CICE Hiroshima University, *Journal of International Cooperation in Education*, Vol.9, No.1, (2006) pp.89 ～ 105

Process Considerations in Evaluating Educational Cooperation Projects

Yuriko Minamoto
Independent Consultant
Masafumi Nagao
Center for the Study of International Cooperation in Education, Hiroshima University

Abstract

This paper reviews how process considerations have been treated in evaluation of educational cooperation projects. Although for a long time educational assistance has not been put to a close evaluation scrutiny owing to its 'essentiality' and inherent complexities, the spread of the Results-Based Management in donor countries is changing this, demanding donor agencies to account more strictly for education outcome and delivery, as in any other sectors. At the same time a growing force of local ownership discourse and spreading practice of sector-wide approaches is shedding increasing light on the importance of building technical and institutional capacities so that sustainability of the project's impact is assured beyond the termination of the project. This new concern has generated an impetus for participatory and interactive forms of evaluation. As a promising example pointing to this trend, the paper introduces a mathematics and science education project of a South African provincial department of education, supported by the Japan International Cooperation Agency and a local university, in which formative monitoring has been employed as a tool of project management.

Introduction

In recent years, the concept of Results-Based Management (RBM) has increasingly come to the fore in the field of development assistance. This has occurred in the context of public-sector reforms in donor countries resulting from constraints such as deteriorating public finances and unfavorable economic circumstances (DAC 2000). Since each country's aid institutions are administrative entities that make up part of the apparatus of government, they have inevitably been subjected to the same reforming scrutiny. In addition, there has been external pressure. Questions have been raised about why the anticipated results have not materialized despite years of ongoing aid (Netherlands Ministry of Foreign Affairs 2003). The phenomenon of "aid fatigue" has also set in (Morita 2003). The movement to adopt RBM is not limited to the bilateral aid agencies of the Development Assistance Committee (DAC) member nations. It has also been evident since the mid-1990s among multilateral aid agencies such as the World Bank and the UNDP. RBM has become the prevailing trend in development aid evaluation, and clear responsibility and accountability to the citizens of aid

donor countries are now regarded as essential.

With RBM, the focus is on evaluating the results of interventions in terms especially of outcomes and impact (Binnendijk 2001). However, it is not sufficient just to establish clear numerical objectives at the outset and measure to what degree they are attained. RBM should also encompass improved performance management practice, including implementation of outcome-focused evaluation procedures (Owen 2006). As part of the latter, the entity delivering the program should monitor and account for the process of program delivery to demonstrate if it is implemented as planned and, more importantly, if the project is on the intended trajectory to generate the desired outcome. These developments have shed a new light on the role of process evaluation in aid project going beyond the conventional notion that it is a 'natural complement' to impact evaluation (Sheirer 1996).

Process considerations assume particular importance in evaluation of education sector projects because of the inherent difficulties involved in assessing these projects, such as long lead time, multiple and sometimes changing objectives, and multi-faceted approaches employed (Psacharopoulos 1995). Education projects must also cope in their implementation process with varied contextual complexities stemming from socio-cultural, economic and political backgrounds. Here, simply transferring and applying the practices of the developed world 'as is' would not work. Aid intervention to be effective should embody adaptive flexibility and problem-solving character. And accordingly process focus would acquire greater importance in evaluating the projects.

It should also be kept in mind that there is apparent asymmetry of interest in aid evaluation between donors and recipients (Nagao 2001; Garaway 2003). Whereas donors have a tendency to target tangible short-term results from aid efforts implemented over a limited time span, aid recipient countries are more interested in the long-term investment effects and developmental impact. Against the background of the development of the 'partnership' discourse emphasizing the 'ownership' of the development process by the developing countries started by the New Development Aid Strategy of DAC countries (DAC 1996), the latter is definitely gaining in influence (King 2004) and evaluation of aid is becoming increasingly aligned to the development policy framework of the aid recipient countries (Miyoshi 2003). The ownership focus in development aid projects leads first of all to participatory trends in evaluation of such projects. It should also render much importance to the process of how the effect is created and how it is internalized by the recipient country organizations and their personnel as compared to how significant the effect is per se. Thus, questions may be posed such as: 'Are the technical and human capacities being created so that the beneficiary population will be able to continue to receive the service?', 'Are the institutional mechanisms being shaped so that the effect or the intervention may become sustainable?', 'Is an adequate monitoring system to capture the capacity build-up process being developed?'

