



A Needs Assessment of Texas Academic, Public & School Libraries

A White Paper on Outcomes Evaluation: Concepts, Strategies, and Practical Applications

Submitted by

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Table of Contents

Abstract.....	ii
1. Introduction.....	1
2. Evaluation, Program Evaluation and Outcome-based Evaluation	1
3. Outcome-based Evaluation Described.....	2
4. Development of an Evaluation Program.....	4
4.1 Six Step Evaluation Program Development	5
Step 1. Define the Purpose of the Evaluation	5
Step 2. Identify the Population to be Evaluated	5
Step 3. Identify the Intended Results	5
Step 4. Identify the Funding Agencies and Stakeholders	6
Step 5. Determine the Data Collection Methods, Analysis Techniques and Interval.....	6
Step 6. Writing the Project Evaluation Report.....	8
5. Case Studies	8
Case Study 1: Knowledge Development Program for Academic Librarians	9
Case Study 2: Collaborative Service Among Academic and Public Libraries	10
Case Study 3: Knowledge Development Program for K-12 Students	11
6. Outcome Based Evaluation and TIFB Grants	12
6.1 Applying Outcome-Based Evaluation Methods to TIFB Grant Programs.....	12
7. Summary: How Outcome Based Evaluation Can Benefit Libraries	14
Appendix A: Glossary	16
Appendix B: Worksheets for Preparing an Evaluation Plan	18
Appendix C: Data Collection Methods.....	23
Appendix D: Suggested Impact/Output Measures by TIFB Grant Program Type	24
Appendix E: Selected Resources	28

Abstract

This white paper introduces evaluation concepts and describes outcome-based evaluation. Outcome-based evaluation is a specific form of program evaluation that is effective for evaluating and reporting the results of library programs and services to stakeholders and funders. Outcome-based evaluation terminology and concepts are explained and examples are provided. The Institute for Museum and Library Services (IMLS) logic model is described in the context of developing a program evaluation plan. Four case studies illustrate how outputs, outcomes and indicators can be used to produce programs results.

A White Paper on Outcomes Evaluation: Concepts, Strategies, and Practical Applications

1. Introduction

This white paper on outcomes evaluation has been developed in response to a request from the Library Working Group (LWG) of the Telecommunications Infrastructure Fund Board (TIFB). The LWG requested a paper on evaluation that would address these objectives:

- Assist libraries receiving TIFB grants to understand the need for and importance of evaluating programs and services enabled through the TIFB funding;
- Discuss key concepts related to evaluation, specifically outcome-based evaluation; and
- Provide practical approaches and advice to help libraries begin developing their own outcome-based evaluation plans.

The focus of this paper is on describing outcome-based evaluation and how it can be used to evaluate library services and programs. Other topics include a step-by-step guide for preparing an evaluation plan, and a description of the importance of learning and applying evaluation techniques. The paper's appendixes contain examples of outputs, outcomes and data sources that libraries might use to evaluate grant programs such as those funded through the TIFB. Appendixes also include a glossary of key terms, descriptions of different data collection methods, and references for additional reading.

2. Evaluation, Program Evaluation and Outcome-based Evaluation

A simple definition of evaluation defines it as the art of judging something or determining its value. It is also the process of collecting, analyzing and interpreting information to determine the adequacy and effectiveness of a program. For purposes of this paper, evaluation is defined as a systematic process to assess the extent to which a program has achieved its intended results.¹ Evaluation is done in different ways and for different purposes. In libraries, as in other organizations, evaluation processes occur for internal organizational reasons of budget justification, expenditure justification, program improvement, and to assess program or service accomplishments. Evaluation can be used to establish baseline data for future comparison, to gauge user satisfaction and to assess staff performance. Evaluation processes can also be triggered by administrative requirements, including requests from governing bodies or parent institutions.²

Generally speaking, the three most common forms of evaluation are for compliance, program performance improvement, and measurement of program merit and worth. An example of compliance evaluation is the TIFB/KPMG Quality Assurance program that evaluates whether TIFB grantee have complied with TIFB grant requirements. The program has provided data to show how well the grantees did in carrying out the purpose and intent of the grants as stated in their application.

Program evaluation is conducted for the purpose of improving program performance. This type of evaluation focuses on examining the goals and objectives of the program. Data are collected to provide evidence that the program has met its goals and objectives.³ The two most common forms of program evaluation are formative evaluation that is conducted to measure a program's performance while the

¹ IMLS: Managing Program Outcomes: Measuring Program Benefits of National Leadership Grants. The Alliance Group,* 2000.

² A review of the TIFB/KPMG Quality Assurance evaluation cycles confirms that TIFB has already focused considerable effort on compliance and has developed a program for evaluating grantee compliance with grant requirements. TIFB grant programs have not yet required grantees to prepare formal outcome-based evaluation plans to measure program outputs and outcomes.

³ Bond, Sally, S. Boyd, K. Rapp, et al. Taking Stock: A Practical Guide to Evaluating Your Own Programs. Horizon Research, 1997.

program is actually underway, and summative evaluation, conducted after a program has been completed.

Various evaluation methods rely on collecting data about a program, service, etc. that can measure results against stated criteria or objectives. Measuring is the process of gathering data and comparing what you find to some criteria or standard to determine if a change has occurred. For example, a performance evaluation to examine program costs might assess the amount and cost of resources (inputs) as related to the amount of program outputs/outcomes. This type of evaluation is useful to answer a question such as, "How much did we spend to produce a computer training program?"

Other forms of evaluation such as effectiveness and cost-effectiveness studies compare the amount and cost of resources in order to assess whether a program met certain attributes (e.g., whether it was accessible and timely for those taking the course). Cost-benefit studies compare inputs to outcomes such as the consequence of use and non-use. Did people taking the computer course experience positive long-term changes? Were those who learned how to search the library's databases better able to get jobs, or did something else happen to them?

