RAC Appalachia

For Educational Needs Assessment

A Report to the
U.S. Department of Education
On Educational Challenges and Technical Assistance Needs
For the Appalachia Region

March 31, 2005

Table of Contents

Preface

This report of the Appalachian Regional Advisory Committee for Educational Needs Assessment (AP RAC) was commissioned by the U.S. Department of Education (ED) under a contract number ED04CO0043/0001 awarded to The CNA Corporation (CNAC). Members of the RAC and their professional affiliations are listed below:

Dr. Julie McCargar, Chair	Tennessee Department of Education, TN
Mr. Wilburn Joe Brothers	Elizabethtown Independent Schools, KY
Dr. Gloria Hagans	Norfolk City Public Schools, VA
Mr. Richard Innes	Bluegrass Institute for Public Policy Solutions, Bowling Green, KY
Ms. Beth Johnson	Owen County High School, KY
Ms. Betsy Landers	Parent Teacher Association, TN
Dr. Jorea Marple	Division of School Improvement, WV
Dr. Johnnie McLaughlin Grissom	Kentucky Department of Education, KY
Ms. Doreen O'Rourke	Springfield, VA
Mr. David Roach	Cabell County School District, WV
Ms. Brenda Spencer	Virginia Department of Education, VA

The AP RAC received support in preparing this report from its Designated Federal Official at the U.S. Department of Education (ED), Lori Ahmady, and from CNAC and its subcontractors, the Institute for Educational Leadership, The McKenzie Group, IceWEB, InterCall, and Kidz Online. The facilitation team for this committee included Daniel Burke and

Executive summary

This report of the Appalachian Regional Advisory Committee for Educational Needs Assessment (AP RAC) was commissioned by the U.S. Department of Education (ED) under a contract number ED04CO0043/0001 awarded to The CNA Corporation (CNAC).

The Secretary of the ED appointed eleven members to the Appalachian RAC to provide advice concerning the educational needs of the region as required by the Educational Technical Assistance Act of 2002 (Public Law 107-279; 20 USC 9605). The ED will use the RAC's assessment concerning the educational needs of the region and the committee's recommendations regarding the best ways to provide technical assistance to meet these needs to prepare the Request For Proposals for the 20 Comprehensive Technical Assistance Centers (TAC) that are to be funded by the ED.

For the purposes of this report, the Appalachian Region consists of the states of Kentucky, Tennessee, Virginia, and West Virginia. The RAC held four public meetings at which the committee members first identified a tentative list of educational challenges in the region, refined these needs upon further reflection and taking into account public input, discussed the technical assistance needed to meet these needs and the stakeholders that would be the clients for specific technical assistance, and approved this report for submission to the Secretary. Through its deliberations and discussions with stakeholders in the region, the Appalachian RAC identified the following areas of need:

- Improving Teacher and Principal Quality
- Increasing Outreach to and Involvement of Family/Community in the Educational System

- Identification and Implementation of Evidence-Based Curricula/Programs

- Building Organizational/Management Capacity

- Increased Collection and Use of data for Assessment, Improvement, and Accountability.

In a second, related set of deliberations, the RAC discussed both the strategy and format for the provision of the technical assistance. It was clearly recognized that the resources of the TAC would be limited relative to the region's needs. That being the case, technical assistance must be high-leverage, cost effective, and easily available and priority should be given to the highest leverage activities and stakeholders. Technical assistance should take advantage of resources such as the recently created "What Works Clearinghouse," along with parallel efforts, to provide scientifically based evidence for effective programs and practices. In this way, the TAC can serve a vital role between federally sponsored research and state level implementation levels.

The RAC developed the following guiding principals for the provision of Technical Assistance:

- State Education Agencies should be heavily involved in determining the priorities for technical assistance within their state.

- Much technical assistance should take the form of identification of successful scientifically based research or evidence-based programs and practices that can be shared across multiple sites.

- The impact of location and environment in which a recommended program was implemented and the role of each stakeholder needs to be understood and shared with prospective users of the program.

- Communications with all stakeholders should be culturally sensitive and, when necessary, in a language that is clearly understood by the various stakeholders.

- The TAC will have to communicate with or help SEAs and LOAs communicate with a very large number of stakeholders. These include SEAs, LOAs, principals, teachers, assessment coordinators, counselors, parents, business leaders, local and state judicial, health, and social services officials, higher education, community agencies, and the news media

This framework does not preclude the provision of direct assistance to stakeholders at any level in the system, but instead provides guidelines to what the RAC considered the most effective and high utility strategy and format.

Introduction

The Secretary of the U.S. Department of Education (ED) appointed eleven members to the Appalachian Regional Advisory Committee (AP RAC) to provide advice concerning the educational needs of the region as required by the Educational Technical Assistance Act of 2002 (Public Law 107-279; 20 USC 9605). The RAC was charged with providing this advice by:

- Conducting an educational needs assessment of its region to assist in determining regional educational priorities
- Submitting a report based on the assessment to the Secretary and the Director of the Institute of Education Services (IES) within six months of the Committee being first convened.

The ED will use the RAC's assessment concerning the educational needs of the Region and the committee's recommendations regarding the best ways to provide technical assistance to meet these needs to prepare the Request For Proposals for the 20 Comprehensive Technical Assistance Centers (TAC) that are to be funded by the ED. The statutory mission of these centers is to:

- Provide training, professional development, and technical assistance on the (a) administration and implementation of programs authorized by the Elementary and Secondary Education Act of 1965 (ESEA), as amended, (b) use of scientifically valid teaching methods and assessment tools for teachers and administrators, and (c) facilitation of communication between education experts, school officials, teachers, parents, and librarians, as appropriate.

- Disseminate and provide information, reports, and publications for improving academic achievement, closing achievement gaps, and encouraging and sustaining school improvement.

- Develop teacher and school leader inservice and preservice training models that illustrate best practices in the use of technology in different content areas.

Overview of the region and its K-12 educational system

For the purposes of this report, the Appalachian Region consists of the states of Kentucky, Tennessee, Virginia, and West Virginia. To better understand the needs of this region so as to design an effective Technical Assistance Centers (TACs) for the entire region, one must understand that the region is quite diverse in its geographic and socioeconomic makeup. It may be thought of as an Appalachian Rural component that includes the counties running along the spine of the Appalachian Mountains (as defined in the Act authorizing the Appalachian Regional Commission), a number of large urban areas (e.g., Memphis, Louisville, Nashville, Charleston, Richmond) and a variety of suburban areas (many of them affluent).

