure readiness. The methodology was data intensive and entailed the collection and aggregation of a wide variety of statistics. Dr. Rodney critiqued the methodology, identifying theoretical limitations and showing the confidence intervals that would accompany such measures. He also collected data sufficient to test the methodology and validate the extent of its usefulness.

From 1994-1996, Dr. Rodney led a Navy team that re-engineered the process by which the US Navy assigns personnel to jobs. The team employed IDEF modeling techniques to develop a TO-BE model for personnel assignments. They subsequently translated the model into action and developed and implemented a process, where the Navy advertises jobs on-line and personnel apply for the jobs over the Internet.

In addition, Dr. Rodney has directed many studies at CNAC, typically of a year's duration, with a team of 4 to 5 people. Two areas of work are summarized below.

In the aftermath of the Cold War, the U.S. Navy reduced in size by roughly one third. He assisted policy development, optimizing the transition to a smaller force – to ensure the Navy maintained a stable work force during and after the years of down-sizing. He developed and used personnel simulation models that allow one to analyze the short- and long-term impacts of different policies on the work force. The simulation models were built on statistical projections, based on historical behavior patterns, and included econometric models that provide estimates of the effects of compensation on personnel behavior. He utilized a variety of non-parametric statistics, to analyze the significance of the resulting estimates. The U.S. Department of Defense instituted policies, based on this work.

Dr. Rodney developed a variety of simulation models to assist manpower planners. These models simulated various groups of personnel, and provided personnel managers with a "what if" capability, that allowed them to analyze the likely impact of prospective policies before they were implemented. Some of the models were based on Markov Chains, while others were discrete entity simulations, utilizing Monte Carlo techniques.

RGI, Inc. 1978 – 1986

Dr. Rodney joined RGI as an analyst and was promoted to a position of Vice-President, eventually managing a staff of 20. He directed studies for the U.S. Federal Government, mostly manpower planning studies for Navy. He also established and directed Micro Computer Concepts, a division of RGI, which sold personal computer hardware and software to federal, state and local governments. He was responsible for all aspects of the division's operations, including long-term planning, fiscal management, personnel and project management, and marketing. Two of the studies he directed are summarized below.

The US Navy provides several hundred millions of dollars a years in re-enlistment bonuses to sailors. The bonuses are designed to induce sailors to re-enlist in scarce skills. Dr. Rodney developed a model to optimize the allocation of bonuses across skills. The model employed dynamic programming techniques.

U.S. sailors spend considerable time undergoing school based instruction, especially when they first join the Navy. Dr. Rodney developed a model to forecast the size of this population, based upon the flow of new personnel into the Navy. The model was a Box Jenkins time series forecasting transfer function.

SDC, Inc. 1976 – 1977

For the Nuclear Regulatory Commission, Dr. Rodney analyzed the vulnerabilities associated with transporting nuclear materials, employing Delphi techniques and probability theory.

For the Federal Aviation Administration, he developed an aviation forecasting model, employing a variety of statistical techniques, including regression analysis.

University of Ibadan, Nigeria 1974 – 1976

Dr. Rodney taught undergraduate courses, led a faculty seminar, and pursued research.

Professional Affiliations

Superior Public Service Medal (2001)

Phi Beta Kappa (1972)

3.2.19 Jennie W. Wenger, Ph.D.

Jennie W. Wenger, Ph.D.

Principal Investigator

Qualifications Summary

Dr. Wenger combines the technical sophistication of a rigorously trained researcher with the practical understanding of a former schoolteacher. She was co-principal investigator on a Quality of Life Study that linked national data sets on education to Navy surveys. This study linked housing locations to characteristics of school districts, revealing what characteristics are important to those Navy service members who do not live in on-base housing. The study also explored how the level of school choice and of specific school characteristics influence satisfaction with schools.

Dr. Wenger is currently undertaking an evaluation of a Congressionally mandated pilot program on the recruitment of home schooling graduates in the military. In both of these studies, she has demonstrated her facility to work with survey data and administrative records to evaluate the effectiveness of government programs and report on results in a form that is accessible both to technical experts and a more general audience.

As part of our ATEC project, Dr. Wenger designed and managed an evaluation of a unique Kentucky program to involve students in technology learning. She performed much of the data analysis for this project, including accessing and analyzing a national dataset, results from a web-based survey, and results from on-site qualitative interviews/focus groups.

Dr. Wenger also participated on a study examining retention of teachers in a large urban school district.

Role

Dr. Wenger will serve as Principal Investigator on the Fast Response Applied Research and Development Project Feasibility and Implications of Choice in Rural Areas.

Education

Ph.D., Economics, University of North Carolina at Chapel Hill.
B.A., Biochemistry, Rice University.

Relevant Experience

The CNA Corporation 2000 - Present

Dr. Wenger's current projects include an analysis of how education reform has influenced likely military recruits. She recently directed a Congressionally mandated study of a pilot program to increase the recruitment of home school graduates into the military. She also directed an analysis of Kentucky's Student Technology Leadership Program, as well as an analysis of how school

quality influences military servicemembers' choice of housing community. During her CNAC career Dr. Wenger has participated in a number of studies on retention of military personnel and the cost effectiveness of various programs, as well as a study looking at retention of teachers in a large urban school district.

Quality of Life Study

Dr. Wenger designed and ran a study linking national data sets on education to Navy surveys. This study linked housing locations to characteristics of school districts, revealing what characteristics are important to those Navy servicemembers who do not live in on-base housing. The study also explored how the level of school choice and of specific school characteristics influence satisfaction with schools, and with Navy life.

Pilot program to recruit homeschoolers and ChalleNGe graduates

Dr. Wenger managed the final evaluation of a Congressionally mandated pilot program. Directing this study involved data analysis, write-up, and presentation of these results. Dr. Wenger is currently designing a follow-up study to look at graduates of the ChalleNGe program in more detail.

Evaluation of Kentucky's Student Technology Leadership Program (STLP)

Dr. Wenger designed and managed an evaluation of a unique Kentucky program to involve students in technology learning. She carried out much of the data analysis for this project, including accessing and analyzing results from several different data sources: a national dataset on schools, results from a web-based survey, and results from on-site qualitative interviews/focus groups.

University of North Carolina, Chapel Hill 1999-2000

Visiting Assistant Professor, Department of Public Policy

University of North Texas

1996-2000

Assistant Professor, Department of Economics,

The Greenfield School

1988-1989

Teacher, Math and Science

Selected Publications

“Generation Y and the U.S. Navy: An Examination of the Pay Elasticity of Reenlistment” 2005. (coauthored). *Journal of Defence and Peace Economics* 16(1): 29-43.

“Predictors of Attrition: Attitudes, Behaviors and Educational Characteristics” (coauthored). CNA CRM D0010146.A2, July 2004.

“Relative Pay and Teacher Retention in Miami-Dade County Public Schools” (coauthored). IPR 11022, March 2004.

“Final Analysis of Evaluation of Homeschooled and ChalleNGe Program Recruits”(coauthored). CNA CRM D0009351.A1, November 2003.

“Does Education Reform Improve Job Performance?” (coauthored). CNA CRM D0008781.A1, August 2003.

“Pre-Service Smoking and First Year Attrition” (coauthored). CNA CAB D0007998.A1, March 2003.

“Does School Quality Influence Housing Choices of Navy Personnel?” (coauthored) CNA CRM D0007150.A2, December 2002.

“Does the Dropout Age Matter? How Mandatory Schooling Laws Impact High School Completion and School Choice” 2002. *Journal of Public Finance and Management* 2(4).

“Technology in Schools: Evaluation of Kentucky’s Student Technology Leadership Program” (coauthored) Policy and Planning Series #104, July 2002.

“What Do Schools Produce? Implications of Multiple Outputs in Education.” 2000 *Contemporary Economic Policy*. 18(1):27-36.

“Do Contingent Workers Over-Invest in Education?” 2000. (coauthored) *Southwestern Journal of Economics* 3(1): 176-193.

3.2.20 Edward S. Cavin, Ph.D.

Edward S. Cavin, Ph.D.

Field Scientist

Qualifications Summary

Dr. Cavin is an experienced researcher and analyst with more than 20 years of experience across a wide range of subjects and issues. In recent years, he has been active in operations analysis while serving as a Field Representative to four different commands. During two of these assignments, he earned Civilian Service Medals from the Department of Defense. Dr. Cavin has also been a director of a large number of major projects in the areas of new system requirements, logistics, modeling and simulation, and exercise evaluation, and has contributed to studies in military manpower and medicine, and new system acquisition. He has also served as a research manager in which he shaped the research agenda for his team and provided quality control over its product. During this period he also managed several field representatives. Prior to joining The CNA Corporation, Dr. Cavin worked at Mathematica Policy Research, where he specialized in issues of welfare and work. Some of his work during this period was published in top-flight peer review journals including the *American Economic Review*.

Role

Dr. Cavin will serve as a Field Scientist to a Chief State School Officer.

Education

Ph.D., Economics, University of Michigan
M.S., Economics, University of Michigan
B.A., Economics, Michigan State University

Relevant Experience

The CNA Corporation 1987 - Present

Field Representative to US Joint Forces Command 2004 - Present
Dr. Cavin has provided analysis and other support to the Command, as it defines its needs.

Analyst and project director, Operations Evaluation Group 2001 to 2004
For several years, CNA supported an OSD-sponsored activity to assess national and theater support to time-critical targeting. The Gulf War and JTMD test program results demonstrated convincingly how challenging such targeting can be, especially against mobile targets. Dr. Cavin initiated CNA support to the C4ISR Policy and Technology Assessments (CPATA) activity, and served as a Deputy Director of the program under an Interagency Personnel Agreement (IPA) with OSD from 1998-2004.

In 2002, The Navy and Marine Corps relied heavily on national intelligence systems to support operations and planning. Dr. Cavin directed a survey of Fleet and Fleet Marine users of national ISR products to assess the quality of service delivery and training. This work builds on previous projects examining Naval requirements for national systems.

Interagency Personnel Agreement assignment to OASD(C3I) 1999 - 2001

Analyst and project director, Policy, Strategy, and Forces Division 1996 - 1999
Joint Theater Missile Defense Attack Operations
From 1996-1999, OSD sponsored a joint test program to examine near-term capability to pursue joint theater missile defense attack operations. Attack operations involve destroying theater missile threats before they are launched, and therefore stresses intelligence, surveillance, command and control, and interdiction operations. Dr. Cavin initiated CNA support to the JTMD program at Kirtland AFB, and served as an analyst in all its major test events.

The Navy investigated alternatives to replace aging aircraft carriers. From 1996-1998 Dr. Cavin was a member of the study team examining alternative new carrier designs, and directed the ship survivability working group.

Research team leader, Operating Forces Division **1994 - 1996**

In 1994, Dr. Cavin directed a study to develop a long-term strategy for Navy modeling and simulation. His team considered acquisition, test, and evaluation, and training applications of modeling and simulation, and tried to impress on the Navy the importance of model validation and configuration control.

Analyst and deputy department head, Resource Analysis Department **1993**

NAVAIR and the Marine Corps sponsored a COEA to evaluate alternative replacements for the aging Marine Corps CH-46 helicopter. Dr. Cavin directed the analysis of survivability of system alternatives, including the V-22 and more conventional helicopter designs, against a variety of threats. He also served as deputy project director.

CNA field representative to Commander, Third Fleet **1991 - 1993**

Field Rep to Commander, Naval Logistics Support Forces, Bahrain **1991**

CNA field representative to Commander, U.S. Atlantic Fleet **1989 - 1991**

Dr. Cavin has long been active in planning and evaluating to support joint task force training exercises at both the numbered fleet and unified CINC levels. He has supported numerous Second Fleet (1988-89), Third Fleet (1991-94), and Pacific Command exercises (1994-2000) intended to train command staffs in how to function in joint and coalition operations.

Dr. Cavin supported real world contingency operations in Operations Desert Storm, Allied Force, Enduring Freedom, and Iraqi Freedom. Most recently he helped assess the performance of EA-6B Prowlers in SEAD and IO support missions over Iraq and Afghanistan.

Analyst and project director, Resource Analysis Department **1987 - 1989**

In 1988, Dr. Cavin directed Phases II and III of this project to assess the adequacy of strategic sealift capability to support existing war plans. Working closely with OSD and JCS staff, he re-tabulated the results of ongoing mobility requirements studies to highlight the shortages of specific kinds of sealift ships.

In 1989, CNA conducted the *Quo Vadis Study*, a study to develop a long-range plan for Navy research and development, under the direction of Dr. Alan Berman. Dr. Cavin supported this effort by developing a mathematical model for optimizing R&D in new system development, and estimating the parameters of this model from Navy data.

Mathematica Policy Research **1980-1986**

Dr. Cavin was a Senior Economist specializing in issues of welfare and work..

Awards and Honors

- DoD Medal for Exceptional Public Service (2001)
- DoD Southwest Asia Civilian Service Medal (1992)
- National Science Foundation Graduate Fellowship (1975)

Select Publications

Journal Articles

"An Evaluation of the Effect of Cashing Out Food Stamps on Food Expenditures," *American Economic Review*, Volume 76 Issue 2: 230-34, 1986, coauthored

"Efficient Provision of Employment Service Outputs: A Production Frontier Analysis." *Journal of Human Resources* 20(4):484-503, 1985, coauthored

Technical Reports

"An Experimental Design Methodology for Sensitivity Analysis of Simulation Models," CNA Report 95-45, 1995

"Developing a Navy Modeling and Simulation Strategy: Proposed Research and Development Agenda," CNA Report 95-102, 1995

"The Dynamic Structure of Navy Research and Development Budgets: A Time-Series Analysis," CNA-89-128, 1990

"Computing Mean Responses in Nonlinear Models," CNA Report 89-292 1989

"User Fees and Program Costs in Marine Corps Child Care Centers," CNA Report 88-198, 1989

"Are Satisfaction and Dissatisfaction Really Opposites? Ordered versus Unordered Models of Satisfaction with Military Life," CNA Report 207 1989

"Is There Such A Thing As Overall Satisfaction With Military Life? A Factor Analysis of Marine Corps Data" CNA Report 295, 1988, coauthored

"A Study of Marine Corps Family Programs" CNA Report 139, 1987

Relationship Between Earnings and Welfare Benefits for Working Recipients Four Area Case Studies, Manpower Development Research Corporation, 1985, coauthored

3.2.21 Apriel Kimaada Hodari, Ph.D

Apriel Kimaada Hodari, Ph.D.

Scientific Analyst

Qualifications Summary

Dr. Apriel Hodari analyzes education policy, including the implementation of technology into K-12 education, the influence of education policy and practice on the lives and careers of individuals, the impact of educational background on career attrition, and the impact of mathematics content knowledge on middle school principals' instructional leadership.

Dr. Hodari provides both qualitative and quantitative analysis for the Thinking about Mathematics Instruction (TMI) project (a partnership between CNAC, the Education Development Center (EDC), and Temple University). TMI is a national study of 600 K-8 principals' leadership content knowledge in mathematics, structured as a clinical trial of EDC's Lenses on Learning (LOL) course. LOL teaches principals to examine how their mathematics knowledge and beliefs about mathematics teaching and learning impact their instructional leadership. TMI uses pre-post surveys consisting of short qualitative responses, Likert-scale responses, and math computations as well as in-depth case studies of selected principals.

Dr. Hodari serves as subject matter expert in CNAC's examination of workforce diversity for a large client. In this work, the CNAC team acts as a strategic partner in the client's efforts to maximize the contributions of all personnel. In addition to participating in overall project activities, Dr. Hodari has led the design, implementation, and analysis of focus group interviews with all categories of personnel to produce a baseline characterization of the client culture.

Dr. Hodari served as lead author and methodology expert for an analysis of Kentucky's Student Technology Leadership Program (STLP). STLP provides opportunities for K-12 students to learn about technology and use their knowledge and skills to benefit their schools and communities. In this evaluation, Dr. Hodari led the qualitative data collection and analysis activities, and helped disseminate the results.

Dr. Hodari performed quantitative and qualitative analyses on the influence of educational background on career attrition, with emphasis on students who were home-schooled or earned GED diplomas. The purpose of this project was to assess specific conditions under which people with varying education background can succeed.

Dr. Hodari maintains strong collaborations with education researchers outside of CNAC. The primary focus of these collaborations is examining science education research and reform from a social justice perspective, including analyses of successful schools for under-represented students and assessing the alignment between reform goals and instructional practices.

Role

Dr. Hodari will be assigned to clusters of schools in the Appalachian region that are failing to make Adequate Yearly Progress (AYP). She will work with school leadership to assess the school's needs, to identify fast response projects addressing those needs, and then conduct re-

search at ELAR. Once completed, Dr. Hodari will disseminate the results of the research back into the school community.

Education

Ph.D. Physics, Hampton University, Hampton, Virginia
Photorefractive Gain Performance of Rhodium-doped Barium Titanate
M.S. Physics, Hampton University, Hampton, Virginia
Development of Diode Laser Pumped Solid State Laser for Remote Sensing System
B.S. Electrical Engineering, Purdue University, West Lafayette, Indiana
Semiconductor Devices and Analog Integrated Circuits

Relevant Experience

The CNA Corporation

2001 - Present

Dr. Hodari performs analyses on a broad range of education policy questions, as well as several diversity initiatives.

Selected Publications

Analysis and Policy Publications

Literature Review: Empirical Evidence Supporting the Business-Case Approach to Workforce Diversity CRM D0011482.A2/Final (The CNA Corporation, 2005) (coauthored).

Predictors of Attrition: Attitudes, Behaviors, and Educational Characteristics CRM D0010146.A2/Final (The CNA Corporation, 2004) (coauthored).

Final Analysis of Evaluation of Homeschool and ChalleNGe Program Recruits CRM D0009351.A2/Final (The CNA Corporation, 2003) (coauthored).

Minority Officer Recruiting: Memorandum to the Deputy Chief of Naval Personnel CME D0008049.A1 (The CNA Corporation, 2003) (coauthored).

Predictors of Officer Success CRM D0007437.A1 (The CNA Corporation, 2002) (coauthored).

Does School Quality Influence Housing Choices of Navy Personnel? CRM D0007150.A2 (The CNA Corporation, 2002) (coauthored).

Technology in Schools: Evaluation of Kentucky's Student Technology Leadership Program (STLP) Policy and Planning Series #104 (The CNA Corporation, 2002). (coauthored).

Invited Presentations and Publications

"Race, culture and transfer: Factors that shape faculty attitudes and beliefs about race and inclusion," Physics Education Research Conference, Sacramento, CA (August, 2004).

“Rejecting the smog of bias: Hands-on practice engaging diversity in your classroom,” *Cosmos in the Classroom* 2004, Boston, MA (July 2004) (coauthored).

“Engaging Diversity in the Astronomy 101 Classroom,” *Cosmos in the Classroom*, Boston 2004, MA (July 2004) (coauthored).

“Crumbs from the Table of Joy: Special Talents and Challenges of HBCU Physics Students,” *2003 Physics Education Research Conference*, Madison, WI (August 2003).

“A review of epistemologies in various cultural contexts,” *Announcer* 32(4), 67 (2002)

“How to identify, understand and destroy stereotype threat in black physics students,” Joint Meeting of the National Society of Black Physicists and the National Conference of Black Physics Students, Huntsville, Alabama (March 2002)

“Do women and minorities learn physics differently?” 2001 American Physical Society April Meeting, Washington, DC (April 2001).

“Do women and minorities learn physics differently?” Seminar in Physics Education Research, Department of Physics, University of Maryland (February 2001).

“Effects of gender and ethnicity on student learning in physics,” Department of Physics, City College of New York (June 2000).

“Promoting the success of under-represented students in the sciences,” School of Education, City College of New York (June 2000).

“Effects of gender and ethnicity on student learning in physics,” Department of Physics, Astronomy and Geosciences, Towson University (March 2000).

“The effect of gender and ethnicity on student cognitive expectations and conceptual change,” Joint Meeting of the National Society of Black Physicists and the National Conference of Black Physics Students, Greensboro, North Carolina (March 2000).

“Exploring the influence of gender and ethnicity on student learning in the physical sciences,” 1999 Sigma Xi Annual Meeting, Minneapolis, MN (November 1999) (coauthored).

“Effects of ethnicity and gender on physics learning,” Department Colloquium, Howard University (September 1999).

“Effects of ethnicity and gender on physics learning,” *Announcer* 29, 81 (Summer 1999).

“Gender and cultural influences on student learning in physics,” National Science Foundation, Arlington, Virginia (March 1999).

Contributed Presentations and Publications

“Research on Teaching Physics for Social Justice,” National Meeting of the American Association of Physics Teachers, Salt Lake City, UT (August, 2005) (coauthored).

“Teaching physics for a socially just society,” Workshop SM05, National Meeting of the American Association of Physics Teachers, Salt Lake City, UT (August, 2005) (coauthored).

“Thinking about mathematics instruction: A preliminary investigation of elementary and middle school principals' leadership content knowledge for mathematics,” Annual Meeting of the American Educational Research Association, Montreal, Quebec, Canada (April, 2005) (coauthored).

“‘A problem from hell’: Cultural transformation in response to genocidal rape,” (In preparation) (coauthored).

“Living the *Covenant with Black America*TM: Insights from strategic voting models,” White paper for the *Covenant with Black America*TM, Produced by Tavis Smiley Presents (In preparation) (coauthored).

“Ingesting the smog of bias: The intimate impact of intolerance,” (In preparation).

“Teaching physics with purpose: Considering the social consequences of teaching,” *Announcer* 34(1), 74 (2004) (coauthored).

“The effect of stereotype threat on undergraduates in an introductory astronomy class,” *Journal of Women and Minorities in Science and Engineering* 10(1), 93-102 (2004) (coauthored); This paper is available online if you have a subscription or want to purchase it separately at <http://www.begellhouse.com/journals/00551c876cc2f027,6c032e931c2bd36e,5d943bfl3d28ae8d.html>.

“Does Stereotype Threat Affect Post-Course Scores on the Astronomy Diagnostic Test?” *Bulletin of the American Astronomical Society* 35(5), 1241 (2003) (coauthored).

“The effect of stereotype threat on undergraduates in an introductory astronomy class,” *Announcer* 33(4), 104 (2003) (coauthored).

“Entree to the temple: Status of women in physics,” Association for Public Policy Analysis and Management Twenty-Fifth Annual Fall Research Conference, Washington, DC (2003).

“Using agent-based modeling to simulate educational empowerment,” Enrico Fermi Summer School on Physics Education Research, Varenna, Italy (2003) (coauthored).

“Qualitative investigation of epistemology in a female-centered learning environment,” *Announcer* 32(4), 64 (2002) (coauthored).

Seton Hall University**1983-1993**

Director, Science/Mathematics Education Program. Dr. Burke led curriculum redesign for pre-service program. He managed five teacher professional development programs for K-12 science teachers.

Director, Center for College Teaching. Dr. Burke directed the university's faculty professional development programs.

Associate Professor, Department of Biology. Chair, Department of Biology. Dr. Burke prepared and managed the department budget, led curriculum design and implementation, made faculty assignments, and prepared annual reports.

Mercer University**1979-1983**

Associate Professor and Chairman, Biology Department. Dr. Burke prepared and managed the department budget, led curriculum design and implementation, made faculty assignments, and prepared annual reports. He managed Title III General Education program and Upward Bound Biology curriculum. Dr. Burke served on the Dean's Council.

University of Illinois-Urbana**1970-1978**

Assistant Professor, Microbiology Department

Honors and Professional Affiliations

American Educational Research Association

American Evaluation Association

American Association for the Advancement of Science

Developmental Education Council. Seton Hall University

Education and Training Committee of the Research and Development Council of New Jersey.

Director of General Education; Writing Board; General Education Reform Committee

University Senate Subcommittee on Undergraduate Education; School of Life Sciences Committee on General Education in Biology. University of Illinois

Biology Coordinator, Upward Bound/Science; Courses and Curriculum Committee. Mercer University

Educational Technology Advisory Group, Urban Systemic Program

Superintendents Coalition.

Education and Human Resources Directorate-wide Committee on Technology Integration in Education, Chair. NSF

Selected Publications

Coauthored, "Using Complexity for Manpower Modeling: Feasibility Study." October 2003.

Coauthored, "An Empirical Test of the Theory of Urban Systemic Reform." December 2000.

Coauthored., "Quality of Navy Recruits: Have State Education Reforms Helped?" October 2000.

Coauthored "Library and Lab Costs at Postsecondary Schools: Benchmarks for Naval Postgraduate School." February 2000.

Burke, D.D., "Making Better School Policy Decisions Using Computer Modeling." *The Systems Thinker*, 7:10. 2003.

Coauthored., "Critical Issues in Recruiting and Retaining the Mathematics and Science Workforce": Summary of Research on Teacher Retention in Miami-Dade County Public School. 2004

Coauthored., "National Board Certification": A Look at How Their Students Stack Up. 50-1978

Coauthored, "High School/University Collaborations," in Tested Studies in Laboratory Education, C. Goldman, ed., Carolina Biological Supply Company. 1991.

Burke, D.D., "Incorporation of Critical Thinking, Mathematics and Writing into Introductory Biology" in Strategies for Success, C. Johnson, ed. Benjamin/Cummings, November 1990.

Coauthored, "A Biology Laboratory for the Underprepared Student," in Enhancing Critical Thinking in the Sciences, L. W. Crow, ed, Society for College Science Teaching. 1989.

Coauthored, "An Innovative Biology Laboratory for the Underprepared Biology Major." *Amer. Biol. Teacher* 51:155. 1989.

Coauthored, "Incorporation of Remedial Skill Training into Introductory Biology." *New Jersey Science Teachers Bulletin*, 32:29. 1986.

Burke, D.D., "A Programmed Approach to Investigative Laboratories in Microbiology," *Amer. Biol. Teacher*, 41:484. 1979.

4 Management Plan

CNAC's approach to managing the ELAR is based upon our highly successful professional management structure and mature processes. We have been managing very large and broad-based research activities for the Federal government for more than 60 years. We have the management structure, personnel systems and policies, financial support systems, and experience to ensure responsive and accountable management for the ELAR. CNAC currently develops and executes an annual research plan exceeding \$45 million to conduct numerous rigorous research projects as well as fast response studies resulting from requests initiated by practitioners and policymakers. We are accountable for the scientific merit and the timeliness of the studies, their usefulness to practitioners, and for adherence to budget and other performance targets. The management system we have developed to support these activities will be used for the ELAR.