Figure 1 is adapted from work by Menou⁴ for evaluating the impact of information services. It presents a view of different types of evaluation and measures that could be associated with the evaluation type. In addition it assist the evaluation designer in seeing which measures can be combined to result in more robust evaluation metrics.

Outcome-based evaluation builds upon other evaluation approaches, but focuses on the benefits received (outcomes) from a program. Outcome-based evaluation uses outcomes measures and performance indicators to evaluate program performance. Section 2 takes up a discussion of this approach to evaluation in more detail.

3. Outcome-based Evaluation Described

Outcome-based (sometimes called outcomes-based) evaluation emphasizes evaluation of not only the inputs/outputs but also of the benefits received (outcomes) from a program. An outcome-based evaluation might ask: "What difference did a particular program, service, technology, or other product make to our library, to our users, and to our community?" Outcome-based evaluation specifically focuses on producing results through measurement that demonstrates program impact to funders and others.⁵

Outcome-based evaluation focuses on improving the ability of agencies and organizations to report on results of their programs. It has been adopted by a variety of agencies and organizations including the United Way, the National Assembly of State Arts Agencies and the Institute of Museum and Library Services (IMLS). IMLS defines *outcome-based evaluation* as:

the measurement of results. It identifies observations that can credibly demonstrate change or desirable conditions ('increased quality of work in the annual science fair,' 'interest in family history,' 'ability to use information effectively'). It systematically collects information about these indicators, and uses that information to show the extent to which a program achieved its goals.⁶

⁴ Menou, Michel J. Measuring the Impact of Information on Development. IDRC, 1993.

⁵ Frequently Asked OBE Questions... <http://www.ims.gov/grants/current/crnt_outcomes.htm>

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Figure 1
Menou's Impact Assessment Framework

Measures **Derived Measures & Indicators**

Inputs (resources)

- Amount of resources
- Cost of resources
- Attributes

Outputs (products and services)

- Amount of output
- Attributes of output
 - Quality
 - Timeliness
 - Accessibility
 - Availability

Usage

- Amount of use and nonuse
- Factors affecting use and nonuse
- Purpose of use
 - Importance
 - Satisfaction with attributes of output
 - Awareness
 - Ease of Use

Outcomes (consequences of use and nonuse)

- Time saved
- Improved productivity
- Improved quality of work
- Improved timeliness of work
- Value derived

Domain (environmental characteristics)

- Target population
- User and nonuser population
- User and nonuser information needs
- Number and attributes of sites

Performance

Cost Effectiveness

Effectiveness

Cost Benefit

Impact

Outcome-based evaluation defines a *program* as a series of services or activities that lead towards observable, intended changes for participants (e.g., a Born to Read program increases the reading time caretakers spend with children). The loan of a book or an exhibit visit might constitute a program, since these have a beginning and an end, and increased knowledge is often a goal.⁷

In the terms of IMLS, the overall evaluation plan is called a “logic model”⁸, a structured plan that articulates and prescribes:

- The overall purpose (target, goal)
- The intended outputs (results)
- The benefits (outcomes) that the program is to achieve
- The indicators (program measurement tools)
- Activities to measure whether a program has benefited the intended users (target audience).

The following illustration shows how outcome-based evaluation terminology can be applied to a simple program. A person intends to prepare a batch of chocolate chip cookies to serve to the library staff at the next library staff meeting. Program *inputs* are the resources needed to produce the intended program, the flour, chocolate chips, etc. The *program activities* are the measuring, mixing and baking of the cookies. *Outputs* are the immediate results, which are usually expressed as numbers, in this case, the number of correctly baked cookies produced. The *outcomes* are changes in behavior, skills, knowledge, attitude, status or life condition, the “what happened” to the people, the target audience, because of the outputs. The outcomes in this case could be to assess the satisfaction of those eating the cookies or to assess the nutritional contribution to the target audience consuming the cookies. The *target/goal* is to serve a sufficient number of delicious cookies to the library staff at the library staff meeting.

4. Development of an Evaluation Program

This section describes and discusses the steps necessary to develop an evaluation program, or logic model. The evaluation plan or logic model helps to clarify each of the important evaluation program elements. IMLS has translated the elements of an evaluation planning process into a short summary that defines the basic logic model elements and provides examples (see Figure 2).

Figure 2: The Institute for Museum and Library Services Logic Model Elements and Structure

Outcome	Definitions	Examples
	Intended Impact	Students will have basic Internet skills
Indicator	Observable and measurable behaviors and condition	The # and % of participating students who can bring up an Internet search engine, enter a topic in the search function, and bring up one example of the information being sought within 15 minutes
Data source	Sources of information about conditions being measured	Searching exercise, trainer observation
Applied to	The specific group within an audience to be measured	The number of 7th-8th graders who complete the workshop
Data interval	When data will be collected	At end of workshop
Target (Goal)	The amount of impact desired	85% of approximately 125 participants

⁷ Perspectives on Outcome Based Evaluation for Libraries and Museums <<http://www.imls.gov/pubs/pdf/pubobe.pdf>> This source has an excellent bibliography of outcome-based evaluation used by non-profit agencies.

⁸ The reader may wish to refer to the glossary of terms located in Appendix A of this paper.

It is important that the design of the evaluation plan be incorporated as an integral part of the program design from the beginning of the project. Without a clear evaluation program at the onset of a program, it will be difficult to design an evaluation process that is informed by the goals, objectives or the expected benefits. Designing an evaluation plan concurrently with the design of the program is essential so program affords the opportunity to collect the appropriate types of evaluation data.

The logic model in Figure 2 fits into a larger evaluation planning process. The development of an evaluation plan can be separated into a series of six steps. Each of the steps is described below. Appendix B contains sample worksheets that can be used to work through each of the steps.

4.1 Six Step Evaluation Program Development

The logic model in Figure 2 fits into a larger evaluation planning process. The development of an evaluation plan can be separated into a series of six steps. Each of the steps is described below. Appendix B contains sample worksheets that can be used to work through each of the steps.