The purpose of the present paper is to examine how process considerations may receive a useful focus in development assistance evaluation by tracing the evolutionary thinking on evaluation of education projects. The paper draws on the examples from the education

cooperation projects carried out by the Japan International Cooperation Agency (JICA). In the following, first, process focus in conventional evaluation of educational cooperation projects is reviewed in reference to the evaluation practice of JICA. This will be followed by a discussion of the impact of the ownership discourse on evaluation of aid projects, in particular the participatory trend in such evaluation. Process focus receives even greater emphasis when evaluation and monitoring function in a given project is used as an instrument of project management. This will be illustrated by a JICA education project in South Africa in which formative monitoring is used as an instrument of the project. The final section summarizes and considers the implications of the evolving thinking on process focus in evaluation of education cooperation projects.

Process Focus in Conventional Evaluation of Aid Projects

The process focus in conventional evaluation of aid projects stems largely from the interest of the donor to monitor project delivery. Indeed for many years monitoring and verification of the generation of output has been the extent of donor countries' evaluation concern about aid projects (Bamberger 2000). However, as noted earlier, the RBM concern is forcing aid agencies to take a more careful look at the project implementation process. This effectively means that key functions of process evaluation, which may be summarized as 'identification of program components', 'measuring of project implementation' and 'assessing of influences on variability of implementation' at the terminal evaluation stage, need to be taken into account along the path of project evolution from the design and planning stage, through the delivery stage and to the terminal evaluation stage (Sheirer 1996).

To take, for example, JICA, a Japanese government agency for technical cooperation, it regularly conducts internal evaluations and routinely monitors the implementation process of the projects it carries out. There is a strong belief in the organization that a strong implementation concern as regards the strategies and processes elaborated for the individual projects should lead to effective development. This thinking is clearly expressed in a technical guideline document the organization has compiled, entitled "Practical Methods for Project Evaluation" (JICA 2004a). The document defines monitoring as a key function of the project managers for managing the objectives set out in the initial plan and for reviewing the activities and outputs in view of various changes that occur in the project implementation process. In JICA, at the beginning of each project, a project plan summary is constructed using the logical framework concept, called Project Design Matrix (PDM), and monitoring is conducted in respect of its principal components, such as inputs, activities, outputs, performance trajectory in relation to project objectives and need for adjustments. However, since such monitoring takes place as an activity internal to the project, its results usually do not reach the evaluation department of the organization. The use of its results, including whether or not they actually lead to fine tuning of the project, depends on the disposition of the particular manager charged with the project.

Within JICA, a more serious look at the project implementation process is given at the

end of the project term – as part of the 'terminal' evaluation which is usually carried out 6 months before the end of the project.[1] The terminal evaluation is also internally conducted and is regarded as an extension of the project's monitoring activity. However, this time, the organization's accountability is at stake. Thus, the guideline document mentioned above explains in some detail how to go about accounting for the implementation process, including a suggestion that, if the results of the monitoring are 'not sufficient', additional data need to be collected retroactively. In Figure 1, JICA's viewpoints for this exercise are spelled out.

It should be noted here that JICA's intention is to trace (or to be more accurate, re-trace) the project process. Its purpose is not necessarily to set up specific criteria for process evaluation but rather to generate information and elucidate grounds (i.e., promoting and impeding factors) for applying JICA's Five Evaluation Criteria (relevance, effectiveness, efficiency, impact, sustainability) to the project outcome. As such, the process is not being *evaluated*, but *traced and reviewed* to assist outcome evaluation.

Figure 1: JICA's Viewpoints for Tracing the Implementation Process

Activity Inspection

- Is the activity proceeding smoothly? Are there any factors impeding the activity?
- Are there activities which are not being adequately implemented? If so, why?
- Is input of the project adequate to continue the activity?

Relationship to Target Groups

- Are the goals of the project consistent with the needs of the target group?
- Is the activity process inducing appropriate effectiveness-raising changes in the attitude and behavior of the target group?
- Is there a high level of community participation and awareness of the project content in the target group organizations or communities?
- Is there a high level of satisfaction and usage among the target group of the services or initiatives provided by the project?

Project Management

- Are there any problems with the project staff's work style or awareness?
- Is the sense of identity of the project staff being respected?
- Is there communication between experts and counterparts?
- Is there adequate project monitoring and mid-course correction?
- Are JICA's departments and overseas offices providing appropriate responses and advice regarding efforts at mid-course correction through monitoring?

Overall Perspective

- What are the important factors and key matters in raising the effectiveness of the project?

[1] In the case of projects with a 5-year term, a mid-term review is conducted in a somewhat similar fashion as the terminal evaluation, though usually with less rigor.