The region as a whole is poorer than the national average (although areas such as Arlington County, VA, are affluent) with the Appalachian rural areas being even poorer than their respective state averages. Educational attainment in the region is also below the national average; the states in the region have a smaller percentage of both high school and college graduates than the national average. Again, in general, the Appalachian rural area lags behind state averages. This lesser educational attainment, obviously, is an important impediment to economic development within the region. Less economic development lowers the tax base to support the public school system.

Thus, almost all areas in the region suffer from a lack of financial and material resources. On top of this, many of the rural areas are geographically isolated, leading to problems in obtaining a high quality teaching workforce, whereas the urban area schools are generally high minority systems with many high need schools with similar problems in attracting and retaining high quality teachers.

Virginia has the largest public school system of these four states (with 1,846 schools and 1,177,229 students). Tennessee is the second largest (with 1,628 schools and 928,000 students), followed by Kentucky (with 1,381 schools and 632,130 students), and West Virginia is the smallest (with 768 schools and 282,455 students).

Figure 1: Appalachian RAC composition (public school students)
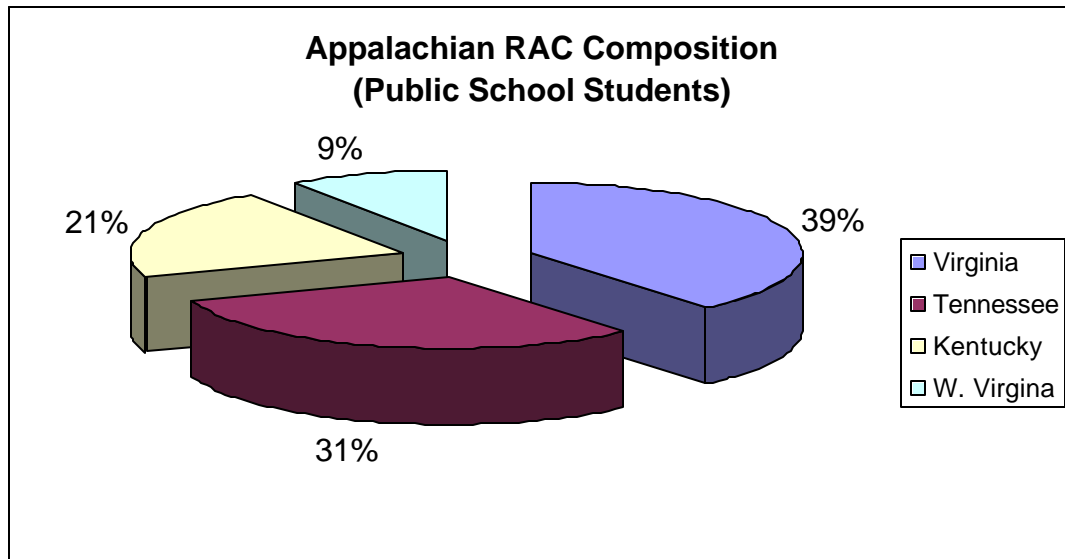
Kentucky and West Virginia have predominantly rural school districts (55 percent and 59 percent, respectively), whereas Tennessee's districts are almost evenly divided across urban, suburban, and rural areas (38 percent, 30 percent, and 32 percent, respectively) Virginia's school districts are predominantly suburban areas (55 percent).

Percentages of School Districts by Metro Status
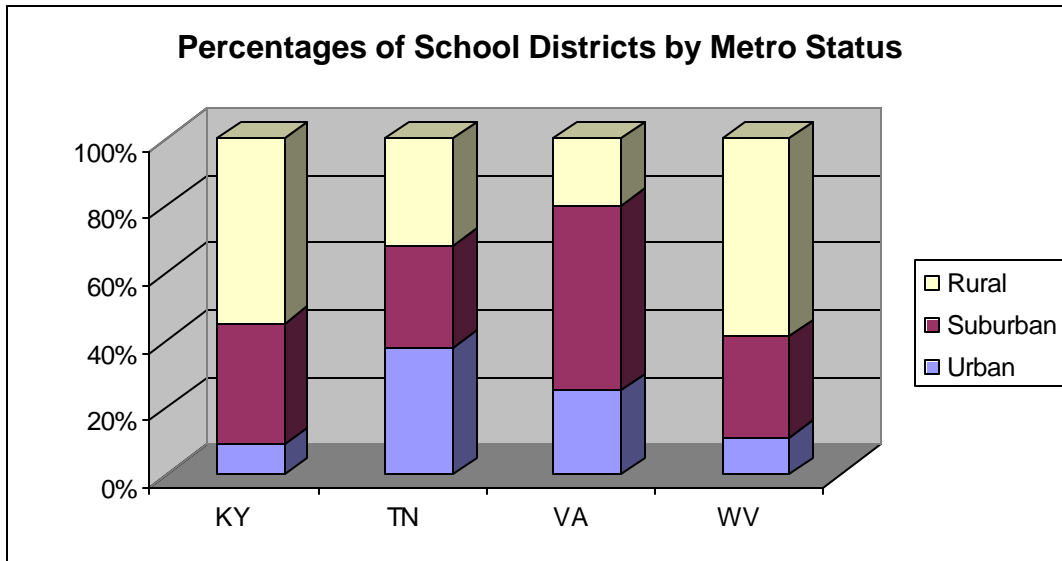
The Appalachian states have predominantly White student populations. For example, 87 percent of Kentucky's students and 94 percent of West Virginia's students are White. Yet almost a quarter (24 percent) of Tennessee's students are African-American. Similarly, more than a quarter (27 percent) of Virginia's public school students are African-American, and the state has the most diverse student population in the region, with Whites representing 61 percent of the students.

Figure 3: Student racial characteristics in public schools (percent)