Step 1. Define the Purpose of the Evaluation

The first section of the evaluation plan should tie the goals and objectives of the proposed program to the process and plan for assessing and stating the results – the outputs and the outcomes of the program. The purpose statement should also discuss the study inputs and the study activities as planned.

The purpose statement is the foundation of the evaluation plan. It is also where the evaluator can make the link between the purpose of the program and the goals and objectives of the library. The purpose statement sets the context in which the program will occur and the evaluation will take place.

Step 2. Identify the Population to be Evaluated

A program or grant application or proposal will usually contain a section that establishes the needs of the target population through a description of the socioeconomic or demographic characteristics or through some form of needs assessment process. If the program being evaluated is being funded through grant funds, then it is likely that the evaluator will be able to build upon the needs statement for the target population(s).

If a needs statement or a description of the target population does not exist, one will need to be created. Typical data gathering activities include conducting a needs assessment survey to ask users about their needs for certain services. Other methods of identifying needs might include interviews or focus groups with members of the identified target group.

Each target audience, if there is more than one, should be described in the evaluation plan. The description of the target audience should reference the condition of the target audience. This description of the needs of the target population serves as baseline information on the condition of the target population before program execution.

The next step, establishing the outputs, outcomes and indicators, ties the target population needs to the expected results.

Step 3. Identify the Intended Results

As noted earlier, outcome-based evaluation plans use outputs, outcomes and indicators to link the condition of the target population with the program inputs and activities and the expected results.

Outputs focus on the short-term impacts and answer the question, “What has been produced?” Outputs are more immediate results and are more easily measured since program outputs are usually numbers.

An example of an output is the number of visitors to a program, or the number of persons who attend a training session.

Outcomes address the question, “What impact has been achieved?” Outcomes are the expected results that happen to people and are typically longer term than outputs. Outcomes are changes in skills, attitudes, knowledge, and behavior or other life conditions brought about by a program. Outcome measures can also relate to an organization’s goals and objectives. For instance, increasing the number of computer terminals in the library might produce a long-term outcome of improving staff ability to seek and use information.

Indicators are measurable conditions or behaviors that can be used to determine if an outcome has been achieved. Indicators are observable evidence of accomplishment, gains or changes in condition.

Examples of outputs and indicators for a program are as follows:

- Outcome: Students will demonstrate problem-solving skills.
- Output: 500 students will be trained in Information Literacy training classes over two semesters of the school year.
- Indicator: 100 (number) of the students attending or 20% (percent) of those trained will find a solution to a common information problem with 100% accuracy.

Outcomes state how people will benefit from a program and identify the intended result of the service or program. Section 5 below provides case studies that illustrate the relationship between outputs, outcomes and indicators and show how these elements can be used to shape an evaluation program.

Step 4. Identify the Funding Agencies and Stakeholders

The evaluation plan should identify the main concerns of stakeholders and funders of the proposed program services and activities. When beginning to develop an evaluation plan, the evaluator should make an effort to be aware of what information might be of concern to funding agencies, sponsors, the target audience or legislators. The evaluator should plan evaluation data collection, to the extent possible, to address these concerns and issues.

For example, if the program is to train students to improve information literacy, then the evaluation plan should discuss how the target audience would be informed about evidence that the program helped the target audience become better researchers. Sponsors should be informed that the program lived up to its promise of increasing skills and reducing student drops outs, etc. Leaders will want to know if the program enhanced the stature of the school or the library.

Step 5. Determine the Data Collection Methods, Analysis Techniques and Interval

This section of the evaluation plan should detail how the outcomes will be measured, what data will be collected, when the data will be collected, and how the data will be analyzed. Data collection, data management, and data analysis are critical components of the evaluation process. Appendix C contains a description of a number of data collection techniques.

The selection of the data collection technique must be driven by two key factors. It must be appropriate to the type of data that is sought, and the data collection effort must be consistent with the level of organizational and staff resources available to collect the data. It is also important that data collection methods be planned from the beginning of a project. Often data will need to be collected at the start of the program. These data will then be compared to data collected at the end of the program so that the results can be compared.

Evaluators should not try to measure everything at once. Comprehensive measurement approaches offer breadth but can be difficult to administer. Most institutions do not have unlimited time and resources, so evaluation should be focused on key outcomes.

There are a variety of data collection designs that can be considered. Selection of the data collection design should be matched to the nature of the survey population and the performance measure(s) that are being evaluated. If the population is large, a sample of the population will be necessary. If the population is small, the evaluator may be able to obtain data from most or all of the population being evaluated.

Early on it is important to determine whether quantitative data – the “numbers” – are useful to tell what happens. Quantitative data provides information about what happened. For instance, 60% of the students visiting the library last month used the TLC databases. Numeric data, however, do not supply the reasons or details, and it may be important to supplement this type of data with qualitative information. Data collection methods such as pre- and post-tests and questionnaires supply quantitative data; focus groups and interviews supply qualitative data.

Some forms of data collection methods that can be used include the following:

- *Pre-tests and post-tests*: Useful to determine if a population has learned a skill, adopted a specific practice.
- *Questionnaire surveys*: Useful to ask multiple questions on specific topics such as what is important to the participant or how satisfied a population may be.
- *Interviews*: One-on-one interviews with structured question scripts can be useful to gain information about specific program aspects from smaller populations where the evaluator asks each participant a series of specific questions.
- *Focus groups*: These group interviews are useful for obtaining information from smaller populations. Fewer questions can be asked than in interviews but more diversity of opinion can be captured on a few topics.
- *Observation studies*: Useful to observe behavior, particularly when the subjects may not know how to answer questions about their behavior or where estimates of behavior are likely to be inaccurate.