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5 Organizational Experience And Capability

CNAC and its partners at the University of Virginia, the University of Kentucky, Educational Innovations LLC, the Center for Applied Linguistics, Insights Policy Research, the Collaboration for Teaching and Learning, the EdVenture Group, Tierra Del Oro Consulting, LLC and Syntech Inc. have the organizational experience and capability to deliver superior performance in the operation of the ELAR. The laboratory specified in this procurement is a complex research organization requiring both expertise in developing and running an integrated research program and the ability to conduct high quality, responsive and relevant, scientifically based research. In this section, we demonstrate that the CNAC team has the requisite experience and capability.

Figure 5-1 (at the end of this section) summarizes the connection between relevant organizational experience and capabilities and the major SOW tasks and subtasks. As is clear from the figure, the CNAC Team has the requisite experience running an organization of this scope together with the experience and capability to conduct the type of research called for in the SOW. This section first discusses our experience and capability *to organize and manage a research organization* like the REL. It then describes our experience and capability *to conduct the work* of the lab.

5.1 Experience And Capability Managing A Large Research Organization

CNAC has over 60 years of experience managing high-quality research, analysis, evaluation, and technical assistance to government, non-profit organizations and private foundations. Of particular significance for the operation of the ELAR is our experience managing the Department of Navy's (DoN) Federally Funded Research and Development Center (FFRDC) (see relevant work example CNAC-1). Our successful decades' long management of the FFRDC demonstrates our capability to manage a research organization of the size and scope of the ELAR.

5.1.1 Needs Assessment (Task 1.1) And Annual Research Plan (Task 5.1)

Every year CNAC manages a process to develop an annual research plan. This plan includes a mixture of short-term, fast response studies and longer, scientifically rigorous studies based upon a mutual assessment by both CNAC and the DoN leadership of the highest priority operational and policy needs. The planning process involves identifying, sizing, scheduling and prioritizing a list of studies for the coming year. Although the DoN senior leadership oversees the process, CNAC must coordinate many different offices throughout this large and complex organization. The final plan integrates the needs and establishes priorities across the organization. A senior Departmental Policy Committee reviews the plan and in some cases reorders priorities or resources across different specialty areas. The ELAR including its Governing Board will benefit from our long experience developing this annual plan.

5.1.2 Fast Response Studies Program (Task 1.2)

CNAC manages a robust annual program of fast response studies. These studies are undertaken at the behest of practitioners and policymakers usually at the senior executive level to answer specific program or policy questions. The annual plan allocates a portion of the funding to study issues that have emerged since the completion of the annual plan or must be completed within a short timeframe to meet a decision deadline. These studies rely on existing data much of which has been archived over many years of conducting these types of analyses. The results of the stud-

ies are generally reported in either a briefing or a memorandum. Task 1.2 in the SOW describes fast response studies in much the same way that we have conducted such studies for decades. An innovative element of the FFRDC's fast response program is the on-site field scientist program. The current program includes about 50 field scientists assigned to commands throughout the Navy and the other Services. On-site field scientists provide evidence-based research to the operational and policy world by virtue of their technical education and experience. Over the past year, our field scientist program has expanded into education with the establishment of a field scientist billet in the Office of the Chancellor of the New York City Department of Education. As part of the ELAR, we will be creating field scientist positions to the Chief State School Officers in Kentucky and Virginia.

5.1.3 Innovative Training And Technical Assistance Program (Task 1.1)

The SOW refers to a program of fellowships and internships. We intend to apply our organizational experience in managing a similar program for the DoN to another program in the ELAR. The Navy assigns a group of officers to serve a tour of duty at CNAC. These officers participate in regular research studies as full members of the staff and they help ensure that our research is relevant and actionable to Navy policymakers and practitioners. The ELAR will create Practitioners Research Group (PRG) fill a similar role.

5.1.4 Rigorous Research Studies Program (Task 2) And Dissemination To Practitioners And Policy-Makers (Task 4)

The FFRDC manages a large program of longer-term rigorous research studies that often address issues of program implementation and policies. Although the DoN does not require the type of experimental design required by the Institute for Education Sciences and in the SOW, these studies are largely empirical and often involve the use of sophisticated statistical, econometric and psychometric techniques. Since our research is usually directly for a practitioner, CNAC staff is also adept at translating highly technical language into accessible information for policymakers and practitioners (Task 4).

5.2 Experience And Capability To Conduct ELAR Tasks

In contrast to the previous discussion on management of the ELAR, this section reviews the CNAC team's experience and capacity to do the tasks.

5.2.1 Experience And Capability Conducting Needs Analysis (Task 1.1)

In October 2004, the Secretary of Education appointed 10 Regional Advisory Committees (RACs) (following the same boundaries as the RELs) to conduct an educational needs assessment. CNAC lead the effort to support this assessment process. As part of this support, CNAC provided each RAC with coordination team led by a senior member of the contract research team (relevant work example CNAC-2). Dr. Daniel Burke of CNAC served as the coordinator for the Appalachian region. In this project, CNAC gained a deep understanding of the challenges facing education stakeholders in both the Appalachian region and nationally. The experience of working closely with stakeholders to identify regional needs and challenges is directly applicable to the needs assessment (task 1.1), and both the Appalachian and Overview reports (authored by CNAC staff) will serve as a baseline for the needs analysis. Also because of our understanding of the needs both regionally and nationally will make us a highly effective member of the REL Network (task 3).

Insight Policy Research, Inc. (Insight), is a national organization specializing in comprehensive, non-partisan, objective, data driven evaluations of government, non-profit, and private sector programs, policies, and initiatives. It will work closely with CNAC staff on needs analysis (task 1.1). The Insight staff have designed and conducted surveys, focus groups, discussion groups, cognitive interviews, process and case studies, and content analysis and semi-structured interviews with a full spectrum of professionals at the national, state, and local level, as well as the general public and special populations (see relevant work sample Insight-1). Insight's expertise extends to working with vulnerable, at-risk, and limited English proficiency populations as well as rural and underserved areas.

5.2.2 Experience And Capability Providing Training And Technical Assistance, And Conducting Fast Response Studies (Task 1.1, 1.2)

Over the last five years CNAC managed the Appalachian Technology in Education Consortium (ATEC), a U.S. Department of Education funded project, to provide training and technical assistance covering the same states as the ELAR (see relevant work example CNAC-3). ATEC included partners³⁹ from across the region (a similar setup to the ELAR), and it functioned as part of the network of Regional Technology in Education Consortia (R*TECs). The R*TEC network undertook joint activities including dissemination activities such as joint participation in national meetings (task 3). The ATEC provided teacher technology training and created a popular *Technology Coach Handbook* in both a web-based and CD ROM format (task 1.1) The ATEC also conducted fast response studies (task 1.2) including an evaluation of the Student Technology Leadership Program (STLP) for the Department of Education in Kentucky and the Virtual High School program for the Department of Education in West Virginia.

Both the Collaborative for Teaching and Learning (CTL) and the EdVenture Group are non-profit, consulting and professional development organizations based in the Appalachian region. They will assist with the training and technical assistance aspects of Task 1.1. Each organization has a professional staff with widespread experience in education at all levels as teachers, administrators, and professional development providers. Their staffs and facilities will also be available to work on the Needs Assessment (see relevant work experience CTL-1, EV-1).

Our plan for fast response studies (task 1.2) involves the creation of an ELAR Data Center (EDC), (Fast response project 1) a field scientist program to Chief State School Officers, a scientific analyst program to schools and districts (Fast response project 2), and five research projects specifically addressing regional and national issues. CNAC has been creating large, complex, longitudinal databases for the last 20 years (see relevant work experience CNAC-1). We have created multiple longitudinal files with millions of records and hundreds of variables. Our experience designing and running field scientist and scientific analyst programs have been discussed previously.

Fast response project 3—Curriculum Quality and Alignment of Appalachian Region Reading First Programs—will be a collaborative effort between CNAC and Tierra Del Oro Consulting LLC (TDO). TDO along with its sister company JES and Company have developed a compre-

³⁹ The ATEC included subcontracts with the Appalachian Rural Systemic Initiative (KY), the University of Memphis (TN), The EdVentures Group (WV), Westat (MD), InfoTech Strategies (DC), JES & Co (AZ); an association with the Vanderbilt University and the University of Virginia; and a nationwide array of consultants.

hensive database of standards with cataloging and cross-referencing technologies, and it has established the nation's first non-proprietary K-12 Achievement Standards Network incorporating alignment to state and nationally recognized academic standards. The National Science Foundation has partially funded its database, search and retrieval, and cataloging systems for the National Science Digital Library (see relevant work example TDO-1). CNAC contribution to this project as well as to Fast response projects 5, 6, and 7 will make use of the broad capabilities of the CNAC research staff. The Personnel section of this proposal demonstrates the individual capabilities of the principal investigators of these studies. However, CNAC's organizational staff capabilities are much deeper than indicated in the limited space and scope of the Personnel section. The CNAC staff includes nearly 350 researchers, research programmers and research assistants. About two-thirds of the research staff hold Ph.D.s in a wide variety of disciplines including education; the physical sciences, mathematics, and engineering; economics and other social sciences; and strategy and policy. As described previously the staff has considerable experience in the type of fast response and rigorous research studies that will be part of the ELAR.

Fast-response project 4—Implications of Growing ELL Population in Appalachian Schools—will be a collaborative effort between The Center for Applied Linguistics (CAL) and Insight. CAL is a private, non-profit organization: a group of scholars and educators who use the findings of linguistics and related sciences in identifying and addressing language-related problems. CAL brings extensive relevant experience with ELL students (relevant work experience CAL-1, 2). Insights contribution will primarily come from Anne Peterson an expert on Census and other demographic information (see Personnel section).

5.2.3 Experience And Capability Conducting Rigorous Research (Task 2)

The CNAC Team brings significant expertise and capability to the rigorous research studies task (task 2). The team includes two of the leading research universities in the Appalachian region, the University of Virginia and the University of Kentucky, and a small research and evaluation company, lead by one of the leading education researchers in the region. Together with CNAC, each of these organizations has the demonstrated experience and capability to conduct scientifically based studies, collect large amounts of data and analyze it with sophisticated analytical techniques, and disseminate the findings accessible to practitioners and policy-makers. CTL and the EdVenture Group, Inc. will assist the researchers with data collection in the school settings for two of the studies.

Dr. Robert Pianta is the director of the Center for the Advanced Study of Teaching and Learning (CASTL), and he will be the principal investigator on the Web-Based Feedback study (Task 2 Study 1). Dr. Pianta's qualifications are presented in the Personnel section of this proposal, but the capacity of his research team at CASTL is presented here. The University of Virginia initiative in the Curry School of Education and the College of Arts and Sciences created CASTL as an interdisciplinary mechanism for advancing scientifically based policy and practice in teacher education, student learning, and the quality of classroom teaching. CASTL's mission is to conduct scientific studies on teaching, teacher quality, and student classroom learning from pre-school through the high school years with particular emphasis on the challenges posed by poverty, social or cultural isolation, or lack of resources in communities under stress. These are critically important issues in parts of the Appalachian region. CASTL current research portfolio includes work evaluating and improving the quality of pre-service teacher education, designing new mechanisms for the study and support of teachers in the field, understanding classroom con-

ditions that maximize students' engagement in learning, and integrating teachers' knowledge in the arts and sciences with their skills in transmitting this knowledge to students of all ages. CASTL is currently working with several states implementing pilot trials of professional development interventions such as the one proposed in for this project MyTeachingPartner (see relevant work experience UVA-1).

Dr. Linda Cavalluzzo, a Senior Researcher at CNAC, will lead the Hybrid Secondary Course study (Task 2 Study 2). Dr. Cavalluzzo's qualifications to lead this study are presented in the Personnel section of this proposal. CNAC has considerable expertise in the conduct of rigorous policy relevant research on education issues that includes the use of experimental designs (see relevant work examples CNAC-4, 5), as well as the assembly of large data sets and the conduct of empirically based studies using sophisticated statistical techniques (see relevant work examples CNAC-6, 7)

Dr. Steven Ross from Education Innovations will lead the Early Literacy First (Task 2 Study 4). His qualifications to lead this study are presented in Personnel section of this proposal. EI's staff conducts rigorous evaluation research of educational policies and practices in preK-12 schools and disseminates their findings to practitioners and policymakers regularly. EI has gained national recognition for their contribution to discussions of issues such as reform of teacher education, educational equity, educational technology, school reform and restructuring, urban and multicultural education, interventions for at-risk students, and using formative evaluation methods for school improvement decision-making. EI follows the guidelines on research design proposed by the National Academy of Sciences and the What Works Clearinghouse. EI is currently evaluating school reform (CSR) initiatives in approximately 600 schools in 20 states, and the Supplementary Education Services program, technology coaches program and the Reading First program all in Tennessee see relevant work samples EI-1, 2, 3). In addition, EI has also developed the Formative Evaluation Process for School Improvement (FEPSI) to assist individual schools to make data-driven decisions to attain NCLB Adequate Yearly Progress (AYP) standards. During the 2004-2005 school years, approximately 850 schools across the nation used this tool and related strategies.

Dr. Ted Hasselbring, a Professor of Special Education at the University of Kentucky, will direct the Math Proficiency Study (Task 2 Study 4). Dr. Hasselbring's qualifications to lead this study are presented in the Personnel section of this proposal. The College of Education at the University of Kentucky has a large diverse research program, and it is involved in a number of large projects and research consortia. One example of this type of capacity is the Appalachian Mathematics and Science Partnership (AMSP). AMSP is an NSF funded network of 10 institutions of higher education and 52 school districts seeking to demonstrate improved student achievement in mathematics and science through the support of partnerships in the Central Appalachian region that unite the efforts of teachers, administrators, guidance counselors and parents in local schools with administrators and faculty at area colleges and universities. With the major thrust of ELAR's first year research aimed at improving literacy, UK also has experience directly relevant to the theme of its rigorous research program of improving in core subject of diverse students through better teaching and more effective use of technology (see relevant research examples UK-1, 2) For example, The National Assistive Technology Research Institute (NATRI) conducts research, identifies promising practices and disseminates information related to the planning, de-

velopment, implementation, and evaluation of technology services for the disabled (i.e., assistive technology) in schools. This study makes use of *Mad Math Adventures* a software program, which will be rigorous, evaluated in the Math Proficiency study.

As previously noted, CTL and EdVenture will assist with the data gathering portion of the rigorous studies. CTL has worked in over 450 elementary, middle and high schools in states including Kentucky. The EdVenture Group has trained over 20,000 teachers and administrators and 60,000 community and business members through its projects and customized offerings and as a result it has an extensive network of connections throughout the state and the region. These experiences will enable CTL and EdVenture to play a role in implementation of data collection of rigorous projects in schools.

5.2.4 Experience And Capability Supporting A National Laboratory Network (Task 3)

CNAC has two relevant experiences supporting a national network. First, in the RAC project (see relevant experience sample CNAC-2), CNAC created a network of Regional Advisory Committees. It built a website to allow individuals RACs to share information both internally and with the public. Entry to each individual websites came through the same portal. CNAC also organized joint activities for the RACs around the issue of national dissemination and plenary meetings. Second, in its management of the ATEC (see relevant experience sample CNAC-3), CNAC participated in the national system of R*TECS. Members of the R*TEC network undertook joint dissemination activities at national education technology meetings. Furthermore the ATEC in partnership with the Middle Atlantic Region Technology in Education Consortium (MAR*TEC) organized a series of meetings for state technology directors across the eight states and District of Columbia with ED officials and outside experts.

5.2.5 Experience And Capability In Regional Dissemination (Task 4)

CNAC and its ELAR partners have provided dissemination services through a number of contracts. As part of the RAC project, CNAC created a multifaceted dissemination program. First, it developed a pamphlet explain the purpose of the RACs, how to access RAC public meetings, and how to provide input to the RAC. Second, it provided public access to RAC plenary sessions and committee meetings through a combination of web-casts and online teleconferences. Third, it created an information distribution system both through national and regional stakeholder organizations. This strategy was successful in generating public interest in the RAC deliberations as indicated by the large number of public comments (as posted comments on the website, e-mails, and postal letters) and Internet viewings over the relatively short duration of the committees' activities. CNAC also gained experience in regional dissemination in the ATEC project. One indication of the success of this campaign is that over the five-year duration of the project activity on the website increased ten-fold.

Supporting CNAC in dissemination activities will be Symtech Corporation. Symtech is a small company with facilities in Virginia and Tennessee with experience and capabilities working with researchers and technical experts to make their writings clear and understandable to the non-technical public. Symtech has worked with a variety of federal and local government agencies on information dissemination.

5.2.6 Experience And Capability Planning, Managing And Reporting (Task 5)

Our experience managing the FFRDC and the ATEC encompass all the requirements of the sub-tasks under task 5. We have demonstrated over many years the capability to develop annual plans and update them (CNAC-1), forming and developing the functions of a governing board (see discussion of the RAC, CNAC-2), providing data for the government to monitor our performance (a requirement of the FFRDC contract), scheduling and conducting regular meetings, and providing all manner of reports including progress and financial ones.

5.3 Resources, Facilities and Equipment

The CNA Corporation and its partner organizations have the resources, facilities and equipment to support everything we have proposed to deliver with the ELAR. CNAC's headquarters is located in Alexandria, Virginia, a short distance from IES and Department of Education headquarters. CNAC's close proximity provides the opportunity for a very effective working environment and ease of communication between the ELAR management and the project officer and other ED staff. The headquarters building includes on-site conference space, access to numerous research resources and libraries, as well as a full suite of communications systems and capabilities, a reproduction center that can produce and disseminate both hard copy and electronic materials, including technical displays and graphic design products.



CNAC Headquarters

CNAC's conference center consists of several components including a multipurpose room, a video-teleconferencing center, and a boardroom. The multipurpose room can be configured as an auditorium to seat 170, as a large conference room to seat 75, or as three breakout rooms seating 34 each. The room also includes multiple monitors for efficient viewing of presentations and a simultaneous interpretation and closed circuit video that can be broadcast throughout the building. The video-teleconference room has a capacity of 18 and allows for up to five simultaneous connections to remote site. The boardroom seats 42 and is ideal for meetings of the ELAR Governing Board. There also is a conference room adjacent to boardroom for breakout meetings or buffet luncheons (seating capacity for 22), another small conference room (seating capacity for 22) and a training center. The meeting facilities also include a business center equipped with a fax machine, copier, phone lines and connections for laptops. This conference facility is ideal for regional or national meetings, technical assistance or training activities and other activities of the ELAR.

CNAC has extensive computer hardware, software, data processing, and analysis tools at its disposal. All CNAC staff members have access to hardware such as IBM compatible PCs, Apple, and Unix based workstations employing several operating systems, including Windows 2000, NT, Linux, and Solaris. CNAC also uses the standard Microsoft Office Professional applications that include Word, Excel, PowerPoint, Access, and Microsoft Project. Adobe Acrobat is also extensively used for creating and reading .PDF files. CNAC has a strong, integrated data management capability, proven by the company's experience at successfully transforming large data sets into analytically useful formats as will be necessary for the creation of the Appalachian Edu-

cation Data Center (AEDC). For large data processing, CNAC uses a series of Alpha minicomputer/ workstations. CNAC maintains both classified and unclassified Alpha VMS systems and can process data at multiple levels of security. CNAC can store, read, and write data from large-scale data storage systems (RAID magnetic disk/optical jukeboxes), capable of storing nearly three terabytes of data, 9-track tape, 3480 tape, and read/write optical 5 1/4 inch media and can also read and write to CD-ROM.

Using an expansive suite of programming database tools as well as software packages, CNAC can easily handle and manipulate large data sets. Programming tools include Visual Basic, Fortran, Cobol, C, C++, Basic, PL1, IMSL Libraries, and Pascal. CNAC's database tools include Oracle, SQL Server, Access, FoxPro, Visual FoxPro, and RDB. The company also owns and uses several statistical and data manipulation packages, including SAS, STATA, SPSS, Gauss, Sawtooth, Matlab, and LimDep, and has access to WORDSTAT, ATLAS, and NUD*IST. Additionally, CNAC maintains modeling and simulation tools such as AMPLE and Visual Basic.

Because of its extensive experience in dealing with both the classified and highly sensitive (because of privacy concerns) it has procedures to ensure complete data security and integrity. All classified data and meets or exceeds the requirements set in OMB Circular No. A 130, App. III. All sensitive data will be stored on C2-level servers. Virus scans of all network-based systems as well as individual desktop PCs are routinely conducted using commercially available software. The ELAR Director will have the sole authority to determine who is allowed access to the project data. Access will be on a need-to-know basis. The ELAR Director, Principal Investigators, and system administrator will work together to establish a password-protected access plan to control access to all data using project management tracking software.

CASTL at the University of Virginia, the College of Education at the University of Kentucky, and Education Innovations (at the University of Memphis) all have access to the research infrastructure at large state universities, which should be more than sufficient to support the rigorous research projects proposed for the ELAR. CASTL includes more than 30 professional research staff as well as more than 20 advanced graduate Fellows supported by IES training grants available to work on projects. The College of Education at the University of Kentucky includes a faculty and staff of 88 plus numerous graduate students and research assistants. Education Innovations has a staff of 20 plus it has ready access to faculty and staff from the University of Memphis. Each of these institutions has more than enough people to support the proposed work.

Insight Policy Research is located in Arlington, VA. Its headquarters includes a Computer Assisted Telephone Interview (CATI) Center, which the ELAR will use for its telephone surveys, as part of the ongoing needs assessment. Insight's permanent staff of nearly 10 is sufficient to fill its roles in the needs assessment and fast response studies.

We intend to use the facilities of both CTL and EdVenture for regional meetings and/or training. CTL has a 10,000 square foot facility located in Louisville, Kentucky. The facility includes 2,500 square-foot training room and self-contained breakout, conference and work areas, which will be ideal for training and public hearings. CTL owns a digital video editing suite, large-screen projection system, and audio conferencing equipment.

The EdVenture Group's facility is located in Morgantown West Virginia and includes a conference room equipped with audio and video equipment that is ideal for focus groups and other meetings, and a training room equipped with 20 wireless laptop computers. For larger audiences EdVenture has access to a nearby amphitheatre. The staff of each organization is between 15 and 20, which is more than sufficient for their assigned roles in the ELAR.

5.4 Project Summaries

Project Title: Federally Funded Research and Development Center, Center for Naval Analyses (CNAC-1)

Contract Number: N00014-00-D-0700

Period of Performance: September 28, 2000 – September 30, 2005

Contract Amount: \$361,000,000

Client Name: Department of the Navy

Technical Contact: Ms. Connie Marasciula, United States Navy Assessment Division (N81)

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Project Description: CNAC operates the Center for Naval Analyses (CNA), a federally funded research and development center (FFRDC). CNA's mission is to provide independent, authoritative research, analysis, and technical support that focus upon the major present and future issues affecting the Navy, the Marine Corps, other DoD agencies, and the Coast Guard. For these agencies, we provide support across the full spectrum of their activities. The Center for Naval Analyses has a 60-year history of working closely with the Department of the Navy (DoN) helping decision-makers make wise choices by providing honest, objective analyses that challenge conventional wisdom and provide frank answers to potentially controversial questions. We assess complex technologies and systems, determining exactly what they are capable of doing and whether they will meet the military's needs in the operational setting. We evaluate DoN's education programs to determine how they can best support its missions.

A primary strength is our ability to plan and execute an integrated research program covering a wide range of issues. The research program includes development of a detailed annual plan that covers the Department's highest priority needs, the design and execution of fast response and long-term rigorous research studies, and the integration of practitioners into this program of research through a fellowship program. The fast response research program relies in part on a comprehensive database that we have built over a number of years. The research centers on five general areas of analysis: technology assessment, systems evaluation, operational assessment, resources and support analysis, and strategy and policy. Finally, we are unique among research organizations in that we have a formal field program in which we send our analysts around the globe to serve alongside field commanders and program managers. This practical real-world experience strengthens our analytical efforts and sets us apart from similar research organizations.

Project Title: Support to the Ten Regional Advisory Committees for Technical Needs Assessment (CNAC-2)

Contract Number: ED-04-CO-0043

Period of Performance: September 30, 2004 – April 30, 2005

Contract Amount: \$1,987,797.17

Client Name: U.S. Department of Education

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In referring to the needs assessment (task 1.1), the SOW includes the requirement that “The contractor shall take into account regional assessments conducted under the Education Sciences Reform Act of 2002, Section 206...” (p. 6) In October 2004, the Secretary of Education fulfilled this requirement by appointing 10 Regional Advisory Committees to conduct an Education Needs Assessment. CNAC had the contract to support the operations of these 10 RACs. The boundary lines for these 10 committees match the boundary lines for the RELs. So for example, the Appalachian RAC included members from the states of Kentucky, Tennessee, Virginia, and West Virginia. As part of CNAC support for the RAC process,⁴⁰ we provided each RAC with a coordination team led by a senior member of the contract research staff team. In the case of the Appalachian Region, Dr. Daniel Burke from CNAC served as the coordinator. The coordinators prepared regional profiles, facilitated the meetings, maintained minutes and other documents, provided briefing materials and literature reviews, and drafted substantial portions of the regional final reports. In this process, these facilitators became very knowledgeable about the education needs within the region. CNAC wrote an Overview and Synthesis of the 10 separate regional reports, in which we identified common needs across the regions. The RAC assessment greatly enhanced CNAC’s knowledge and understanding of the education needs of both the Appalachian Region (task 1.1) and the nation as a whole. This nationwide knowledge will also help CNAC in being a part of the REL Network (task 3). Another element of CNAC’s RAC support was the development and execution of both a nationwide and region specific information dissemination plan. As part of this plan, CNAC developed a list of over 150 national and regional stakeholder organizations whose membership might be interested in the RAC deliberations.

⁴⁰ Another part of this support was the creation of a single website for the 10 committees. We deferred further discussion of organizational experience and capability implications to the proposal for Task 6.