Student Racial Characteristics in Public Schools (percent)
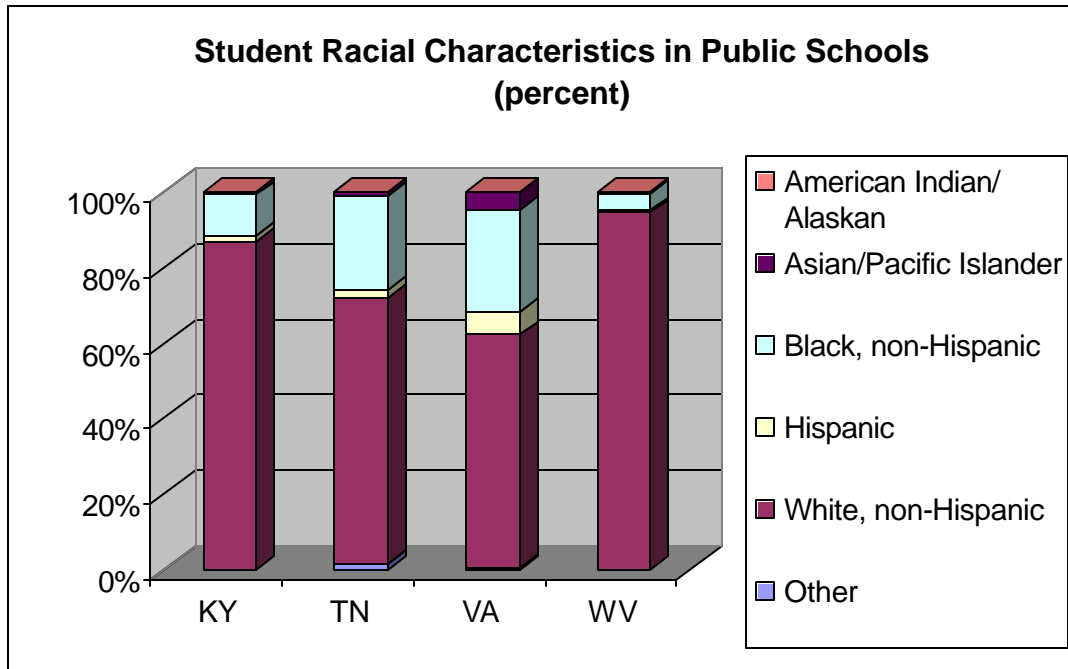
These states also have small, but growing, numbers of students who are English Language Learners (ELL) and/or migrant students. Appalachian states fall below the national average (8 percent) in terms of ELL students, with only 4 percent in Virginia, 2.1 percent in Tennessee and 1 percent in Kentucky and West Virginia falling in this category. Although Kentucky's student population has a slightly higher proportion of migrant students than the national average (2 percent compared to 1 percent), Tennessee had, with Virginia and West Virginia having fewer than 1 percent. The states, as a group, have higher than the national percentage (13 percent) of students with Individualized Education Plans; about 15 percent of all four states' students have IEPs.

Figure 4: Student demographic characteristics (percent)
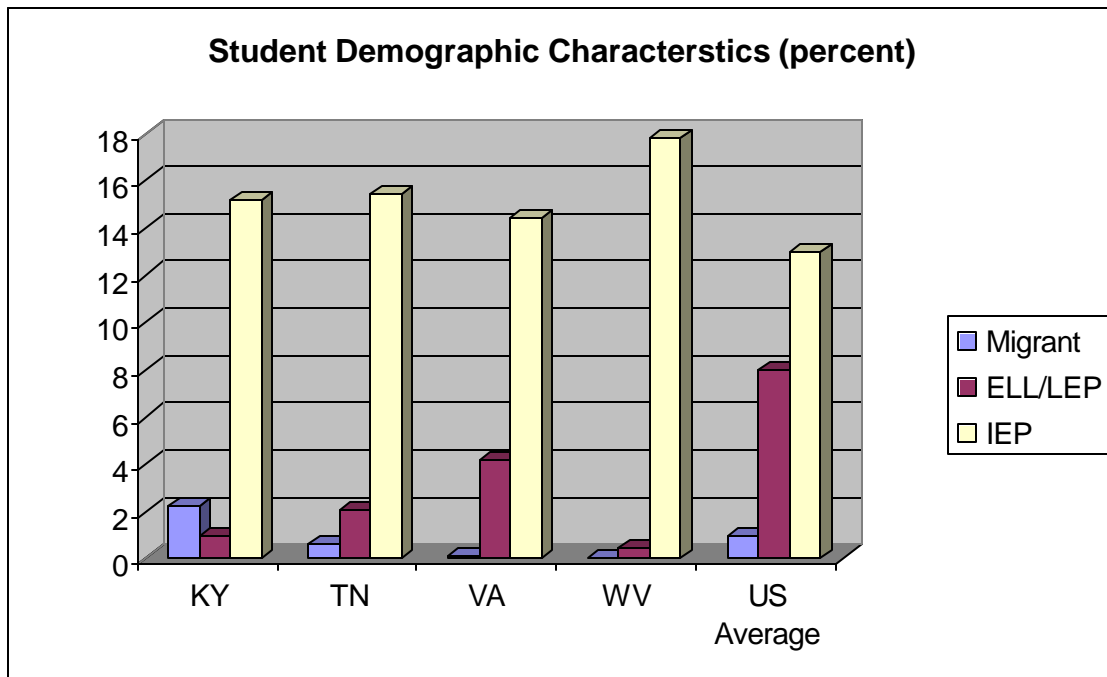
In all Appalachian states, African-American and Hispanic students trail Whites in academic achievement based on National Assessment of Education Progress (NAEP) scores of fourth graders. (No NAEP data were available for Hispanic students in Kentucky and West Virginia due to the small sample size.) The widest gap occurred in Virginia, where 46 percent of White students scored at proficient levels or above in math, compared to 13 percent of African-American students and 21 percent of Hispanic students. The state's students had a similar gap in reading scores, with 44 percent of Whites reaching proficiency (or higher), whereas only 16 percent of African-American students and 20 percent of Hispanic students did so.

Tennessee's achievement gaps are not as pronounced, with 30 percent of Whites, 6 percent of African-Americans, and 14 percent of Hispanics scoring at the proficiency level. In reading, the gap between percentages of Hispanic and White fourth graders who reached proficiency or better is small (27 percent versus 32 percent), though African-American students fare less well, with only 9 percent reaching proficiency.

12

Similarly, African-American student NAEP scores lag behind Whites in West Virginia and Kentucky. Among African-American fourth graders in West Virginia, only 13 percent were proficient in reading and math, compared to 24 percent of White 4th graders in math and 29 percent of White fourth graders in reading. In Kentucky, 8 percent of African-Americans were proficient in math and 15 percent were proficient in reading, whereas comparable rates for Whites were 24 percent in math and 33 percent in reading.

It should be noted that state-to-state comparisons with the NAEP must be approached with caution as uneven exclusion of students due to limited English proficiency and learning disabilities impact the scores in ways that are still under research. However, for purposes of this report, the general level of performance cited above is more than adequate evidence that significant additional improvement in educational achievement is needed.

More than one-third of the schools in the Appalachian states failed to make adequate yearly progress (AYP) in SY2002-2003. The rates ranged from a low of 34 percent in Kentucky to a high of 44 percent in Tennessee, with West Virginia and Virginia falling in between (38 percent and 40 percent, respectively). Yet only a small percentage of schools across the states, between 0 percent and 4 percent, have been designated as needing improvement.