Another important question to ask when selecting a data collection method is whether other studies or instruments exist that can be adapted to be used to evaluate your program. In many cases there may be a standard evaluation technique that is commonly used for the type of evaluation being considered that can serve as a guide or that might provide comparative data.⁹ For assessing service quality, survey instruments such as LIBQUAL¹⁰ exist that can be adapted, with permission, for local use. The benefit of using existing surveys is that there is often proven reliability and its results can be compared with those obtained from other studies.

The data interval should specify when data are to be collected. For example in the case of an Information Literacy Training Program, data might be collected at specific intervals: after each training session; or only at the end of the program. Data collection activities typically occur at the beginning and at the end of a program so that assessments of changes in condition can be made.

Data analysis activities should discuss who will be involved in the data analysis and how the data will be treated, such as how the data will be examined, categorized and synthesized. The specific data collected

⁹ The Colorado State Library maintains a web site with useful statistical and survey information for comparative purposes.
<http://www.lrs.org>

¹⁰ Herson, Peter and Ellen Altman. *Service Quality in Academic Libraries*. Ablex, 1995. Appendix A. pp. 161-164.

will influence the way the data are to be treated. Large amounts of quantitative data from a comprehensive survey will require computer software and resources, for example. Resources will be needed for data analysis activities such as tabulating of the data, verification activities and statistical analysis, as well as ongoing data management.

Data analysis should focus on the outcomes that were defined for the program. Data analysis should look for recurring themes related to the specified outcomes. Periodically reviewing the data as they accumulate can help to begin to identify trends and themes. Ongoing analysis and review can make the data analysis process less intimidating than waiting until all the data are collected.

An evaluation timeline can serve as a useful tool that lists evaluation project activities and provides a schedule of when evaluation activities are to take place.

Step 6. Writing the Project Evaluation Report.

The project evaluation report should interpret the findings from the evaluation and relate what the evaluation results mean and why they matter. The evaluation report document should contain the following:

- A summary the purpose of the program
- A summary of the inputs and activities
- A description of the targeted audience and its characteristics
- A description of the evaluation method
- A discussion of the outcomes
- A discussion of the program outcomes as they relate to program expectations (goals).

The summary of the output and outcomes or results achieved should discuss the units delivered to the target audience(s) and the results achieved for the target audiences(s). The report should also discuss whether the program met the stated expectations of the program developers, i.e., the goal or the target. The discussion can assess whether the program outcomes met the stated expectations or the degree to which the program exceeded or fell short of expectations with further explanations of why these results were achieved.

Reporting results should take into account the different audiences for the evaluation. Presentation of results on outcomes may vary depending on the interest of sponsors, the target audience or legislators. Since the data needs of these groups were planned in the evaluation plan, the presentation of the data should align with their identified needs and interests.

Reporting on the evaluation results does not have to be limited to the production of a written report. Results from evaluation activities can be shared by making oral presentations using software tools such as Microsoft Power Point™. Other ways of reporting include group discussions, summaries for in-house newsletters, and photographs.

5. Case Studies

This section presents a set of case studies that illustrates how an outcome-based evaluation approach can be applied to specific grant programs. Each of the case studies demonstrates how the evaluation process can match impact/outcome measures with a particular program and with a data collection methodology. The following case studies are intended to illustrate how the components of the IMLS logic model apply to a program or project.

Case Study 1: Knowledge Development Program for Academic Librarians

Purpose: The purpose of this program will be to train academic library reference staff to prepare and execute complex searches of at the Medline database.

Audience: The primary population will be the academic library reference staff. The assumption about this population is that the introduction of statewide access to the Medline database over a short period of time has created a skill gap for academic reference librarians related to searching medical topics.

Users of the academic reference services are the secondary population and are likely to be undergraduate students, graduate students and faculty. The assumption about this population is that increased skills on the part of the reference staff will result in faster and more responsive service and therefore accuracy, responsiveness and timeliness of searches at the reference desk leading to user satisfaction.

Outcome: The measurable result of this project will be that 80% of the reference staff attending will demonstrate that they can search Medline databases.

Data Collection and Interval: Appropriate data collection strategies include pre and post- tests and/or evaluation reports following training by reference staff to report on whether the training achieved a change in their online searching skill levels. Job satisfaction can be assessed through a survey based on already developed survey instruments. Data on user satisfaction could be obtained through an analysis of the library suggestion box system or through conducting a customer service survey such as LIBQUAL to assess customer satisfaction.¹¹

Data will be collected at the end of the training period.

Target: The desired output will be to train at least one reference staff member in each academic library that has access to the Medline database within one year of the implementation of that database in their institution.

Summary of Outcomes and Indicators

Purpose	Outcomes	Output	Indicators
Quantity	Improve staff ability to search Medline databases	Train 500 academic librarians in 20 session in 12 months	Complete the Medline training of at least one librarian in each participating academic library
Use	Increase uses of Medline searches by users.	Perform x number of Medline searches	Increase by 20% the number of Medline searches performed daily by users
Satisfaction	Increase library staff satisfaction with search skills		Increase library staff job satisfaction for 50% of the staff
Satisfaction	Increase user satisfaction with Medline searching		Decrease complaints by users 20% in the next 12 months

¹¹ Appendix C briefly defines data collection methods.

Case Study 2: Collaborative Service Among Academic and Public Libraries

Purpose: The purpose would be to develop a joint local history portal between a public and academic library. The portal would be shared between a public library and academic library in Brown City, Texas, to provide online access to local historical resources of a public library and an academic library for their respective users.

Audience: The primary population would be the local history staff of the Brown City Public Library and the Brown City State University. The assumption about this population is that local history staff needs to acquire additional skills to develop, manage, and use the proposed portal. The users of the local history portal are the secondary population. The assumption about this population is that users will use the portal once they become aware of it and that they will require some assistance in searching the portal.

Outcome: To establish more access for users and to leverage staffing resources through the creation of a collaborative portal.

