pants have made this suggestion.

The Diversity Quilt not only allows individual differences to coexist in one unified piece, but it also represents different realities. Carl Rogers (1980) wrote that, "there are as many realities as there are persons" (p. 105). If we can accept this idea, then perhaps we can recognize that realities consist of idiosyncratic perceptions, and those perceptions are intimately connected to our cultural underpinnings. This internalized approach may facilitate a willingness to accept, rather than attempt to eliminate, our inevitable differences. The Quilt provides an opportunity to acknowledge, embrace, and learn about differences and to let those differences exist unchallenged in their own right.

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The a-e-I-o-u Approach to Program Evaluation

Mari Kemis & David A. Walker, Iowa State University

The evaluation of projects or programs provides faculty, practitioners, or other audiences with a deeper understanding of project goals, objectives, activities, and results, as well as its uses in the decision making process by providing an understanding of what has or has not been successful and why. Further, evaluation can help identify what should be changed in continuing projects and may point out strengths that could contribute to the success of future projects (Rossi, Freeman, & Lipsey, 1999; Wolf, 1990; Worthen & Sanders, 1987).

Focusing an evaluation study is fundamental to developing an evaluation plan and providing a framework to understand what is to be evaluated, what is to be learned, what evaluation information is needed, and what criteria will be used to make judgments about worth and merit (Kemis & Lively, 1997; Worthen & Sanders, 1987). Regardless of the evaluation's theoretical orientation or the process used to determine key evaluation questions, it is essential to use a method of organizing the questions that produces a comprehensive evaluation plan.

The a-e-I-o-u evaluation approach is a framework for organizing key evaluation questions and allows for many models of evaluation and/or methods of data collection to be used. It was developed cooperatively between the Research Institute for Studies in Education (RISE) at Iowa State University and the Virginia Polytechnic Institute and State University (see Kemis & Lively, 1997 and Sorenson & Sweeney, 1996 for additional descriptions of specific applications of the a-e-I-o-u approach). Within the a-e-I-o-u approach, evaluation questions are organized into five areas: (a)accountability, (e)ffectiveness, (I)mport, (o)rganizational factors, and (u)anticipated outcomes. Questions related to accountability and effectiveness, and most importantly those related to impact (thus, the capital I), are salient because they are significant in determining the success of a project or program. Questions related to organizational
factors and unanticipated outcomes provide additional evaluative information about context and help to explain project impact.

Evaluation questions provide the basis for developing a plan and conducting a comprehensive evaluation. They determine what information will be required and which sources will provide that information, the costs for both personnel and resources, and the reporting and use of information produced by the evaluation.

Defining the a-e-l-o-u Evaluation Approach
The following defines the a-e-l-o-u approach to organizing evaluation questions and gives examples of appropriate evaluation questions in each of the five areas. Using a simplified representation of the a-e-l-o-u approach as an illustration, the evaluation questions posed here center on evaluating a single activity within a larger project.

Accountability: Did the project do what it said it was going to do?
Accountability focuses on determining whether activities related to the goals and objectives of the project were completed. There is no judgment of the value of the activity within accountability, only whether it occurred and was completed. For example, if one of the activities was a conference, questions related to accountability might include:
1. Was the conference held?
2. Who attended?
3. What was the conference agenda?

Given these questions, the types of information needed might include dates, times, and location of the conference; the number of participants and demographic information about them; and a listing and/or summary of conference activities. Accountability information is often available in existing project records such as registration materials. A survey might also be used to collect information from participants.

Effectiveness: How well did the activities meet the objectives of the project?
Effectiveness addresses how well objectives were accomplished and focuses on attitudes, opinions, and knowledge. Continuing with the conference example, questions related to effectiveness might include:
1. What were participants’ reactions to the conference activities?
2. How applicable or useful will be/were the conference activities in the participants’ classrooms with students?
3. How satisfied were participants with conference activities?

Participants’ reactions and opinions provide information related to effectiveness. Data could be collected from the participants by survey or focus group.

Impact: What changes have occurred as a result of the project?
Impact focuses on identifying and assessing changes that result from project activities. These changes are generally tied to the stated outcomes. Impact questions are often designed to identify changes in the attitudes or behavior of individuals, groups, or systems. If the conference in the previous examples addressed innovative teaching, questions related to impact might include:
1. What new teaching methods have you tried as a result of the conference?
2. Has your use of new teaching methods resulted in increased student learning?
3. What changes have you made in the curriculum?
4. What changes in policy have occurred?

Descriptions or observations of actions or changes would answer these questions. Sources could be participants, project personnel, and/or the participants’ students or clients. Methods of data collection could include follow-up surveys, focus groups, and observations. Often, baseline data and follow-up data are required in order to make comparisons to determine change.

