



Collaborative Research for Educating
Adults with Technology Enhancements

*Researcher-Practitioner Collaborations in Adult Foundational Education: A Brief on Strategies for
Engaging Practitioners in Research on Interventions*

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Abstract

Adult Foundational Education (AFE) services assist adult learners in developing the skills and knowledge they need to advance their education, employment, and personal well-being. Research on AFE instructional, assessment, and support interventions is instrumental in facilitating the delivery of high-quality AFE services. Collaboration among AFE researchers, state staff, and local program staff is central to this research. Researchers' work with state and program staff (also referred to as practitioners in this brief) can help to ensure that AFE intervention research is relevant to key issues concerning the delivery of AFE services and results in interventions that will benefit AFE learners.

This brief discusses work undertaken by the CREATE (Collaborative Research for Educating Adults with Technology Enhancements) Adult Skills Network to specify strategies for AFE researchers to use in collaboration with state and program staff in designing, implementing, and evaluating AFE interventions. Organized according to the CREATE Research Framework, the strategies reflect a range of activities that AFE researchers and staff can undertake to provide meaningful and effective interventions for learners.

Introduction

The Role of Research in AFE

AFE in the United States aims to provide adult learners with high-quality services that can advance their skills and knowledge and further their social and economic well-being. AFE services comprise instructional, assessment, and support interventions to enable learners to enhance their literacy, numeracy, English-language proficiency, digital skills, workplace literacy, and family literacy, among other skills. These services can enable learners to meet their educational goals, including earning a high school equivalency credential, and to prepare for postsecondary education, training, and employment.

One factor that can affect the delivery of high-quality AFE services is the availability of an evidence base on interventions that are designed for AFE learners. An educational intervention involves introducing a change or practice to learners that can affect their outcomes. The goals of interventions can vary from boosting learners' academic performance to strengthening their psychosocial or career readiness skills. The intent of research on interventions in education is to

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learn about the types of strategies or treatments that work best to improve learners' outcomes expected from the strategies or treatments (Anderson, 2024). AFE interventions can range in scope from a single curriculum or an educational technology process to a multi-component career pathways program.

Interest in evidence-based research on AFE interventions has grown since the early 2000s with the funding of research networks and studies of multi-component interventions. For instance, U.S. federal agencies' desire to understand effective approaches for adult reading instruction resulted in the funding in 2004 of the Adult Literacy Research Network by the U.S. Department of Education, the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development, and the former National Institute for Literacy. The Network encompassed six teams that conducted intervention research involving experimental studies of newly developed or adapted adult reading interventions (Alamprese et al., 2011; Greenberg et al., 2011, 2013; Hock & Mellard, 2011; Miller et al., 2011; Sabatini et al., 2011). The U.S. Department of Education's Institute of Education Sciences (IES) also supported an experimental evaluation of a curriculum developed to increase adult English language learners' reading skills (Condelli et al., 2010). More recently, the Center for the Study of Adult Literacy developed and studied the AutoTutor technology-based adult reading intervention (Graesser et al., 2021). Talwar's (2024) review of research on adult reading points to the contribution of these studies in increasing our knowledge of reading instruction as well as areas for future research.

In addition to conducting studies on adult reading, AFE researchers have developed and evaluated interventions that prepare adult learners to earn a high school equivalency credential and succeed in integrated education and training programs. For instance, LaGuardia Community College's GED® Bridge to Health and Business program involved the development of a contextualized GED® preparation program and the conduct of a randomized control study that compared Bridge program participants to traditional GED® prep course participants in terms of participants' GED® receipt and enrollment in community college (Martin & Broadus, 2013). The Accelerating Opportunity initiative was an early effort to adapt and scale the key components of Washington State's Integrated Basic Education and Skills Training (I-BEST) intervention. This expansion of I-BEST to seven states was evaluated using a quasi-experimental design (Eyster et al., 2018). The evaluations of both the GED® Bridge program and the expanded I-BEST model showed promise for those interventions.

These studies not only increased the knowledge base on AFE but also raised awareness about the types of research being conducted and the potential use of research findings in improving the delivery of AFE services. Through presentations at conferences, such as those sponsored by the Coalition on Adult Basic Education (COABE), ProLiteracy, the International Literacy Association, and other venues, AFE researchers engaged with AFE state staff, local program

staff, and other researchers to generate interest in the role of research in AFE and its potential to address practitioners' key challenges in delivering effective AFE services.