Figure 5: AYP and improvement SY2002-2003 (percent)

AYP and Improvement, SY2002-2003 (percent)
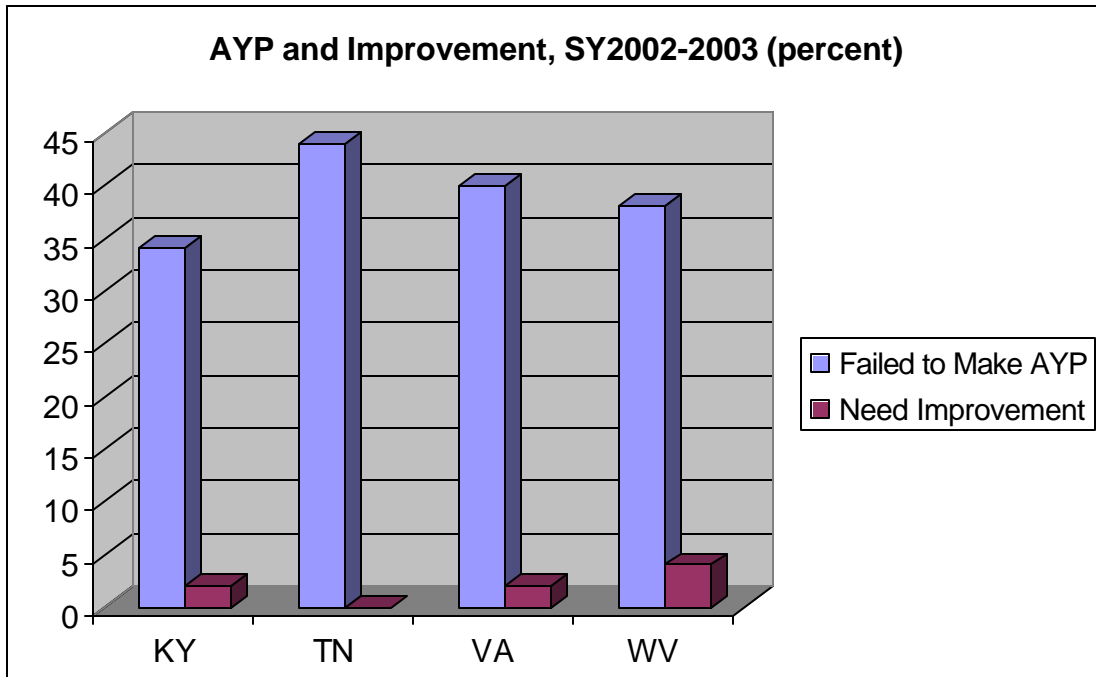
As with the NAEP, it is also necessary to caution that direct comparison of state-to-state AYP performance is difficult because states have adopted very different rules for AYP determination. However, even though true relative performance between states cannot be determined accurately with current AYP data it is clear that considerable improvement is needed in every state in the region.

Committee membership and function

The table below lists the RAC members, their states and the stakeholder group that they represented:

Table 1: RAC membership information

Member	State	Stakeholder group
Dr. Julie McCargar, Chair	Tennessee	State Education Agency
Mr. Wilburn Joe Brothers*	Kentucky	Local Education Agency
Dr. Gloria Hagans	Virginia	Local Education Agency
Mr. Richard Innes	Kentucky	Education Research
Ms. Beth Johnson	Kentucky	Principal
Ms. Betsy Landers	Tennessee	Parent Group
Dr. Jorea Marple	West Virginia	State Education Agency
Dr. Johnnie McLaughlin Grissom	Kentucky	State Education Agency
Ms. Doreen O'Rourke	Virginia	Teacher
Mr. David Roach	West Virginia	Local Education Agency
Ms. Brenda Spencer	Virginia	State Education Agency

*Dr. Steven Daeschner, KY was originally appointed to the RAC, but was not able to serve due to medical reasons. He was replace by Mr. Wilburn Joe Brothers.

The RAC held four public meetings. The first meeting was a face-to-face meeting between RAC members in Washington, DC, on December 2-3, 2004. The second and third were virtual meetings with members holding a joint conference call and concurrently sharing visual information over the Internet. These meetings were held on January 7 and February 9, 2005, respectively. The final meeting was a combination of face-to-face and conference call held on March 11 in Houston, TX. The public was encouraged to attend the second and third meetings through an Internet broadcast of the meetings and were also invited to attend the first and fourth meetings in person. More than 50 members of the public attended the various meetings.

Working at the meetings, the RAC first identified a tentative list of educational challenges in the region, then refined these needs upon further reflection after taking into

account public input, discussed the technical assistance needed to meet these needs and the stakeholders who would be the clients for specific technical assistance, and approved this report for submission to the Secretary. These clients include the region's State Education Agencies (SEA), Local Education Agencies (LOA), schools, principals, teachers, parent and community organization, and higher education.

The RAC engaged in extensive activities to obtain input from stakeholders in the region concerning the educational needs facing the region, and the technical assistance that is needed to overcome these challenges. One outreach activity that all the RAC members used was that of placing notices on both the Web sites and Listservs of various stakeholder groups. This has the double purpose of 1) notifying the stakeholder groups about the Appalachian RAC Web site, and 2) asking for direct feedback from the groups. The former was important because accessing the Web site allowed the stakeholders to comment on the deliberations of the RAC, post their own suggestions as to challenges and technical assistance, and learn about the concerns of others in the region. The responses that the RAC members received from the Listservs informed their further deliberations. A second key activity that the RAC used was making presentations at meetings of stakeholders. This enabled them to obtain direct feedback and alerted a wider audience to the Web site. This input was considered at each RAC meeting. Among the groups and list serves contacted were:

- Appalachian Region Title I coordinators
- KY, TN, VA, WV state education agencies
- District superintendents in each state
- KY Association of School Administrators
- Association of School Curriculum Developers
- National Parent Teachers Association

16

- Region's Parent-Teachers Association

- Region' NCLB practitioners

- State legislators.

The Appalachian RAC Web site received over 1241 hits as of February 28, 2005 and more than 50 public comments.

Major needs, proposed technical assistance strategies, and clients

Through its deliberations and discussions with stakeholders in the region, the Appalachian RAC identified numerous individual educational needs. The stakeholders included legislators, state education agencies, directors of various categorical programs (Title I, etc.), district superintendents and school boards, principals, teachers, parents, and other concerned parties. It became apparent that the various needs could be grouped into five key areas each linked to a central theme. The utility of these groupings is that they allow technical assistance to be designed most effectively because they will enable the provider to integrate a response to multiple needs and multiple stakeholders. These areas of need included:

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

A second, related set of deliberations the RAC engaged in had to do with both the strategy and format for the provision of the technical assistance. It was clearly recognized that the resources of the TAC would be limited relative to the region's needs. That being the case, technical assistance must be high leverage, cost effective, and easily available. With this in mind,

the RAC developed the following guiding principals for how the members believed that Technical Assistance could be provided the most effectively:

- State education agencies should be heavily involved in determining the priorities for technical assistance within their state because of their ability to help select high leverage projects.