Project Title: Appalachian Technology in Education Consortium (ATEC) (CNAC-3)

Contract Number: R302A000014

Period of Performance: June 1, 2000 – September 30, 2005

Contract Amount: \$6,511,727.00

Client Name: Department of Education

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Over the last five years CNAC managed the Appalachian Technology in Education Consortium (ATEC), a U.S. Department of Education funded project covering the same four states as the proposed ELAR. The ATEC was part of a network of Regional Technology in Education Consortia (R*TECs) with the mission of providing technical assistance and training to practitioners and policymakers in each of 10 regions. Members of the R*TEC network undertook some joint activities and as a group coordinated dissemination activities. An example of R*TEC network collaboration occurred after the passage of NCLB when ED asked the R*TEC to refocus their efforts toward helping states fulfill the requirements of Title 2D dealing with technology. CNAC in partnership with the Middle Atlantic Region Technology in Education Consortium (MAR*TEC) at Temple University organized a series of meetings for state technology directors across the eight states and District of Columbia with ED officials and outside experts to discuss 1) how to develop state technology plans complying with NCLB regulations and 2) how to rigorously evaluate NCLB technology grant proposals. This R*TEC collaboration demonstrates our cross-organizational collaborative capacity required of the RELs in task 3. The ATEC included several other components relevant to the SOW. Task 1.1 discusses training. The ATEC provided teacher technology training and created a popular *Technology Coach Handbook* in both a web-based and CD ROM format. The ATEC also conducted fast response studies (task 1.2) including an evaluation of the Student Technology Leadership Program (STLP) for the Department of Education in Kentucky and the Virtual High School program for the Department of Education in West Virginia. Task 5 speaks to the management of the REL. To meet both the technical and subcontracting requirements of this RFP, CNAC has built a team of subcontractors spread across the region and beyond. We demonstrated the capability to manage such an organization with the ATEC project. This project included multiple partners⁴¹ undertaking a variety of tasks for practitioners and policymakers over a five-year period in a cost efficient and timely manner throughout.

⁴¹ The ATEC included subcontracts with the Appalachian Rural Systemic Initiative (KY), the University of Memphis (TN), The EdVentures Group (WV), Westat (MD), InfoTech Strategies (DC), JES & Co (AZ); an association with the Vanderbilt University and the University of Virginia; and a nationwide array of consultants.

Project Title: Evaluation of Thinking About Math Instruction (CNAC-4)

Subcontract Number: EDC 6210

Period of Performance: October 14, 2003 – September 30, 2005

Contract Amount: \$303,376.32

Client Name: National Science Foundation through a subcontract with Education Development Centers

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CNAC has considerable experience in program evaluation including the use of experimental designs and employing a combination of quantitative and qualitative methods. This project is an example of our experience conducting studies with a randomized assignment component. CNAC in partnership with Temple University is conducting an evaluation of the NSF Math-Science Partnership grant held by the Education Development Centers (EDC) entitled “Thinking About Math Instruction.” This project is a national study of 600 K-8 principals’ leadership content knowledge in mathematics. The project is structured as a clinical trial of EDC’s Lenses on Learning (LOL) course, which teaches principals to examine how their mathematics knowledge and beliefs about mathematics teaching and learning affects their instructional leadership. The evaluation uses pre-post surveys consisting of short qualitative responses, Likert-scale responses, and math computations, as well as in-depth case studies of selected principals.

Project Title: Evaluation of Teaching American History Grants (CNAC-5)

Subcontract Number: PO No. 2601883 and 23218

Period of Performance: Feb 24, 2004 – Jun 30, 2006

Contract Amount: \$200,000

Client Name: Fauquier County Public Schools

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Project description: CNAC is currently the outside evaluator for local school districts on three “Teaching American History” grants including the “Creating a More Perfect Community: Improving the Teaching of Traditional American History in Alexandria, Virginia,” “Peopling the American Past: Focusing on Key Individuals, Events, and Documents in U.S. History” for Fauquier County, VA and “Foundations of Freedom II” for Newport News VA. The goal of these three-year projects is to support programs that raise student achievement on the Virginia Standards of Learning (SOLs) by improving teachers' knowledge, understanding, and appreciation of American history (Goal 1), helping teachers create classroom resource materials and use primary source materials (Goal 2); and increasing teachers' professional networking (Goal 3). Although the content of the professional development programs (i.e., the treatments) differ across the three grants, our formative and summative experimental evaluation design employs quantitative and qualitative analysis techniques and uses staggered implementation to create the control groups for each of these 3-year evaluation studies. We use the Statistical Package for the Social Sciences (SPSS) software to generate random assignment lists of history teachers in each participating grant to populate the treatment and control groups. We developed baseline and follow up surveys to measure change in participants' content knowledge and perceptions about teaching American history to document teacher effectiveness outcomes. Change is measured using paired t-tests to examine statistical significance between treatment and control groups and between baseline and follow up survey measures within these groups for survey sections and survey questions. First year findings indicate statistically significant improvements in teacher effectiveness. An overall analysis of variance is planned. To support our qualitative analysis we are conducting pre- and post-focus groups and teacher interviews and compiling field notes on our observations of history book group discussions and classroom history lesson plans and curriculum units. The qualitative methods yield deeper insights into how the teachers make sense of their roles as instructors of American history. Frequent observation and dialogue with teachers facilitates the identification of issues influencing their pedagogy and content knowledge. Each of the qualitative data sources provides different perspectives of the teachers. Observational field notes provide a clearer contextual image of the programmatic intervention and the teacher's instructional environment. Data are coded with categories and themes constructed to search for “confirming” evidence that meets project goals.

Project Title: Critical Issues in Recruiting and Retaining the Math and Science Teacher Workforce (CNAC-6)

Contract Number: REC-0107014

Period of Performance: July 15, 2001 – September 30, 2005

Contract Amount: \$857,651

Client Name: National Science Foundation

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Under an NSF grant, we conducted a study of teacher workforce issues in the Miami Dade Public Schools. The study demonstrates our capabilities (1) to assemble large longitudinal databases from a variety of sources, (2) to conduct empirically based studies using sophisticated statistical techniques that advances the state of research within education and (3) to use those findings in a simulation model that permits examination of the implications of alternative options on the capacity of the instructional workforce.

The retention and compensation database drew on these sources:

- **Annual snapshots from Miami Dade Public Schools personnel files**
- **Annual data from the Florida Schools Indicators Report about schools**
- **The Common Core of Data** for information about student body demographics
- **National Science Foundation data** on the occupations that workers with undergraduate degrees in mathematics and the sciences enter
- **March Current Population Surveys** on earnings of workers with college degrees in different occupations.
-

The resulting database included over 24,000 records (6,429 unique teachers) covering 11 years of observations. We then estimated a model, first developed at CNAC 25 years ago⁴² and widely used since then, known as the Annualized Cost of Leaving (ACOL) model. The ACOL model combines all elements of current and future compensation into a single discounted present value in making comparisons to alternatives employment opportunities, rather than the more conventional approach of considering only current earnings and working conditions. With this model, we examined the expected effects on teacher retention rates of changes in the compensation package that occur at different points in time (e.g. bonuses, salary or retirement pay). In the final part of this study, we developed a system dynamics simulation model of the teacher workforce. Simulations can be used to identify the critical factors in recruiting and retaining high quality teachers. The model uses of feedback loops and delays in information flows through the teacher workforce system to identify nonlinear behavior, resistance to policy change, and counterintuitive and/or untended consequences of policy change and/or resource allocation.

⁴² John T Warner and Matthew S Goldberg, "The Influence of Non-Pecuniary Factors on Labor Supply: The Case of Navy Enlisted Personnel," *The Review of Economics and Statistics*, 1984, vol. 66, issue 1, p 26-35.

Project Title: National Board Certification (CNAC-7)
Subcontract Number: LP-02-0203-009
Period of Performance: August 15, 2002 – October 31, 2004
Contract Amount: \$160,000
Client Name: National Board for Professional Teaching Standards (NBPTS)
Technical Contact: Dr. Ann Harmon
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This jointly funded study of the relationship between teacher quality indicators and student achievement in high school mathematics further illustrates CNAC's considerable capacity and experience in conducting large-scale, policy relevant, empirical research that requires (1) the construction of longitudinal data bases (2) the merging of data files from various sources, (3) use of sophisticated statistical techniques and (4) specific expertise in value-added analysis.

For purposes of this analysis, researchers collected nearly 108,000 individual student records covering a four-year period, from the Office of Assessment and Data Analysis in Miami-Dade County Public Schools and linked each with his or her subject-area teacher using (2) personnel records from the office of Human Resources, (3) additional information on National Board Certification from the Office of Professional Development and (4) school characteristics contained in the public Florida Schools Indicators Reports, a public data set that offers information by school, to create a longitudinal dataset that was used to examine gains in mathematics achievement in school years 1999-2000 to 2002-2003.

The researchers examined results for a variety of model specifications individual student and school fixed effects models, and a variety of different student subsamples, finding robust evidence that observable teacher characteristics provide important signals about teacher quality. Indeed, seven of nine indicators of teacher quality that were included in the analyses of student gains on state end-of-grade exams in mathematics resulted in appropriately signed and statistically significant effects. Among those indicators, having a teacher (1) whose primary job assignment is mathematics, (2) who holds National Board Certification and (3) who is state-certified in mathematics had the largest effect sizes. Neither the quality of the undergraduate institution the teacher attended, nor holding a post-secondary degree had a meaningful effect on student achievement. The findings show that there is a link between specific career milestones and student achievement. However, those used in most pay tables that determine teacher pay are only weakly tied to performance. New pay structures appear to be warranted.

Project Title: Web training: Pre-K teachers, literacy, and relationships (MyTeachingPartner) (UVA-1)

Contract Number: R01 HD046061

Period of Performance: 9/26/03 – 7/31/08

Contract Amount: \$4,760,034

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MyTeachingPartner (MTP) is a project based at the University of Virginia's Curry School of Education. We will be using MTP in the rigorous research study (study 1 in task 2) entitled "Alternative Models of Professional Development to Improve Student Outcomes" It is designed to provide, and evaluate the effects of, three types of web-based support for teachers in pre-kindergarten programs. This support is designed to help teachers implement activities that improve children's literacy and language development and positive social relationships. MTP is supported by a grant from the National Institute of Child Health and Human Development to a multidisciplinary team of educators at the Curry School. MTP is an innovation in professional development for educators and has the endorsement of the Commonwealth's State Department of Education. The development of the components of MTP is a precursor for rigorous research study 1.

All teachers participating in the project will receive copies of the language, literacy, and social relationships activities developed by MTP for use in pre-kindergarten classrooms. These activities map onto the most common curriculum used in pre-kindergarten programs (e.g., Creative Curriculum, High Scope), they also map onto the Commonwealth of Virginia pre-kindergarten benchmarks, and they have been developed for use within any existing curriculum. All participating teachers and school divisions will receive access to evaluation results, regular newsletters with teaching tips, updates, and new web-links, and training in classroom activities for promoting literacy, language development, and building positive relationships with children. The materials, activities, and consultations offered by MyTeachingPartner.org have been fully field-tested and piloted with early childhood educators.

Project Title: Supplemental Educational Services (EI-1)

Contract Number: 331035-076

Period of Performance: 12-1-2004 to 11-30-2005

Contract Amount: \$90,000

Client Name: Tennessee Department of Education

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Supplemental educational services are a component of Title I of the Elementary and Secondary Education Act (ESEA), as reauthorized by the *No Child Left Behind Act* (NCLB), which will provide extra academic assistance for eligible children. Specifically, students from low-income families who are attending Title I schools that are in their second year of school improvement (i.e., have not made adequate yearly progress or “AYP” for three or more years), in corrective action, or in restructuring status are eligible to receive these services. Education Innovations is evaluating the impact and quality of these services on behalf of the Tennessee Department of Education and other State Department’s of Education.

Project Title: TEAM TN Evaluation (Ed Tech Evaluation) (EI-2)

Contract Number: 331034-274

Period of Performance: 10-01-2004 to 09-30-2005

Contract Amount: \$454,094

Client Name: Tennessee Department of Education

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The goals of this partnership with the TN Department of Education and The CNA Corporation are to (a) fully address NCLB requirements of implementing proven strategies for technology integration and supporting high-quality professional development; (b) structure and support formative evaluation data usage at the individual school and district levels; (c) provide both formative and summative evaluation data to guide decision-making for technology programs at the state level; (d) create comprehensive databases to document technology usage at LEAs relative to implementation quality, school/district characteristics, professional development support, and student achievement; and (e) support rigorous research on technology program effectiveness using randomized and quasi-experimental designs.



Project Title: Reading First Evaluation (EI-3)
Contract Number: (331) 064-018
Period of Performance: 07-01-2004 to 06-30-2005
Contract Amount: \$376,099
Client Name: Tennessee Department of Education
Technical Contact: Mr. Jim Herman
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The Education Innovations through a contract with the Tennessee Department of Education is evaluating all Tennessee schools that received grants as part of the Reading First Program. EI is providing formative evaluation services to the schools to assist them with effectively implementing their literacy programs, as well as summative evaluation services to inform the state and other policymakers of the outcomes that are associated with the implementation of this initiative in Tennessee, especially with regard to improved student reading ability.

Project Title: The National Assistive Technology Research Institute (UK-1)
Grant Number: H327G000004
Grant Period: September 2000 – August 2005
Grant Amount: \$2,800,000
Funding Agency: U.S. Department of Education, Office of Special Education Programs
Project Officer: Jane Hauser
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The University of Kentucky also has considerable experience in assistive technology research, which is critical for the math intervention that we are proposing. Through funding from the Office of Special Education Programs, we established the National Assistive Technology Research Institute (NATRI) to meet two primary goals, one, to examine factors related to the planning, development, implementation, and evaluation of AT services in schools. The second is to disseminate the findings of the research in ways that will assist school personnel to develop or improve AT policies and practices for students with disabilities. To meet these goals a series of studies have been conducted to determine the following:

1. The status of AT use in schools and the role that AT provides in the education of students with disabilities;
2. The policies, procedures, and resources that school districts use to develop and deliver AT services to their students;
3. The ways that AT decisions are made by teams of people who develop Individualized Education Programs (IEPs) for students enrolled in special education programs;
4. The training and technical support that is needed by individuals who are involved with planning and implementing the use of AT devices and services with students;
5. The integration of AT into learning environments and the ways that AT devices and services are used to facilitate instruction and access to the curriculum;
6. The effect that the use of AT devices and services have on the academic, social, and functional performance of students who use them.

NATRI is related to the current project in that the math intervention we are proposing is based on an assistive technology practice and methodology that can be critical to the successful learning of mathematics for students with disabilities.

Project Title: Curriculum Access through Reading Electronically (CARE) (UK-2)
Grant Number: H327A030076
Grant Period: October 2003 – September 2005
Grant Amount: \$398,927
Funding Agency: U.S. Department of Education, Office of Special Education Programs
Project Officer: David Malouf
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The University of Kentucky has considerable experience in assessing the effectiveness of software in schools. This project is an example of our experience conducting studies on technology-based interventions that assist students with disabilities in accessing the math curriculum.

This project examined the extent to which systematic and statewide implementation of Universal Design for Learning (UDL) concepts and technology improved the results of education, increased access to general curriculum, and improved participation and performance in statewide assessment for students with disabilities. This project was built on two years of work by the Kentucky Department of Education to infuse text to speech or text reader software into Kentucky's schools. The project has examined how text reader software can be embedded into classroom routines to improve student access to academic core subjects that are typically inaccessible to students with disabilities due to their low literacy skills.

This project is related to the project we are currently proposing in that Project CARE is looking at how students with disabilities use text-reader software to access the math curriculum. For example, are students able to solve word-problems more readily using text reader software as compared to when this technology is not available?

This project has examined student use of text reader software in more than 700 schools in Kentucky. From the data collected we are examining variables that are inherent to a statewide UDL initiative, including increases to access to the general curriculum, eligibility for use of text reader software during the state assessment, and effective methods for support, training and technical assistance to schools in understanding and implementing UDL concepts and technology.

Project Title: Middle Grades Research Project/Different Ways of Knowing (CTL-1)

Contract Number: ED-99-CO-0151

Period of Performance: 1999-2004

Contract Amount: \$13.1 million from OERI/USDOE (sub-contract to the Collaborative for \$1.3 million)

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The Middle Grades Research Project developed a whole school design for middle grades reform that would promote increased student achievement, based on adapting *Different Ways of Knowing* to the middle grades. The Galef Institute was the federal grant to design and implement the program in four states, and CTL was a sub-grantee, providing leadership, coordination and support for the Kentucky schools and contributing to the development of the design and related professional learning project-wide. In Kentucky, implementation was in two waves with five schools in each cohort. These schools represented a variety of demographics: urban schools characterized by high numbers of students of poverty and color, suburban schools with diverse student populations and rural schools where poverty was a defining factor. CTL led both formal and informal professional development for each participating school, provided on-site coaching several times a month at each site, and engaged schools leadership teams in a series of seminars designed to build school capacity for sustained instructional improvement. This leadership seminar concept developed by CTL was adopted by the sub-grantees in the other three states implementing the program. The infrastructure provided by CTL and the caliber of professional development/coaching led to the highest levels of school performance among the four states in the Galef Institute's final internal project evaluation.

The formal external evaluation of the project, lead by Dr. Steven Ross (EI), adhered to federal guidelines for scientifically based research using a quasi-experimental design. The evaluation focused on the Cohort I schools. After one year, participating schools demonstrated significant overall advantage (effect size = +0.19) over their matched control schools on seventh grade KCCT (Kentucky Core Content Test) reading. Positive trends continued during the second and third years in reading and on all three tests for CTBS. Additionally, state assessment data for 2003-04 for the ten Cohort I and II schools demonstrate that all ten improved their accountability index and nine of the ten reduced the number of students performing at the novice (lowest) level, a priority of the assessment system.

Project Title: The West Virginia Turnkey Solution (EV-1)

Contract Number: R303A980157

Period of Performance: 1998-2002

Contract Amount: \$7,043,547

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West Virginia is divided into fifty-five counties, all of which have participated in Phase 9, the centerpiece and professional development component of the Turnkey Solution Project. Since its inception in 1999, just over 1700 kindergarten through twelfth grade teachers have attended the weeklong training by the EdVenture Group. Working in interdisciplinary teams, Phase 9 teachers have created nearly 1,000 curriculum units, comprised of almost 6,000 standards-based, technology-rich, peer-reviewed lessons that span the entire curriculum, from core academic subjects to the arts, foreign language, and physical and vocational education. These curriculum units reside on The Solution Site, the project's public web site, which currently averages about 1,355 hits per day.

Before teachers attend Phase 9, they must complete the state-approved Technology Standards for Teachers prerequisite class to gain the skills needed to complete the training successfully. After they complete Phase 9, teacher teams are required to train at least thirty colleagues in their home sites. The Phase 9 model also includes training for building principals—additional insurance that teachers have local administrative support and a voice in local technology and curriculum planning. These project activities have brought the total numbers of teachers trained to almost 19,000 statewide, and helped secure a critical mass of proponents among teachers and principals. They have also helped the project meet its own dissemination goals as well as the Technology Innovation Challenge Grant program goals of using technology to leverage change and bring about sustainable school reform. The degree to which changes are sustained depends in large part on what the teachers themselves do, or at least set in motion: how deliberately they use their training and The Solution Site, how extensively they spread the training to others, how effectively they use the instructional resources and strategies with students, and how demonstrably everything devoted to enhanced learning translates into improved performance.

Project Title: Evaluation of HRSA'S Nursing Education Loan Repayment Program and the Nursing Scholarship Program (Insight-1)

Contract Number: 230-03-0016

Period of Performance: 10/1/2003 through 9/31/2007

Contract Amount: \$571,575 (with a fifth year option for an additional \$265,721)

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This five-year project involves the evaluation of the impact of two key national programs – the Nursing Educational Loan Repayment Program and the Nursing Scholarship Program. These programs are designed to reduce the current nursing shortage and address the nation's growing need for nursing professionals, particularly in critical shortage facilities. The research design contains both qualitative and quantitative components. Qualitative data is developed through regional discussion groups with award recipients and critical shortage facility administrators. Quantitative data is obtained from the analysis of current program databases (such as the number of applicants, awards and funds obligated by demographics of program participants, school and type of shortage facility) and from nationally representative surveys of program recipients and their lenders. This project which is focused on addressing on addressing critical needs in the nursing community demonstrates the capability of Insight to support the Needs analysis (task 1.1)

Comprehensive data analysis is performed to determine the program impacts, the effectiveness of the program on nurse recruitment and retention, the effect of each program on beneficiary career choices, and the effect of the program on the supply and distribution of nurses. The evaluation also includes the development and implementation of annual performance measures as well as a cost-benefit analysis of the program in the context of the issues affecting the current nursing shortage. At the end of each year, Insight submits an annual report detailing the findings and resultant recommendations to the Health Resources and Services Administration (HRSA), the Department of Health and Human Services, and Congress. The most recent report is titled *HRSA Responds to the Nursing Shortage: Results from the Nursing Education Loan Repayment Program and the Nursing Scholarship Program*, January, 2004.

Project Title: The National Science Digital Library: Achievement Standards Network (TDO-1)

Grant Number: DUE-0121717, CFDA No. 47,076

Period of Performance: Sept. 2004 – August 2006

Contract Amount: \$453,837

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Diny Golder-Dardis heads the National Science Digital Library Achievement Standards Network program. Achievement Standards are statements of what learners should know and be able to do. They may be promulgated by state departments of education, national content groups, professional organizations, labor or skill boards, and certification bodies, both in the public and private sectors. They are often referred to as learning standards, academic standards, content standards, skill standards, competency standards and performance standards, or by other terms. Many include specific granular statements of achievement levels or proficiencies in the form of benchmarks or rubrics. The Achievement Standards Network (ASN) is comprised of four distinct but related projects that when fully developed work together to form a coherent framework for alignment, discovery and retrieval of educational resources by learning standards:

The Achievement Content Standards Repository (ACSR) that includes K-12 learning standards as promulgated by departments of education in each of the United States plus standards from nationally recognized content groups and other national and international achievement standards as individual use cases may require; available in XML format and compatible with XML schemas and recommendations of the Schools Interoperability Framework, Gateway to Education Materials, Dublin Core Metadata initiative, and other technical standards. Repositories of Aligned Standards (RAS) that include sets of exemplary Intermediary statements and vocabularies along with alignments of those statements and vocabularies to the various learning standards contained within the ACSR; and other third party intermediaries or alignment services that interoperate with the framework. The collection of services, interfaces, protocols and agents, including the Achievement Standards Network Registry Service that connects various classes of users to the content and functionality of the ACSR and the RAS. Research and Development on best practices and recommendations for representing content and skill standards within catalog records and educational systems

Project Title: Academic Literacy through Sheltered Instruction for Secondary English Language Learners (CAL-1)

Period of Performance: June 2003 – December 2006

Contract Amount: \$601,700

Client Names: Carnegie Corporation of New York/The Rockefeller Foundation

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Address:

Telephone:

The Sheltered Instruction Observation Protocol (SIOP) Model is a research-based approach to sheltered lesson planning and implementation that has proven effective with English language learners through the U.S. The model was developed in a 7-year national research project (1996-2003) sponsored by the Center for Research on Education, Diversity & Excellence (CREDE), funded by the USDE. Through literature review and collaboration with teachers, researchers identified features of instruction present in high-quality sheltered lessons to generate the SIOP Model. The model, refined in field-testing, consists of 8 components and 30 features.

Using the SIOP Model, CAL is engaged in a 30-month experimental research project involving 60 middle school educators in the Clifton, NJ, district to investigate the relationship between professional development in the SIOP Model and the academic achievement of secondary English language learners (ELLs). The project addresses these research questions: (1) Do teachers reach high levels of implementation of the SIOP Model during a sustained professional development program after 1 year? After 2 years? (2) Does implementation of the SIOP Model in subject area classrooms result in increased student achievement after 1 year? After 2 years? (3) Does the level of implementation among teachers affect student achievement?

Professional development and coaching activities on the SIOP Model provide a broad repertoire of activities, projects, and teaching methods to ensure that all students can learn challenging academic content. The professional development program includes summer institutes and follow-up workshops during the school year.

CAL is collecting and analyzing data for students taught by SIOP-trained and comparison teachers. The comparison group consists of teachers from a different district who are not receiving training in the SIOP Model. To measure the academic achievement of both groups of students, CAL staff will analyze their scores on standardized tests mandated by the state. Using the sheltered instruction observation protocol, teachers' level of implementation of the SIOP Model will also be evaluated. Participating teachers will be observed at least twice, in the fall and in the spring. A randomly selected subset will be observed in the winter as well.

Project Title: Acquiring Literacy in English (CAL-2)

Period of Performance: Sept. 2000 – May 2005

Contract Amount: \$7,369,982

Client Name: National Institute of Child Health and Human Development

Technical Contact: Peggy McCardle

Address: NICHD, 31 Center Dr, 6100/4B05h

Bethesda, MD 20892

Telephone: (301)-435-6863

Email:

Contract Contact: Stuart Sutton

Address:

Telephone:

Acquiring Literacy in English was a 5-year, multi-faceted research project on the acquisition of English literacy by Spanish-speaking children. In addition to a Research Core focused on assessment and an Administrative Core, the program included three research projects: Early Childhood Language and Literacy Development; Transfer of Reading Skills in Bilingual Children; and Spelling as an Indicator of English Literacy Development. This project was carried out in cooperation with Harvard University, The Johns Hopkins University, the University of Miami, and the University of Houston. The study was designed to permit a preliminary view of the developmental sequence of literacy in Spanish-English bilinguals from age 3 or 4 through Grade 5.

The Research Core assisted the three research projects by providing expertise in the development and adaptation of assessments and other data collection instruments and by addressing issues in the use of such assessments with Spanish speakers learning English. It also conducted cross-project analyses of research outcomes, building and maintaining a centralized archive, and providing comparison information for key assessments on levels of performance achieved by groups of children with different amounts of exposure to Spanish and English. The unit also reviewed requests from outside researchers and practitioners for use of assessments developed by this project.

Early Childhood Language and Literacy Development of Spanish-Speaking Children was a study of 350 4-year-old children in three locations focused on the relationship between home and school environments, links between growth in language skills in English and Spanish, and differences in the literacy process for monolingual and bilingual children. The purpose of this longitudinal research was to understand the early stages of literacy acquisition and identify ways in which parents and schools can help children be more successful in school.

Transfer of Reading Skills in Bilingual Children focused on children's Spanish reading, English reading, and awareness of sounds and word structure. The goal was to understand the role of the mother tongue (Spanish) in the development of English reading competency in second- through fifth-grade Spanish-speaking students. A pilot vocabulary intervention study investigated the feasibility of training teachers to implement a vocabulary development intervention.

Spelling as an Indicator of English Literacy Development focused on Spanish-English bilingual children in Grades 3-5 to identify factors that explain high levels of transfer from Spanish to English spelling, as well as to determine the relationships between English spelling skills and English reading ability in bilingual children.

Authors and Key Personnel for This Section

Name	Key Personnel	Section Author	Proposed Role
Donald Cymrot	Yes	Yes	Deputy Director

6 Small Business Subcontracting Plan

CNAC has well-established procedures and a record of success in managing subcontracts. We annually issue nearly \$4 million in subcontracts and teaming agreements and have never had a claim or judgment filed against us for any contracting activity. We have a proud history of regularly exceeding many of our small business subcontracting goals.

Small businesses and small disadvantaged businesses have clearly demonstrated exceptional leadership in creativity and innovation. We regularly tap these important resources for our clients and will do so for the ELAR.

