# Evaluation of Professional Development Efforts of ATE Projects and Centers
Phase I Report

The preparation and professional development of college faculty and secondary school teachers is a primary activity of the ATE program. Through the efforts of various projects and centers, substantial professional development activities are occurring. The overall goal of the current study is to examine in detail the nature of these professional development efforts and assess the value obtained through participating in such activities. To that end, a four phase study approach is being implemented. This report details the results of Phase I: Project Segmentation.

Project Segmentation	Key Informant Interviews	Participant Survey	Best Practices
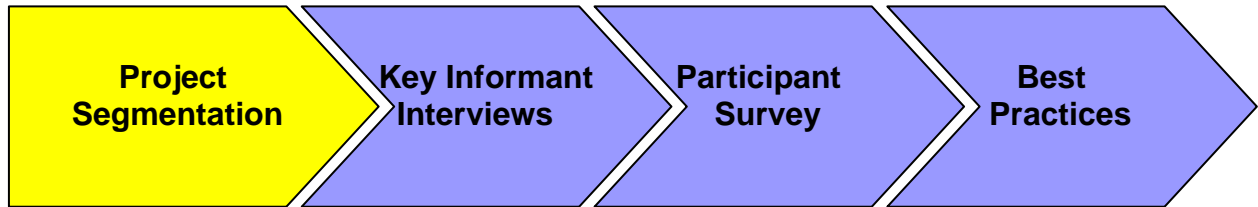
Phase I was designed to accomplish two things: (1) classify projects along two key dimensions—linkage and scope of activity and (2) purposely sample projects based on their classification. The results of this phase will be used to identify key informant candidates in the next phase of the project.

Selected Projects

We followed a very rigorous segmentation process (described in detail in the Methodology Section below). We also selected 12 projects as the sample size. Twelve projects represent approximately 12 percent of the population (see Database Review below), were manageable in terms of scope of the overall project, and would be consistent with the overall goal of evaluating the effectiveness of professional development activities.

Based on the decision to limit the sample to 12, the number to be selected from each cell is shown in Table 1.

Table 1: Number of Projects to be Drawn from Each Cell

		Linkages			
		High	Medium	Low	Total
Professional Development Activity Points	High	n = 4	n = 2	n = 2	8
	Medium	n = 2	n = 0	n = 0	2
	Low	n = 2	n = 0	n = 0	2
	Total	8	2	2	12

As shown, twice as many projects were from the "High-High" cell than any other of the contributing cells. The rationale for this was the fact that this particular group had by definition the strongest linkages and was the most active in terms of professional activities. Given the goal of the study, this particular group would be of particular interest and thus warranted a larger portion of the overall sample.

Descriptions of the selected 12 projects based on the available demographics are presented in Table 2.
Table 2: Descriptions of Selected Projects

Award Number	Institution Category	Funding Category	Funding Award	Project Age (Years)	Linkages	Activity Point Score
101507	2 Year College	Center	$3,000,001.00	2	High	High
101524	2 Year College	Articulation Partnership	$257,541.00	2	High	Low
101573	2 Year College	Center	$1,499,636.00	2	High	Medium
101622	4 Year College	Project	$188,890.00	2	High	Medium
101667	2 Year College	Project	$293,049.00	2	Medium	High
101683	Association/Society	Project	$393,629.00	2	Low	High
101715	Other Institution	Center	$1,998,727.00	1	High	High
101747	2 Year College	Project	$460,509.00		Medium	High
118933	2 Year College	Center	$2,050,000.00	1	High	High
120666	Association/Society	Project	$1,767,569.00	1	Low	High
202400	2 Year College	Center	$2,999,784.00	1	High	High
302414	2 Year College	Project	$540,725.00	2	High	Low

Database Review

We reviewed the available survey data to identify potential projects to serve as the sample. The population was all the projects that responded to the Professional Development section in the 2003 ATE Annual Survey (n = 104). We next examined the end dates for all 104 projects. Only project end dates that are targeted to extend past the end of the current study were included in subsequent analyses considered for sampling purposes. Forty-four projects were slated to end before February 28, 2004, and were no longer viable to be part of our sample. From the remaining 60 projects, we measured 2 constructs: degree of linkages and degree of professional development activities.

