

**ATE Evaluator
Examination of the Annual Survey
Report for 2002 and Suggestions for
Improvement in Relation to Program
Goals, and Review of Survey 2002
and Survey 2003 In Relation to the
2002 Report**

Prepared by

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Introduction

This is the ATE Evaluator Review of Survey 2002 and Survey 2003 In Relation to the 2002 Report, and the examination of the annual survey report for 2002 and suggestions for improvement in relation to program goals, consistent with the revised evaluator plan of work. That revised plan of work called for the evaluator to “Examine the annual survey report for 2002 and make suggestions for improvement in relation to program goals, and to Review Survey 2002 and Survey 2003 in relation to the report and make final suggestions for improvement and suggest modifications.” This review was conducted primarily from the perspective of a meta-analysis of the evaluation project, which was what was called for in the contract. “The role of the ATE project evaluator is to conduct a meta-analysis of the project’s evaluation efforts and the usefulness of those efforts to NSF, and program personnel.” Some comments might be considered to be meta-evaluation.

As the evaluator, I previously reviewed the 42 page 2002 Web Survey and provided a report entitled “ATE Evaluator 2002 Survey Review Report” on October 22, 2002. I have re-reviewed that report as well as the hard copy version of the “Survey 2003 – Final High 11-26-02” provided by Nanette Keiser, and the “Survey 2002: The Status of ATE Projects and Centers” report dated November 2002.

Overall, the surveys call for, and the report presents a significant amount of information that describes the nature of the activities being conducted through the ATE programs. They primarily address the extent to which the projects are engaged in the types of activities required within ATE programs. To some extent, the data could be thought of as data to monitor compliance and progress on various desired features of ATE programs.

The documents focus on the processes of implementing and completing the ATE programs, and to a limited extent on what participants do after completing the programs. Based on the interviews of stakeholders who received the “Survey 2002: The Status of ATE Projects and Centers” report, NSF personnel tend to see this information useful but not sufficient. Project and center directors have found this information to useful for various purposes and seem to be patterning their evaluations around the data asked for in the survey and contained in the report. (See Survey of ATE Programs, Centers, and NSF Personnel Perceptions of the Annual 2002 Survey Report, March 2, 2003)

In general, the documents reflect an academic orientation rather than an education for work orientation. The major difference is a focus on the process and quality of the education rather than the ultimate outcomes. In other words, much of the data currently being gathered and reported focus on what the projects and centers did, rather than the outcome of what they did in terms of improving the actual preparation of technicians. The focus on process is recognized on page 47 of the 2002 status report. But the major issue raised at that point was one of the validity of what is produced (quality of the products). That still does not focus on typical education for work criteria regarding impact of what is produced in terms of the improved ability of technicians to function in the world of work as a result of the new or modified programs. That ultimate goal of the ATE program is presented on page ii of the report and indicates that a major goal of the ATE program is to improve the workforce capabilities of technicians in our nation. It appears that what is needed is to add an additional component to the evaluation dealing with assessing the outcomes of the ATE program in terms of the actual improvement of the workforce capabilities of technicians. It is likely that this focus on process, and a relative lack of focus on the final goal of the ATE programs, is what led NSF personnel interviewed in the “Survey of ATE Programs, Centers, and NSF Personnel Perceptions of the Annual 2002 Survey Report” March 2, 2003, to

indicate that the survey and report did not provide information desired regarding the overall goals of ATE.

It is suggested that some of the process information currently being gathered be reduced and a requirement be put in place that ATE programs gather outcome data as part of their evaluation plans, which would provide the types of information needed to answer outcome measures to be included in the survey.

Specific Suggestions for Modifying the Survey
(reference page numbers are to the 2003 survey unless specified differently)

Overall, the survey appears to be gathering information on the basic activities and processes, which ATE projects should include or address. There are a few items on quality of what is produced and what happens to participants immediately after their education.

- As suggested in my review of the 2002 survey, I suggest that the survey instrument begin with a formal title.
- Page 1 might provide a list of primary goals of projects from which PIs select those that apply. This could be a sort criterion for other types of data such as types of institutions by type of goal, etc.
- It appears that some major technology areas, such as construction and power and energy, are still missing from the list from which people can select.
- Page 3 or the 2003 survey indicates that the responses should “reflect information.” If that is meant to mean, “be consistent with” then that could be clarified.
- Items were included in the 2003 survey on where a project is in its life cycle.
- Again, I suggest that Page 4 Item III be modified. The rating scale is based on a relative amount of each project characteristic. It compares this year with last. However, it does not give actual descriptive data regarding how much or how many. I suggest adding another column in which they enter an actual number. That number would probably be more useful in describing the projects.
- Page 6 item 5. I suggest adding some additional categories such as: ERIC, National Curriculum Centers, etc. These are major vehicles for education for work personnel.
- Page 8 Item 8. This item nor others seem to reflect major movements within education for work programs that are consistent with ATE. For example: Integrated curriculum, Increase problem solving, and Increased community-based learning activities.
- Page 10 Item 11. The types of advisory committees presented are very limited to geographic location. Also important is the function of the advisory committee. There are many purposes of advisory committees and they provide a wide range of input. It would be important to know what types of input they are providing. There is a significant amount of literature available on advisory committees that talk about how to organize them, their purposes, how to manage them, types of membership for various purposes, etc. This literature could be consulted.
- Some people would define articulation to include transition to the world of work. That is not reflected in item 17b on page 12 of the 2003 survey.
- It is not clear why the focus in the materials development section has a specific item on licensure or certification exams without including other categories that do not require an exam. For example, in some fields you can get certified without an exam. Should that not be a category?