- Much technical assistance should take the form of identification of successful scientifically based research or evidence-based programs and practices that can be shared across multiple sites.

- In reviewing successful programs for possible replication, the impact of location and environment in which the program is implemented and the role of each stakeholder needs to be understood and shared with prospective users of the program.

- Communications with all stakeholders should be culturally sensitive and, when necessary, in a language that is clearly understood by the various stakeholders.

- The TAC will have to communicate with or help SEAs and LOAs communicate with a very large number of stakeholders. These include SEAs, LOAs, principals, teachers, assessment coordinators, counselors, parents, business leaders, local and state judicial, health, and social services officials, higher education, community agencies, and the news media.

Given this and the large body of information to be disseminated to these stakeholders (depending upon their role in the system) multiple means will have to be used. Dissemination should include:

- Maintaining referral listings for programs and experts

- Developing of Web-based tools/position papers/research summaries/databases

- Training staff at all levels of the educational system in the effective use of data, information, and scientifically based research results

- When appropriated, face to face, phone, and e-Mail contact with stakeholders

- Serving as a "critical friend" to SEA and LOA assessment staff

- Participating in or making presentations at meetings and other events.

Using this as a guide, an effective TAC will then be able to adapt assistance to work within the particular environment and location of the stakeholder being assisted. This framework does not preclude the provision of direct assistance to stakeholders at any level in the system, but instead provides guidelines to what the RAC considered the most effective and high utility strategy and format.

It is clear that all of this cannot be done within the resources available, so priority should be given to the highest leverage activities and stakeholders. The recently created "What Works Clearinghouse," along with parallel efforts to provide scientifically based evidence for effective programs and practices will ultimately provide major support for the success of the TAC by providing a great deal of validated information for systems, schools, and teachers to use. The TAC can serve a vital role between federally sponsored research and state level implementation levels.

Need #1: Improving teacher and principal quality

A great deal of research has shown that the single most important school-based factor in enabling student achievement is the presence of a highly effective teacher in the classroom. Given this fact, the RAC determined that the #1 need is to provide a highly effective teacher for every student in the region. The RAC members considered this need in its broadest sense; that is, it is key to recruit high quality teachers as required by NCLB using state defined criteria. It is

then important to determine which teachers are most effective at enabling student achievement and, finally, it is critical to provide teachers with continuous, high-quality learning experiences to enhance their effectiveness.

Given their critical roles as school instructional leader, manager of school resources, and selector/assessor of teachers, improving the quality of principals is a complementary need to improving the quality of teachers.

Need #1.1: States need to develop criteria for identifying highly effective teachers and principals

Recommended technical assistance strategy

In this context, "highly effective" ultimately means those teachers and principals who are effective in enabling higher student achievement. TACs should work with the SEAs to develop the criteria for identifying highly effective teachers and principals. The SEA then can provide these criteria for effectiveness and tools for measuring them to the LOAs.

Developing these criteria and tools would start with the scientifically based research on how to measure teacher effectiveness, (e.g., the Tennessee value-added system). Working with the SEA, the TAC would then develop criteria for measuring teacher effectiveness and an aligned evaluation system that is based on the best available research. The provider, SEA, and LOAs then could develop tools that LOAs and principals could use to help select resources and design professional development programs to enable the principals and teachers, respectively, to become more effective. Though there is limited research available, the TAC could help pinpoint the state of the art in principal development, and the best practices that can be implemented by principals at various schools concerning areas such as mentoring programs/networks, training, and hiring.

These measures of effectiveness might also be used to develop validated, evidence-based systems that identify/reward the most effective teachers and principals (e.g., compensation and/or recognition programs).

Need #1.2: To meet the requirements of NCLB and to improve the quality of the teaching workforce, school districts need to recruit and retain highly qualified teachers, principals and other personnel.

This is a particular challenge in high-need urban and rural schools in which the loss of 25 percent of their first-year teachers and over 50 percent of new teachers by year five is common. Although the principal workforce is more stable, it appears that there will be a significant number of retirements in the coming years, so this is a particularly good time to institute measures to increase the hiring of highly qualified principals. The SEA can play a major role in this challenge by disseminating information concerning programs that are effective in recruiting and retaining high-quality teachers and principals and by policy implementation to support these programs. LOAs can disseminate information to schools concerning effective practices in retaining high-quality teachers and principals and also implement policies to support those practices.

Recommended technical assistance strategy

The TAC should review the appropriate scientifically based research and current best practices to identify effective strategies to recruit and retain teachers and principals in high need schools and districts and provide this information to the SEAs and LOAs. They can also provide the SEAs and LOAs assistance in disseminating this information through tools such as Web sites and, as a synergistic activity with TACs in other regions, may make presentation at large national conferences, and partnering with the Teacher Quality office of ED to work with state directors of Title IIA. In this activity, priority should be given to fill the critical shortage in

highly qualified math, science, and special education teachers. In addition, priority should be given to hiring and retaining high-quality principals. Thus, the research review should pay particular attention to the root causes for shortages in these areas. Technical assistance should be provided to SEA to assess the root causes in their states of these shortages and to support implementing strategies to eliminate shortages in these teaching areas.

Need #1.3: Beyond recruiting and retaining teachers and principals, support must be provided to upgrade the core subject knowledge and skills of existing staff. A focus should be placed on recent scientifically based research and technological developments.

Recommended technical assistance strategy

The TAC should work with the SEA to identify the most needed content across the state. Either obtaining or producing online professional development modules that would be made available to all of the teachers in the state would provide high-leverage technical assistance. Additionally, states need help to develop or identify high quality existing initial training and ongoing professional development modules for principals. Care should be taken to ensure that these modules include evidence from scientifically based research on teaching and learning as well as development in the core subjects.

Need #1.4: To improve the quality of the teaching workforce, technical assistance is needed to recruit and retain highly qualified special education teachers and other personnel as well as upgrade the current special education teachers/personnel in core subjects to highly qualified.

The strategies are essentially the same as those detailed in Needs 1.3 and 1.4; however, the RAC wishes to highlight the fact that if we are to meet the goals of NCLB, the crucial needs in special education must be met.

Need #1.5: A specific challenge relates to the need to increase the capacity of teachers to use technology effectively for: instructional delivery, student assessment, online certification, and professional development.