To facilitate the use of research in AFE practice, some researchers prepared curriculum and training materials to disseminate their interventions. For instance, the lesson plans and administration procedures from the Making Sense of Decoding and Spelling study that Alamprese, MacArthur, Price, and Knight (2011) conducted were packaged and disseminated through the U.S. Department of Education's Literacy Information and Communication System (LINCS) portal (MacArthur et al., 2010).

Collaboration in AFE Research

An important feature of AFE intervention research is collaboration among researchers, state staff, and local program staff in designing, implementing, and evaluating interventions. As has been discussed in IES-sponsored studies of researcher and practitioner partnerships, researchers' work with state and program staff can help to ensure that an intervention is designed to address the needs of the population of learners for whom it is intended, aligned with a program's organization and structure to help ensure its ongoing use, and supported through professional development and dissemination (Farrell et al., 2018). These findings also reflect the experiences of AFE researchers who have conducted researcher-practitioner partnership projects aimed at improving the delivery of AFE services.¹

The CREATE Network

One example of AFE research on interventions and how this research can be meaningful to the AFE field is the work of the CREATE (Collaborative Research for Educating Adults with Technology Enhancements) Adult Skills Network,² which began in 2021 under funding from IES. CREATE facilitates the development, adaptation, implementation, and evaluation of technology-supported interventions to build adult foundational skills and academic attainment. The Network comprises six research teams that focus on a variety of approaches to using technology to improve or measure adult foundational skills development and a Network Lead team that provides leadership, coordination, and dissemination related to the research teams' work.

¹ Such projects include the Study of Effects of Accelerated Basic Skills Instruction on Adults' GED® Attainment and Enrollment in Postsecondary Education, IES Award R305H140108 to Abt Associates; Career Pathways Programming for Lower-Skilled Adults and Immigrants: A Comparative Analysis of Adult Education Providers in High-Need Cities, IES Award R305H150047 to Pennsylvania State University; New York State Literacy Zone Researcher-Practitioner Partnership, IES Award R305H160023 to the American Institutes for Research (AIR); and Georgia Partnership for Adult Education and Research (GPAER), IES Award R305H180061 to Georgia State University.

² The CREATE Adult Skills Network is supported by a set of grants from the IES, U.S. Department of Education, including Award R305N210014 to AIR for network leadership and coordination. See <https://createadultskills.org>.

As part of the CREATE Network, the six research teams have engaged with AFE state leaders and local program staff in designing and executing their research projects and have learned from their experiences about the value of collaboration between researchers and practitioners. In addition to funding the CREATE Network teams, IES has supported other projects involving collaboration between AFE researchers and state leaders and/or local practitioners in conceiving, designing, conducting, and reporting results from studies of AFE interventions.³

Overview of the Brief

This brief discusses ways in which AFE researchers and practitioners can collaborate in carrying out key phases of research on AFE interventions (shown in the figure below). This collaboration can strengthen the quality of both the interventions that are developed or adapted and the research that is conducted about those interventions. The examples of collaboration in this brief illustrate the ways in which researchers can work with practitioners in various phases of the intervention research process. These examples are drawn from the experience of the CREATE Network research teams and the author of this brief's work in conducting other IES-supported AFE studies.⁴ The brief is intended to facilitate AFE researchers' work with practitioners to develop and assess interventions that can improve the quality and effectiveness of AFE services. While the brief is focused on collaborations that support AFE intervention research, the suggested activities can be applied to varied types of AFE studies.

CREATE Research Framework

As part of the CREATE Network Lead's activities, we developed a streamlined framework that specifies five phases of conducting research from planning through the execution of studies about AFE interventions and includes key activities that are generally conducted during each phase (see figure below). The CREATE Research Framework⁵ reflects the stages of intervention research referenced in the literature (e.g., Gitlin, 2013) and can be useful in guiding discussions about the activities involved in conducting research.