We will meet or exceed the 23 percent of total cost goal subcontracted to small businesses, small disadvantaged businesses, woman-owned small businesses, HUBzone small businesses and service-disabled veteran-owned small businesses for the ELAR contract. We will meet or exceed each of the individual category goals for each type of business.

The following document is our "Small Business Subcontracting Plan" for ELAR:

6.1 ELAR Small Business Subcontracting Plan

Contractor: The CNA Corporation (CNAC)

Address: 4285 Mark Center Drive, Alexandria, Virginia 22311-1850

Solicitation or Contract Number: RFP#ED 05-R-0006

Title: Regional Education Laboratories – Tasks 1-5

Period of Performance: Date of award through 60 months (anticipated to start 1/1/06)

Contract Total Value (60 months): \$26,786,377

The following is hereby submitted as a Subcontracting Plan to satisfy the applicable requirements of RFP # ED 05-R-0006. The goals presented in this plan exactly reflect the ED goals negotiated with the Small Business Administration. CNAC enthusiastically accepts these goals.

6.1.1 Small Business and Small Disadvantaged Business Goals

The following percentage goals (expressed in terms of percentage of total contract value) are applicable to the contract cited above or to the contract awarded under the solicitation cited.

Small Business Concerns: 23 percent or more of total contract value will go to the subcontractors who are small business concerns

- a. Small Disadvantaged Business Concern: 6 percent or more of total contract value will go to subcontractors who are small business concerns owned and controlled by socially and economically disadvantaged individuals. This percentage is a subset of the 23 percent.
- b. Woman Owned Small Business Concerns: 5 percent or more of total contract value will go to subcontractors who are women owned small business concerns. This percentage is a subset of the 23 percent.
- c. HUBZone Small Business Concerns: 3 percent or more of total contract value will go to subcontractors who are HUBZone small business concerns. This percentage is a subset of the 23 percent.
- d. Service-Disabled Veteran Owned Small Business Concerns: 3 percent or more of total contract value will go to subcontractors who are Disabled Veteran Owned small business concerns. This percentage is a subset of the 23 percent.

6.1.2 Dollar Value of Goals

The following dollar values correspond to the percentage goals shown in 6.1.1 above.

- a. Total dollars planned to be subcontracted to small business concerns: \$6,176,696 or more of the contract total value.
- b. Total dollars planned to be subcontracted to small disadvantaged business concerns: \$1,607,183 or more of the contract total value.
- c. Total dollars planned to be subcontracted to women owned small business concerns: \$1,333,319 or more of the contract total value.
- d. Total dollars planned to be subcontracted to HUBZone small business concerns: \$803,591 or more of the contract total value.
- e. Total dollars planned to be subcontracted to Service-Disabled Veteran Owned small business concerns: \$803,591 or more of the contract total value.

6.1.3 Products and Services Subcontracted to Small Business

CNAC has taken an aggressive role in recruiting SB/SDB firms as true teaming partners for this procurement. Each partner has a fully executed Teaming Agreement in place. CNAC has selected firms for their technical ability to directly contribute to the substantive work of the project. They are not support or administrative roles, but instead, vital components of the planned research, analysis, technical assistance, reporting and dissemination tasks.

6.1.4 Method of Developing Small Business Goals

CNAC's philosophy, and a tenet of our subcontracting vision, is to provide the best-qualified individuals and subcontracting resources to every project we perform. This includes considering our small business goals and making every effort possible to insure the appropriate people and resources are available through the appropriate channels. In addition, CNAC is attentive to HUBZone small business and Veteran-Owned small business subcontracting requirements and works diligently to identify and subcontract to these types of businesses.

We have teamed with the following SB/SDB companies to support the ELAR:

Company Name	SB	SDB	WOSB	HUB	DVSB
Education Innovations	X				
Insights Policy Research	X	X	X		
Tierra Del Oro Consulting	X	X	X	X	
Symtech Corp	X	X	X		X

We will aggressively pursue additional small business candidates to subcontract with us during the course of this contract when we believe it advantageous to the ELAR objectives. We will identify potential candidates by searching the various business literature sources such as Eagle Eye Publishers and SBA's PRO-Net, our own network of contacts, and the ED contractor lists. We will research potential candidates to determine their background, experience, expertise, capabilities and qualifications, history of past performance, publications, technical and scientific accomplishments, and their past and current clients lists. We will use our screening process to identify the best possible candidates, and establish a working relationship with them in the form of a signed subcontract based on the prime contract when applicable. Our outreach efforts to obtain sources include:

- a. Contacting minority and small business trade associations
- b. Contacting business development organizations and local chambers of commerce
- c. Attending small, small disadvantaged, woman-owned, and HUBZone small business procurement conferences and trade fairs
- d. Requesting sources from the Small Business Administrations (SBA) PRO-Net, and other SBA resources
- e. Conducting market surveys to identify new sources, including the use of subscription databases such as Eagle Eye Publishers and Input, and
- f. Contacting ED procurement officials to assist in the identification of prospective subcontractors

Our internal efforts to guide and encourage purchasing personnel include:

- a. Conducting workshops, seminars, and training programs
- b. Establishing, maintaining, utilizing small, small disadvantaged, woman-owned, and HUBZone small business sources lists, guides, and other data for soliciting subcontractors, and
- c. Monitoring activities to evaluate compliance with the subcontracting plan

6.1.5 Indirect Costs

Indirect costs have not been included in the dollar and percentage subcontracting goals above.

6.1.6 Records and Reporting

The following is a recitation of the types of records CNAC will maintain to demonstrate the procedures adopted to comply with the requirements and goals in the subcontracting plan. These records will include, but not be limited to, the following:

- a. Small, small disadvantaged, woman-owned, small veteran owned, small disabled veteran owned and HUBZone small business source lists, guides, and other data identifying such vendors
- b. Organizations contacted in an attempt to locate small, small disadvantaged, woman-owned, small veteran owned, small disabled veteran owned, and HUBZone small business sources
- c. On a contract-by-contract basis, records on all subcontract solicitations over \$100,000, which indicate for each solicitation (1) whether small business concerns were solicited, and, if not, why not; (2) whether HUBZone small business concerns were solicited, and if not, why not; (3) whether small veteran owned and small disabled veteran owned business concerns were solicited, and if not why not; (4) whether small disadvantage business concerns were solicited, and if not, why not; (5) whether woman-owned small business concerns were solicited, and if not, why not; and (6) the reason for the failure of solicited small, small disadvantaged, woman-owned, and HUBZone small business concerns to receive the subcontract award
- d. Records to support other outreach efforts, e.g., contacts with minority and small business trade associations, attendance at small and minority business procurement conferences and trade fairs
- e. Records to support internal guidance and encouragement provided to buyers through (1) workshops, seminars, training programs, incentive awards; and (2) monitoring performance to evaluate compliance with the program and requirements; and
- f. On a contract-by-contract basis, records to support subcontract award data including the name, address, and business type and size of each subcontractor

CNAC gives assurance of (1) cooperation in Government studies or surveys that may be required; (2) submission of periodic reports which show compliance with the subcontracting plan; (3) submission of Standard Form (SF) 294, "Subcontracting Report for Individual Contracts" and Optional Form 312, SDB Participation Report, and if applicable, "Summary Subcontract Report," in accordance with the instructions on the forms; and (4) ensuring that subcontractors agree to submit Standard Forms 294 and 295.

Reporting Period	Report Due	Due Date
Oct 1 - Mar 31	SF-294	4/30
Apr 1 - Sep 30	SF-294	10/30
Oct 1 - Sep 30	SF-295	10/30
Contract Completion	OF-312	30 days after report period

Report forms will be completed and transmitted as follows:

- SF-294 to the cognizant Awarding Contract Officer
- Optional Form 312, (OF-312), if applicable, to the cognizant Awarding Contracting Officer
- SF-295 to cognizant Awarding Contracting Officer, to other ordering Federal agencies, as appropriate and to the:
 Office of Small and Disadvantaged Business Utilization
 Department of Health and Human Services
 200 Independence Avenue, SW
 Humphrey H. Building, Room 517-D

Washington, D.C. 20201

- “Information” copy of the SF-295 and the SF-294 upon request to the SBA Commercial Market Representative (CMR)

6.1.7 Program Administration

This program will be administered by:

Name/Title: Janet Smalley, Deputy Manager, Contracts and Procurement
Address: The CNA Corporation
4825 Mark Center Drive
Alexandria, VA 22311-1850
Tel/E-mail: (703) 824.2095 smallej@cna.org

Program Administrator Duties

The CNAC Program Administrator has general overall responsibility for CNAC’s subcontracting program. She develops, prepares and executes subcontracting plans and monitors performance relative to the requirements of CNAC’s subcontracting plans. Other duties include, but are not limited to, the following activities:

- Developing and promoting company-wide policy initiatives that demonstrate CNAC’s support for awarding contracts and subcontracts to SB, SDB, WOSB, HUBZone, and VOSB concerns; and for assuring that these concerns are included on the source lists for solicitations for products and services they are capable of providing
- Developing and maintaining bidder source lists of SB, SDB, WOSB, HUBZone, VOSB concerns from all possible sources
- Ensuring periodic rotation of potential subcontractors on bidder’s lists
- Ensuring that requests for contracts (RFC) are designed to permit the maximum practicable participation of SB, SDB, WOSB, HUBZone, and VOSB
- Accessing various sources for the identification of SB, SDB, WOSB, HUBZone, and VOSB concerns to include the SBA’s PRO-Net and SUB-Net Systems, the Federal Acquisition Computer Network (FACNET) Contractor Registration Database, the NIH e-Portals in Commerce (e-PIC), the National Minority Purchasing Council Vendor Information Service, the Office of Minority Business Data Center in the Department of Commerce, local small business and minority associations, contact with local chambers of commerce and Federal agencies’ Small Business Offices
- Establishing and maintaining contract and subcontract award records
- Participating in Business Opportunity Workshops, Minority Business Enterprise Seminars, Trade Fairs, Procurement Conferences, etc
- Ensuring the SB, SDB, WOSB, HUBZone, and VOSB concerns are made aware of subcontracting opportunities and assisting concerns in preparing responsive bids to the company
- Conducting or arranging for the conduct of training for purchasing personnel regarding the intent and impact of Section 8(d) of the Small Business Act, as amended
- Monitoring CNAC’s subcontracting program performance and making any adjustments necessary to achieve the subcontract plan goals
- Preparing, and submitting timely, required subcontract reports

- Coordinating CNAC's activities during the conduct of compliance reviews by Federal agencies

6.1.8 Flow-Down Clause

CNAC will include the provisions under FAR 52.219.8, "Utilization of Small Business Concerns" in all acquisitions exceeding the simplified acquisition threshold that offers further subcontracting opportunities. All subcontractors, except small business concerns that receive subcontracts in excess of \$500,000 must adopt and comply with a plan similar to the plan required by FAR 52.219.9 "Small Business Contracting Plan." (Flow-down is not applicable for commercial items/services as described in 52.212-5).

Signed

Typed/printed name: Patrick Donahue

Title: Manager, Contracts and Procurement

Date: October 3, 2005

Authors and Key Personnel for This Section

Name	Key Personnel	Section Author	Proposed Role
Donald Cymrot	Yes	Yes	ELAR Deputy Director

7 Appendix

The following Letters of Support and Letters of Commitment are provided.

- U.S. Senator Jim Bunning
- U.S. Congressman Ben Chandler
- Kentucky Commissioner of Education Gene Wilhoit
- Dr. Barbara Goodson, Abt Associates
- Dr. Paul Swank, University of Texas
- Dr. Marc Bornstein
- Joel Klein, Chancellor, NYC Department of Education
- Phil Cruver, President, Kidz Online
- Jo Lynne DeMary, Superintendent of Instruction, Virginia Dept of Education
- Joe Brothers, Chair, Appalachian Regional Advisory Committee
- Lan Neugent, Ass't Superintendent of Technology and Human Resources, Virginia Department of Education
- Antoinette Rath, Chair, Mid-Atlantic Regional Advisory Committee
- Bob Moore, Chair, Southwest Regional Advisory Committee

Index of Changes in the Answers to Questions From The CNA Corporation	
Question	Type of Change
1a	Copy editing
1c	Minor changes
2a	Copy editing
3a	Increased specificity
3b	Copy editing
3c	Increased specificity
4a	Copy editing
4b	Copy editing
5	Increased specificity
6	Copy editing
9a	Copy editing
10b	Copy editing
11	Changed AREL to ELAR to be consistent with original proposal
12	Copy editing
13	Increased specificity
15a	Increased specificity
15b	Increased specificity
17a	Minor changes
18	Increased specificity
20	Increased specificity
23	Copy editing
24a	Minor correction
25a	Minor correction
49	Copy editing

TECHNICAL PROPOSAL

Answers to Technical Proposal Questions

EDUCATIONAL LABORATORY OF THE APPALACHIAN REGION

**U. S. Department of Education
Contracts and Acquisition Management
550 12th Street, SW
7th Floor, Room 7120
Washington, DC 20202**

Proposal Submitted by



December 5, 2005

This proposal includes data that shall not be disclosed outside the government and shall not be duplicated, used, or disclosed – in whole or in part – for any purpose other than to evaluate this proposal. If, however, a contract is awarded to this offeror as a result of - or in connection with - the submission of this data, the government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit the government's right to use information contained in this proposal if it is obtained from another source without restriction. The data subject to this restriction are contained on marked sheets within this proposal.

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Question 2b: For example, the offeror proposes to survey 600 teachers for the first year, but the proposal does not identify whether other stakeholders will be included in the survey, or who the stakeholder groups would be.....	4
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Question 3a: Semi-structured interviews, focus groups and site visits are proposed for qualitative studies (page 8) but no specific information for these activities is provided. For example, who and how many participants and sites will participate in each of the activities?	5
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Question 3c: Also, the proposal does not provide detailed information for the practitioners working group (page 9). For example, which and how many stakeholders will receive training in research methods and practices? Please respond to these concerns.....	6
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Question 5: For the Practitioners Research Group, how feasible is it to recruit a sufficient number of people who have the data analytic skills? Would their employers let them only work ½ time? What kinds of logistics will be needed to implement it?	87

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Question 10a: Project 2: The proposal states that on-site researchers and scientific analysts can directly disseminate their findings (page 21). However, it will be essential to assure the quality before disseminating. How will the quality of their work and products be assured? 11

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Question 11: Project 2: The impact may be largely dependent on the quality of the person doing the job and may vary from situation to situation. How will the quality of the personnel be ensured? 12

Question 12: Project 3: The offeror needs to assure ED that the proposed Early Reading First study is not duplicative of the IES/NCEE impact study on Early Reading First. Please describe how the offeror’s study differs from the current NCEE study..... 12

Question 13. Project 3: The offeror proposes to evaluate the Reading First intervention curriculum by analyzing its scientific quality and alignment to State and Federal standards. However, the proposal describes very little about the methods and procedures that will be used. The offeror proposes to assess the scientific quality of the RF curriculum based on ED’s six criteria for scientifically based research. Please explain what kinds of methods and procedures will be used to identify the criteria. 13

Question 14. Project 3: The analysis and reporting plan did not provide enough information to understand how and what kinds of data will be analyzed, and how they will be reported to whom. Please respond to this concern. 1615

Question 15a: Project 4: The proposal describes research issues and ideas for the study about adolescent immigrants. However, it does not provide a clearly defined set of research questions, methods and procedures. The proposal states that a limited investigation will be conducted to determine the type of programs, staffing, and teacher professional developments for the education of ELLs and the results will be compared with the WWC recommendations. Without more information about the methods and procedures, however, it is impossible to understand how and what kinds of studies will be conducted. 1715

Question 15b: Also, the offeror did not seem to have examined the WWC to find out what kinds of recommendations are available..... 1816

Question 15c: The offeror also proposes to analyze the outcome data of ELLs in schools and districts and compare them with similar data in districts with well-respected newcomer programs. However, the proposal does not describe what criteria will be used to determine well-respected programs, how they will be selected, and how and what kinds of data will be collected and analyzed. 1817

Question 16: Project 5: What does the literature say about school safety? Have any similar studies been performed?..... 1817

Question 17a: It is unclear why the offeror proposes a two-stage analysis: a) regression analysis for identifying demographic variables associated with test scores and safety measures, and (b) selection and comparison of 2 good and 2 poor schools on safety performance..... 2220

Question 17b: What are the advantages of the two-stage analysis compared to a multi-level regression (HLM) model with variables at individual level and school level?..... 2220

Question 18: Project 5: The research plan needs to provide more detailed information about the methods and procedures. For example, how will the four dimensions of safety and security plan (page 30) and the safety level be measured? How many schools will be selected for the in-depth analysis? How will the data be analyzed?..... 2422

Question 19a: Project 6: Methods and procedures for the analysis of data are not described in detail. For example, how and what kinds of student characteristics will be identified? 2724

Question 19b: Will the student characteristics be identified for all three categories of students or only failing categories? 2724

Question 19c: How will the distribution of student scores and student growth trajectories be analyzed using what kinds of methods and techniques? 2724

Question 19d: The proposal suggests that longitudinal data will be examined to detect early warning signs for school of failure on AYP. How and what kinds of longitudinal data will be examined? 2825

Question 19e: How will the warning signs be detected?..... 2826

Question 20: Project 7: The proposal needs a more detailed study plan, including methods and procedures for identifying the important dimensions of the school choice problems in rural areas and factors associated with parental exercise for the school choice option. Also, it may be important to examine the relationships between the dimensions and factors for parental decisions, including the relative importance of the dimensions and factors in the process of policy and parental decisions. Please address these concerns..... 2826

Question 21: Project 7: The proposal briefly discusses two other alternatives to school choice, charter schools and online classes. However, it is unclear whether and how the alternative choices will be studied in this plan. Providing policy implications for choosing an alternative to school choice (e.g., which alternative under what conditions) will be very useful. Please respond to this concern..... 3128

Question 22: Project 7: The analysis plan is not clearly developed. How will costs be analyzed? 3229

Question 23: For a randomized study, the intervention should be fully developed and have at least some preliminary evidence on its effect to be ready for a randomized trial because it requires a large amount of resources and effort. Is the intervention proposed for each of the four studies ready for a randomized study? Please describe whether each of the interventions is completely developed, and any preliminary evidence of effects..... 3229

Question 24a: Overall, for each of the studies, are these the interventions that have the highest priority in the region? 3734

Question 24b: Please substantiate that the interventions proposed are currently a high priority and that no existing evaluation evidence can be applied to produce answers, including research and evaluation studies currently underway at the IES/NCEE. 3835

Question 25a: Overall, for any of the proposed studies for which you plan to recruit schools for a randomized study, recruitment may be difficult, particularly when it requires randomly assigning schools to different conditions. Please explain how the recruitment of a sufficient number of schools can be assured in time..... 3936

Question 25b: For each of the studies proposing to randomly assign at the school level, can the offeror propose at least one alternative design using within school assignment to reduce costs? Also, please set forth conditions needed to carry out a two-level assignment design that involves assignment of students and/or teachers to experimental conditions in some schools and not others, within an initial assignment at the school level. 4239

Question 26: Study 1: The two treatment conditions should be more effective than the control condition because additional support will be provided for the treatment conditions. If so, should the primary question for this study be which one between the two treatment conditions is more effective? This study proposes to provide different levels of consultant expertise to the two treatment groups. If so, will the effects of consultancy method (live and remote) not be confounded with the effects of consultant expertise level? How will the level of expertise be measured? 4340

Question 27: Study 1: Descriptions of the procedures for sampling schools and assigning teachers in the school are not consistent. On page 46 (section 2.2.1.3), it says that schools will be randomly assigned, but on page 50 (section 2.2.1.4) it says that children and teachers will be randomly assigned. Which description is right? If you were to randomly assign schools, how many schools should be sampled to ensure the adequate level of statistical power and effect size? 4441

Question 28. Study 1: If students will be followed during 3rd and 4th grade, will these students have different teachers from year to year? If so, how will this impact be considered in the data analysis and interpretation of the findings? 4441

Question 29. Study 1: The intervention materials and implementation procedures are well described. However, no preliminary evidence on the effects of the materials is presented to show that the intervention is ready for a large-scale randomized trial. Please provide whether and what kinds of preliminary evidence are available. 4542

Question 30: Study 1: What are differences between the individual child assessment (section 2.2.1.3.2.3, page 49) and the direct assessment to be conducted for four students selected from each classroom (2.2.1.3 section, page 46)? 4542

Question 31: Study 1: The offeror proposes to collect classroom assessments, teacher questionnaires and individual direct assessments. However, the data analysis plan primarily focused on the direct assessments. How will other data be analyzed? 4542

Question 32: Study 1: The activity timelines show only two data collections of student achievements, even though the proposal indicates that student achievement will be collected four times. Please clarify. 4643

Question 33: Study 2: The control condition is not described in detail. How will the effects of the possibly different content and quality of the curriculum in the two conditions be measured? On page 55, it states that online courses meet state and national curriculum standards and make use of research-based pedagogical practices. However, no information is provided about the traditional courses. 4643

Question 34: Study 2: Treatment conditions A and B will not be implemented simultaneously and their effects will be tested against a control group at different times. How will the time effect be measured? 4744

- Question 35: Study 2: The general description of the criterion characteristics defining high quality of online curriculum (4th paragraph on page 55 and 1st paragraph on page 58) looks fine. However, applying the criteria to the evaluation of a curriculum quality will require systematic procedures. Please explain how the quality of online curriculum will be evaluated using the criterion characteristics. 4744 |**
- Question 36: Study 2: What is the plan for from year 1 to year 2 when students change teachers? How will student attrition be handled? 5047 |**
- Question 37: Study 2: Should there be only three hypotheses on page 56? 5047 |**
- Question 38: Study 3: What evaluation data are available for the three curricula: Doors to Discovery; Read, Play, and Learn!; and Pearson’s Opening the World of Learning? 5047 |**
- Question 39: Study 3: What is the rationale for assuming that ERF teachers will implement scientific research-based practice in language, cognition and early reading (see section 2.2.3.2 on page 68) more than other teachers? Are scientific research-based practices embedded in the ERF curricula? How would the implementation of the research-based practices be measured? 5148 |**
- Question 40: Study 3: The schools are likely to be reluctant to participate in the second alternative as well as the first one because students assigned to the control group will receive only a half of the ERF instruction. How can it be assured that a randomized study will be conducted without the guaranteed recruitments of schools? Please remember that the third option, a matched study, is unacceptable for Task 2. 5350 |**
- Question 41: Study 3: The data analysis plan is not described in detail. How will the teacher and parent survey data be analyzed? Will they be included in the analysis of student achievement data? If achievement data are collected at multiple points of time, is it a good idea to examine the achievement growth using a growth curve model? 5350 |**
- Question 42: Study 3: Please describe the reading expertise of the project staff concerning the target population. 5451 |**
- Question 43: Study 4. This study proposes to examine the effects of specific instructional strategies (mini vs. max anchors) in a technology-based math curriculum. However, it is unclear whether its purpose is to evaluate a selected curriculum (Mad Math Adventures) in which the anchor strategy is used as its primary component or to investigate the effects of the anchor as an independent instructional strategy. If the former is the purpose, more information is needed about the curriculum, including a rationale for why it is selected for the study (e.g., agreements of the curriculum content with state standards in the region). If the latter is the purpose, however, more theoretical discussions (e.g., impacts of the strategy on cognition and learning) are needed. Please respond to this concern. 5552 |**

Question 44: Study 4. The expected sample size is presented based on the estimated effect size and power analysis. However, the sampling and assignment procedures are not explicitly described. Please respond to this concern. 5754 |

Question 45: Study 4. If the purpose of the study is to evaluate the Mad Math Adventures curriculum, would it be better to evaluate the whole curriculum for selected grades rather than to conduct a short 7-day experiment with a segment of the curriculum?..... 5855 |

Question 46: Study 4. If the purpose is to investigate the effects of specific anchor strategies, how can the results of this study be used to improve student math achievements in the region? 5855 |

Question 47: Dissemination activities, including type and numbers of products, dissemination frequencies, etc., and procedures for assuring the quality of dissemination materials, including the technical reports, are not described in detail. Please address this concern. 5855 |

Question 48: No letters of agreement or intention from the partners and subcontractors are provided. Please provide them. 6057 |

Question 49: The offeror proposes to operate a peer review to assure product quality, but did not provide details about the selection of the peer reviewers and the review process. Please respond to this concern. 6057 |

ATTACHMENT 1. SUBCONTRACTOR LETTERS OF COMMITMENT A-1

Question 1a: What kinds of specific issues and potential needs should be examined in each of the areas?

(b)(4)

[Redacted content]

(b)(4)

Question 1b: How will the needs be identified, from whom?

(b)(4)

Question 1c: How and who will use the baseline assessments to provide training and technical assistance?

(b)(4)

(b)(4)

Question 2a: Surveys are proposed to assess the awareness and attitudes of regional stakeholders about the needs of the region (pages 6-7). Although the proposal describes general principles of and approaches to the survey, it does not provide specific information necessary to estimate the level of effort for the surveys.

(b)(4)

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Question 2b: For example, the offeror proposes to survey 600 teachers for the first year, but the proposal does not identify whether other stakeholders will be included in the survey, or who the stakeholder groups would be.

(b)(4)

Question 2c: Also, the proposal does not discuss what kinds of specific data will be collected, from whom. Please address this concern.

(b)(4)

Question 3a: Semi-structured interviews, focus groups and site visits are proposed for qualitative studies (page 8) but no specific information for these activities is provided. For example, who and how many participants and sites will participate in each of the activities?

(b)(4)

Question 3b: What kinds of information will be collected with each of the activities?

(b)(4)

(b)(4)

Question 3c: Also, the proposal does not provide detailed information for the practitioners working group (page 9). For example, which and how many stakeholders will receive training in research methods and practices? Please respond to these concerns.

(b)(4)

Question 4a: On page 12, the proposal briefly describes that field scientists and scientific analysts will perform different activities for Tasks 1.1 and 1.2. Exactly, what kinds of activities will they perform for Task 1.1 and Task 1.2?

(b)(4)

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Question 4b: How will the activities for the two tasks be different?

(b)(4)

Question 4c: How will activities for the two tasks be related to each other?

(b)(4)

(b)(4)

Question 5: For the Practitioners Research Group, how feasible is it to recruit a sufficient number of people who have the data analytic skills? Would their employers let them only work ½ time? What kinds of logistics will be needed to implement it?

(b)(4)

Question 6: Only two key personnel members are identified with their time commitments (30% and 15%) for Task 1.1. Is this adequate level of commitment? If not, what is the total estimated number of man-hours necessary for this task?