Recommended technical assistance strategy

The TAC should research best practices in implementing school-wide technology approaches and disseminate this information. Another key strategy would be to:

- Work with schools that have pilot technology programs to (1) effectively implement the technology, and (2) review the scientifically based evaluation results where available.

- Develop strategies that use successful pilot schools as models for other schools in states. The SEAs would work with their LOAs to support implementation of the successful practices and programs from these pilot schools.

Need #1.6: We must overcome the common organizational resistance to implementing identified "best programs and practices" in critical needs areas. Since teachers and principals are the frontline of school change, it is important to target them for this assistance.

Recommended technical assistance strategy

There is a need to identify scientifically validated models that generate effective collaboration and accountability amongst all stakeholders. More generally, TACs need to develop or to find scientifically validated training programs to help SEAs and LOAs work with their teachers and principals to implement change effectively.

Need #1.7: There is a need to develop an understanding of the needs of culturally and linguistically diverse children.

Recommended technical assistance strategy

Technical assistance is needed to train teachers and principals to deal with cultural differences by organizing workshops, providing a handbook with strategies and activities for each content area and basic information on language acquisition.

Need #2: Increasing outreach to and involvement of family/community in educational system

Parents, community organizations, and business must provide serious, sustained support to the education system for it to be most effective. Unless the message is that education is important many children will not put the effort into studies that is needed for high achievement. Teachers must be made aware that parents and the community value their efforts and expect them to make the same effort for all students. Teachers, principals, and the entire education administration need to welcome these stakeholders into the system and, reciprocally, these stakeholders must support the system with real commitment and resources. The RAC identified a number of needs that must be met to make this relationship most effective. A battery of strategies can be used, either directly or indirectly, depending upon the resources available. These include identification of effective programs, disseminating this information through the Internet and other media, supporting the convening of events to disseminate information and/or train stakeholders in the use of tools to enable higher student achievement and help build links between governmental agencies and the public.

Need #2.1: Technical assistance is needed to identify research-based, differentiated "best practices "that enable parents and families to work with school personnel to support their students.

Recommended technical assistance strategy

In a real sense, this information-gathering assistance undergirds all of the other needs in this area.

Need #2.2: The education system must communicate with parents to increase their awareness of the value that their involvement brings to educating their children.

Recommended technical assistance strategy

Technical assistance SEAs and LOAs can collect and disseminate information over the Internet and through other media to help parents and community organizations understand the value of their involvement and provide tools to help make this involvement most effective. Schools and community organizations can convene events for parents and other stakeholders to obtain their input, provide training to the stakeholders on how they can help students. Both SEAs and LOAs can maintain referral listings for resources and experts that can be used to meet this need. Technical assistance could be provided to help gather the required information, in designing effective dissemination programs, and in helping SEAs and LOAs design and hold training events for stakeholders. Specific examples of programs and activities that should be supported by technical assistance include:

- Ombudsman programs to help parents understand their rights in the education process need to be developed or replicated. This would help parents feel more comfortable and confident about public schools and become more involved in assisting with the learning process.

- Programs to identify each stakeholder's role in education. This is particularly necessary to help identify "What specific things should parents, business leaders, teachers, etc. do?" Technical assistance could provide self-assessments so that each group can see how well it accomplishing its role.

Need #2.3: Technical assistance is needed to help families and communities build links between the education system and legal, health, and social services. These links would be of great value for many poor and single parent families who often find themselves dealing with multiple agencies.

Recommended technical assistance strategy

Technical assistance could help broker these links at both the state and local level. They may be able to provide the appropriate agencies models of successful linkages in other geographic areas.

Need #3: Identification and implementation of evidence-based curricula/programs

For the nation to remain competitive in a global economy and to bring equity to our education system requires that we raise the achievement level of all of our students and that we eliminate the achievement gap between different groups of students. To do so, teachers and others responsible for student achievement need be provided effective curricular and programmatic tools. At the classroom level, these tools should be continuously updated to reflect the rapid changes in knowledge and skills required and need be differentiated to best meet the needs of all groups of students. At the school level, programs need to be implemented that help make the entire school more effective. At the system level, we need effective means for providing learning outside of the school and integrating that with school-based learning. Achieving these objectives will require technical assistance in a number of areas.

28

Need #3.1: Schools and systems need tools by which they can rapidly update curriculum and program content and delivery to respond to advances in technology as it impacts the knowledge students need and to respond to new uses of educational technology to better enable learning.

Recommended technical assistance strategy

The most effective way of achieving this would be to take advantage of economies of scale and the synergy of group collaboration by providing a support network for the region's (or possibly a national network) state curriculum developers and educational technology directors to review current, validated curriculum standards in light of changes in the knowledge and skills currently required. TACs would also bring to this group information and training on the most current cutting edge approaches to delivering curriculum to students effectively. TACs would also help these regional groups to disseminate this information to the LOAs and, where appropriate, directly to the schools. The information could be disseminated electronically and through other media, through state-sponsored meetings, and by building it into teacher professional development.

Need #3.2: Schools and school systems must be provided the strategy/programs/ training to help close the achievement gap between low-performing and other students while at the same time increasing academic achievement for all students.

Recommended technical assistance strategy

Where necessary, the strategies and programs should be tailored to the needs of the different student groups (SES, Limited English Proficiency, Migrant, and Special Education students) and, at base, use criteria that measure the fundamental skills and knowledge each individual student may lack or need to improve. This determination needs to start early in a student's academic career and be continuous throughout his/her time in school. The

practices/programs also should account for differing learning styles and other student characteristics. Examples of specific needs include:

- Technical assistance should be provided to support high levels of student literacy. Literacy is a fundamental building block for high student achievement. These programs must include early identification of problems, preschool programs, and the provision of informational materials and different reading strategies across the curriculum.

- Identify evidence-based programs that employ technology to help enhance student achievement including the use of formative assessments that are easily utilized and that can be used to guide instruction more effectively.

- Identify programs that support culture change in teachers and other school personnel so that they more generally recognize that all student groups can achieve at high levels.

- Strategies and programs are needed to improve the quality of Special Education Programs and increase achievement by Special Education students.

Need #3.3: Schools and school districts which have difficulty meeting AYP goals will need tools and information for evaluating and implementing programs that are well matched to the make up and characteristics of particular schools.

Recommended technical assistance strategy

Assistance will also be required to identify procedures that allow flexibility in the use of programs such as Extended School Services, Supplemental Services, and reconstituting schools using comprehensive school reform models. For this to be most effective, technical assistance is needed in implementing effective procedures for evaluating these programs and services. This will require the identification of supplemental service providers and the development of

benchmarks for the effectiveness of their programs. In providing this assistance the center could also assist SEAs in:

- Disseminating information from the What's Works Clearinghouse to local decision-makers in districts and schools, especially scientifically based research supporting approaches to closing the achievement gap.