Data Collection and Interval: Appropriate data collection strategies include web logs and web session statistics. A survey instrument, either web mounted, mailed, or in-house, could assess user awareness and satisfaction with the portal site. Data collected to measure the longer-term outcomes could include statistics gathered over a period of time to determine whether use of the portal increased.

Target: To increase by 10% availability of local dollars available for local history materials through the creation of a portal site through reduced staffing costs.

Summary of Outcomes and Indicators

Purpose	Outcome	Output	Indicator
Use	Increase use of the portal site by library users.	Create a portal site within 12 months.	A 20% increase in the use of the portal site by public library users for research and by academic users for research and educational purposes.
Extensiveness	Increase staff skill in accessing the portal site	Number of user portal searches in a twelve month period	A 10% increase in the number of users of local history who say they are satisfied with service received from the staff.
Efficiency	Decrease in local history costs for both institutions.		A decrease of 20% in the shared program costs for both institutions.
Satisfaction	Increase in user satisfaction with the access to local historical collections and resources.		A 5% increase in the users who say they are more satisfied with local history online access
Efficiency	An increase in donor contributions, budget support from the sponsoring agencies, and increased support by outside funding agencies.		A 20% increase in memberships Friends of the Library memberships. An increase in donated funds of 15% over the next twelve months.

Case Study 3: Knowledge Development Program for K-12 Students

Purpose: The purpose of this program would be to develop training for K-12 school students to improve student ability to assess the quality and reliability of Internet resources.

Outcome: The desired result of this program will be that students who use K-12 libraries will be able to use evaluation tools to assess and differentiate the quality of Internet information sources.

Audience: The primary population will be the students in K-12 schools who perform independent Internet searches to obtain information for school and homework assignments. The assumption about this population is that Internet sources vary widely in quality and that students are unaware of evaluation tools that they could use to improve their ability to distinguish reliable and accurate information from other sources.

Data Collection and Interval: Appropriate data collection strategies include self-reports by students and/or by teachers about evaluation skills. Students could complete self-reports about successful use of TLC databases. Data collection to measure the longer term outcomes could include gathering statistics on use of TLC databases by this population group to assess whether use increased or changed after evaluation skills training. Satisfaction data could be obtained from teachers through the use of surveys, interviews or focus groups. Data collection to assess changes in student grade point averages can be obtained from student self reports or from school records.

Target: An increase of 10% in the students who are able to apply and use evaluation skills to assess the quality of Internet resources for use in school assignments.

Summary of Outcomes and Indicators

Purpose	Outcomes	Output	Indicators
Use	Increase in student literacy skills	Train 500 students in 15 training seminars over an 18 month period	20% of the FTE student body will complete a training tutorial on information literacy such as TILT.
Quality	Improvement in student test taking and grades on papers.		50% of the students who complete the training will demonstrate the ability to apply two evaluation tools to assess Internet information.
Effectiveness	An increase in the number of students who choose to use quality online sources such as the TLC databases as opposed to Internet common search engines such as Google, Yahoo, etc.		A 20% increase in students who use TLC databases.
Satisfaction	An increase in teacher satisfaction with online information sources used by students in school assignments.		10% of teachers will indicate satisfaction with improved student online evaluation skills.

6. Outcome Based Evaluation and TIFB Grants

The preceding sections contained an overview and description of outcome-based evaluation using the IMLS logic model. Section 4 provided illustrations of how measures could be applied to different cases. The challenge of creating an evaluation process for the TIFB grant program is twofold: to adopt outcome-based evaluation and to create an evaluation program that can be readily and consistently used by Texas TIFB grantees to select appropriate impact and outcome measures to assess their grant programs. This section and Appendix D present an approach and tools for librarians to consider in developing appropriate evaluation methodologies and plans for assessment of their TIFB-funded programs and services.

6.1 Applying Outcome-Based Evaluation Methods to TIFB Grant Programs

The approach for applying outcome-based evaluation to the variety of TIFB grant programs require the following steps:

1. Identify the mission of each grant program
2. Define the value and purpose of each program
3. Prescribe measures for each value or purpose
4. Develop indicators for each measure
5. Define data collection requirements, and
6. Train grantees on the outcome-based evaluation process

A successful outcome-based evaluation process must help grantees translate a generalized discussion into the specifics related to their particular library or grant program. In this section outcome-based evaluation is applied to the TIFB grant programs using mission statements, purposes, measures and data types for each grant category. Table 1 below illustrates the type of grant programs and their respective missions.

**Table 1
TIFB Grant Programs Categorized by Mission**

Grant Program	Mission
Collaborative Grant Programs – Existing	Improvement of Statewide Library Connectivity
Connectivity Program – Existing	
Equity Programs – New	
Library Technology Advancement – Existing	Improvement of Individual Libraries
Sustainability – New	
Training – New	Knowledge and Skills Development
Awareness/PR – New	
Discovery Grants – Existing	

The next step in creating a successful outcome-based evaluation program is for a responsible group (e.g., the TIFB Library Working Group) to define and select a number of value/purpose categories for each of the major grant programs. Table 2 presents a first step toward identifying agreed upon purposes/values such as access, capacity, connectivity, effectiveness, efficiency, extensiveness, quality and satisfaction.

Table 2
TIFB Grant Programs Categorized by Purpose

Grant Program	Mission	Value/Purpose
Collaborative Grant Programs – Existing	Improvement of Statewide Library Connectivity	Connectivity
Connectivity Program – Existing		Connectivity
Equity Programs – New		Access
Library Technology Advancement – Existing	Improvement of Individual Libraries	Use Access Capacity
Sustainability – New		Capacity
Training – New	Knowledge and Skill Development	Satisfaction
Awareness/PR – New		Awareness
Discovery Grants – Existing		Effectiveness

Once a set of purpose categories has been agreed upon, more specific output and outcome measures can be defined. The measures may be pre-defined and published as part of the grant application process so that grantees will understand which measures they would be required to use in their grant evaluation proposals.

