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ABSTRACT

Groups from two Michigan-based science education projects, funded through the Kellogg Foundation Science Education Initiative, used networking conferences with cluster evaluation processes for their program assessment format. Cluster evaluation is categorized as a type of naturalistic evaluation, and it includes negotiated common cluster outcomes, collaborative data collection and analysis procedures, regular networking conferences, technical assistance to individual projects, and cooperative derivation and dissemination of findings. Networking conferences (NC) are special gatherings held semi-annually of project directors, evaluators, other key project staff, foundation staff, invited guests, and cluster evaluators. The Science Education Initiative aims to improve science teaching and learning with a long-term goal of improving the scientific literacy of Michigan citizens. The specific purposes of the cluster evaluation networking conferences included the following: (1) conduct strategic planning for, exchange ideas about, provide direction to discuss issues and problems emerging from, and review and analyze data and findings of the cluster evaluation; (2) share lessons learned with other projects; (3) learn about current and developing issues in science education and science curriculum, instruction, and assessment topics directly pertinent to projects; (4) formally and informally share science education curriculum materials and instructional strategies; and (5) visit project sites. (Contains nine references.) (JB)

The Power of Cluster Evaluation Networking Conferences

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Abstract - The Power of Cluster Evaluation Networking Conferences

This paper describes the importance of networking conferences in the cluster evaluation process of two groups of Michigan-based science education projects funded through the W. K. Kellogg Foundation Science Education Initiative. The overall goal of the Science Education Initiative is to improve science teaching and learning, with a long-term goal of improving the scientific literacy of Michigan citizens.

Five specific purposes of cluster evaluation networking conferences are (1) conduct strategic planning for, exchange ideas about, provide direction to, discuss issues and problems emerging from, and review and analyze data and findings of the cluster evaluation; (2) share lessons learned with other projects; (3) learn about current and developing issues in science education and science curriculum, instruction, and assessment topics directly pertinent to projects; (4) formally and informally share science education curriculum materials and instructional strategies; and (5) visit project sites.

A summary of nine fundamental propositions of the power of networking conferences are provided.

THE POWER OF CLUSTER EVALUATION NETWORKING CONFERENCES

This paper describes the importance of networking conferences in the cluster evaluation process of two groups of Michigan-based science education projects funded through the W. K. Kellogg Foundation Science Education Initiative. Networking conferences are an invaluable strategy for planning, exchanging ideas about, and discussing issues and problems emerging from cluster evaluation; learning about current and developing issues in science education; sharing curriculum materials, instruments, strategies, and project experiences; and improving the knowledge and skills of cluster project staff.

CLUSTER EVALUATION

Networking conference is one fundamental component of cluster evaluation. "Cluster evaluation provides a framework for addressing important evaluation questions related to outcomes, context, and implementation" (Barley & Jenness, 1993a). The purposes of the cluster evaluation are 1) to strengthen individual projects and 2) to assess the impact of the selected groups of projects and, thus, strengthen Foundation programs and policy making. The overall goal of the Science Education Initiative is to improve science teaching and learning, with a long-term goal of improving the scientific literacy of Michigan citizens.

Cluster evaluation can be categorized as a type of naturalistic evaluation. It includes five fundamental elements: 1) negotiated common cluster outcomes, 2) collaborative data collection and analysis procedures, 3) regular networking conferences, 4) technical assistance to individual projects, and 5) cooperative derivation and dissemination of findings (Jenness and Barley, 1992a). Communication among stakeholders (funders, project staff, science educators, and the community) is an essential part of cluster evaluation. Project staff receive technical assistance based on their needs. "Cluster evaluation meets this need by providing a skilled, credible evaluator to work with a cluster of projects to assure that useful and defensible information is obtained" (Barley & Jenness, 1993b).

NETWORKING CONFERENCES

Cluster evaluation networking conferences (NC) are special gatherings held semi-annually of project directors, evaluators, other key project staff, foundation staff, invited guests, and cluster evaluators to share successes, problem-solve, discuss issues, and further individual project and cluster-level evaluation efforts. Specifically, purposes for networking conferences are to "1) conduct strategic planning for, exchange ideas about, provide direction to, discuss issues and problems emerging from, and review and analyze data and findings of the cluster evaluation; 2) share lessons learned with other projects; 3) learn about current and developing issues in science education and science curriculum, instruction, and assessment topics directly pertinent to projects; 4) formally and informally share science education curriculum materials and instructional strategies; and 5) visit project sites" (Jenness and Barley, 1992b, p. 10 Jenness, Barley, & Pearl, 1993).

NC's are one and one-half to two days in length, held at hotel and conference facilities at different Michigan sites near home bases of one or more projects. Each project is represented by one to four people, with "host" projects inviting additional project staff and supporters. Project participants receive preconference notebooks with an agenda and other organizational information. Project participants also receive assignments to prepare for working sessions.

NC topics emerge from needs identified by project directors, cluster evaluators, and Foundation staff. Additionally, state, regional, and national issues in science and general education, evaluation, and leadership development are incorporated into conference agendas. Cluster evaluation, as represented by NC's, are "constructivist in orientation with the evaluation being constructed out of the shared visions, values, and directions of the cluster group" (Barley & Jenness, 1993a).

NC implementation is characterized by group activities related to the conference topics. In this stage, conference participants work and discuss the assignments previously mailed with the conference booklet. Group activities are attempted to "promote the exchange of ideas and experiences among project staff, and build a network among the projects" (Rubino, 1993).