(b)(4)

Question 7a: Project 1: Please describe what kinds of data would be stored in the database in what kind of structure. How and what kinds of data in the database would be disseminated to whom?

(b)(4)

Question 7b: Who will be allowed to access to it?

(b)(4)

Question 7c: How long would it take to develop it?

(b)(4)

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Question 7d: Is the Data Center not more relevant for Task 1.1?

(b)(4)

Question 8. Project 2: For on-site researchers and scientific analysts to successfully perform their responsibilities, it will be important for them to establish clear working relationships with LAEs². How will the working relationships be established?

(b)(4)

Question 9a: Project 2: How many scientific analysts will be fielded?

(b)(4)

Question 9b: How will their projects and activities be prioritized?

(b)(4)

Question 9c: How often and what kinds of reports will they submit?

(b)(4)

Question 10a: Project 2: The proposal states that on-site researchers and scientific analysts can directly disseminate their findings (page 21). However, it will be essential to assure the quality before disseminating. How will the quality of their work and products be assured?

(b)(4)

Question 10b: What kinds of format will be used for them to report and disseminate their work?

(b)(4)

(b)(4)

Question 11: Project 2: The impact may be largely dependent on the quality of the person doing the job and may vary from situation to situation. How will the quality of the personnel be ensured?

(b)(4)

Question 12: Project 3: The offeror needs to assure ED that the proposed Early Reading First study is not duplicative of the IES/NCEE impact study on Early Reading First. Please describe how the offeror's study differs from the current NCEE study.

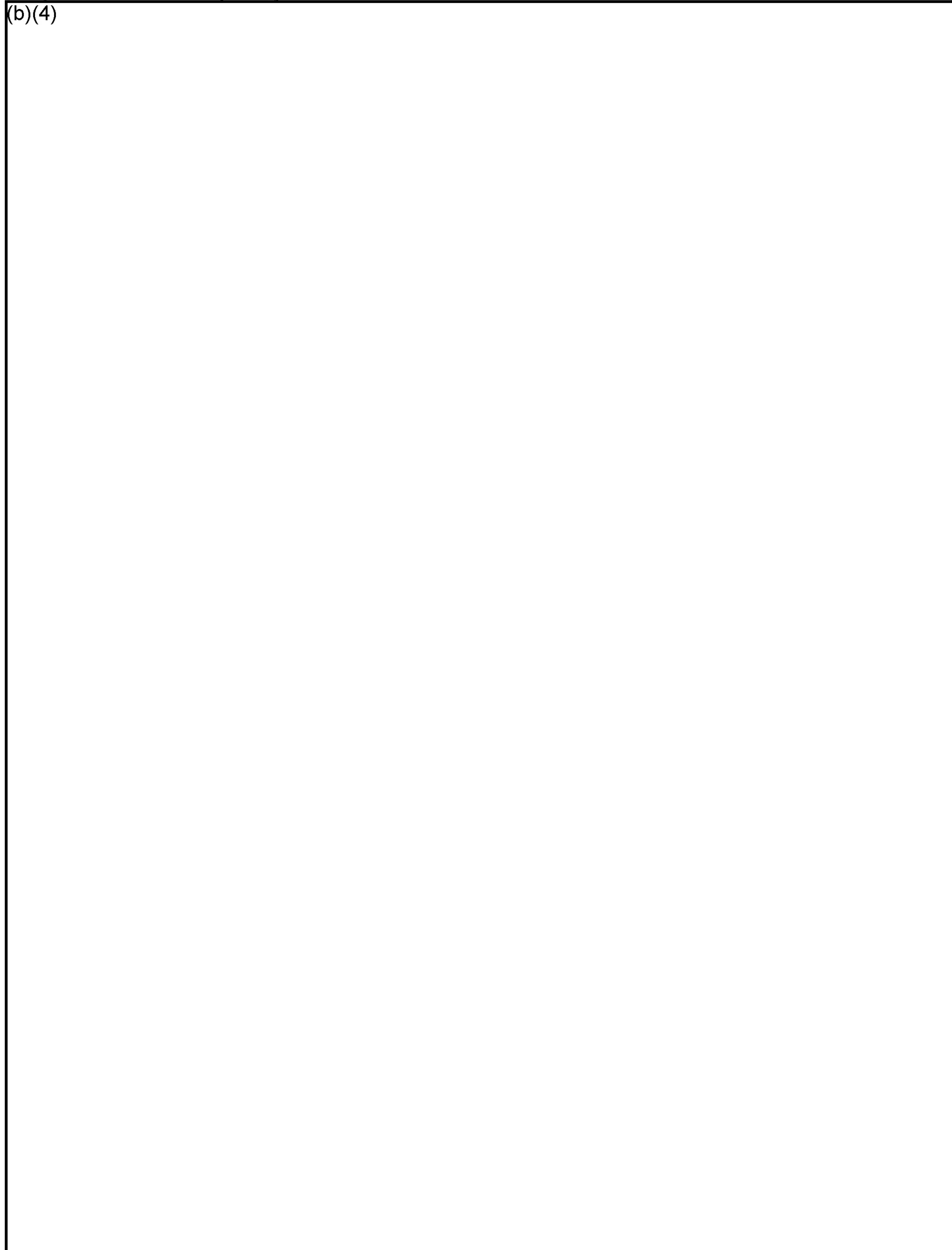
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Question 13. Project 3: The offeror proposes to evaluate the Reading First intervention curriculum by analyzing its scientific quality and alignment to State and Federal standards. However, the proposal describes very little about the methods and procedures that will be used. The offeror proposes to assess the scientific quality of the RF curriculum based on ED's six criteria for scientifically based research. Please explain what kinds of methods and procedures will be used to identify the criteria.

(b)(4)

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(b)(4)

Question 14. Project 3: The analysis and reporting plan did not provide enough information to understand how and what kinds of data will be analyzed, and how they will be reported to whom. Please respond to this concern.

(b)(4)

(b)(4)

Question 15a: Project 4: The proposal describes research issues and ideas for the study about adolescent immigrants. However, it does not provide a clearly defined set of research questions, methods and procedures. The proposal states that a limited investigation will be conducted to determine the type of programs, staffing, and teacher professional developments for the education of ELLs and the results will be compared with the WWC recommendations. Without more information about the methods and procedures, however, it is impossible to understand how and what kinds of studies will be conducted.

(b)(4)

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Question 15b: Also, the offeror did not seem to have examined the WWC to find out what kinds of recommendations are available.

(b)(4)

Question 15c: The offeror also proposes to analyze the outcome data of ELLs in schools and districts and compare them with similar data in districts with well-respected newcomer programs. However, the proposal does not describe what criteria will be used to determine well-respected programs, how they will be selected, and how and what kinds of data will be collected and analyzed.

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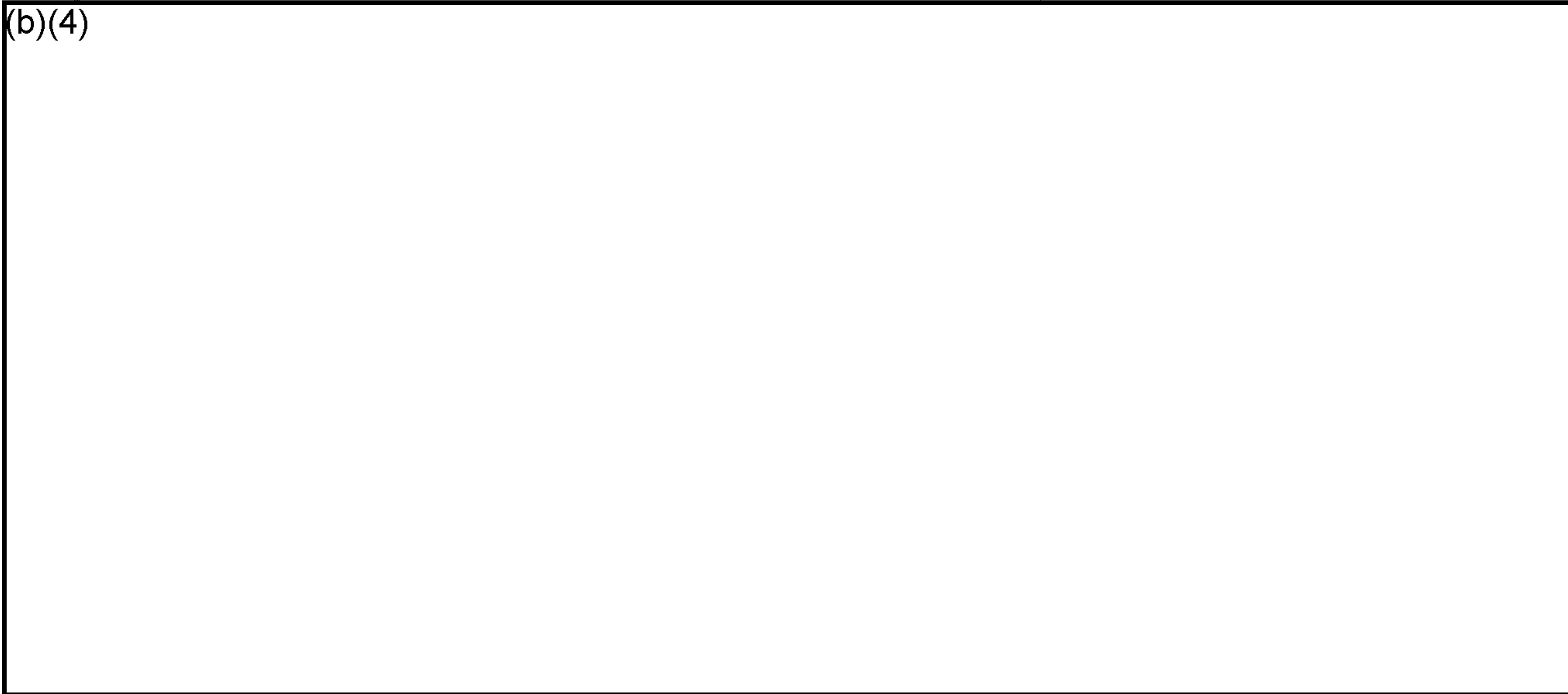
Question 16: Project 5: What does the literature say about school safety? Have any similar studies been performed?

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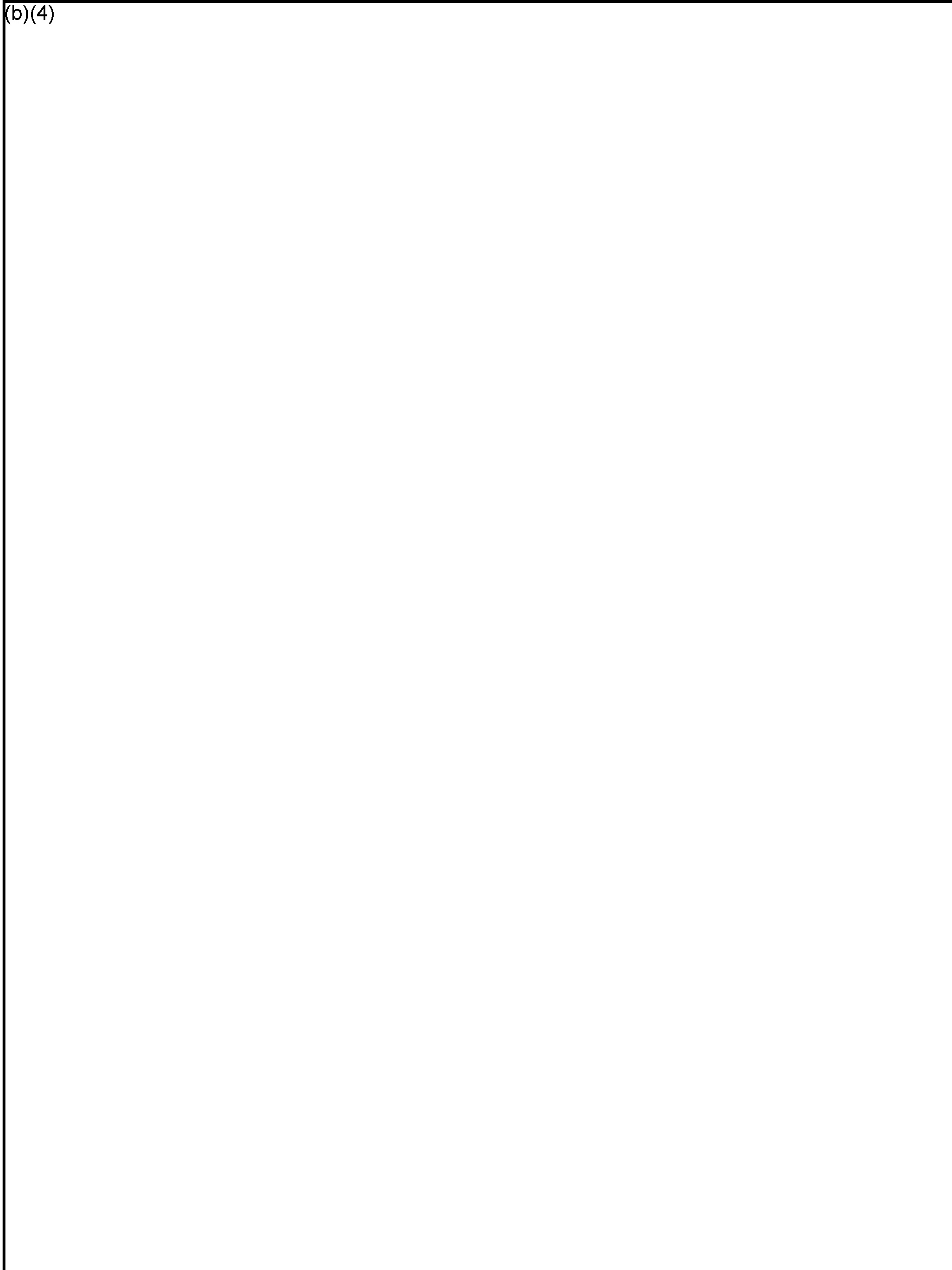
Question 17a: It is unclear why the offeror proposes a two-stage analysis: a) regression analysis for identifying demographic variables associated with test scores and safety measures, and (b) selection and comparison of 2 good and 2 poor schools on safety performance.

(b)(4)

Question 17b: What are the advantages of the two-stage analysis compared to a multi-level regression (HLM) model with variables at individual level and school level?

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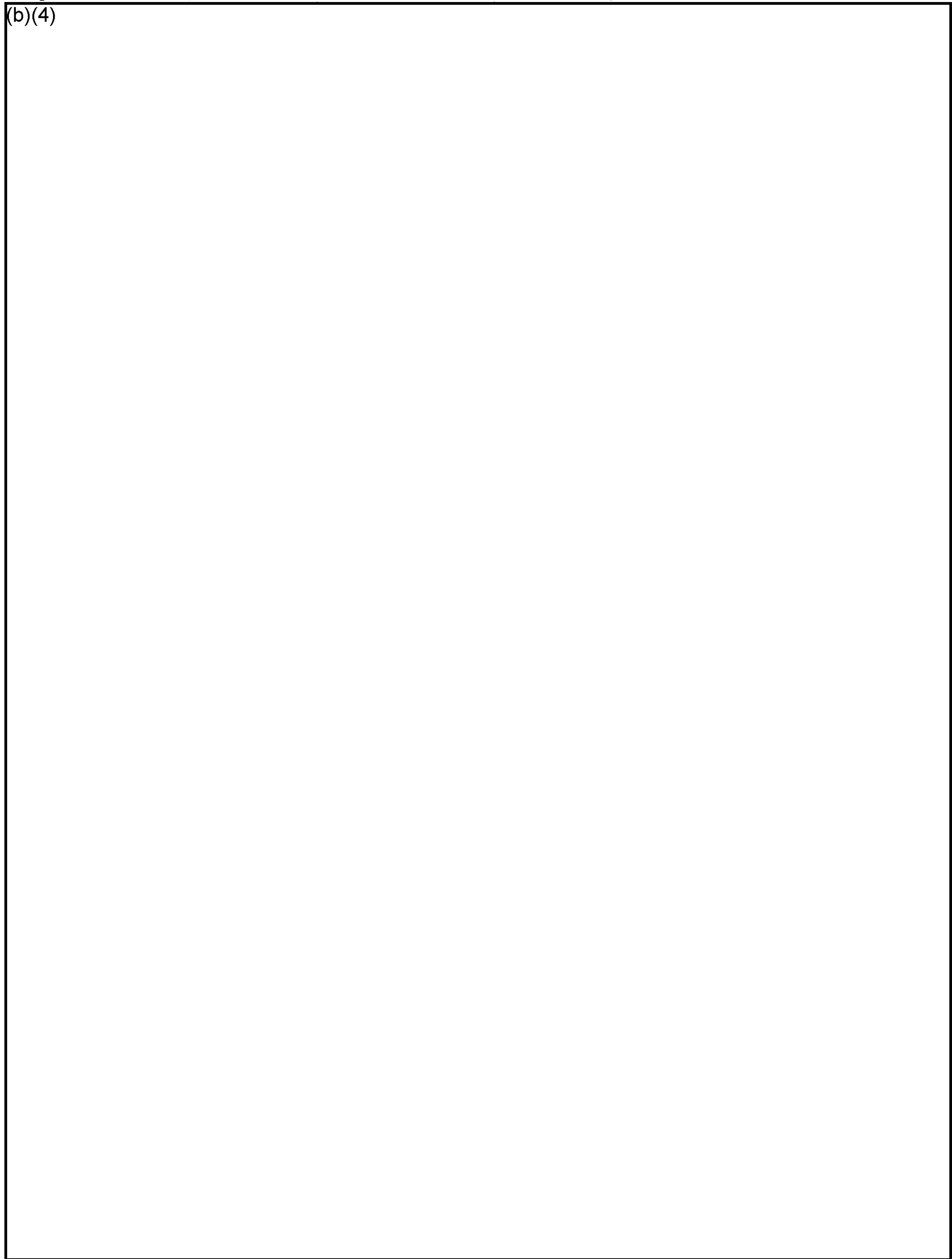
Reference:

Everett, B.S., Cluster Analysis, 2nd Edition; Heinemann Education Books, London, 1980

Question 18: Project 5: The research plan needs to provide more detailed information about the methods and procedures. For example, how will the four dimensions of safety and security plan (page 30) and the safety level be measured? How many schools will be selected for the in-depth analysis? How will the data be analyzed?

(b)(4)

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Question 19a: Project 6: Methods and procedures for the analysis of data are not described in detail. For example, how and what kinds of student characteristics will be identified?

(b)(4)

Question 19b: Will the student characteristics be identified for all three categories of students or only failing categories?

(b)(4)

Question 19c: How will the distribution of student scores and student growth trajectories be analyzed using what kinds of methods and techniques?

(b)(4)

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Question 19d: The proposal suggests that longitudinal data will be examined to detect early warning signs for school of failure on AYP. How and what kinds of longitudinal data will be examined?

(b)(4)

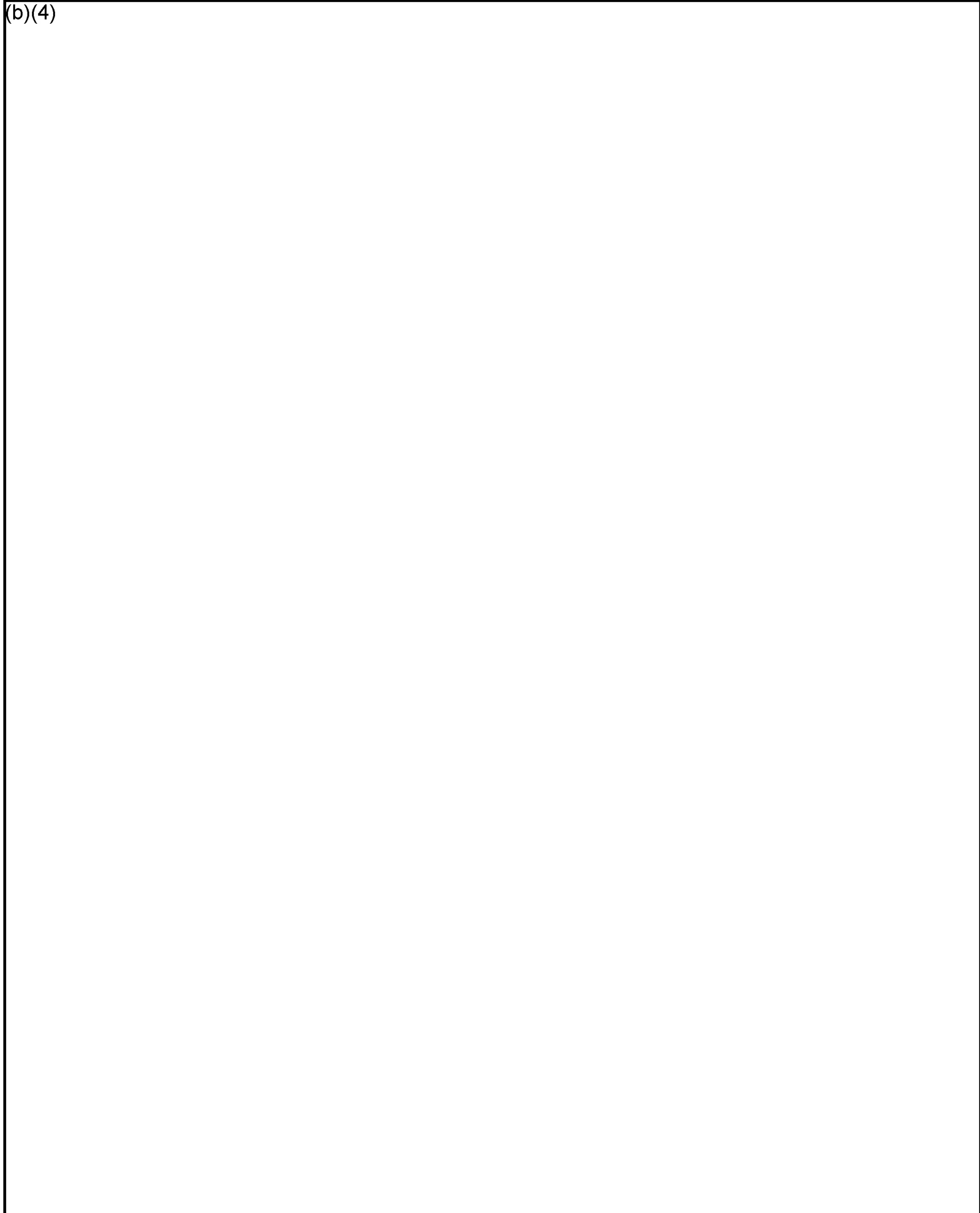
Question 19e: How will the warning signs be detected?

(b)(4)

Question 20: Project 7: The proposal needs a more detailed study plan, including methods and procedures for identifying the important dimensions of the school choice problems in rural areas and factors associated with parental exercise for the school choice option. Also, it may be important to examine the relationships between the dimensions and factors for

parental decisions, including the relative importance of the dimensions and factors in the process of policy and parental decisions. Please address these concerns.

(b)(4)



(b)(4)

References on Choice:

Dennis Epple, David Figlio, and Richard Romano, "Competition between Private and Public Schools: Testing Stratification and Pricing Predictions" *Journal of Public Economics* 88 (2004), 1215-45

Bruce Hamilton and Molly MaCauley, "Determinants and Consequences of the Private-Public School Choice" *Journal of Urban Economics* 29, (1991), 282-94

Hamilton Lankford and James Wyckoff "Primary and Secondary School Choice among Public and Religious Alternatives" *Economics of Education Review* 11(1992), 317-37

(b)(4)

(b)(4)

Question 21: Project 7: The proposal briefly discusses two other alternatives to school choice, charter schools and online classes. However, it is unclear whether and how the alternative choices will be studied in this plan. Providing policy implications for choosing an alternative to school choice (e.g., which alternative under what conditions) will be very useful. Please respond to this concern.

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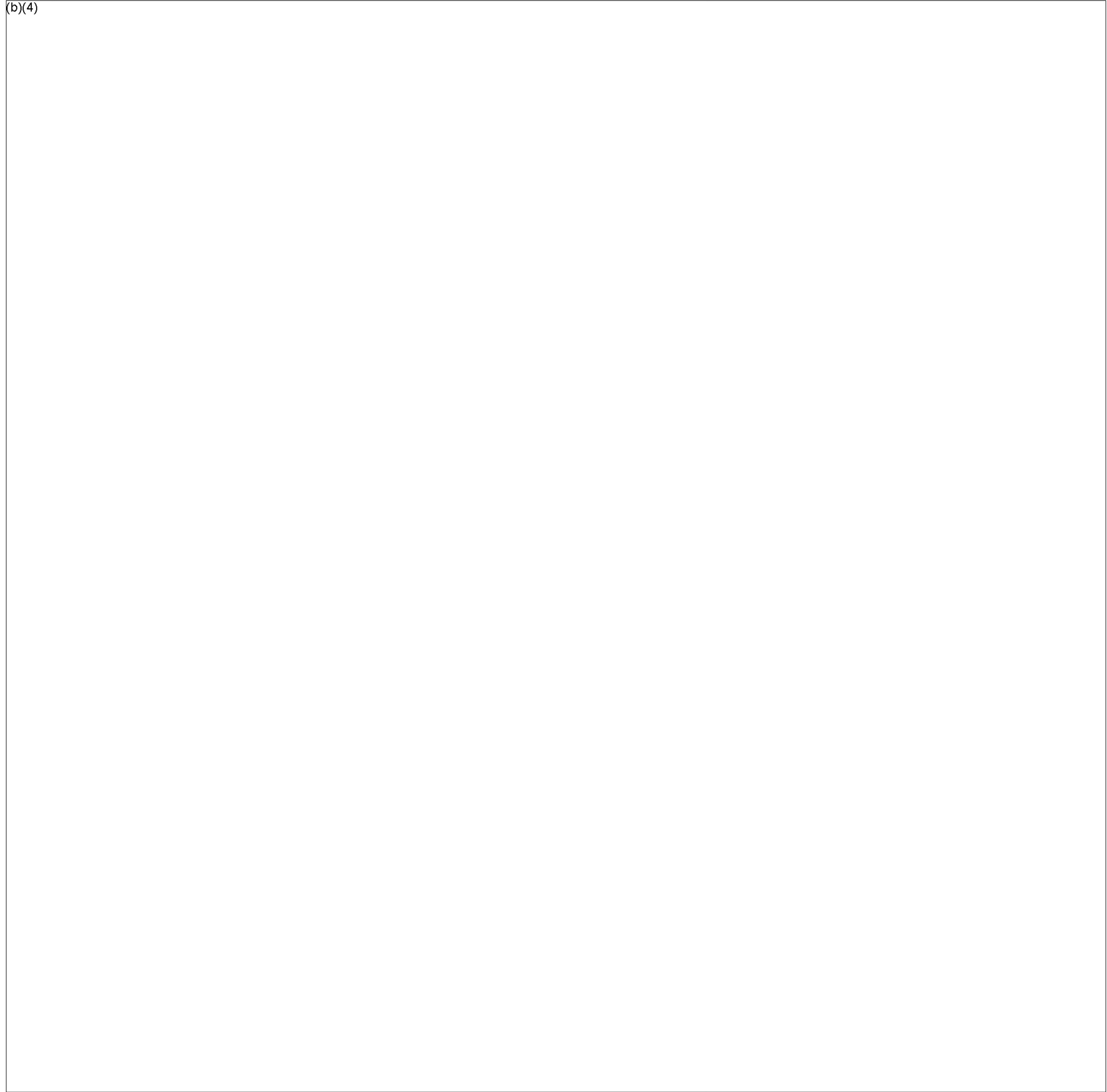
Question 22: Project 7: The analysis plan is not clearly developed. How will costs be analyzed?