After measures have been agreed upon, the next step is to define one or more indicators (program measurement tools) that could be used to measure performance.

After the indicators have been defined, a number of appropriate data collection methods are defined that can be used to measure the outputs and outcomes for a certain grant program category. Relating the indicators to the data collection methods removes guesswork or uncertainty on the part of grant applicants and grantees related to the appropriate tools and data collection methods to be used.

Table 3 illustrates the relationship between the value/purpose, output/outcome, indicator and data source for one of the grant categories: Knowledge and Skill Development. Appendix D provides similar tables of information for other TIFB grant categories.

Table 3
Relationship between Mission, Purpose, Outcome/Output and Data Types for Knowledge and Skill Development Grant Program

Value/Purpose	Output/outcome	Indicator	Data Type – Source
Effectiveness	More staff effectiveness in evaluating Internet resources	# and % of staff trained in evaluating Internet sources; Increase in # and % of correct answers to incorrect answers	Pre-and post-test of staff skills; Staff questionnaire; User questionnaire; Observational study
Effectiveness Extensiveness	Users increase skills in using specific TexShare databases	# and % of users trained on TexShare databases	Library use statistics; User pre- and post-test; User satisfaction questionnaire on online skills assessment; Session logs;
Effectiveness	Increase staff access to training sessions about electronic services	# and % of staff attending training	Staff surveys
Effectiveness	Increase in staff skills after training session attendance	# and % of staff indicating an increase in skills	Comparison of scores between pre- and post-tests; Satisfaction of staff with skills on evaluation form
Awareness	More public use of the library's legal, consumer and financial Internet resources	# and % of users who receive Internet training on consumer, legal and financial sites	Library use statistics; User survey

The final step in creating an outcome-based evaluation program is to develop an evaluation training process. Through a systematic training program, TIFB grantees will learn how to select a set of defined measures and how to select and collect data appropriate to the results and benefits they intend to measure.

7. Summary: How Outcome Based Evaluation Can Benefit Libraries

An important reason for conducting evaluations is to assist an individual library's planning process. By specifying the services that are to be provided and spelling out the way that the effect of these services will be measured, evaluation can be used as a management tool to help local libraries not only assess their performance but also to set priorities and allocate resources. Evaluation feedback can improve the questions and strategies formulated in a planning process. The planning process, in turn, then can drive the key issue areas to be monitored through performance measurement.

By learning and using evaluation techniques, libraries can help generate information that will improve programs. It can help libraries shape and define data collection methods, and it can yield data that can help to identify issues that might not otherwise have been identified without an evaluation process.

The key benefits to libraries that accrue from systematic evaluation programs are:

Improved planning. When library service and program outputs and outcomes are coupled with realistic measurement indicators, the library can maximize the utility of its overall services planning as a management tool.

Visibility. Demonstrating accountability and documenting results for funding agencies and stakeholders through the use of library outcomes data can help improve confidence in the program and raise the visibility and quality of library service.

Investment guidance. By comparing and measuring both the costs and benefits associated with particular programs or activities, libraries can improve their perspective on which programs and activities are the best investment of their resources.

Appendix A: Glossary

Access. A measure of the availability of online resources, TexShare databases or equipment associated with enabling libraries and users to view and use online information sources either at their home institutions or from other remote locations.

Capacity. A measure of inputs to an organization such, as the number of Internet workstations owned or speed of Internet workstations.

Effectiveness. Effectiveness measures describe the extent to which the intended goals or organizational objectives are being met.

Efficiency. Efficiency measures typically describe cost-effectiveness measures --the relationship between the resources used to the services provided. For instance, an efficiency measurement is the ratio of program dollars spent to administrative dollars spent; or the amount of value produced in relation to the amount of resource consumed.

Extensiveness. This measure defines the breadth of the program. It describes the extent of coverage of a program or service.

Inputs: These are the resources dedicated to a program or consumed by a program. They may be staff, money, materials, collections, etc.

Indicators. Evidence, facts, or data used to represent the work of a library and its progress toward specific performance objectives. Indicators should be specific, observable and measurable.

Logic model: "A clear, graphic representation of the links between program activities and the results these activities will produce." (*IMLS Managing for Results*)

Outcome-based evaluation. A systematic method of assessing the extent to which a program has achieved its intended results. Determining the outcomes of a program answers this question: "What are the program's effects or consequences?" An example would be learning that library technology upgrades had a positive impact on students' test scores. If an increase in the test scores can be demonstrated to result from the upgraded equipment this would be an "outcome."

Outcomes. Outcomes are long-term effects of programs and are distinguished from outputs, which are more immediate and more easily measured. Outcome measures are tied to the goals and objectives of the organization. Intermediate outcome measures typically can be changes in skills, attitudes, knowledge, and behavior or other life conditions brought about by a program. Long-term outcomes typically address significant changes to an organization and/or its clients.

Outcomes logic model: An evaluation plan that discusses the processes and the outcomes of a program. The plan clarifies each of the program elements and discusses the indicators that are to be used to measure change. The outcomes logic model also identifies the intended audience (target) for the program impact.

Outputs: These are the results produced by a program and are usually capable of being stated as a number. For instance the number of visitors to a program, the number of programs offered, etc.

Performance measurement. A set of measures that can be used to evaluate how a program or service performs. These tools can be used to chart progress toward stated goals and gauge the results of library activities.

Program description. A set of resources and activities with one or more common goals.

Program evaluation. The process of determining and assessing the results (outputs/outcomes) of program activities through the accumulation of valid, reliable, and applicable information about programs, processes, outcomes, and outputs to enable more effective decisions for program improvement.

Qualitative data. This type of evaluative data is information in a narrative or anecdotal form typically collected from focus group sessions, individual interviews, round-table discussions, and open-ended survey responses.

Quantitative data. Data points that are expressed as a number, a statistic or in some quantity.

Quality. Quality is a multi-dimensional measure. Service quality is usually considered to involve dimensions such as reliability and responsiveness of service, courtesy, empathy, and competence.