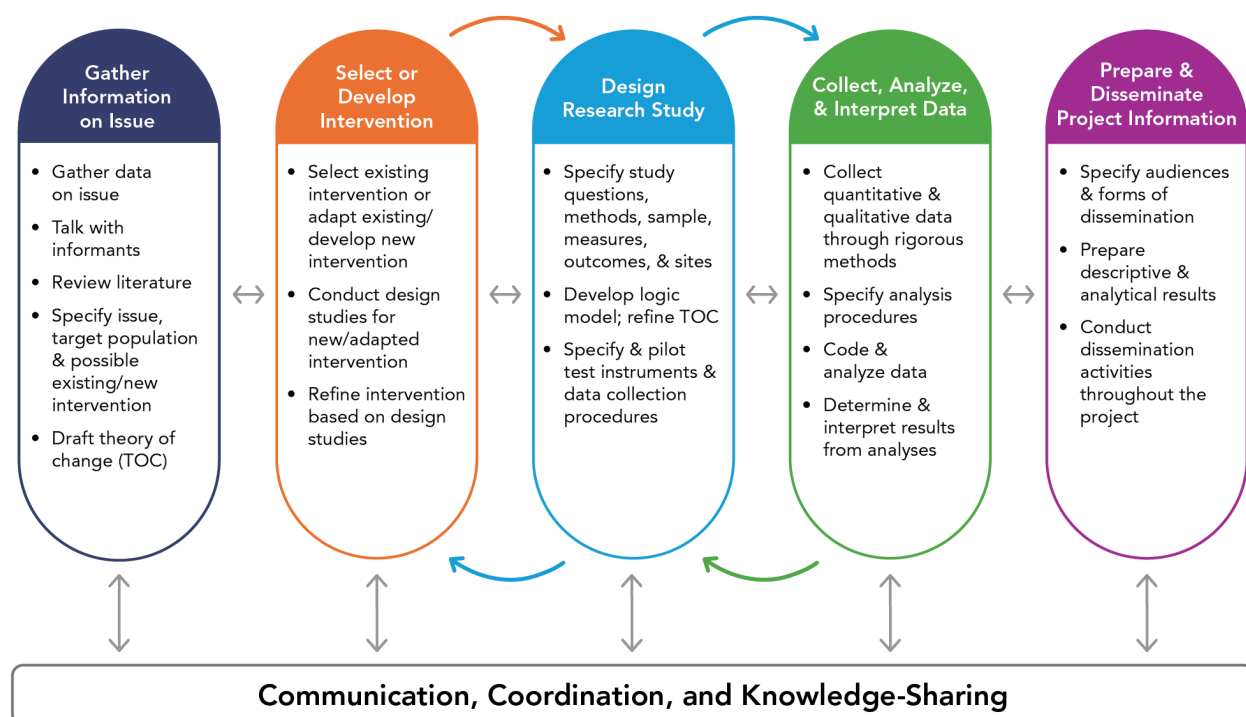
³ Examples include the Study of the Effects of the Transition Planning Process (TPP) on Adult Basic Skills Learners' GED® Attainment and Enrollment in Postsecondary Education, IES Award R305L170012 to Abt Associates, as well as the Study of Effects of Accelerated Basic Skills Instruction on Adults' GED® Attainment and Enrollment in Postsecondary Education, IES Award R305H140108 to Abt Associates.

⁴ Some examples in the brief are drawn from the Study of the Effects of the Transition Planning Process (TPP) on Adult Basic Skills Learners' GED® Attainment and Enrollment in Postsecondary Education, IES Award R305L170012 to Abt Associates.

⁵ Framework was prepared by Judith Alamprese as part of the CREATE Adult Skills Network supported by IES, U.S. Department of Education, through Award R305N210014 to AIR.

CREATE Research Framework

Phases of Research for Studying Interventions: Planning through Execution



In practice, the phases of research on AFE interventions are iterative and will vary in implementation depending on the approach to intervention identification or development that is used. For instance, AFE researchers can work with practitioners (state staff, program staff, or both) to identify an issue that needs to be addressed to improve AFE services and to select an existing intervention that can be evaluated to determine its adequacy in addressing that issue or can determine that a new intervention needs to be developed. Alternatively, AFE researchers can independently develop a new intervention or adapt an existing intervention to meet a known need in AFE based on their expertise and knowledge of current issues in the AFE field. In this instance, researchers would work with practitioners in pilot testing the new or adapted intervention and in evaluating its effectiveness in addressing the identified issue. Both approaches can involve iterative activities within the research phases.

The strategies for each research phase in the framework are opportunities for AFE researchers and practitioners to work together in facilitating high-quality studies that address critical issues in AFE services and whose findings can move the practice of AFE forward. The activities will vary depending on the focus of the research—an existing intervention or a newly developed or adapted intervention—and the types of practitioners involved. For instance, the next section of the brief discusses researchers' possible strategies for working with AFE state and program staff because the examples are drawn from the CREATE Network projects that have primarily

involved those staff. However, the collaboration strategies provided are appropriate for researchers' work with a range of staff involved in AFE services at the state, regional, and local levels.