(b)(4)

Question 23: For a randomized study, the intervention should be fully developed and have at least some preliminary evidence on its effect to be ready for a randomized trial because it requires a large amount of resources and effort. Is the intervention proposed for each of the four studies ready for a randomized study? Please describe whether each of the interventions is completely developed, and any preliminary evidence of effects.

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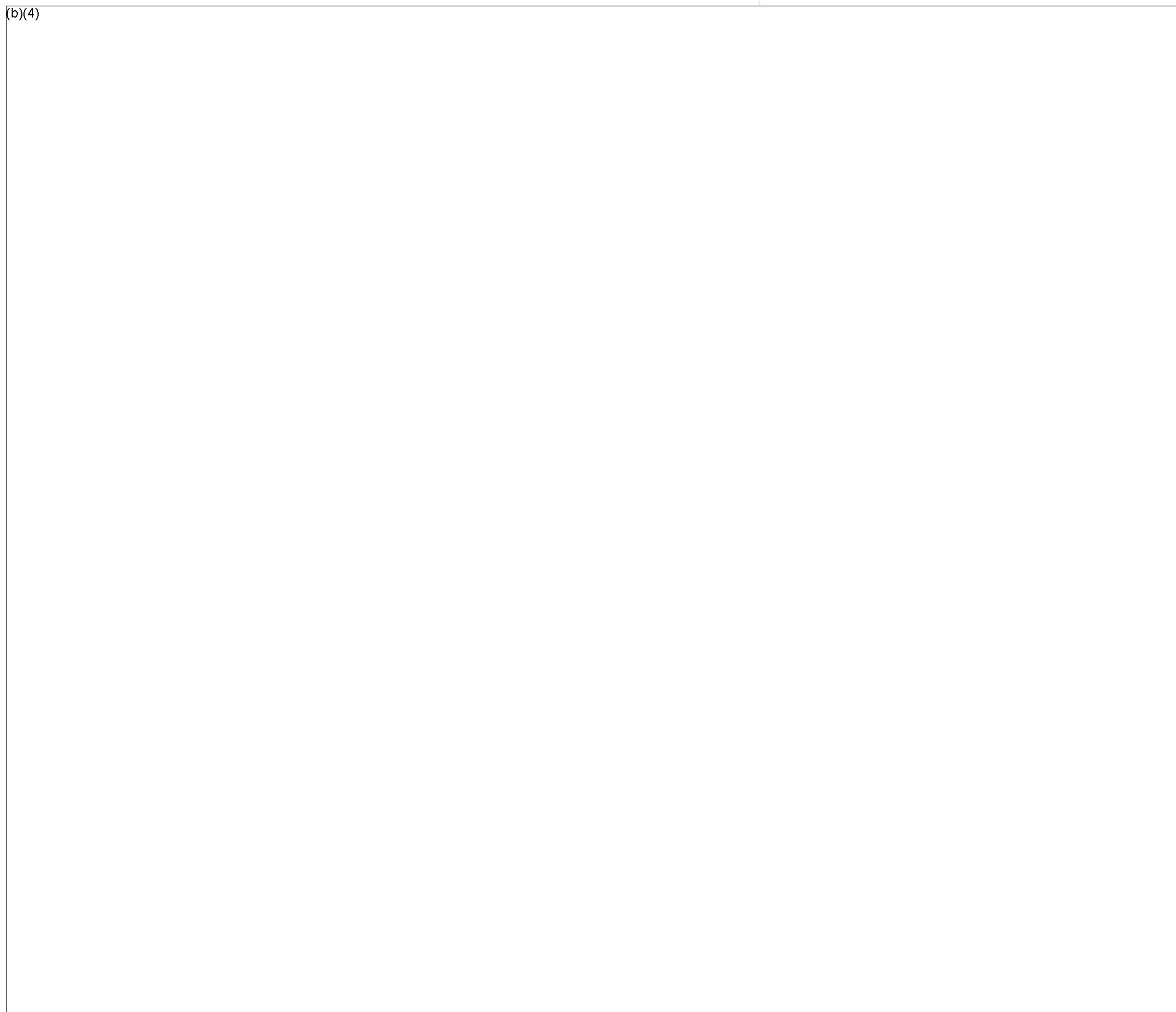
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Waxman, H.C., Lin, M., & Michko, G. (2003), A Meta-analysis of the Effectiveness of Teaching and Learning with Technology on Student Outcomes. Learning Point Associates

Lowes, S. (2005), Online Teaching and Classroom Change: The Impact of Virtual High School on Its Teachers and Their Schools, Columbia University, Synopsis in *A Synthesis of New Research on K-12 Online Learning*, R. Smith, T. Clark and R. Blomeyer, Learning Point Associates, November, 2005

Kleinman, G., Carey, R., Bonifaz, A., Haistead E., & O'Dwyer, L., (2005) A Study of the Effectiveness of the Louisiana Algebra 1 Online Project, EDC. Synopsis in *A Synthesis of New Research on K-12 Online Learning*, R. Smith, T. Clark and R. Blomeyer, Learning Point Associates, November, 2005

(b)(4)



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(b)(4)

References:

Child Development Resources (2005), *1-2-3 read! Emergent literacy in Head Start: Implementation manual*.

Coleman, J. (submitted for publication, 2005), *Adaptations of a play-based early childhood curriculum for children with special needs*.

Coleman, J., Linder, T., & Linas, K. (2005), *Using play to build language and literacy in inclusive preschool settings*. Presentation at National Head Start Association Annual Training Conference: Research Track, Orlando, FL, May 25, 2005.

Coleman, J., Linder, T., Linas, K., & Meyer, K. (2005), *Effects of Read, Play, and Learn! on development of children from 3–5*. Presentation at College of Education Research Symposium, University of Denver, April, 2005.

Coleman, J., & Stokka, K. (2003), *Parental perceptions of the Read, Play, and Learn! curriculum*.

Halfon, N., McLearn, K.T., & Schuster, M.A. (2002), *Child rearing in America: Challenges facing parents with young children*. Port Chester, NY: Cambridge University Press.

(b)(4)

(b)(4)

Question 24a: Overall, for each of the studies, are these the interventions that have the highest priority in the region?

(b)(4)

(b)(4)

Question 24b: Please substantiate that the interventions proposed are currently a high priority and that no existing evaluation evidence can be applied to produce answers, including research and evaluation studies currently underway at the IES/NCEE.

(b)(4)

(b)(4)

References:

Armbruster, B.B., Lehr, F., & Osborn, J. (2001). *Put Reading First: The Research Building Blocks for Teaching Children to Read*. Washington, D.C. National Institute for Literacy.

Reading First: Federal Guidelines for Reading First Professional Development Plans. (2004). North Central Regional Education Laboratory. Retrieved December 1, 2005 from www.ncrel.org.

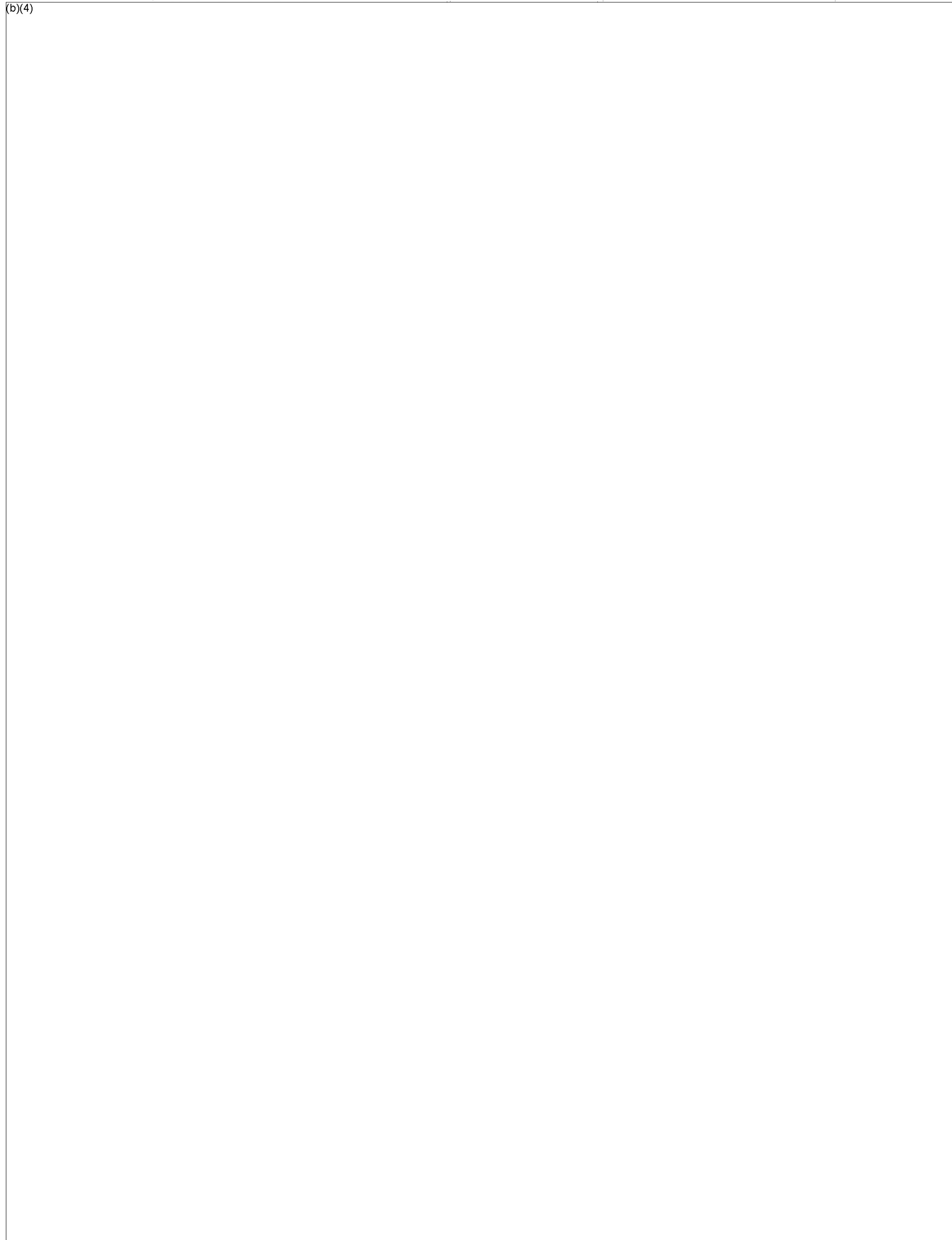
National Institute of Child Health and Human Development (NICHD). (2000), Report of the National Reading Panel. Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction Reports of the subgroups (NIH Publication No. 00-4754). Washington, DC: U.S. Government Printing Office.

(b)(4)

Question 25a: Overall, for any of the proposed studies for which you plan to recruit schools for a randomized study, recruitment may be difficult, particularly when it requires randomly assigning schools to different conditions. Please explain how the recruitment of a sufficient number of schools can be assured in time.

(b)(4)

(b)(4)



(b)(4)

References:

Head Start FACES 1997: *Longitudinal Findings on Program Performance, Third Progress Report*, January 2001

Head Start FACES 2000: *A Whole-Child Perspective on Program Performance, Fourth Progress Report*, May 2003

Hubbell-McKey, R., Pai-Samant, S., Lopez, D.F., & Kim, K. (2005). *Variations in Classroom and Program Characteristics for Head Start Children Across Three FACES Cohorts*. Paper presented at the biennial Society for Research on Child Development conference in the symposium *The Changing Environmental Context of Head Start Children From Three Cohorts of the Head Start Family and Child Experiences Survey* (Lopez, M.L, & Zill, N. Co-Chairs). Atlanta, GA, April 7-10, 2005.

(b)(4)

Question 25b: For each of the studies proposing to randomly assign at the school level, can the offeror propose at least one alternative design using within school assignment to reduce costs? Also, please set forth conditions needed to carry out a two-level assignment design that involves assignment of students and/or teachers to experimental conditions in some schools and not others, within an initial assignment at the school level.

(b)(4)

(b)(4)

Question 26: Study 1: The two treatment conditions should be more effective than the control condition because additional support will be provided for the treatment conditions. If so, should the primary question for this study be which one between the two treatment conditions is more effective? This study proposes to provide different levels of consultant expertise to the two treatment groups. If so, will the effects of consultancy method (live and remote) not be confounded with the effects of consultant expertise level? How will the level of expertise be measured?

(b)(4)

(b)(4)

Question 27: Study 1: Descriptions of the procedures for sampling schools and assigning teachers in the school are not consistent. On page 46 (section 2.2.1.3), it says that schools will be randomly assigned, but on page 50 (section 2.2.1.4) it says that children and teachers will be randomly assigned. Which description is right? If you were to randomly assign schools, how many schools should be sampled to ensure the adequate level of statistical power and effect size?

(b)(4)

Question 28. Study 1: If students will be followed during 3rd and 4th grade, will these students have different teachers from year to year? If so, how will this impact be considered in the data analysis and interpretation of the findings?

(b)(4)

Question 29. Study 1: The intervention materials and implementation procedures are well described. However, no preliminary evidence on the effects of the materials is presented to show that the intervention is ready for a large-scale randomized trial. Please provide whether and what kinds of preliminary evidence are available.

(b)(4)

Question 30: Study 1: What are differences between the individual child assessment (section 2.2.1.3.2.3, page 49) and the direct assessment to be conducted for four students selected from each classroom (2.2.1.3 section, page 46)?

(b)(4)

Question 31: Study 1: The offeror proposes to collect classroom assessments, teacher questionnaires and individual direct assessments. However, the data analysis plan primarily focused on the direct assessments. How will other data be analyzed?

(b)(4)

(b)(4)

Question 32: Study 1: The activity timelines show only two data collections of student achievements, even though the proposal indicates that student achievement will be collected four times. Please clarify.

(b)(4)

Question 33: Study 2: The control condition is not described in detail. How will the effects of the possibly different content and quality of the curriculum in the two conditions be measured? On page 55, it states that online courses meet state and national curriculum standards and make use of research-based pedagogical practices. However, no information is provided about the traditional courses.

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Question 34: Study 2: Treatment conditions A and B will not be implemented simultaneously and their effects will be tested against a control group at different times. How will the time effect be measured?

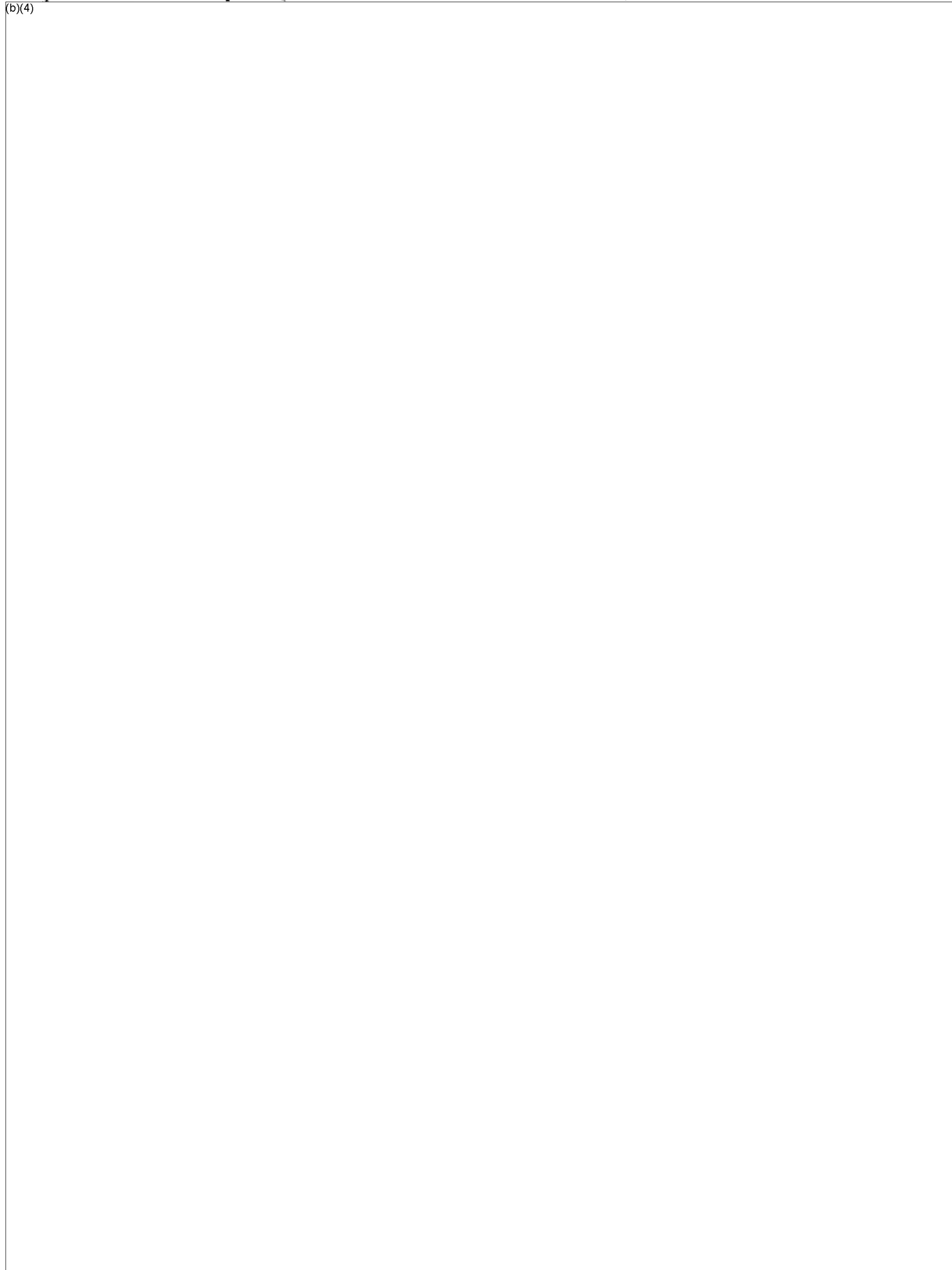
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Question 35: Study 2: The general description of the criterion characteristics defining high quality of online curriculum (4th paragraph on page 55 and 1st paragraph on page 58) looks fine. However, applying the criteria to the evaluation of a curriculum quality will require systematic procedures. Please explain how the quality of online curriculum will be evaluated using the criterion characteristics.

(b)(4)



(b)(4)



(b)(4)

Question 36: Study 2: What is the plan for from year 1 to year 2 when students change teachers? How will student attrition be handled?

(b)(4)

Question 37: Study 2: Should there be only three hypotheses on page 56?

(b)(4)

Question 38: Study 3: What evaluation data are available for the three curricula: Doors to Discovery; Read, Play, and Learn!; and Pearson's Opening the World of Learning?

(b)(4)

(b)(4)

Question 39: Study 3: What is the rationale for assuming that ERF teachers will implement scientific research-based practice in language, cognition and early reading (see section 2.2.3.2 on page 68) more than other teachers? Are scientific research-based practices embedded in the ERF curricula? How would the implementation of the research-based practices be measured?

(b)(4)

(b)(4)

References:

Boekaerts, M., Pintrich, P. R., & Zeidner, M. (2000), *Handbook of Self-Regulation*, San Diego, CA: Academic Press.

Pressley, M. & McCormick, C.B. (1995), *Advanced Educational Psychology for Educators, Researchers, and Policymakers*, New York, NY: Harper Collins.

Schunk, D.H. & Zimmerman, B.J. (1998), *Self-regulated learning: From Teaching to Self-Reflective Practice*, New York: Guilford Press.

Schunk, D.H. & Zimmerman, B.J. (2001), *Self-Regulated Learning and Academic Achievement: Theoretical Perspectives*, Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Zimmerman, B.J., Bonner, S., & Kovach, M. (1996), *Developing Self-Regulated Learners: Beyond Achievement to Self-Efficacy (Psychology in the Classroom)*, Washington, DC: American Psychological Association Press.

Question 40: Study 3: The schools are likely to be reluctant to participate in the second alternative as well as the first one because students assigned to the control group will receive only a half of the ERF instruction. How can it be assured that a randomized study will be conducted without the guaranteed recruitments of schools? Please remember that the third option, a matched study, is unacceptable for Task 2.

(b)(4)

Question 41: Study 3: The data analysis plan is not described in detail. How will the teacher and parent survey data be analyzed? Will they be included in the analysis of student achievement data? If achievement data are collected at multiple points of time, is it a good idea to examine the achievement growth using a growth curve model?

(b)(4)

(b)(4)

Question 42: Study 3: Please describe the reading expertise of the project staff concerning the target population.

(b)(4)

Ross, S. M. (2005). *Accelerated Reading*. Presented at the 2005 National Evaluation Institute (CREATE) in Memphis, TN., July 7-9, 2005.

Ross, S. M., & Gallagher, B. M. (2004). *The Effects of Accelerated Reader/Reading Renaissance on Student Achievement in Memphis City Schools: Supplementary Analysis of Tennessee Comprehensive Assessment Program (TCAP) Scores*. Memphis, TN: The University of Memphis, Center for Research in Educational Policy.

Ross, S. M., Nunnery, J. A., Goldfeder, E., McDonald, A., Rachor, R., Hornbeck, M., & Fleischman, S. (2004). Using school reform models to improve reading achievement: A longitudinal study of Direct Instruction and Success For All in an urban district, *Journal of Education for Students Placed At Risk*, 9 (4), 357-388.

Ross, S. M., Nunnery, J., Goldfeder, E., & McDonald, A.J. (2004). *A Randomized Experiment on the Effects of Accelerated Reader/Reading Renaissance in an Urban School District: Final Evaluation Report*. Memphis, TN: The University of Memphis, Center for Research in Educational Policy.

Ross, S. M., Nunnery, J., Smith, L. J., McDonald, A. J., & Sterbinsky, A. (2003). *Little Rock School District Literacy Program Evaluation*. Memphis, TN: The University of Memphis, Center for Research in Educational Policy.

Grehan, A. W., & Ross, S. M. (2005). *An Evaluation of the Effects of FOCUS on 1st Grade Reading Achievement in a Title I Elementary School*. Paper presented at the annual meeting of the American Educational Research Association (AERA) in Montreal, April 2005.

Grehan, A., Ross, S. M., Harrison, L., & Smith, L. J. (2005), *Evaluation of the Literacy Collaborative Model in Pitt County Schools*, Memphis, TN: The University of Memphis, Center for Research in Educational Policy.

Grehan, A. W., Ross, S. M., Smith, L. J., & Wang, L. W. (2004), *An Evaluation of the Effects of FOCUS on First Grade Reading Achievement in a Title I Elementary School*, Memphis, TN: The University of Memphis, Center for Research in Educational Policy.

Sterbinsky, A., & Ross, S. M. (2003). *Literacy Observation Tool Reliability Study*, M Memphis, TN: The University of Memphis, Center for Research in Educational Policy.

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(b)(4)



References:

Baroody, A. J. (1981/1991). Teaching mathematics developmentally to children classified as learning disabled. In D. K. Reid, W. P. Hresko, & H. L. Swanson (Eds.), *A cognitive approach to learning disabilities* (2nd ed., pp. 375-430). Austin, TX: PRO-ED.

Bottge B.A., Heinrichs, M., Mehta, Z. D., & Hung, Y-H. (2002). Weighing the benefits of anchored instruction for students with disabilities in general education classes. *The Journal of Special Education*, 35(4), 186-200.

Bransford, J. D., Brown, A. L., & Cocking, R. R. (Eds.) (2000). *How people learn: Brain, mind, experience, and school*. Washington, DC: National Academy Press.

Cognition and Technology Group at Vanderbilt (1992). The Jasper experiment: An exploration of issues in learning and instruction design. *Educational Technology Research & Development*, 40(1), 65-80.

Cognition and Technology Group at Vanderbilt (1997). *The Jasper project: Lesson in curriculum, instruction, assessment, and professional development*. Mahway, NJ: Lawrence Erlbaum Associates.

Hasselbring, T., Sherwood, R., Bransford, J., Merty, J., Estes, B., Marsh, J. & Van Haneghan, J. (1991). *An evaluation of specific videodisc courseware on student learning in a rural school environment*. Nashville, TN: Vanderbilt University, Learning Technology Center.

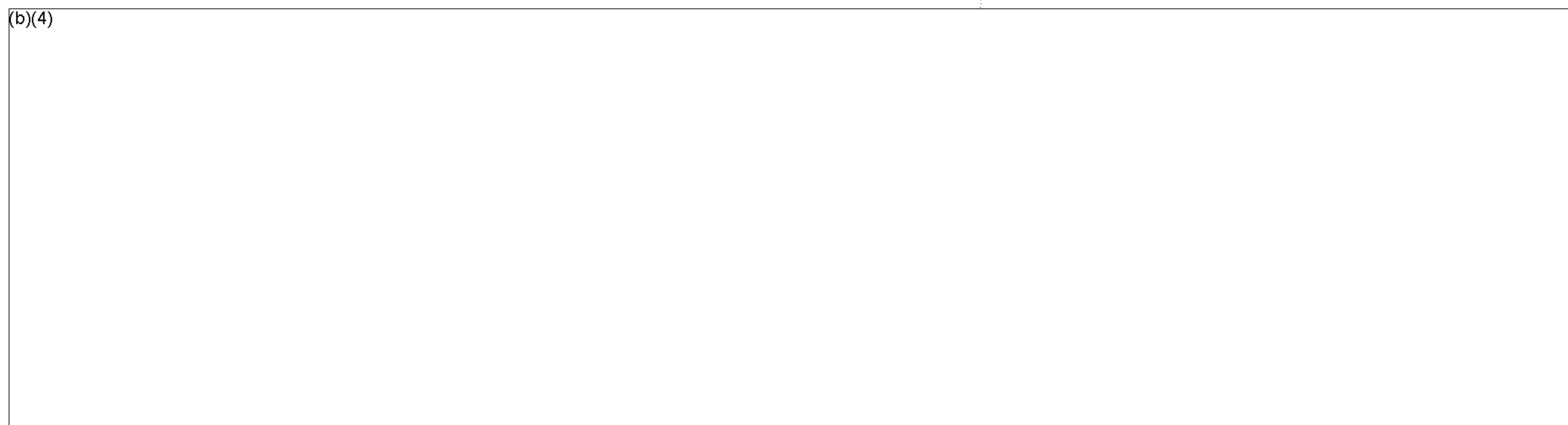
Rose, D. H. & Meyer, A. (2002). *Teaching every student in the digital age: Universal design for learning*. Alexandria, VA: Association for Supervision and Curriculum Development.