- Helping states/projects conduct self-assessments to ensure that the activities being supported are in line with the state's approved performance goals and indicators and reflect scientifically based research.

- Partnering with the special education resource centers to collaborate with special education directors and Title I directors to implement programs that close the gap between these student populations and other students and are proactive in addressing the disproportional representation of poor and minority students in special education by providing early intervention strategies to struggling students in high poverty schools before referral and identification.

- Partnering with organizations (such as the CCSSO school support network) to provide states with multiple strategies in providing technical assistance to schools and districts in improvement.

- Developing a statewide support network that develops the capacity of LOAs to improve their own schools.

A common thread in the provision of all of the technical assistance mentioned above is (1) the need for a review of current programs and practices, (2) the identification of the most effective programs and practices and implementation sites that currently exist, (3) the widespread provision of information concerning these effective programs and practices to the appropriate stakeholders and, where necessary, (4) training in the use of these programs and practices. Thus,

for instance, working with the SEAs, the TAC should review current state approaches to evaluating supplemental service providers and partner with the states to improve these evaluation methods. They could also review scientifically based research on effective out of school academic intervention programs, such as the 21st Century Learning Centers. Dissemination of this information could be through the Internet, through meetings sponsored by state directors of Title I, CSR and other programs, and by presentation at national conferences. SEAs, working with the technical assistance provider could also develop, or help LOAs develop, workshops to make this information available at the school and teacher level and to train teachers in the effective implementation of these practices and programs.

Need #3.4: Schools and school districts need to be provided with programs that will enable them to have all students demonstrate technology literacy.

A goal of the NCLB act is that all children be technologically literate by the eighth grade. This requires that schools implement programs to build this literacy and that SEAs or LOAs develop assessments for technology literacy.

Recommended technical assistance strategy

The TAC should carry out a review of current programs and practices to identify the most effective classroom strategies for building technological literacy and make this information available to LOAs. SEAs, working with the technical assistance provider could also develop, or help LOAs develop, workshops to make this information available at the school and teacher level and to train teachers in the effective implementation of these practices and programs.

The TAC should also work with the SEAs and LOAs to identify grade level appropriate assessments of technological literacy and provide information as where these assessments have been implemented successfully.

Need #4: Building organizational/management capacity

Beyond improving the quality of our teachers and providing them with the most effective tools to enable learning, they must work in an environment (local and global) that best supports their ability to do an outstanding job. Thus, the leaders of our educational system at all levels need support in improving their capacity to support teachers, and our educational system needs to be shaped to provide the best learning environment possible for our students.

Need #4.1: In general, information should be provided to SEAs enabling them to develop and implement effective student data management systems.

Recommended technical assistance strategy

This information would then be shared with LOAs to improve their student management systems, for instance, in the following ways:

- Research has shown that high student mobility has a negative impact on student achievement. Schools and SEAs need assistance to develop better methods for tracking these students and their academic performance. Technical assistance is needed to improve student records databases to ensure that a student's new school has a complete record of progress. Information on the impact of high student mobility on student achievement and programs that have been successful in either reducing high student mobility or ameliorating its effects (such as districts that allow students to remain in their first zoned school until the end of the school years) should be provided to schools and teachers.

- SEAs, LOAs, and schools need a way to link disparate databases to enable more efficient analysis of information.

- Principals and district representatives need a method for accurately linking student performance to individual teachers.

LOA Need #4.2: Technical assistance is required to help remove administrative impediments encountered by teachers to allow more instructional time.

Recommended technical assistance strategy

Better use of technology is needed to reduce a teacher's paperwork burden. For example, technical assistance is needed for developing and providing online Individual Education Plans (IEPs).

Need #4.3: To make best use of scarce resources, technical assistance is required to build the capacity of systems to use cost benefit analysis to optimize resource allocation.

Recommended technical assistance strategy

This could include guidance concerning the flexibility available to states and school divisions on the use of federal funds. This would also include providing information not only about what programs are effective in improving student achievement, but also the cost benefit ratio of these interventions and best leveraging of existing resources. For example, technical assistance is needed in determining the school services currently available and how they can be expanded through cost sharing arrangements (e.g., expanding existing after school care into an augmented learning environment).

Need #5: Increased collection and use of data for assessment, improvement, and accountability

Two key drivers of increased student achievement and improved performance of the educational system are the effective use of student and system assessments to measure

performance and strong accountability systems to promote change and improvement. Clearly, both of these rely on obtaining the data needed to make the assessments and determining where the accountability for particular performance lies. This requires understanding the data to collect, how to collect and validate it, how to transform it into knowledge about students and the system, and how to use this knowledge to improve student, teacher, and system performance.

Need #5.1: State and local accountability systems must be implemented that provide continuous assessment utilizing scientifically defensible multiple measures of high content standards before AYP testing.

Recommended technical assistance strategy

To support the implementation of these systems the TAC must convey an understanding of what constitutes good scientifically based research supporting the various levels and types of assessment measures to the education community (ED's What Works Clearinghouse is one source of this information). Schools and teachers also need assistance concerning interpreting and utilizing test results to improve student performance. Because they are measures of system performance, the proper interpretation, including the limitations, of scores for assessment tests (NAEP and state assessments) needs to be understood. (NAEP Validity Studies Panel's "An Agenda for NAEP Research" provides some ideas on the limitations and problems of interpreting NAEP, and many of these issues are equally pertinent to state assessments).

Need #5.2: SEAs and LOAs need technical assistance in developing and implementing good information collection systems and building databases that enable the effective analyses and dissemination of this information.

Recommended technical assistance strategy

A variety of user-friendly linked databases are needed. These databases should maintain consistent and reliable student records that track student achievement in ways that help

stakeholders understand the academic needs of students. Assistance is needed in identifying the questions to ask to help transform the data into useful information. Database information should also include review/analysis of accountability systems, information on successful instructional and other practices.

Need #5.3: Need to disseminate best practices on the assessment and inclusion of Special Education and ELL students in state assessment programs.

Recommended technical assistance strategy

Disseminate results from scientifically based research concerning the best methods of assessing these students and adjusting their score for proper averaging into state accountability scores if necessary.

Need #5.4: The TAC needs to prepare educators at all levels to lead the cultural change necessary implement the use of an effective accountability system(s).

Recommended technical assistance strategy

Assistance is needed to demonstrate to all educators the quality and limitations of current education research (e.g., information on successful examples of using scientifically based research to enhance best practice).