Strategies for Engaging Practitioners in Planning and Conducting AFE Research

This section provides examples of how AFE researchers can work with AFE state and program staff in carrying out the research activities in the five phases in the CREATE Research Framework. The strategies offered are illustrative of a range of actions researchers can take to collaborate with practitioners and enhance the effectiveness of their studies.

Research Phase I Activities: Identify Issue or Problem that Reflects Concerns of AFE Programs and AFE Field

There are different strategies researchers can take to identify an issue or problem in delivery of AFE services that an existing or a new AFE intervention could address. The strategies below highlight the need for a variety of data and types of information in determining the focus of intervention research. Researchers may consider the following:

Gather Information on Issue

- Collect information about AFE priorities, operational practices, and possible challenges in service delivery from state and local perspectives.
- Discuss with AFE state and program staff the types of learner and program data that are available and whether researchers can access these data to review and discuss with staff.

Talk with Informants

- Work with state staff and program staff to examine patterns of learner performance, discuss delivery of AFE services, and review other information that can help to identify possible topics for research on interventions.
- Discuss with AFE state and program staff possible implications from the review of trends in the data and from conversations about AFE services to determine whether an existing practice might be refined or a new practice might be developed to address the issues or gaps in AFE services that are identified.

Review Literature

- Review past studies on the issue or gap in AFE services identified from discussions with state and local staff and review of AFE data.

- Based on this review, determine whether the types of interventions that have been used by others to address the issue or gap being explored are feasible for addressing the current issue.

Specify Issue, Target Population, and Possible Intervention

- Decide with AFE state and program staff the specific issue that will be the focus of the intervention and the target population of adult learners for the intervention.
- Identify whether there is an existing intervention that can address the issue or whether an existing intervention would need to be modified or a new intervention developed to address the AFE program issue.

Prepare Draft Theory of Change

- In identifying an intervention, it can be helpful to work with staff to prepare a draft theory of change to clarify staff members' assumptions about the use of the intervention and how the activities involved in the intervention are expected to work together to produce the desired outcomes.

Case Study of Phase I Activities

An AFE researcher who had worked with a state's AFE staff on a previous study re-engaged with the state staff to discuss the state's current AFE activities. As part of the step of gathering information, the researcher learned from the state staff that there were a number of assessment intake scores that indicated learners in the state's AFE programs were close to being ready to take the GED® test but that the GED® completion rate was not increasing. The state staff were concerned that AFE learners with potential for earning a GED® credential were missing this opportunity.

As part of the step to talk with informants, the researcher asked the state staff to compile the AFE learner data. The researcher and staff reviewed the data and found that a substantial number of learners who entered AFE programs without a high school diploma and who post-tested at the level indicating readiness to take the GED® test did not do so or did not retake a GED® test after receiving a low score. The researcher and state staff conducted telephone interviews with AFE program directors and key staff to discuss program processes for tracking GED® test taking and found that a range of practices were being implemented to identify learners who were ready to take the GED® test. However, learners' plans for taking the GED® test were not always tracked. This finding raised the question of what additional practices might help to ensure that more eligible learners complete the GED® test.

To explore possible practices that could facilitate learners' participation in the GED® test, the researcher reviewed the literature on efficient and low-cost strategies to support adult learners' progress in education. From the researcher's review of the literature and discussions with AFE state and program staff, the state and local staff and researcher determined together that the use of text messaging to monitor AFE learners' progress in preparing to take the GED® test and in following up with learners was a reasonable practice to test. To ensure that the researcher and staff had similar assumptions about the use of text messaging that would encourage learners' participation in GED® testing, the researcher collaborated with staff to develop an initial theory of change for the text messaging intervention.

Research Phase II Activities: Select or Develop Intervention

The process of selecting an existing intervention, developing a new intervention, or adapting an existing intervention to test involves a number of considerations and iterative activities.