- The materials development section might also ask about adding curriculum development, or program development, which is broader than a course or module since program development is presented as a concept in other parts of the survey.
- On page 31, the categories of possible development are program, module, and course. Yet, in other places in the document, the only choices are module and course, and in others where module and course might be meaningful distinctions, the focus is only on courses. (E.g., page 23 item n; page 36, refers to programs and courses but not modules.)

Possible Additional Item Types

If the survey was to be expanded to include outcome information, the following are some samples of the types of information that might be gathered. Some of the measures are direct and some are indirect. Some result in perception data.

Since the projects and centers have indicated that they are tending to pattern their evaluation efforts around the types of data required in the survey, the selection of the outcome measures would be very important. Over time it would be likely that such data would be available because projects and centers would begin to gather it.

The typical evaluation focus of preparation for work educational programs is on outcome. Such measures have been in place since the original Smith-Hughes Act of 1917. Although the exact measures have changed somewhat since that time as society has changed, education for work legislation to the present day reflects that basic orientation. Therefore, there is a significant amount of literature in Vocational Education, and more recently Career and Technical Education, that contains research on methodology and instrumentation to gather such outcome information (e.g., Pucel, 1973, "The Minnesota vocational follow-up system: Rationale and Methods, ERIC No. ED 079 514, VT 020 684; Pucel, 1979, "Longitudinal methods as tools for evaluating vocational education", ERIC No. ED 173 545, CE 019 615).

Some examples of measures are:

- Employer satisfaction with technician performance in the area addressed by the ATE program.
- Technician reflections on the adequacy of their training regarding the focus of an ATE project based on their actual job experiences.
- Perceptions of graduates comfort level with their future ability to actually apply the content addressed by an ATE program in the world of work after they complete the program.
- Advisory committee judgments regarding the likelihood that students would be adequately prepared to perform on the job with the content of the ATE program after completing the program as planned.

Comments on the Actual 2002 Report

The report clearly indicates on page ii that the information provided is largely descriptive and serve as baseline and trend data for tracking ATE program progress. The report does this quite well. Data are presented consistent with the survey, and descriptive interpretations are presented. It is difficult to suggest better ways of doing this beyond the few suggestions made earlier in this report. However, the major issue is not whether what is being done is being done well. As indicated earlier, there appears to be some concern of NSF staff that the data being gathered, although good, are not sufficient to evaluate ATE. The current evaluation does not

appear to directly provide information regarding progress toward the overall outcome goals of ATE. Comments regarding types of additional data that might be gathered were made above. Some specific suggestions for making the current report more effective in doing what it is currently doing are presented below.

- Page iii probably should acknowledge that all projects were engaged in at least one work category.
- The section on “Degrees/certifications and transfer credit” on page vii provides information on transfer credits, but does not summarize data on certifications and degrees. Yet, that information is gathered in the surveys.
- Some of the tables could use more text explanations. For example, Table 5 on page 9 can be eventually figured out. However, it is likely that many would not take the time to do so. A text explanation of an example interpretation would be helpful in such cases.
- It would be helpful to have the table of contents as the first page within the document. Currently you need to actually begin to work your way through the document in order to find the table of contents. Given the attention people said they have paid to the report in the past, it is likely many will not get to that point and will not be aware of the specific data available.
- It might be helpful to print the table of contents and present it in the text of information regarding marketing the report so people can be attracted to information of particular interest to them.

What might be helpful to NSF would be to highlight specific data that raise concerns and then to provide suggestions for NSF remedial action. For example, on page 42 the data and interpretation indicate that relatively few people who engage in professional development activities intend to make any changes based on what was presented. Since the professional development activities ultimately are intended to improve the preparation of technicians in the work force, this is a problem. This issue could be highlighted along with possible suggestions for what could they do about it. If possible, solutions are not presented; at least a section could be included on problems detected from the data that suggest concerns about achieving the ultimate goals of ATE.