Degree of Linkages

We examined linkages between professional development and either materials development or program improvement or both. Activities in materials development were linked to activities in professional development via Question 5 from the Materials Development section of the 2003 Survey. Specifically, this question requires respondents to indicate all the types of material development activities in which their respective programs engage. One of the options expressly states that the project engages in materials development for professional development activities. We asserted that any project that indicated such was considered to have a "link" between materials development and professional development activities. Linkages for program improvement were established by reviewing responses to questions in each of the Program Improvement subsections of the 2003 ATE Annual Survey. Specifically, if respondents indicated that their center/project provided an instructional program to students at the secondary school level and/or the associate degree level and/or the baccalaureate level and ATE grant monies have been used to improve that instructional program, we asserted that a link existed between professional development and program improvement for those specific projects.

These are the degrees of linkages:

- High – Projects indicated they participated in materials development for professional activities **and** indicated their center/project had used ATE grant monies to improve their instructional program at any of the three instructional levels.

- Medium – Projects **either** indicated that they participated in materials development for professional activities **or** indicated that their center/project had used ATE grant monies to improve their instructional program at any of the three instructional levels.

- Low – Projects failed to indicate materials development for professional development or failed to indicate any type of program improvement effort at any of the three education levels.

For example, Project Award Number 101667 indicated that it participated in materials development for professional activities on Question 5 of the Materials Development section of the survey. However, it did not indicate that it was involved in any program improvement efforts at any of the education levels. Therefore, this project was classified as a "medium" on the linkage dimension.

Degree of Professional Development Activities

Degree of professional development activities was based on the project's professional development activity score. This score was a created value designed to reflect the extent to which any particular project/center was involved in professional development activities. The score reflected five dimensions:

- Number of professional development opportunities
- Number of individuals participating in those opportunities
- Number of follow-up methods formally used by each project
- Number of types of support typically provided by the various projects/centers to the participants
- Percentage opportunities operating at full capacity (i.e., 100% of available seats occupied in the various opportunities)

The actual values for the first four dimensions above varied substantially. We reviewed the distribution of raw scores and recoded them to values of 1 to 4 for total score calculation purposes. The recoding procedures followed are shown in Table 3.

Summing across these 5 dimensions for each of the 60 projects currently in our sample resulted in their professional activity score. These scores have a range of 19 with a minimum value of 4 and a maximum value of 23. For final segmentation purposes, these scores were also recoded. The distributions of professional activity scores were divided roughly into thirds and assigned points accordingly. The top third (total scores of between 15 and 23) were considered to have "High" professional activity. The middle third (total scores between 11 and 14) were considered to have "Medium" professional activity. The bottom third (total scores between 4 and 10) were said to have "Low" activity.

Table 3: Recoding Procedures

Dimension	Raw Scores	Recoded Values
Number of opportunities (i.e., conferences, workshops, in-service courses, internships, online courses, other opportunities)	1-5 6-10 11-20 > = 21	1 2 3 4
Number of participants across all instances of each opportunity	1-10 11-30 31-100 > = 101	1 2 3 4
Number of follow-up methods used (i.e., personal contacts, surveys, newsletters, letter or e-mail, other)	1 2 3 4-5	1 2 3 4
Number of types of support (i.e., money, equipment, materials, technical assistance, follow-up activities such as stipends, e-mail, newsletter, other)	1-3 4 5 6-7	1 2 3 4

Note: The fifth dimension (percentage of opportunities operating at full capacity) was originally designed to generate values of 1 – 4 (0-25% = 1; 26-50% = 2; 51-75% = 3; and 76-100% = 4) so no recoding was necessary.

Purposeful Matrix Sampling

Crossing the linkage categories (high, medium, and low) with the professional development activity scores categories (high, medium, and low) resulted in Table 4:

Table 4: Degree of Linkages * Professional Activity Points

		Linkages			
		High	Medium	Low	Total
Professional Development Activity Points	High	15	6	3	24
	Medium	8	7	3	18
	Low	5	8	5	18
	Total	28	21	11	60

As shown in Table 4, 28 projects were considered to have "high" linkages between materials development, professional development and program improvement (vertical, shaded cells). Likewise, 24 projects were categorized as "high" in activity points, suggesting significant professional development activities and participation by large numbers of participants (horizontal, shaded cells).

For sampling purposes, we asserted that any project associated with a "high" rating was active and worthy of consideration for further investigation as part of this study. Furthermore, we asserted that a higher likelihood of success would be achieved if the sample purposely included projects that offered a greatest number and variety of opportunities, involved larger number of participants, and generally involved materials development and/or program improvement. Therefore, the purposeful selection of projects reflected our assertions.