Researchers studying existing interventions can move forward to Phase III activities after confirming the selection of the existing intervention. Researchers developing new or adapting existing interventions may consider the following:

Select Type of Intervention: Use Existing Intervention; Develop New or Adapt Existing Intervention

- Work with AFE state and program staff to determine the specific intervention or practice that can address the issue or gap in services that has been identified. The intervention can be an existing practice the researchers and staff determine can be used as designed, or the practice can require some modifications for use with AFE learners. The intervention can also be a new practice that is developed.
- In selecting an intervention, consider the extent to which its content and structure are appropriate for use with all skill levels of AFE learners, or whether the intervention is likely to be more successful with a subpopulation of learners.
- Discuss with AFE state and program staff whether the delivery of the intervention is aligned with the structure of possible AFE program sites for the study, whether the materials and resources needed to implement the intervention are or can be made available in AFE programs and are consistent with any existing curricular

Phase II: Considerations in Selecting Type of Intervention

To facilitate successful research on AFE interventions, researchers should collaborate with practitioners to consider factors related to the status of the intervention.

- For an existing intervention:
 - There is initial evidence of success of the use of the intervention with the AFE population of interest.
 - The intervention can be structured to fit into an AFE delivery system in terms of length of delivery, materials or technology requirements, and availability of staff.
 - Professional development is accessible for preparing AFE staff to deliver the intervention.
- For developing an intervention:
 - Staff with experience and expertise in AFE intervention development have time and availability.
 - Materials and resources are accessible for developing a new intervention that can address the AFE issue of interest.
 - There are interested AFE staff who are available to collaborate with researchers in developing the content and structure of a new intervention.
- For adapting an existing intervention:
 - There is initial evidence that the existing intervention could be adapted in terms of content and/or structure to be used with AFE learners.
 - The technical expertise and materials needed to adapt the intervention are available.
 - There are AFE staff who would be willing to implement the adapted intervention.

requirements, and whether the types of staff and training needed to deliver the intervention are or can be made available.

Conduct Design Studies for New or Adapted Intervention

- Work with AFE program staff to conduct usability and feasibility studies of newly developed or adapted interventions. Consider the use of the intervention with the planned target population, and work with AFE staff in reviewing instruments and data collection processes that are planned for the design study. The conduct of design studies will involve many of the activities that are also part of **Research Phase III, Design Research Project**, such as instrument design, data collection, and initial analyses of data. If the development of a new or adaptation of an existing intervention is determined as the appropriate step, researchers will likely conduct activities in Research Phase II. As Phase II progresses, researchers can review the activities planned for Phase III regarding the evaluation of the refined intervention to check whether the initial research design is still appropriate and feasible.
- Obtain feedback from staff after each iteration of studies to identify barriers and factors that can facilitate the use of the intervention.

Refine Intervention Based on Design Studies

- Discuss with AFE state and program staff the planned modifications to the intervention based on the usability and feasibility test results and other factors that may need to be considered, such as any planned changes in AFE program operations that could affect the use of the refined intervention.

Research Phase III Activities: Design Research Project

The development of a comprehensive research design involves a series of steps researchers can take to ensure the research design is adequate for conducting a rigorous test of the intervention. Researchers' collaboration with AFE staff in project design is critical to the project's success. Researchers may consider the following:

Specify Study Questions, Methods, Sample, Measures, Outcomes, and Study Sites

- Work with AFE state and program staff to specify the research questions to ensure that the questions address issues of interest to AFE staff and are likely to produce findings that can be useful in delivering AFE services and/or developing AFE policies.
- Consider specifying initial research questions during the selection of the intervention and confirming them after the type of intervention is finalized.
- In selecting the study method (e.g., experimental, quasi-experimental, descriptive) based on the research questions and the type of study that can best address those questions, check with AFE state and program staff about the operation of AFE services to assess the feasibility of conducting a well-implemented study.

- Work with AFE state and program staff to determine the study's sample and study sites based on the type of study that is being conducted and the target audience for the intervention. AFE state and program staff can assist in researchers' determination of the sample and study sites by providing information about the background characteristics and skill levels of adult learners, learner enrollment and hours of participation in AFE, and the outcomes learners achieve.
- Discuss with AFE program staff the AFE program data from previous years to help identify study sites likely to have enrollments that meet a study's sample requirements.
- Ask AFE state staff to support the study by facilitating the recruitment of study sites.
- Work with AFE program staff to collect information about possible AFE study sites' current program practices. Determine how the proposed intervention aligns with or could improve current practices to facilitate the recruitment of study sites.
- In specifying an AFE study's measures, consult with AFE staff to consider the key variables that should be analyzed to address a study's questions. These variables should reflect key implementation factors such as context and inputs, as well as the short- and long-term outcomes reflected in the theory of change.
- Engage with AFE program staff to ensure that the measures are adequate to assess an intervention's implementation and outcomes, or whether additional measures may be needed.