Organizational Factors: What structures, policies, or events helped or hindered the project in accomplishing its goals?
Questions related to organizational factors focus
on identifying contextual factors, policies, or events that contribute to or detract from achieving goals and objectives. Example questions may include:

1. What helped to achieve project goals and objectives?
2. What made it difficult to achieve project goals and objectives?

Data are often collected through interviews of key personnel, focus groups comprised of those most affected by the project, or document analysis.

**Unanticipated Outcomes: What happened that you did not plan or expect?**

Sometimes, things happen or change occurs as a result of the project that were not planned or anticipated. This component examines those unplanned positive or negative changes. Useful methods of collecting data for this component are focus groups, interviews, informal communication, and observations.

**Using the a-e-l-o-u Worksheet to Develop an Evaluation Plan**

As a guide to organizing the evaluation questions and developing a plan for conducting an evaluation, we suggest using a worksheet to detail information related to the evaluation questions in each of the five areas of the a-e-l-o-u approach. It is beneficial to complete this worksheet during the early stages of the project, refer to it as data are being planned and collected, and revise it as project activities and evaluation results suggest. The worksheet provides a valuable resource throughout the project for collecting and reporting evaluation data.

First, determine the key evaluation questions for each of the five areas. Specific evaluation questions should relate to the goals, objectives, and activities of the project. Second, identify the type of information needed, appropriate sources of that information, methods of collecting the data, and a time line for collecting the data. Finally, note that the type of information is *what* information will answer the question. The data source is *who* will provide the information. The method of collecting data identifies *how* the information will be collected, and the timing of the data collection tells *when*.

Continuing with the conference illustration, Figure 1 examines a specific evaluation question pertaining to the effectiveness of the conference. Also, the inclusion of additional information to the worksheet, such as costs, who has responsibility for the development of the survey, and who will collect, analyze, and report the data, may be beneficial.

**Reaction by Users of a-e-l-o-u**

The a-e-l-o-u evaluation approach has application in a variety of evaluation situations. This approach has been used successfully to plan, organize, and conduct evaluations of programs and projects in higher education, K-12 education, and business settings. Faculty, administrators, and practitioners who have used the a-e-l-o-u evaluation approach have indicated that it provides a practical way to organize evaluation questions and collect appropriate data.

In a recent evaluation of Iowa State University’s Vision 2020 project, we asked approximately 40 mini-grant recipients to develop an evaluation plan, collect evaluation information about their mini-grant, and report the findings using the a-e-l-o-u approach as the framework. Because these mini-grant recipients had little past experience conducting formal evaluations, it was important that they had an evaluation method that was easy to understand and use, as well as one that would provide a consistent format for information across the mini-grant projects. One mini-grant recipient had this to say about the a-e-l-o-u approach:

> The a-e-l-o-u evaluation model provides a simple approach to collecting and presenting our experiences in workforce preparation programming. In sharing our evaluation findings, we have discovered that clients, funding agencies, administration, and co-workers easily follow this model.

Another mini-grant recipient wrote:

> I have appreciated following the a-e-l-o-u model primarily because it helps me organize and manage the evaluation pro-
process. It helps me plan ahead as to timing of needed data collection, insuring that evaluation begins at the start of the project and not the end. Each of the five parts forces me to think in more detail than I normally would in developing an evaluation plan.

Conclusion
With a framework that is easy to understand and use, the a-e-I-o-u approach takes into account the five critical components of an evaluation: (a)ccountability, (e)ffectiveness, (I)mpace, (o)rganizational factors, and (u)nanticipated outcomes. This evaluative approach affords it users a detailed plan that describes the type of information needed, who will provide that information, the methods for collecting the information, when it will be collected and reported, and the flexibility to revise evaluations as indicated by changes in project activities. Finally, reactions to the a-e-I-o-u approach indicate that its propensity to focus on what is important to know and its capacity to provide clear evidence of success are key to users, such as faculty or practitioners, who direct programs or projects and want to engage in the process of evaluation.

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FIGURE 1.
Example Question Evaluating the Effectiveness of a Conference

<table>
<thead>
<tr>
<th>Evaluation Question</th>
<th>Type of Information</th>
<th>Source of Information</th>
<th>Method of Collecting Information</th>
<th>Timing of Data Collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effectiveness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q. How applicable or useful will be/were the conference activities in the participants' classrooms with students?</td>
<td>Participant opinions about conference activities. Anecdotal examples of how the information was used or applied in a classroom setting.</td>
<td>Participants</td>
<td>Survey</td>
<td>At the end of the conference's activities. Follow-up with conference participants in three months to check on applicability and use.</td>
</tr>
</tbody>
</table>

PLANNING WORKSHEET. Evaluation Plan for