Vygotsky, L. S. (1935/1978). Interaction between learning and development. In M. Cole, V. John-Steiner, S. Scribner, E. Soubelman (Eds.), *Mind in society* (pp. 79-91). Cambridge, MA: Harvard University Press.

Whitehead, A. M. (1929). *The aims of education*, New York: Macmillan.

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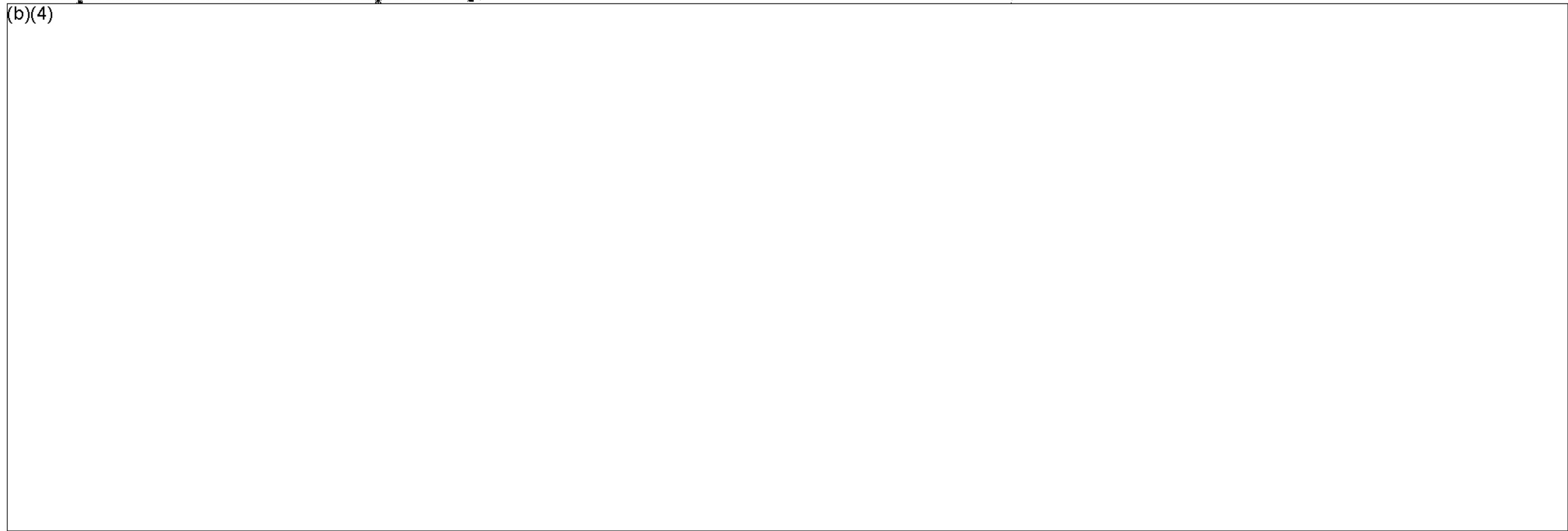
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ATTACHMENT 1. SUBCONTRACTOR LETTERS OF COMMITMENT

**Index of Changes in the Task Abstracts
From The CNA Corporation**

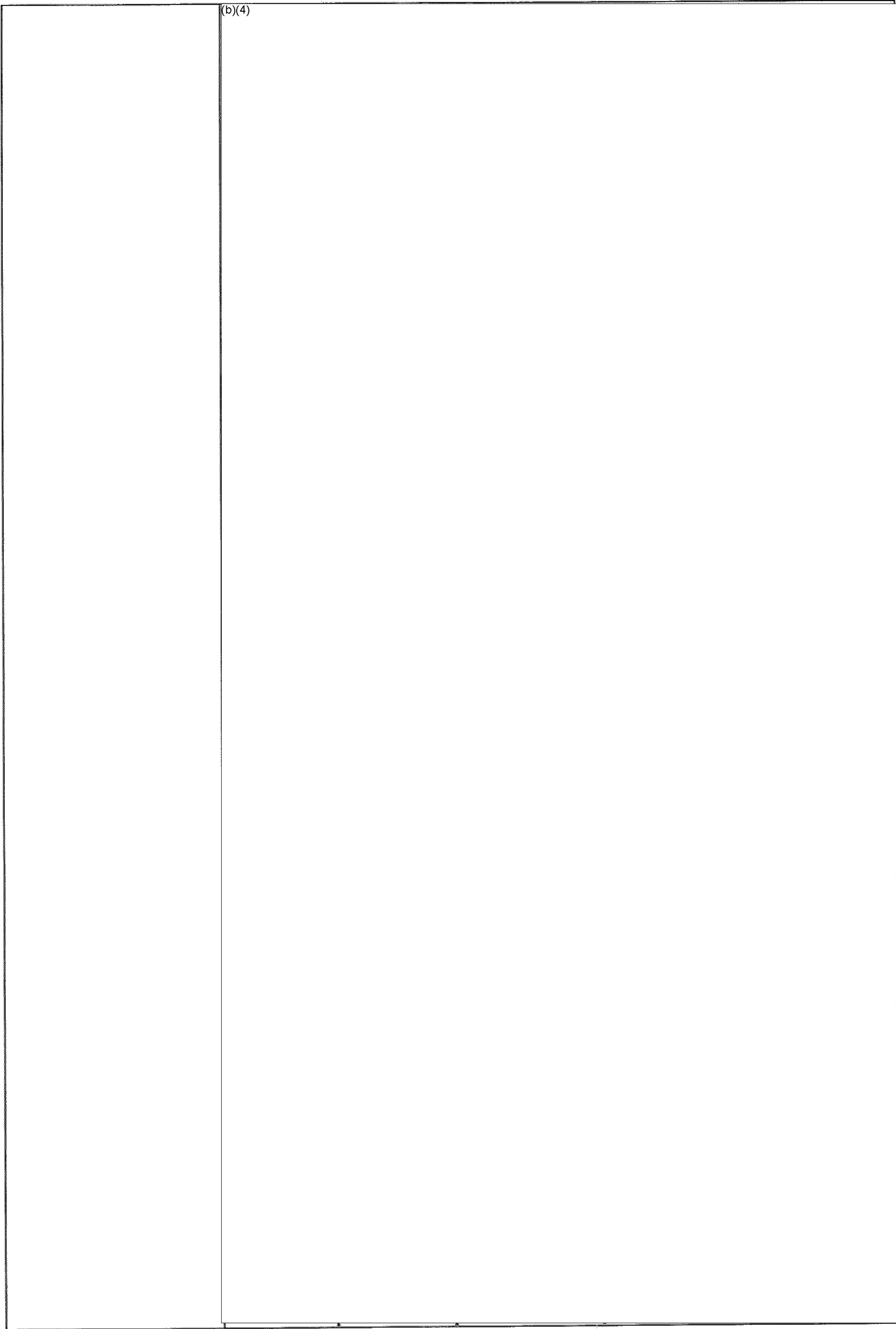
Study	Section	Change
1	Intervention Description	Copy editing
1	Independence of Evaluator	Minor changes
1	Operational Monitoring	Copy editing
2	Key Research Questions	Copy editing
2	Description of Control Groups	Minor change
3	Justification	Copy editing
3	Description of Intervention	Copy editing

TASK 2 STUDY ABSTRACTS

OFFEROR: The CNA Corporation

REGION: Appalachian

TASK 2 STUDY TITLE	Using Web-Based Feedback and Support to Improve Teacher Quality and Student Outcomes
KEY STUDY PERSONNEL & INSTITUTIONAL AFFILIATIONS	<p>Our key study personnel are Robert C. Pianta, Dr. Bridget Hamre, and Dr. Marcia Kraft Sayre, all of the University of Virginia Center for Advanced Study of Teaching and Learning (CASTL), and Dr. Sarah Friedman from the CNA Corporation (CNAC). We briefly summarize the responsibilities of each of our key personnel:</p> <p>Study PI(s) Dr. Robert C. Pianta, University of Virginia Center for Advanced Study of Teaching and Learning</p> <p>Responsible for evaluation design plans: Dr. Robert C Pianta and Dr. Sarah I. Friedman, REL Lab Director (at CNAC)</p> <p>Responsible for intervention implementation, training, and data collection/coding: Dr. Bridget Hamre, University of Virginia Center for Advanced Study of Teaching and Learning</p> <p>Responsible for evaluation study data collection (assessment, surveys, observations, school records, etc.): Dr. Marcia Kraft Sayre, University of Virginia Center for Advanced Study of Teaching and Learning</p> <p>Responsible for analysis and reporting: Dr. Sarah Friedman, REL Lab Director (at CNAC)</p>
INTERVENTION DESCRIPTION	(b)(4)



(b)(4)

(b)(4)

(b)(4)

JUSTIFICATION
FOR SELECTING
THIS

INTERVENTION

(b)(4)

	(b)(4)
INDEPENDENCE OF EVALUATOR	

	(b)(4)
KEY RESEARCH QUESTION(S)	

	(b)(4)
KEY OUTCOMES	

	(b)(4)
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	(b)(4)
<p>JUSTIFICATION FOR THE LEVEL OF RANDOM ASSIGNMENT</p>	
<p>WHO DOES the RANDOM ASSIGNMENT?</p>	
<p>DESCRIPTION OF INTERVENTION AND CONTROL GROUP CONDITIONS</p>	

(b)(4)

SETTING

POWER
ANALYSIS

(b)(4)

DATA
COLLECTION

(b)(4)

	(b)(4)
TARGET SAMPLE SIZES	
OPERATIONAL MONITORING	
STUDY PHASES and SCHEDULE	

	(b)(4)
FUNDING REQUESTED	

STUDY PHASES AND SCHEDULE

Task/Sub-Task	Start Date	Interim Milestones	End Date	Deliverables
Recruitment of teachers	1-1-06	Districts enrolled	6-30-06	Consented teachers assigned
Piloting of measures and procedures	1-1-06	Web versions complete; all decisions ratified	8-30-06	Data collection website finalized; intervention protocol final
Revision of MTP website for 3 rd grade	1-1-06	3 rd grade classroom videos and texts complete	8-30-06	MTP website fully functional for 3 rd grade
Hiring project staff	1-1-06	Job descriptions complete and positions posted	4-30-06	Staff hired
Training of teachers/participants	7-1-06	Trainings scheduled	9-15-06	Teachers trained
Implementation of intervention Year 1	9-1-06	Periodic consultations with teachers	6-30-07	Teachers receive 10 cycles of feedback
Staff training	9-1-06	Weekly staff training meetings	6-30-07	Staff at fully trained capacity
Data collection for child outcomes and implementation fidelity	9-1-06	Teachers complete 2 waves of direct assessment and web assessment.	8-30-07	Year 1 data collection complete and data stored for use
Data coding for classroom observations	9-1-06	Teacher implementation coded by UVA observers	8-30-07	Observational data from Year 1 coded and stored
Website maintenance and technical assistance	9-1-06	Monthly maintenance routines	8-30-07	Year 1 maintenance complete
Training of teachers/participants	7-1-07	Trainings scheduled	9-15-07	Teachers trained
Implementation of intervention Year 2	9-1-07	Periodic consultations with teachers	6-30-08	Teachers receive 10 cycles of feedback
Staff training	9-1-07	Weekly staff training meetings	6-30-08	Staff at fully trained capacity
Data collection for child	9-1-07	Teachers complete 2	8-30-08	Year 2 data

Task/Sub-Task	Start Date	Interim Milestones	End Date	Deliverables
outcomes and implementation fidelity		waves of direct assessment and web assessment.		collection complete and data stored for use
Data coding for classroom observations	9-1-07	Teacher implementation coded by UVA observers	8-30-08	Observational data from Year 2 coded and stored
Website maintenance and technical assistance	9-1-07	Monthly maintenance routines	8-30-08	Year 2 maintenance complete
Data reduction	6-1-08	Compilations of analysis data sets	12-31-08	Analysis data sets
Data analysis	12-31-08	Monthly reports and documentation	12-31-09	Reports, papers, presentations
Dissemination of results	12-31-08	Papers, conference presentations, reports	12-31-09	Published articles in journals

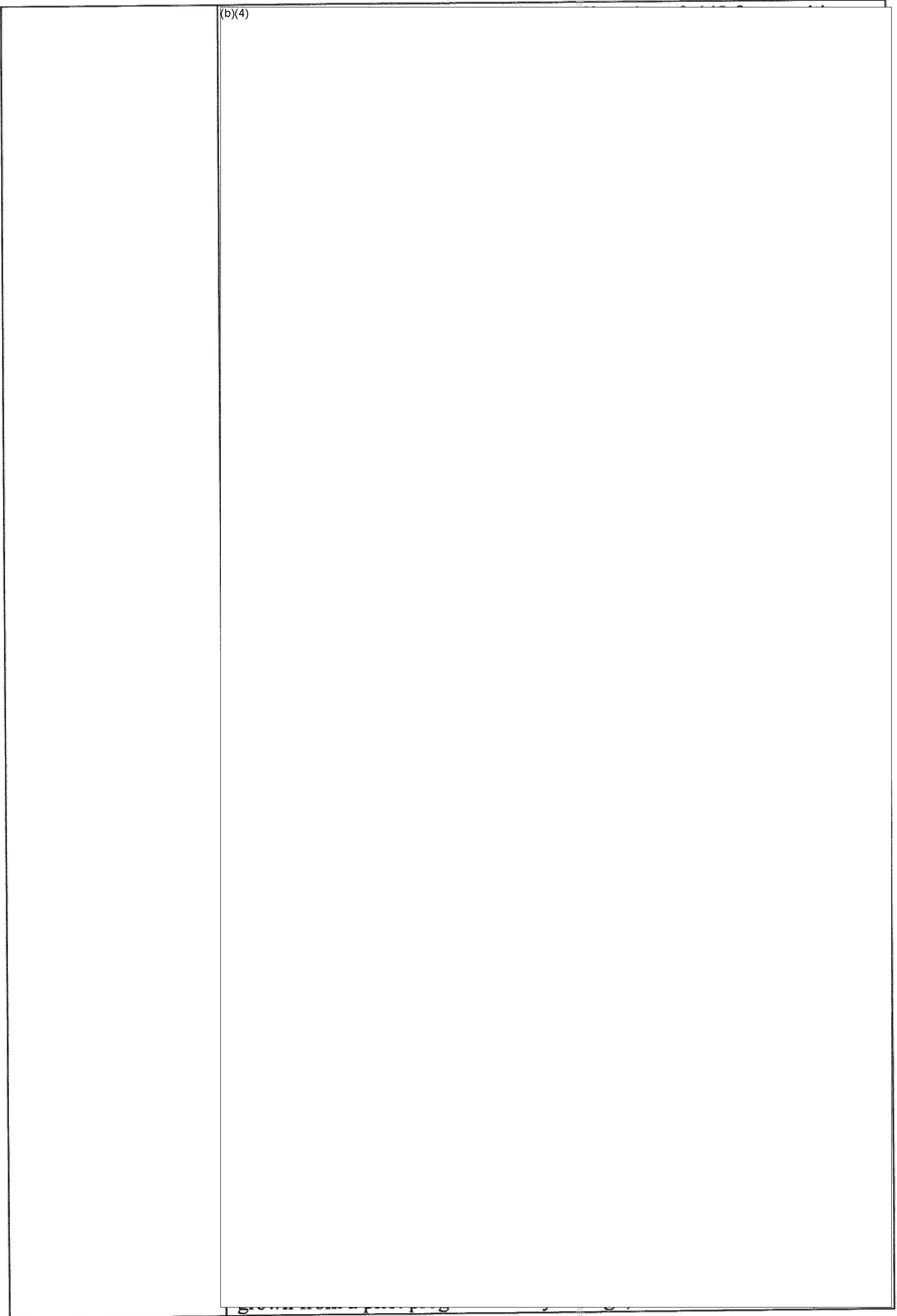
TASK 2 STUDY ABSTRACTS

OFFEROR: The CNA Corporation

REGION: Appalachian

<p>TASK 2 STUDY TITLE</p>	<p>Effectiveness of Hybrid Secondary School Courses For Adolescent Students and As Embedded Professional Development Experiences for Classroom Teachers</p>
<p>KEY STUDY PERSONNEL & INSTITUTIONAL AFFILIATIONS</p>	<p>Our key study personnel are Dr. Linda Cavalluzzo of CNAC and Dr. Deborah Lowther of Education Innovations. Dr. Cavalluzzo will serve as the study Principal Investigator and Dr. Lowther will serve as the Co-PI. We briefly summarize the responsibilities of each of our key personnel:</p> <p>Dr. Linda Cavalluzzo is responsible for intervention implementation. The intervention will be implemented by Kentucky Virtual High School (KVHS) and The Collaborative for Teaching and Learning (CTL). The PI will monitor the implementation to ensure that it occurs as described in the proposal.</p> <p>Dr. Cavalluzzo is responsible for data collection (assessment, surveys, observations, school records, etc.). The PI is responsible for collection of student assessments, teacher surveys, and school/student records. The Co-PI, Dr. Lowther, is responsible for collection of classroom observations.</p> <p>The PI has overall responsibility for the study, analysis of student assessment and teacher survey data, and delivery of all reports to ED. The Co-PI is responsible for analysis and reporting of results from classroom observation data.</p>
<p>INTERVENTION DESCRIPTION</p>	<p>(b)(4)</p>

	(b)(4)
JUSTIFICATION FOR SELECTING THIS INTERVENTION	



(b)(4)

(b)(4)

	(b)(4)
INDEPENDENCE OF EVALUATOR	
KEY RESEARCH QUESTION(S)	
KEY OUTCOMES	

	(b)(4)
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	(b)(4)
JUSTIFICATION FOR THE LEVEL OF RANDOM ASSIGNMENT	

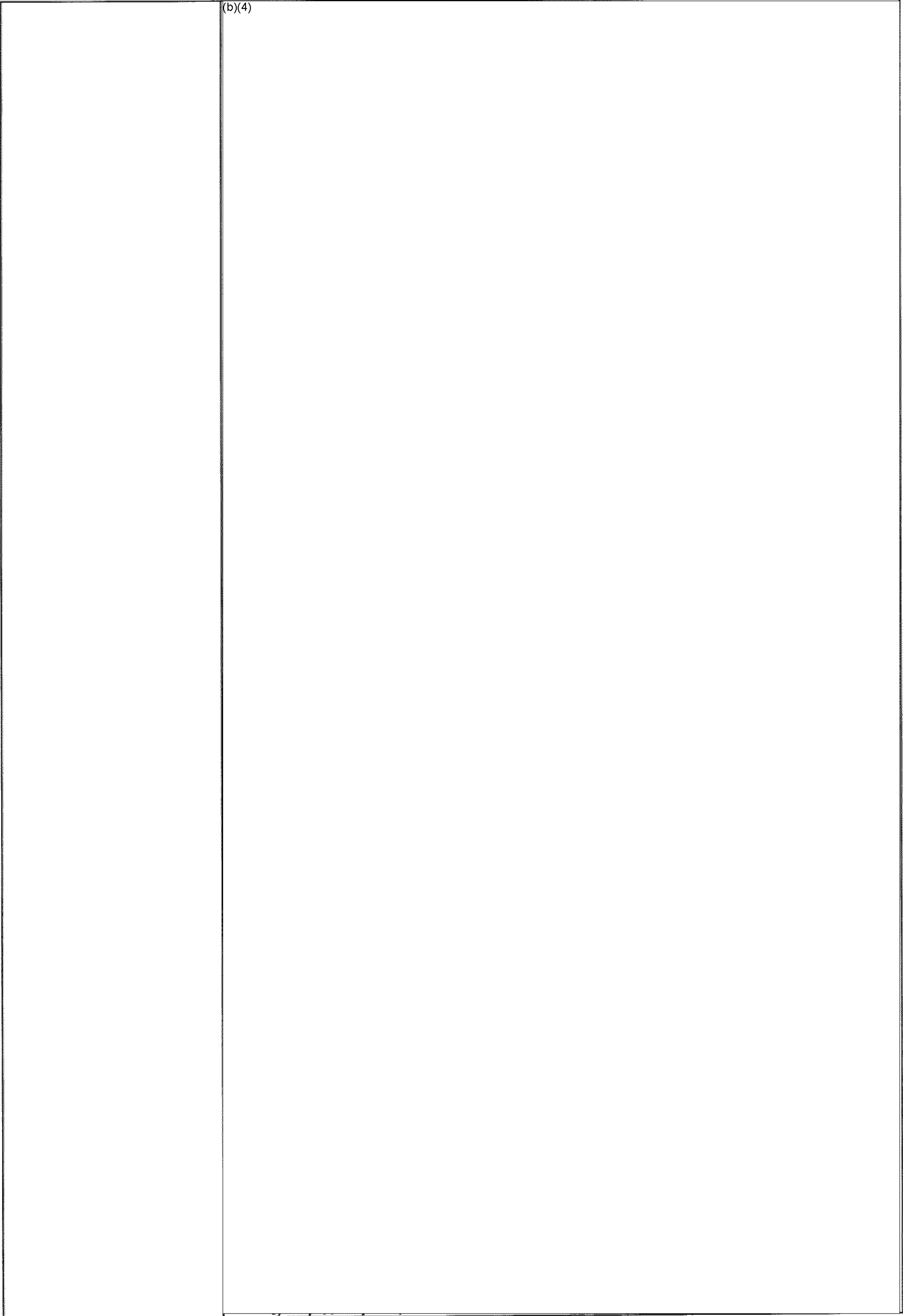
	(b)(4)
WHO DOES the RANDOM ASSIGNMENT?	
DESCRIPTION OF INTERVENTION AND CONTROL GROUP CONDITIONS	

(b)(4)

(b)(4)

	(b)(4)
SETTING	
POWER ANALYSIS	

	(b)(4)
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(b)(4)

(b)(4)

	(b)(4)
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DATA COLLECTION	(b)(4)
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(b)(4)

	(b)(4)
TARGET SAMPLE SIZES	(b)(4)
OPERATIONAL MONITORING	(b)(4)
STUDY PHASES and SCHEDULE	(b)(4)
FUNDING	(b)(4)

REQUESTED	<u>Provide detailed information in budget table for this study.</u>
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Evaluation/Assessment Design: Hybrid Courses for Student Instruction and Teacher Professional Development

Tasks	Study Year				
	Year 1	Year 2	Year 3	Year 4	Year 5
Planning period: prepare study materials, IRB approval, Treat/Ctrl assignments	X				
Collect and analyze baseline data (includes SOM/RSCA)	X	X			
Deliver Baseline Report			X		
Mentored Support (Treatment A, SY 2007-2008)					
SOM/RSCA			X		
Treatment teacher questionnaires		X	X		
Student performance data		X	X		
Data analysis		X	X		
Create treatment archives		X	X		
Deliver Round 1 Report				X	
Vicarious Support (Treatment B, SY 2008-2009)					
SOM/RSCA				X	X
Teacher questionnaires			X	X	
Student performance data			X	X	
Data analysis			X	X	
Deliver Final Report					X

TASK 2 STUDY ABSTRACTS

OFFEROR: The CNA Corporation

REGION: Appalachian

TASK 2 STUDY TITLE	An Impact Evaluation of Early Reading First Programs
KEY STUDY PERSONNEL & INSTITUTIONAL AFFILIATIONS	<p>Our key study personnel are Dr. Steven Ross of Educational Innovations and Dr. David Lopez of CNAC. We briefly summarize the responsibilities of each of our key personnel.</p> <p>Dr. Ross and Dr. Lopez will be responsible for the evaluation design plans.</p> <p>The Early Reading First awardee will be responsible for intervention implementation.</p> <p>Dr. Anna Grehan, Educational Innovations, will be responsible for data collection (assessment, surveys, observations, school records, etc.).</p> <p>Dr. Ross and Dr. Lopez will be responsible for analysis and reporting.</p>
INTERVENTION DESCRIPTION	(b)(4)
JUSTIFICATION FOR SELECTING THIS INTERVENTION	(b)(4)

(b)(4)

	(b)(4)
INDEPENDENCE OF EVALUATOR	(b)(4)
KEY RESEARCH QUESTION(S)	(b)(4)

	(b)(4)
KEY OUTCOMES	(b)(4)

	(b)(4)
JUSTIFICATION FOR THE LEVEL OF RANDOM ASSIGNMENT	(b)(4)

	(b)(4)
WHO DOES the RANDOM ASSIGNMENT?	(b)(4)
DESCRIPTION OF INTERVENTION AND CONTROL GROUP CONDITIONS	(b)(4)

	(b)(4)
SETTING	(b)(4)
POWER ANALYSIS	(b)(4)

(b)(4)

	(b)(4)
DATA COLLECTION	(b)(4)

(b)(4)

(b)(4)

	(b)(4)
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	(b)(4)
TARGET SAMPLE SIZES	
OPERATIONAL MONITORING	
STUDY PHASES and SCHEDULE	
FUNDING REQUESTED	
	<u>Provide detailed information in budget table for this study.</u>

Attachment A: Timeline Table and Schedule

Task/ Sub-Task	Start Date	Interim Milestones	End Date
YEAR ONE	First draft of instruments submitted for internal and Dept of Education review	1-Jan-06	1-Feb-06
	Revision, and Submission for IRB and OMB approvals	1-Mar-06	1-July-06
	Develop Data Management, Online Data Collection System, Sample Tracking System	1-Jan-06	1-Sept-06
	Secure Site Cooperation	1-Jan-06	1-April-06
	Select Sample	1-May-06	31-July-06
	Recruit Field Staff	1-March-06	15-July-06
	Train Field Staff (training and prep time for training materials)	1-June-06	15-Aug-06
	Data Collection	1-Oct-06	20-Nov-06
	Data Analysis and Reporting (24 wks YRS 1-4 and 48 weeks YR 5)	1-Dec-06	1-Mar-07
	YEAR TWO	Sample and Site Refreshing	1-Jan-07
Spring Data Collection -- Train Field Staff (training and prep time for training materials)		1-Jan-07	15-March-07
Spring Data Collection		1-April-07	15-May-07
Fall -- Train Field Staff (training and prep time for training materials)		1-June-07	15-Aug-07
Fall Data Collection		1-Oct-07	20-Nov-07
Data Analysis and Reporting		1-Dec-07	1-Mar-08
YEAR THREE	Sample and Site Refreshing	1-Jan-08	15-Jan-08
	Spring Data Collection -- Train Field Staff (training and prep time for training materials)	1-Jan-08	15-March-08
	Spring Data Collection	1-April-08	15-May-08
	Fall -- Train Field Staff (training and prep time for training materials)	1-June-08	15-Aug-08
	Fall Data Collection	1-Oct-08	20-Nov-08

Task/ Sub-Task	Start Date	Interim Milestones	End Date
YEAR FOUR	Data Analysis and Reporting	1-Dec-08	1-Mar-09
	Sample and Site Refreshing	1-Jan-09	15-Jan-09
	Spring Data Collection -- Train Field Staff (training and prep time for training materials)	1-Jan-09	15-March-09
	Spring Data Collection Fall -- Train Field Staff	1-April-09	15-May-09
	(training and prep time for training materials)	1-June-09	15-Aug-09
	Fall Data Collection	1-Oct-09	20-Nov-09
YEAR FIVE	Data Analysis and Reporting	1-Dec-09	1-Mar-10
	Final Report	1-Jan-10	31-Dec-10
	Create Public and restricted use data files	1-Jan-10	31-Dec-10

Overall Schedule and Deliverables

Start Date	Interim Milestones	End Date	Deliverables
1-Jan-06	Monthly Progress Reports	31-Dec-10	Detailed monthly report to ED
1-Jan-06	Data Collection Summaries and Reports	31-Dec-10	Status reports during data collection, as well as summaries of data.
1-Jan-06	Technical Reports and preliminary analyses	31-Dec-10	Following each round of data collection, a detailed statistical summary will be provided to ED.
1-Jan-10	Final Report	31-Dec-10	Final Report
1-Jan-10	Public and Restricted Use Data Files	31-Dec-10	Data Files delivered to ED.