Satisfaction: Satisfaction is a measurable element in evaluation to determine whether services the library offers meet needs and expectations.

Use. Typically expressed in numbers, this is measure of the utilization of a particular resource, program, or service by a user group or target audience.

Appendix B: Worksheets for Preparing an Evaluation Plan

The worksheets contained in this appendix are associated with the six steps in developing an evaluation plan discussed in Section 3. The worksheets included are:

- Worksheet about the Purpose of the Evaluation (Step 1)
- Worksheet to Identify the Population to be Served (Step 2)
- Worksheet to Identify the Intended Results (Step 3)
- Worksheet to Identify Funding Agencies and Stakeholders (Step 4)
- Worksheet to Determine the Data Collection Method (Step 5)
- Worksheet for Writing the Project Evaluation Report (Step 6)

These worksheets can be modified and adapted by libraries as appropriate.

Step 1. Worksheet about the Purpose of the Evaluation

What is the program purpose?

What is the nature of change produced by the program?

How will the measurement process increase the library's value to its users?

Why is the program element to be evaluated? Is it to assess immediate impact or to identify long-term improvement?

Step 2. Worksheet to Identify the Population to be Served

Identify each population to be served.

Target Population to be served:	Notes/Description
Assumptions about the needs of the target population	Notes/Description

Step 3. Worksheet to Identify the Intended Results

First select the short-term impacts to be evaluated such as efficiency, satisfaction or use, then, add the indicators; next, decide on the long-term outcomes measures to be evaluated.

(What immediate impact will the program have?)	
<u>Impact</u>	<u>Indicators</u>
(What long-term effects will the program have?)	
<u>Outcomes</u>	<u>Indicators</u>

Select from among the indicators (performance measurement tools) to be used in the evaluation.

Indicator	Description
Quality	How well the result is produced or performed
Quantity	How much or many of the results are produced or performed
Cost	At what expense is the result produced or performed

Step 4. Worksheet to Identify Funding Agencies and Stakeholders

Identify the entities that should be informed about the results of your program(s).

Name of Funding Agency or Stakeholder: _____

Name of Funding Agency or Stakeholder: _____

Name of Funding Agency or Stakeholder: _____

Step 5. Worksheet to Determine the Data Collection Method

Where will the data be collected?

Who will collect the data?

When will the data collection activities be performed?

Before program

During program

Immediately after program

What will be the timetable for the data collection to begin?

When should collection end?

What data collection method will be used? Do the data already exist?

Surveys	Existing	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
Interviews	Existing	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
Observations	Existing	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
Case studies	Existing	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
Tests	Existing	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
Individual Interviews	Existing	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
Use Statistics	Existing	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No

Other

Will instruments be pilot tested? How?

Step 6. Worksheet for Writing the Project Evaluation Report

What was the program intended to accomplish?

Program Purpose

We do what (summary of the key proposed services):

For whom (target population)

For what outcome(s) (benefits/changes in skill, knowledge, attitude, behavior, condition, status):

Organizational Mission (which element(s) of your mission does the proposed program match?):

What was the program method?

Program Services (delivered to participants):

Program Stakeholders (key entities that help define the program, or to whom the program will report results):

Target Population(s) (specific, clearly defined categories or characteristics of primary intended participants):

What is the program's immediate impact?

Intended Impact (changes in skill, knowledge, attitude)

What are the anticipated outcomes for long-term change?

Intended Outcomes (changes in skill, knowledge, attitude)

How is the desired change measured to show that the desired change has occurred?

Indicators (Measures) for each outcome

Outcome Measure

What method will be used to gather information?

Data Source(s)

At what points and how often will information be collected?

Data Interval(s)

Appendix C: Data Collection Methods

Focus Groups: A group, usually composed of up to 12 people, who, with a moderator, discuss a series of topics or questions for approximately one and one half hours. Program participants, students, trainees or those participating in a program could be interviewed in a group meeting where the topic focus would be on whether the program achieved what it intended and other information about the participants experiences and outcomes.

Pre- and Post-Test Evaluation: This type of evaluation is typically used to assess a change in knowledge or skill level after a student or participant has completed a program or course of study. The pre-test is a test given before instruction to measure existing levels of proficiency. A post-test is a test given at the end of instruction to determine the extent to which the learner has achieved instructional objectives. The method is to administer the same or test (pre and post) to participants at the start of a program and at the end of a program. The objective is to measure whether learning has taken place.

Surveys: There are many surveys in existence that can be adopted or adapted for use to evaluate a participate program. A customer satisfaction survey is used to evaluate user satisfaction. A LIBQUAL survey might be administered to assess customer satisfaction. A copy of the LIBQUAL customer satisfaction survey tailored for library use can be found in the Hernon/Altman publication on *Service Quality in Academic Libraries*.¹²

Self- Assessment: Participants in programs could be asked to write about what skills they acquired or what they learned from attending a program. The self-assessment might ask about the acquisition of certain skills and their ability to apply these skills in a setting.

Transactional Log Analysis: Log analysis can be performed by examining the log files from a specific electronic database or from the library's home page log files. Data that can be collected include amount of time spent visiting a page or site, number of screens viewed, number of mouse clicks used to reach a particular screen, etc.

¹² Hernon, Peter and Ellen Altman. *Service Quality in Academic Libraries*. Ablex, 1995. Appendix A. pp. 161-164.

Appendix D: Suggested Impact/Output Measures by TIFB Grant Program Type

The following tables were developed to illustrate each of the TIFB grant categories with examples of outputs, outcomes, indicators and types of data sources.