Specific activities formats include all-group discussion sessions, small group work, poster sessions, individual project presentations, roundtable discussions, and one-on-one consultation.

One fundamental element of the NCs is the site visit to one or more of the cluster projects. The site visit is facilitated by project staff, who discuss the development of the project, provide opportunities to tour facilities, and answer questions about the project. This activity allows participants to learn about details of project goals and objectives, equipment, project bottlenecks and solutions, experiences, and the day-to-day operation. In addition, the site visit involves all project stakeholders (teachers, staff, students, etc), allowing dialog with a variety of project staff, participants, and different audiences and learn about each one's perspective.

After the conference, participants complete a conference evaluation survey, the compilation of which becomes part of the networking conference report. The networking conference report also includes a summary of activities, decisions, and the work of small group sessions, along with supplementary materials, articles, and recent information about science education. Supplementary selection materials is based on issues treated in the conference. Thus, this report is not only a post-conference evaluation report but a source of information about evaluation and science education. "It fulfills a formative function by providing useful materials to project staff and conference participants"(Rubino, 1993). This characteristic of NC can be related to the learning function pointed out by Guba and Lincoln (1989) in their naturalistic approach to evaluation.

In summary, networking conferences offer an opportunity to

1) bring together participants to build their evaluation knowledge and skills;

2) allow sharing of issues and knowledge of science education;

3) promote awareness of other ideas and concepts;

4) develop connections among project staff, foundation staff, and cluster evaluators;

5) provide access to and information about new resources;

6) maximize interaction with regional, state, or national experts.

NETWORKING CONFERENCES AND LOCAL PROJECTS

Networking conferences respond to several project needs: (1) need to increase their effectiveness in solving problems and dealing with science education issues, (2) need to build and sustain relationships and interactions with other schools and projects, (3) need to learn about new developments and obtaining new knowledge about science education, (4) need to compare and determine the efficiency of implementation procedures related to common outcomes, (5) need to acquire the capacity to self-evaluate practices and activities, and (6) need to share commonalities that allow projects progress toward intended state and national goals and objectives for science education.

Networking conferences are very important in increasing the effectiveness of staff in local schools. In many cases, projects facing similar problems learn successful practices from other projects. In these cases the projects do not have to begin from "scratch" but can adapt approaches already successful. NCs, then provide opportunities for participants to learn about ways to increase the effectiveness and efficiency of their programs. In addition, there is transference of experiences from one project to another, providing extra meaning to project staff work.

NCs are also important in building and sustaining relationships and interactions among schools from different locales. Exchange of ideas can be a catalyst for change leading to project improvement. The more complex the change needed, the more interaction is required (Fullan, 1991). Relationships and interactions are built around sharing of materials, curriculum ideas, content knowledge, and science education methodologies. Project staff attending NC's learn about new ways to approach science education and instruction. Teachers from one project have become models for teachers from other projects. Project staff exchange materials, ideas, and innovations in curriculum and classroom instruction. In addition, participants update previous knowledge.

NCs provide opportunities to collect new ideas and information for future implementations. Although projects are each unique, they also have many similarities which provide the

common ground for applying ideas from one to another project. The particularities also provide a framework for seeing how certain approaches can be more successful than others.

NCs are a place to disseminate and share knowledge based on practice. Combining practice-based knowledge with research-based knowledge from the literature, creates a strong foundation for developing new approaches and/or maintaining the energy of project activities. Additionally, project staff can become "multipliers" of information by sharing their own experiences with others.

Another key issue related to NCs is the internalization of evaluation as a continuous process whose goal is to maintain, and/or to improve current project practices, activities, and initiatives. NCs are conducted by a team of evaluators who share and communicate that evaluation 1) is primarily a formative process; 2) should involve all stakeholders; 3) can be used to maintain, improve, or change implementation strategies; and 4) is an integral part of any educational activity. Consequently, evaluation activities conducted in the NCs are intended to help project reflect on their own programs and the impact of the cluster. It is not unusual for project staff participating in NCs to learn to make effective use of evaluative data to improve their own programs. They understand that strengths and weaknesses are more important as benchmarks to continue, maintain an approach, or to change a practice than characterizing them as success or failure. They get the idea that evaluation is for making things better.

NCs are one forum in the cluster evaluation process intended to build evaluation skills and develop evaluation capacity of projects and project staff. NCs are also the setting where common cluster outcomes are negotiated, a key exercise of cluster evaluation. These outcomes provide a significant part of the framework for the evaluation of the cluster of projects, and "represent to the projects the intended impact of the cluster" (Barley, 1991). NC's provide an opportunity for group and one-on-one dialogue.

POWER OF NETWORKING CONFERENCES

The power of networking conferences can be summarized in nine fundamental propositions.

Networking conferences:

- Constitute an effective forum to discuss successes and problems faced by each project. Each project learns they are not alone--others face similar obstacles in reforming science education.

- Help stakeholders to internalize evaluation as a continuous process and not just an end of project activity.

- Promote the application of ideas and knowledge gained by project staff in the workshops and activities presented, a transference to individual project activities.

- Provide uninterrupted time for staff to reflect on the strengths and limitations of their projects.

- Provide procedures/guidelines for collaboratively developing a set of common cluster outcomes.

- Provide feedback to Foundation staff and cluster evaluators in a face-to-face setting.

- Provide the opportunity for sharing new knowledge about science education and its evaluation (i.e., project staff learn from each other). Facilitate opportunities to interact with state and national-level science education experts.

- Highlight the importance of individual projects as well as the cluster of projects.

- Serve to disseminate information about new trends and issues in science education.

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