The Transdisciplinary
Play-Based Curriculum
from Toni Linder



*Storybook
Activities*
for Young Children



Toni W. Linder, Ed.D.

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Overview

Read,

Play,

and

Learn!®

AN OVERVIEW OF THE RESEARCH BASE FOR *READ, PLAY, AND LEARN!*[®]

Several studies are underway to look at the outcomes of *Read, Play, and Learn!*

RESEARCH ON *READ, PLAY, AND LEARN!*[®]

In one on-going study, Coleman, Linder, and Linas (2005) and Coleman, Linder, Linas, and Meyer (2005) have found significantly higher developmental skills as measured by standard scores on the Mullen Scales of Early Learning for 50 preschool children who have been immersed in *Read, Play, and Learn!* for 1 year compared to children entered in the program for 3 months or less. Analysis using a linear regression indicated that immersion in *Read, Play, and Learn!* predicted both significantly higher overall developmental scores and receptive language sub-scales scores ($p = .01$).

Another study, done with developmentally younger children from Early Head Start (Child Development Resources, 2005), used *1-2-3 Read!*, an adapted version of *Read, Play, and Learn!* for younger children. This study looked at developmental growth in 24 children from low income and diverse backgrounds whose mean pre-test developmental quotient (DQ) on the Early Learning Accomplishment Profile prior to using the curriculum was 83. At post assessment, the mean DQ was 102. All children, including the 6 with identified disabilities, showed substantial developmental gains. Overall, children showed a 12-month gain in 9 months. This study demonstrates the effect of the *Read, Play, and Learn!* model on children who are developmentally younger, from high risk environments, and culturally diverse backgrounds. In addition, 100% of families reported, post-test, reading daily to their children. This is in sharp contrast to a study (Halfon, McLearn, & Schuster, 2002) showing less than half of parents from diverse socioeconomic backgrounds reading daily to their children under age 3.

Similar results were found with middle income families whose children used the *Read, Play, and Learn!* model. A survey of 87 families of children using *Read, Play, and Learn!* in five preschool classrooms found that as a result of using the curriculum, families read to their children more frequently, used the vocabulary being taught in the classroom, and followed through with activities done at school more frequently than they had before having their children enrolled in the program with the *Read, Play, and Learn!* curriculum (Coleman & Stokka, 2003, unpublished paper).

In a qualitative study conducted with teachers who had children with disabilities in their classes where they were using *Read, Play, and Learn!*, Coleman (submitted for publication, 2005) found that teachers were able to adapt the curriculum to meet the needs of a wide range of children. Children remained engaged and participated in the curriculum using creative modifications. The cur-

riculum was found to assist teachers in making environmental, lesson planning, and other daily adaptations.

Read, Play, and Learn! integrates the findings from literature on development, learning, play, and literacy. With the passage of the No Child Left Behind (NCLB) Act of 2001, schools are under increasing pressure to find and use evidence-based curricula to align with the scientifically based research criteria outlined in NCLB. Unfortunately, in the aftermath of NCLB, the value of play as a foundation for learning has been diminished (Zigler, May 27, 2002, childcareexchange.com). If play is to continue to serve an important role in the education of young children, empirical research is needed to document potential developmental and academic outcomes, in addition to other developmental benefits, of play. The above studies and a growing body of research, as described in part below, are finding that a play and literature-based curriculum can have significant impact on children, families, and teachers.

COMPONENTS OF LITERACY

The *Read, Play, and Learn!* curriculum is founded on important research findings about how children learn early literacy skills. With the active support of adults, these skills should develop in an integrated manner (Ollila & Mayfield, 1992). Components of literacy (Depree & Iversen, 1994) include: 1) oral language, with the subcomponents of listening (accessing information from speech) and speaking (expressing information orally); 2) written language, with the subcomponents of reading (accessing information from print) and writing (expressing information in print); and 3) visual language, with the subcomponents of viewing (accessing information from sources other than print, e.g., pictures, maps) and presenting (expressing information in visual form other than print, e.g., art, charts).

A brief description of research support for these aspects within *Read, Play, and Learn!* follows.

RESEARCH ON ORAL LANGUAGE: Listening and Speaking

In order to have facility with oral language, children need to be exposed to an environment rich in language and interact with adults using language in a social context (Bruner, 1975; Cazden, 1992; Chomsky, 1965; Halliday, 1975; McNeill, 1970; Menyuk, 1977; Morrow, 1991). *Read, Play, and Learn!* explores new literature themes every 2 weeks, ensuring that language is constantly changing. Adults help children use new language concepts throughout the day. Language concepts are learned in meaningful contexts and generalized. Children demonstrate dramatic gains in vocabulary and language usage (Linder, in progress).

Research demonstrates that storytelling strongly attracts children to books (Morrow & Weinstein, 1986) and that children who frequently listen to stories develop more sophisticated language structures and a larger vocabulary (Lenz, 1992). Listening to stories establishes favorite storybooks and encourages children to want to read and actively pursue the necessary skills to read by themselves (Sulzby, 1985). Research shows that listening to stories 1) enhances comprehension and knowledge about books and print (Mason, 1980), 2) develops a sense of story structure (Morrow, 1985), 3) develops positive attitudes toward reading and writing, and 4) helps children develop their own stories (Morrow, 1985).

With *Read, Play, and Learn!*, children are read to at the beginning of each day and numerous times throughout the day. Repetition gives the child mastery over story sequence and vocabulary. The stories soon become favorites. As the stories are sought out by children for rereading throughout the year (Linder, in progress), children learn the conventions of reading and print.

When telling stories, children tend to mimic the intonation of adults reading stories. This “book language” takes children beyond talking into understanding the language of reading (Cazden, 1992; Snow, 1991). Children’s ability to question also develops, with questions relating to the pictures and meanings of the story. With additional maturation and practice, the questions children ask relate to the letters, words, and sounds of letters in print on the storybook page (Morrow, 1985; Roser & Martinez, 1985). Parents report dramatic gains in vocabulary and discussion about books when a storybook curriculum is used (Linder, in progress). In addition, with increasing exposure to the books and interaction with the teacher, either individually or in small or large groups, the children develop an increasing repertoire of literacy-related questions, vocabulary, and concepts related to a broad range of topics.

RESEARCH ON WRITTEN LANGUAGE: *Reading and Writing*

When children use functional forms of literacy in their play, they begin to understand the forms’ purposes. Children use a variety of functional literacy forms throughout all of the centers in the *Read, Play, and Learn!* classroom. Each child is encouraged to work at his or her own level of learning, with teachers facilitating the child’s acquisition of the next stage of learning. McCormick and Mason (1981) established three developmental levels of word recognition in learning to read: 1) identifying words through context, 2) using sound–letter cues, and 3) sounding out words. Parents and teachers report gains in children’s book knowledge and understanding of basic reading skills, such as letter recognition, phonological awareness, and basic sight vocabulary. Children begin to understand the meaning of print by using syntactic cues, semantic cues, and graphophonic rules (Morrow, 1991).

As a first step in reading and writing, children learn that print has functions (Mason, 1980). Children next express interest in the forms of print—including names, sounds, and configurations of letters and words—and then learn the conventions of print—including reading from left to right and the purpose of punctuation and spacing. Sulzby (1985) identified six steps in the development of children’s writing behavior: 1) use of drawings for writing, 2) scribble writing, 3) use of letter-like forms, 4) use of well-learned units or letter strings, 5) use of invented spelling, and 6) writing conventionally. All forms of literacy are incorporated into *Read, Play, and Learn!*. For example, children illustrate story concepts, construct charts and maps, follow recipes, create books, make signs for dramatic play, and write notes or messages for peers and parents. Each child’s attempts are accepted at his or her developmental level and scaffolded to the next level. Children show an increase in representational abilities in symbolic expression, dramatic play, art, and print.

RESEARCH ON VISUAL LANGUAGE: *Viewing and Presenting*

Pictures and symbols introduce children to literacy (Schickedanz, 1999). Children need opportunities to gain information through pictures, maps, charts, and symbols. In addition, dramatic representations of story concepts assist in memory

development (Rowe, 1998), syntactic skills (Vedelar, 1997), book comprehension (Rowe, 1998), and phonological awareness (Sonnenschein, Baker, Serpell, & Schmidt, 2000) and build connections between oral and written modes of expression (Roskos & Christie, 2001). The *Read, Play, and Learn!* classroom uses a variety of visual representations of emerging literacy and print. Charts of daily routines, recipes and instructions, symbols for print in books, and maps of the classroom are integrated into each module. Children also learn signs and visual symbols associated with each of the stories. Dramatizations of each story are central to the curriculum, with the teacher facilitating by introducing story props and materials; modeling and encouraging functional use of literacy tools; and mediating the social interactions among children as they integrate story, props, and dramatic interactions.

Emerging literacy requires presentation of the following language and literacy components at a developmentally appropriate level for each child: phonological awareness, vocabulary, syntax, semantics, and story sequence. These concepts are introduced through multidimensional means, including pictures, dramatization, songs and fingerplays, gestures, signs, charts, symbols, and other visual methods. Opportunities for children to express their conceptual understanding through a variety of visual means, including gestural, dramatic, and artistic, enable them to connect oral and written modes of expression (Neuman & Roskos, 1990; Rowe, 1998; Schickedanz, 1999).

Presenting visual information is integral to *Read, Play, and Learn!*. A group art mural depicting story elements, sequences, and concepts is developed for each story. In addition, children create individual art projects, drawings with dictations, charts in science projects, and two- and three-dimensional representations related to the stories. Children also render dramatic representation of story characters, concepts, actions, and sequence. Children's ability to represent ideas pictorially increases.

RESEARCH ON LITERACY, PLAY, AND SCAFFOLDING

Research shows that play can support the application of literacy skills. Play provides a meaningful setting, supportive peer interactions, and functional opportunities for using skills (Morrow, 1990; Neuman & Roskos, 1990, 1992, 1997). Play can provide settings that promote literacy activities, skills, and strategies, offer language experiences that build associations between oral and written modes of expression, provide opportunities for teachers to instruct children in functional literacy skills (Neuman & Roskos, 1990), and help incorporate literacy concepts, skills, and processes (Neuman & Roskos, 1992, 1997). When appropriately facilitated by an adult, play and literacy can be integrated to increase book comprehension and memory for stories (Rowe, 1998), assist children in learning to read environmental print (Neuman & Roskos, 1993; Vukelich, 1994), and develop phonological awareness and motivation to read print (Sonnenschein et al., 2000). *Read, Play, and Learn!* integrates play and literacy throughout the day.

Adult involvement in the early childhood environment is critical to children's learning. Adult involvement and intervention infuse literacy ideas, processes, and skills into play (Neuman, 2000; Vukelich, 1994). Scaffolding for emerging literacy skills should incorporate a sequence of developmental strategies, including shared language experiences, shared reading, guided reading, and independent reading. Concurrently, scaffolding of writing needs to incorporate a corresponding sequence of developmental strategies that include language experience, writing for children,

shared writing, guided writing, and independent writing (Depree & Iversen, 1994). The *Read, Play, and Learn!* modules incorporate all of these strategies. Specific strategies for literacy are addressed in Chapter 7 of the *Teacher's Guide* for the *Read, Play, and Learn!* curriculum.

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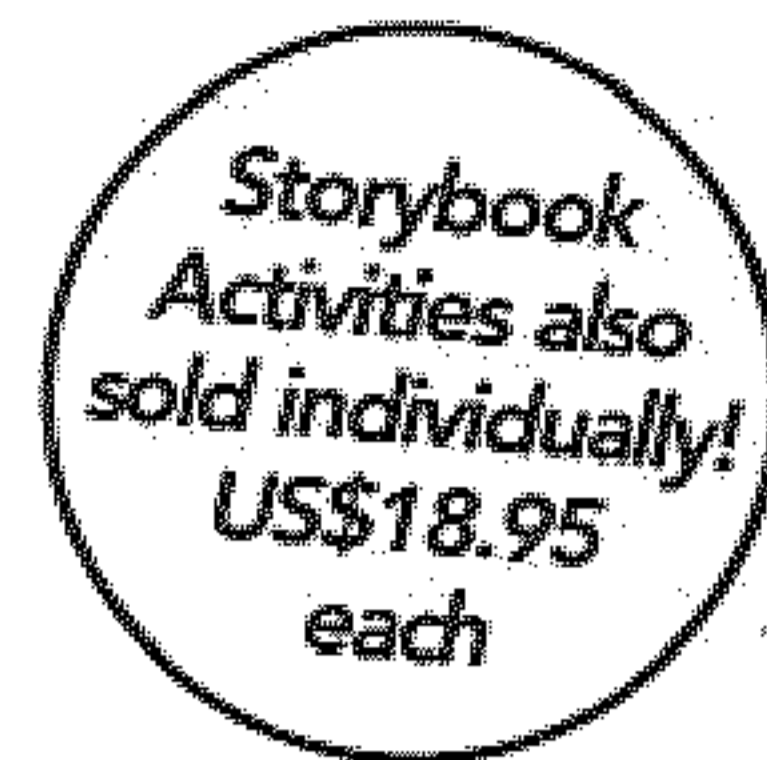
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<p>TASK 2 STUDY TITLE</p>	<p>Enabling Students to Achieve Math Proficiency Through a Technology-Based Approach</p>
<p>KEY STUDY PERSONNEL & INSTITUTIONAL AFFILIATIONS</p>	<p>Study PI(s) Ted S. Hasselbring and Janet Mannheimer Zydney, University of Kentucky (UK)</p> <p>Responsible for evaluation design plans: Ted S. Hasselbring and Dr. Xin Ma from the University of Kentucky, and Dr. Sarah Friedman, Lab Director at CNAC</p> <p>Responsible for intervention implementation: Janet Mannheimer Zydney</p> <p>Responsible for data collection (assessment, surveys, observations, school records, etc.): Melinda Ault, University of Kentucky</p> <p>Responsible for analysis and reporting: Ted S. Hasselbring, Janet Mannheimer Zydney, Melinda Ault and Xin Ma from UK and Sarah Friedman, Lab Director at CNAC</p>
<p>INTERVENTION DESCRIPTION</p>	<p>(b)(4)</p>

(b)(4)

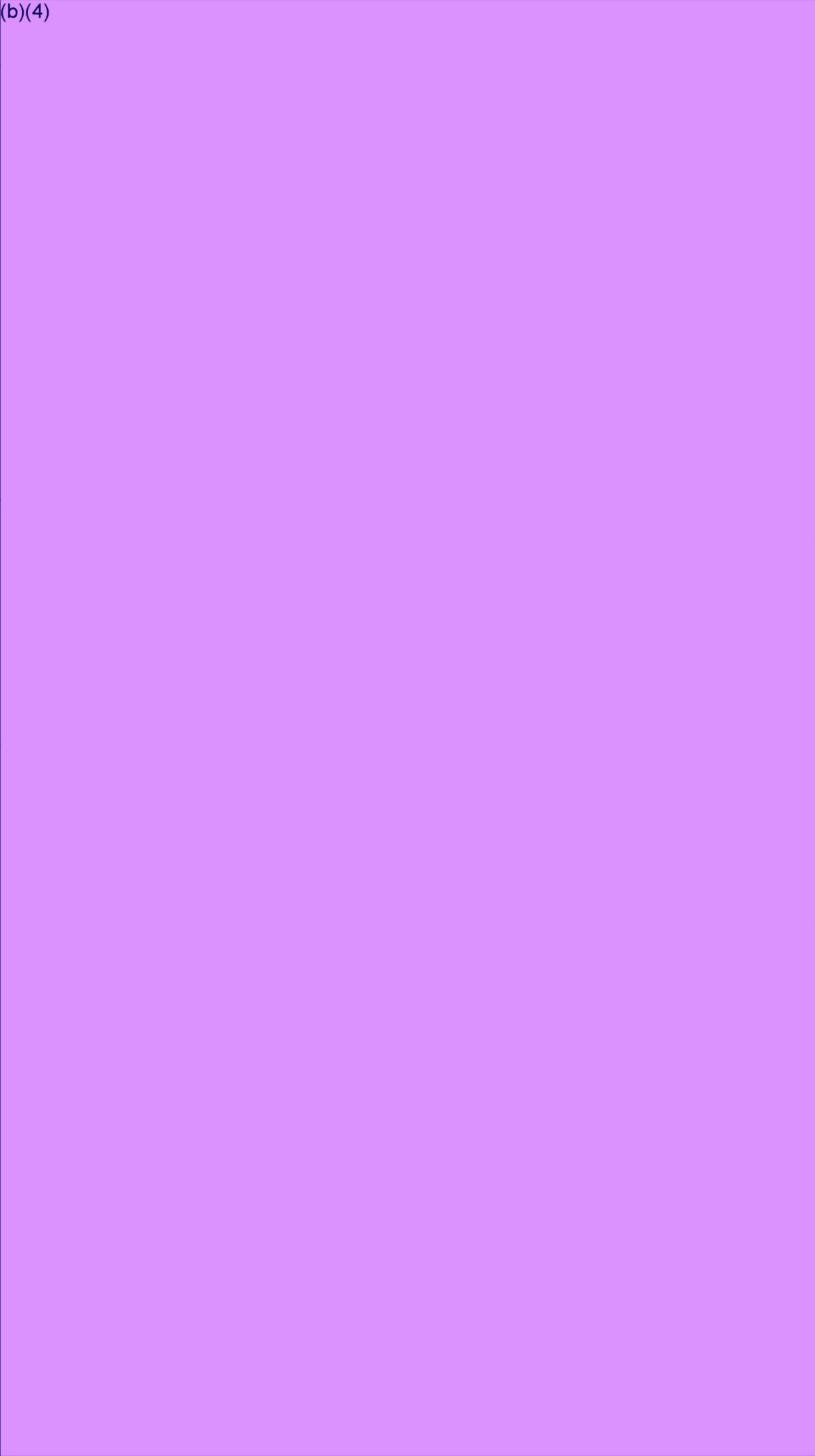
JUSTIFICATION
FOR SELECTING
THIS
INTERVENTION

Intervention Selection References:

Bottge, B. A. (1999). Effects of contextualized math instruction on problem solving of average and below-average achieving students. *The Journal of Special Education, 33(2)*, 81-92.

	<p>Bottge, B. A. & Hasselbring, T. S. (1993). A comparison of two approaches for teaching complex, authentic mathematics problems to adolescents in remedial math classes. <i>Exceptional Children</i>, 59, 556-566.</p> <p>Bottge, B. A., Heinrichs, M., Chan, S., Mehta, Z. D., & Watson, E. (2003). Effects of video-based and applied problems on the procedural math skills of average- and low-achieving adolescents. <i>Journal of Special Education Technology</i>, 18(2), 5-22.</p> <p>Bottge, B.A., Heinrichs, M., Chan, S., & Serlin, R. (2001). Anchoring adolescents' understanding of math concepts in rich problem-solving environments. <i>Remedial and Special Education</i>, 22, 299-314.</p> <p>Cognition and Technology Group at Vanderbilt (1997). <i>The Jasper project: Lesson in curriculum, instruction, assessment, and professional development</i>. Mahway, NJ: Lawrence Erlbaum Associates.</p> <p>Zydney and Hasselbring (2005). <i>Involving Students in the Software Design Process: A Design-Based Research Study on Students' Motivation</i>. Paper submitted to the International Conference of the Learning Sciences.</p>
<p>INDEPENDENCE OF EVALUATOR</p>	<p>(b)(4)</p>

	(b)(4)
KEY RESEARCH QUESTION(S)	
KEY OUTCOMES	

	(b)(4)
JUSTIFICATION FOR THE LEVEL OF RANDOM ASSIGNMENT	
WHO DOES the RANDOM ASSIGNMENT?	
DESCRIPTION OF INTERVENTION AND CONTROL GROUP CONDITIONS	

SETTING

(b)(4)

POWER
ANALYSIS

	<p>(b)(4)</p> <p>Power Analysis References:</p> <p>Bottge, B. A. (1999). Effects of contextualized math instruction on problem solving of average and below-average achieving students. <i>The Journal of Special Education</i>, 33(2), 81-92.</p> <p>Bottge, B. A. & Hasselbring, T. S. (1993). A comparison of two approaches for teaching complex, authentic mathematics problems to adolescents in remedial math classes. <i>Exceptional Children</i>, 59, 556-566.</p> <p>Bottge B.A., Heinrichs, M., Mehta, Z. D., & Hung, Y-H. (2002). Weighing the benefits of anchored instruction for students with disabilities in general education classes. <i>The Journal of Special Education</i>, 35(4), 186-200.</p> <p>Cohen, J. (1988). <i>Statistical power analysis for the behavioral science</i> (2nd. ed.). Hillsdale, NJ: Erlbaum.</p> <p>Rosenthal, R., & Rosnow, R.L. (1984). <i>Essentials of behavioral research: Methods and data analysis</i>. New York: McGraw-Hill.</p> <p>Thum, Y. M., & Bryk, A. S. (1997). Value-added productivity indicators: The Dallas system. In J. Millman (Ed.), <i>Grading teachers, grading schools: Is student achievement a valid evaluation measure?</i> (pp. 100-109). Thousand Oaks, CA: Corwin.</p>
<p>DATA COLLECTION</p>	<p>(b)(4)</p>

(b)(4)

TARGET SAMPLE
SIZES

OPERATIONAL
MONITORING

	(b)(4)
STUDY PHASES and SCHEDULE	See tables below.
FUNDING REQUESTED	(b)(4) <u>Provide detailed information in budget table for this study.</u>

Pilot Tasks				
Task/Sub-Task	Start Date	Interim Milestones	End Date	Deliverables
Recruit School for Pilot Study	Jan. 2006		April 2006	Letter of Agreement
Test Technology at Pilot School	April 2006		May 2006	
Develop Module I Instruments	Jan. 2006		May 2006	Instruments
Develop Student Survey	Jan. 2006		May 2006	Survey
Develop Attitude Survey	Jan. 2006		May 2006	Survey
Complete OMB application	May 2006		May 2006	Completed application
Complete IRB application	May 2006		May 2006	Completed application
OMB Approval	June 2006		Sep. 2006	
IRB Approval	June 2006		Sep. 2006	Approved Consent Forms
Develop Project Database/Web Server	June 2006		Aug. 2006	Project Database
Develop Training Materials for Module 1	June 2006		Sep. 2006	Training Manuals
Recruit Teachers and Students	Oct. 2006		Oct. 2006	Signed Consent Forms
Train Teachers	Nov. 2006		Nov. 2006	
Install/Test Software on Student Computers	Nov. 2006		Nov. 2006	
Run Pilot Study	Dec. 2006		Dec. 2006	
Validate Instruments	Dec. 2006		Dec. 2006	
Conduct Observations	Dec. 2006		Dec. 2006	Field Notes
Analyze Pilot Data	Jan. 2007		Mar. 2007	Statistical Output

Pilot Tasks				
Task/Sub-Task	Start Date	Interim Milestones	End Date	Deliverables
Refine Study Design	March 2007	TWG Review	May 2007	Revised Project Plan
Refine Instruments	March 2007	TWG Review	May 2007	Revised Instruments
Refine Training Materials	March 2007	TWG Review	May 2007	Revised Training Modules
Disseminate Results from Pilot	March 2007		Aug. 2007	Presentations and Articles

Module 1 Tasks				
Task/Sub-Task	Start Date	Interim Milestones	End Date	Deliverables
Recruit Elementary Schools	January 2007		April 2007	Letter of Agreements
Test Technology at Elementary Schools	January 2007		April 2007	
Recruit Teachers	May 2007		June 2007	
Complete OMB application	May 2007		May 2007	Completed application
Complete IRB application	May 2007		May 2007	Completed application
OMB Approval	June 2007		Sep. 2007	
IRB Approval	June 2007		Sep. 2007	Approved
Refine Project Database	June 2007		Aug. 2007	Consent Forms
Train Teachers	July 2007		July 2007	Updated Project Database
Recruit Students	Oct. 2007		Oct. 2007	Signed Consent Forms
Install/Test Software on Student Computers	Nov. 2007		Nov. 2007	
Run Module 1 Study	Dec. 2007		June 2008	
Conduct Classroom Observations	Dec. 2007		June 2008	Field Notes
Analyze Data	June 2008		Aug. 2008	Statistical Output
Evaluate Project with TWG	Aug. 2008		Aug. 2008	Revised Project Plan
Disseminate Results from Module 1	July 2008		Dec. 2008	Presentations and Journal Articles