Statewide Library Connectivity Improvement Grants

Value	Output/Outcome	Indicator	Data Type – Source
Efficiency	Increase user access to library resources statewide through collaborative partnerships	# and % of users with access to resources outside of their home libraries.	Dollars spent by individual libraries in comparison with dollars spent if resources purchased by individual institutions; # and percent of libraries in collaborative partnerships
Efficiency	Decrease in the cost to individual libraries for access to online resources	# and percent of libraries with access to online resources	Budget figures for costs for individual subscriptions to online resources versus statewide contract costs
Efficiency	Additional workstations purchased and provided in schools	# and % of workstations available per student FTE; # and % of workstations as compared to 1 year ago	Library surveys
Extensiveness	Increase in the number of Texas population served by with medical and legal online resources	# and % of Texas users who access online medical and legal online resources	Library in house surveys; Database logs
Use	Increase in the number of TexShare electronic use sessions statewide by Spanish speaking population	# and % of Spanish speaking persons accessing online services; # and % of Spanish speaking users satisfaction with online access	Spanish language in house library surveys; User surveys; Focus groups
Use	Improvement in the extent of TexShare electronic use sessions in given subject areas	# and % of user access in given subject areas as compared to all sessions	Session logs; Library statistics on use;
Connectivity	Assess resource sharing performance		Number and percent of libraries participating in formal resource sharing programs
Connectivity	Assess local network participation		Number and percent of libraries participating in local or regional community networks

Statewide Library Connectivity Improvement Grants (continued)

Value	Output/Outcome	Indicator	Data Type – Source
Access	Improve access to remote online resource use	Percent of libraries statewide that provide information in electronic formats (CD-ROM, OPAC, Internet) to remote library users	Library statistics; Library surveys
Access	Provide more access to online workstations for students in K-12 schools	Average number of minutes students wait for access to online workstations	Observation studies User studies
Access	Increases extent to which users statewide have electronic access to library catalogs	# and % of libraries providing users with electronic access to their catalogs	Library user surveys Library surveys
Access	Increase extent to which users statewide have access to electronic library catalogs beside their own libraries of other libraries	Percent of libraries providing other libraries with electronic access to their catalog Average number of external catalogs accessed electronically from a library	Library statistics
Access	Increase the extent of school library media center Internet access	Percent of Texas students (K-12) served by a school library media center with Internet connectivity	Library statistics
Access	Teachers with access to electronic resources		Number and percent of total teachers served

Individual Library Impact Grants

Value/Purpose	Output/Outcome	Indicator	Data Type - Source
Use	Increase use of an electronic service	The number of user online access hours	Database logs; User surveys
Use	Use of an electronic service	Percent of reference questions answered using electronic resources as compared to print sources	Library statistics; Database logs
Use	Increase in extent of TexShare use	Increase by 10% the ratio of TexShare users to all online and print users.	Library statistics; Observation studies by library staff;
Quality	Increase ability of user to search electronic databases without staff assistance	Increase the percent of users who report successfully conducting searches	User self-assessments
Efficiency	Increase the number of reserve requests generated by users from their homes	Increase percent of reserve requests received in the library as compared to those receive remotely from users	Integrated library system reports Library surveys
Efficiency/cost	Increase the number of electronic workstation hours available per member of the service population.	Increase by 10% the number of electronic workstations in school library media centers in twelve months	Library statistical report
Satisfaction	Greater use of rural library users with online resources	# and % of rural library users who say they are satisfied with use of online resources Ratio of rural users satisfied with online resources to those using print resources	Library user surveys Satisfaction surveys
Awareness Use	Public awareness of remote access to online resources	# and % of remote accesses to online resources as compared to total uses of online resources. Number and percent of users as compared to one year ago	User surveys Session logs

Individual Library Impact Grants (continued)

Value/Purpose	Output/Outcome	Indicator	Data Type - Source
Extensiveness	Establishing or enhancing electronic linkages among or between libraries.	# and % of member libraries with connectivity to online resources	Library surveys
Extensiveness	Number of public access Internet workstations per capita in public libraries		Ratio of Internet workstations to public library user population
Extensiveness	Improvement in the number of public access Internet workstations available for users in academic libraries	# and % of users who indicate satisfaction with Internet access availability Ratio of Internet workstations to students in academic institutions	User satisfaction survey Ratio of Internet workstations to FTE students in academic institutions
Extensiveness	Increase in the user access to Internet workstations in school library media centers	# and % of students expressing satisfaction with access to workstations.	Ratio of Internet workstations to students in schools

Appendix E: Selected Resources

Childers, Thomas and Nancy Van House. *What's Good? Describing Your Public Library's Effectiveness*. American Library Association, 1993.

Hernon, Peter. *Assessing Service Quality*. American Library Association, 1998.

Hernon, Peter and Robert E. Dugan. *Action Plan for Outcomes Assessment in Your Library*. 2002.

Institute of Museum and Library Services. *Frequently Asked OBE Questions*.
<http://www.ims.gov/grants/current/crnt_outcomes.htm>

Institute of Museum and Library Services. *Perspectives on Outcome- Based Evaluation for Libraries and Museums*
<<http://www.ims.gov/pubs/pdf/pubobe.pdf>>

Institute of Museum and Library Services. *Showing the Difference We Make: Outcome Evaluation in Libraries and Museums*
<http://www.ims.gov/grants/current/crnt_obe.htm>

Mark, Melvin and Gary Henry, et. al. *Evaluation: An Integrated Framework for Understanding, Guiding, and Improving Public and Nonprofit Policies and Programs*. Jossey-Bass, 2000.

McClure, Charles, and John Carlo Bertot. *Evaluating Networked Information Services*. Asis&T, 2001.

Menou, Michel J. *Measuring the Impact of Information on Development*. IDRC, 1993.

National Assembly of State Arts Agencies. *A State Arts Agency Performance Measurement Toolkit*. National Assembly of State Arts Agencies. Washington, D. C. n.d.

Texas STaR Chart: A Tool for Planning and Assessing School Technology and Readiness, Texas Education Agency. Educational Technology Advisory Committee (ETAC).
<<http://www.tea.state.tx.us/technology/etac/txstar>>