Develop Logic Model; Refine Theory of Change

- Develop or co-develop with staff a draft logic model to provide a visual representation of how the intervention is intended to work. Working together on the model helps to achieve a shared articulation of the relationship among resources, activities, and the expected outcomes or results.
- Discuss with AFE state and local staff the draft logic model, and reflect on the reasonableness of the assumptions underlying the use of the intervention.
- Confer with AFE stakeholders who can also help determine the types of projected outcomes that can be achieved from the use of the intervention and can inform the scope of the study.
- Refine the theory of change developed in Phase I if this activity was conducted in that phase.

Specify and Pilot Test Instruments and Data Collection Procedures

- Consider the range of instruments used in studies of AFE interventions to measure adult learners' background characteristics, foundational skills, and perceptions about participating in AFE services.

- Work with AFE program staff to pilot test instruments that have not been validated with AFE learners to ensure the instruments are suitable for use with the AFE target population.
- In establishing procedures for data collection, consult with AFE program staff about the schedule of AFE services and program timelines, both of which may affect data collection.
- Collaborate with AFE staff to develop an ongoing process for communication to ensure that data collection can proceed as planned. Ongoing communication with AFE staff can help determine whether additional instruments are needed to document unexpected changes in use of the intervention or in program operations that may affect the intervention.

Research Phase IV Activities: Collect, Analyze, and Interpret Data

Sharing procedures for collecting, analyzing, and interpreting data from intervention studies can support the engagement of AFE staff and key stakeholders and set initial expectations for the study's results. In conducting these activities, researchers may consider the following:

Collect Data

- Work with AFE state and program staff to ensure that all necessary approval procedures are in place for researchers' collection of data and for the transfer of data from state or local entities to researchers. Ask AFE staff to review the content and readability of the learner consent form.
- Work with AFE program staff to facilitate (1) the administration of learner assessments and related instruments, (2) the conduct of staff, learner, and other stakeholder interviews, and (3) the conduct of class observations or other relevant data collection activities.
- Work with AFE state staff or program staff to arrange the transfer of adult learner administrative data to the study's researchers.
- Ask AFE staff to communicate with learners about the purpose and value of the study to support learners' participation in the study.

Specify Analysis Procedures; Code and Analyze Data

- Provide AFE staff with information about the analysis process, particularly frameworks for coding qualitative data to check the validity of the coding.

Interpret Data

- Share the initial results of the data analysis with AFE staff to discuss implications from the data.
- Ask AFE staff to identify any circumstances that might have affected learners' performance on assessments or responses to interviews that might affect the interpretation of the results.

- Ask AFE staff to suggest additional clarifying analyses that would be useful for understanding the results of the study.

Research Phase V Activities: Prepare and Disseminate Project Information

A key phase of intervention research, dissemination begins at the inception of a project and continues throughout the project. In planning and conducting dissemination, researchers may consider the following:

Specify Audiences and Forms of Dissemination

- Work with AFE state and local staff and other stakeholders to determine the audiences for dissemination, the purposes of dissemination activities for each audience, and the forms of dissemination best suited to different audiences.
- Consider that audiences can vary during the project based on the phases of the research activities. Early dissemination and project progress reports can be conducted and shared with a wide audience of stakeholders; later dissemination activities can be targeted to stakeholders by their specific interests.

Prepare Descriptive and Analytical Results

- Plan to prepare descriptive and analytical results that are aimed at difference audiences, such as practitioners, policymakers, and other researchers.
- Discuss the study's initial findings with AFE state and local staff, and solicit their comments on any draft reports so that key stakeholders are aware of the results before they are disseminated. These processes can help AFE state staff consider policies or guidance that may be developed based on the results of the study.

Conduct Dissemination Activities throughout the Project

- Conduct early activities such as dissemination of descriptive information about the purpose of the project, the intervention that is being tested, the target population for the intervention, and the expected outcomes from the use of the intervention.
- Include AFE staff in dissemination activities, such as co-presenting with AFE staff at conferences and joint preparation of descriptive information about the project.

Conclusion

Collaborations between researchers and AFE state and local staff can help to increase the likelihood that study findings will reach a range of audiences and can affect the delivery of AFE services, particularly concerning programs' use of new practices. The investment of time and effort that researchers and practitioners dedicate to working together can also help to ensure a well-designed intervention and a well-implemented evaluation of that intervention. Overall,

collaborations and lessons learned from them can improve the overall quality of AFE practice and research.

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