Need #5.5: Need a conduit to the Department of Education to help shape its scientifically based research program.

Recommended technical assistance strategy

In collecting, reviewing, and disseminating this body of information on effective practices and programs, the TAC (particularly considered in the aggregate) is in a unique position to identify gaps in our knowledge that require scientifically based research. Thus, the

center could act as a conduit to the ED in helping shape its scientifically based research program based on these identified needs.

Conclusion

In its deliberations, the RAC was fully cognizant of the large number of educational needs in the region and the limited resources that will be available to the TAC. However, despite this, it was still the decision of the RAC not to prioritize the needs for technical assistance. The committee's thinking in this hinged on two factors: 1) the education system is truly a system and changes to any of the components may change the rest of the system. Thus, it is up to the SEAs, LOAs, and schools working with the TAC to identify the highest leverage points at any given instance to bring about the most improvement in the system, and 2) a better estimation of the competence of the various bidders for the TAC contract can be made by examining their responses to the needs and general principles for technical assistance identified by the RAC.

Educational needs of the Appalachian Region

- Improving Teacher and Principal Quality
- Increasing Outreach to and Involvement of Family/Community in the Educational System
- Identification and Implementation of Evidence-Based Curricula/Programs
- Building Organizational/Management Capacity
- Increased Collection and Use of data for Assessment, Improvement, and Accountability.

General principles for technical assistance

- State education agencies should be heavily involved in determining the priorities for technical assistance within their state because of their ability to help select high leverage projects.

- Much technical assistance should take the form of identification of successful scientifically based research or evidence-based programs and practices that can be shared across multiple sites.

- In reviewing successful programs for possible replication, the impact of location and environment in which the program is implemented and the role of each stakeholder needs to be understood and shared with prospective users of the program.

- Communications with all stakeholders should be culturally sensitive and, when necessary, in a language that is clearly understood by the various stakeholders.

- The TAC will have to communicate with or help SEAs and LOAs communicate with a very large number of stakeholders.

Glossary

AYP—Adequate Yearly Progress, defined in the NCLB Act as a way to measure the academic achievement of elementary and secondary school students in relation individual state student academic achievement standards.

CHARTER SCHOOLS—Public schools that are largely free to innovate, and often provide more effective programs and choice to underserved groups of students. Charter schools subject to the "adequate yearly progress" (AYP) and other accountability requirements of the NCLB Act.

COMPREHENSIVE TECHNICAL ASSISTANCE CENTERS—Centers authorized by Section 203 of the Education Sciences Reform Act of 2002 (P.L. 107-279). Appropriations for the centers in Fiscal Year for 2005 would enable the U.S. Department of Education to support 20 centers, 10 of which must be in current regions.

COMMON CORE OF DATA—The National Center for Education Statistics' comprehensive, annual, national statistical database of information concerning all public elementary and secondary schools and local education agencies.

CONSOLIDATED STATE PLAN FOR NCLB—Plan from each state that demonstrates it has adopted challenging academic content standards and challenging student academic achievement standards that will be used by the state, its local educational agencies, and its schools.

CORE SUBJECTS—Includes English, reading or language arts, mathematics, science, foreign languages, civics and government, economics, arts, history, and geography [Section 9101(11)]. Although the federal statute includes the arts in the core academic subjects, it does

not specify which of the arts are core academic subjects; therefore, states must make this determination.

DFO—Designated Federal Official. A DFO acts as a liaison between a federal advisory committee and federal agency and must be present at all committee meetings.

ELL—English language Learners

FACA—Federal Advisory Committee Act was created in 1972 (Public Law 92-463) by the U.S. Congress to formally recognize the merits of seeking the advice and assistance of our nation's citizens. Congress sought to assure that advisory committees: provide advice that is relevant, objective, and open to the public; act promptly to complete their work; and comply with reasonable cost controls and recordkeeping requirements.

HIGHLY QUALIFIED TEACHERS—States must define a "highly qualified" teacher. The requirement that teachers be highly qualified applies to all public elementary or secondary school teachers employed by a local educational agency who teach a core academic subject. "Highly qualified" means that the teacher: has obtained full state certification as a teacher or passed the state teacher licensing examination and holds a license to teach in the state, and does not have certification or licensure requirements waived on an emergency, temporary, or provisional basis; holds a minimum of a bachelor's degree; and has demonstrated subject matter competency in each of the academic subjects in which the teacher teaches, in a manner determined by the state and in compliance with Section 9101(23) of ESEA.

IDEA—Individuals with Disabilities Education Act

IEP—Individualized educational plan required by Individuals with Disabilities Education Act

IES—Institute of Education Sciences, the research arm of the U.S. Department of Education that was established by the Education Sciences Reform Act of 2002

LOA—Local Operating Agency

OESE—Office of Elementary and Secondary Education in the U.S. Department of Education

RACs—Regional Advisory Committees that are authorized by Education Sciences Reform Act of 2002 (P.L. 107-279)

RAC QUORUM—A majority of appointed members. A RAC must have a quorum to meet or hold an official meeting.

REGIONAL EDUCATIONAL LABORATORIES—Federally supported regional institutions that have operated since 1966 and reauthorized by Section 174 of the Education Sciences Reform Act of 2002

SCIENTIFICALLY-BASED RESEARCH—Section 9101(37) of ESEA, as amended by *NCLB,* defines scientifically based research as "research that involves the application of rigorous, systematic, and objective procedures to obtain reliable and valid knowledge relevant to education activities and programs." (P.L. 107-279)

SEA—State Education Agency

STATE—References to states include the 50 states, the District of Columbia, the Commonwealth of Puerto Rico, the freely associated states, and the outlying areas.

SUPPLEMENTAL EDUCATIONAL SERVICES—Additional academic instruction designed to increase the academic achievement of students in schools that have not met state targets for increasing student achievement (AYP) for three or more years. Services may include tutoring and after-school services by public or private providers approved by the state.

TECHNICAL ASSISTANCE—Assistance in identifying, selecting, or designing solutions based on research, including professional development and high-quality training to

implement solutions leading to improved educational and other practices and classroom instruction based on scientifically valid research; and improved planning, design, and administration of programs; assistance in interpreting, analyzing, and utilizing statistics and evaluations; and other assistance necessary to encourage the improvement of teaching and learning through the applications of techniques supported by scientifically valid research (P.L. 107-279)

WHAT WORKS CLEARINGHOUSE (WWC)—Clearinghouse established in 2002 by the U.S. Department of Education's Institute of Education Sciences to provide educators, policymakers, researchers, and the public with a central and trusted source of scientific evidence of what works in education.

List of tables and figures