Selecting the Specific Projects

As shown previously in Table 1, 12 projects constituted our sample. Only projects located in one of the "high" (i.e., shaded) cells were considered as part of the sample. Examination of Table 4 reveals that of the 60 projects whose end date exceeds that of this project, only 37 projects fall into these cells.

We then used a series of filters and analyses in order to get the number of projects down to the goal of 12. Consistent with our assertion that the greatest likelihood of success would be achieved with those projects that involved the greatest number of participants, the first filter we used was the number of participants engaged in professional development opportunities by institution type. Table 5 below displays the results of this filter. The following points describe the information contained in Table 5:

- Column 1 displays the award number of those projects that had either the largest number of participants or the second largest number of participants within each combination of linkage and point categories (e.g., High/High)
- Column 2 displays the linkage category for that particular project
- Column 3 displays the activity points score category for that particular project
- Columns 4-7 present the largest and second largest actual number of participants by education institution
- Column 8 presents the total number of participants summed across columns 4 through 7

Table 5: Number of Participants by Linkage/Point Categories and Education Institutions

Award Number	Linkages	Activity Points	Number of Participants Per Educational Institution				Total Number of Participants
			Secondary Schools	2 Year Colleges	4 Year Colleges	Other	
101421	High	High			12	27	39
101507	High	High		250	50		300
101715	High	High	100				100
118933	High	High	200	163			363
202400	High	High				40	40
101445	High	Medium	44				44
101489	High	Medium				350	350
101573	High	Medium	343	187		39	569
101622	High	Medium			7		7
101635	High	Medium		30	20		50
101524	High	Low		51			51
101607	High	Low	10		20	7	37
101646	High	Low				1	1
302314	High	Low	35	45	5		85
101598	Medium	High	25				25
101621	Medium	High	33		14		47
101667	Medium	High		25		30	55
101747	Medium	High			30	25	55
202272	Medium	High		25			25
101683	Low	High	5	72	10		87
120666	Low	High	50	530	150	50	780

As shown in Table 5 above, employing this filter reduced the number of projects from 37 to 21. There is also excellent representation across all 4 education institution types.

Next, we examined the number and variety of different types of professional development opportunities offered by these 21 projects. Table 6 displays the results of this analysis.

Table 6: Number of Professional Development Activities by Linkage/Point Categories

Award Number	Linkages	Activity Points	Number of Professional Development Activities					
			Conferences	Workshops	In-service Courses	Intern-ships	Online Courses	Other
101421	High	High	12	8	2			2
101507	High	High	2	4	2			
101715	High	High	6	10	60		100	
118933	High	High	1	8	2	1	1	
202400	High	High	1	1				
101445	High	Medium			11			
101489	High	Medium			2			
101573	High	Medium	5	7	1			
101622	High	Medium			2			
101635	High	Medium	1	3				
101524	High	Low		2				
101607	High	Low		2		1		
101646	High	Low		1	2			
302314	High	Low	2	2				
101598	Medium	High	4	1	1		2	
101621	Medium	High	5	5				
101667	Medium	High		1	1			
101747	Medium	High		10	1			40
202272	Medium	High		1				
101683	Low	High	1		2			
120666	Low	High	1	2				2

Due to the large wide variety of responses, our examination of Table 6 did not help to reduce the number of projects, but it did confirm good representation and variety of professional development activities across the 21 projects.

Next, we investigated the match between program improvement at a particular education level and actually drawing participants from that same level. In essence, this is a validation of programs serving their respective target audiences. Three projects (202272 at the secondary school level; 101489 and 101598 at the associate degree level) were missing their target audiences. These projects stated that they were involved in programs at these various levels but were drawing no participants from those education levels. These 3 projects were dropped from further consideration, lowering our number to 18.

Finally, we employed a random selection process to eliminate the six additional projects that we did not need. Table 7 presents the number selected randomly from within each linkage/activity point's combination.

Table 7: Number Selected Randomly from within Each Linkage/Activity Point's Combination

Linkage	Activity Points	Number of Projects Available by Category	Number of Projects Randomly Selected
High	High	5	4
High	Medium	4	2
High	Low	4	2
Medium	High	3	2
Low	High	2	2
	Total	18	12

Recap of the Selection Process
- Population of participants completing the 2003 Survey – 104
- Projects with end dates following the completion of this study – 60
- Number of projects in one of six "high" cells – 37
- Number of projects with the largest or second largest number of participants – 21
- Number of projects that matched program improvement with participant draw – 18
- Number of projects randomly selected – 12

The 12 projects listed in Table 2 served as the basis for identifying key informants to participate in interviews as this project moves forward to the second phase.