How is this "implementation process tracing" carried out in the actual project context? Figure 2 shows elaboration of different aspects for the examination of the implementation process at the terminal review of two teacher training projects.[2] They can be broadly divided into four categories. First is tracing of problem areas that emerged during activities by means of comparisons of activity progress status with initial plans. This evaluates whether or not the project proceeded as planned. Second is tracing the functioning of the project management system, by looking at changes made to the logical framework, the relevance of the monitoring system, responses to changes in external conditions, etc. Third is the aspect of changes in the awareness of the people involved. It traces changes in communication between Japanese experts and their counterparts, building of the relationship of trust, degree of interest of project beneficiaries, and so on. Finally, fourth is the matter of looking at the quality of technology transfer and related activities. This aspect addresses the relevance of the knowledge dissemination system and the technical cooperation process.

As can be seen from Figure 2, there is no uniformity in the way the project implementation process is represented at the terminal evaluation stage. For that matter there is not necessarily agreement among the JICA staff about the reason for tracing of the implementation process at the terminal evaluation stage apart from the information value it may have for the subsequent five-criteria evaluation of the projects. In other words, in spite of the guidance provided in the technical guidebook, the actual evaluation practice does not seem to reflect the emphasis the process focus should receive.

Local Ownership of Education Projects and Participatory Trends in Evaluation

If the process focus in conventional evaluation of education aid projects remains less pronounced than what the donor agencies' strong implementation concern purports it to be, there has been a massive and much broader change taking place in the area of educational cooperation, which has cast a new light on the process of aid project implementation and its evaluation. Against the background of spreading sector-wide approaches and direct financial support to national education budgets by the donor agencies, there has emerged a strong policy concern among the developing countries for local ownership of education projects and the national capacity for ensuring that the impact of the projects become sustainable. This has raised two major evaluation issues. One concerns the questioning of the policy commitment and financial sustainability of the global- and national-level efforts for

[2] The two issues addressed in primary and secondary education were: "School attendance promotion for primary and secondary education" focusing on quantitative expansion of educational services and "Quality improvement in primary and secondary education" targeting teaching methodology, curriculum and textbook content, etc. JICA cooperation in the field of basic education in the 1990s focused on technical cooperation projects, dispatch of experts to improve math and science education, sending of Japan Overseas Cooperation Volunteers as teachers, and grant aid cooperation to construct primary and secondary schools. In the latter half of the 1990s development studies and development partnerships began to be carried out. Among these, project-type technical cooperation included 12 projects to improve the quality of primary and secondary education by training math and science teachers.

Figure 2. Aspects of the Implementation Process Examined at the Terminal Evaluation of Two Teacher Training Projects

Aspects of Implementation Process	Project A: Strengthening of Mathematics and Science in Secondary School Education (SMASSE) in Kenya	Project B: Improvement of Educational Achievement in Science, Technology and Mathematics in Basic Education (STM) in Ghana
Activity Progress Status	Comparison to initial plan What problems have arisen during activities and how were they dealt with?	—
Monitoring Status	Development of monitoring tools and relevance of monitoring results PDM changes Changes in external conditions (status of management funds control, status of cooperation with district boards of education, degree of establishment of counterparts, degree of establishment of key trainers in pilot districts)	PDM (Project Design matrix) changes
Project Management System	—	Appropriateness of project management system for multiple stakeholders
Communication among project-related personnel	Was communication between Japanese experts and their counterparts good? Building personal rapport When problems arose, how were they resolved?	Personal rapport between experts and counterparts Collaborative problem solving Level of ownership taken by counterparts
Technology transfer achievement level	Achievement level of technology transfer to counterparts Areas of effectiveness and areas needing improvement Innovations that emerged during implementation	Relevance and extent of achievement of the technology transfer process
Target country ownership	Establishment of ownership in Ministry of Education and implementing institutions	Stance of management staff affiliated with central implementing institutions
Relations with beneficiaries (teachers, students)	Changes in the relations to and d egree of interest in the project by beneficiaries Changes in participation rates	Awareness of and feedback about project activities from beneficiaries

Source: -JICA (2002) *"Kenya Chutorikakyoiku Kyokakeikaku Shuryojihyokahoukokusyo"* (Post Evaluation Report of the Strengthening of Mathematics and Science in Secondary Education Project in the Republic of Kenya).
-JICA(2004b)"*Ghana Shyochugakkorisukakyoiku Kaizenkeikaku Purojekuto Shuryojihyokahoukokukai Siryo*" (Post Evaluation Report of the Improvement of Educational Achievement in Science and Mathematics in Basic Education in the Republic of Ghana).

educational development and cooperation, especially for Education for All (Nagao 2003; King 1998, 2004).[3] In the microscopic context of individual products, these conditions are usually determined in the political domain away from the projects. The other concerns assessment of the technical and institutional sustainability of project impacts, which focuses squarely on the project process and its influence on the creation of local capacity. It is this aspect that needs to be examined here.

In the effort to effectively carry out fixed term external aid interventions and to fulfill the accountability function relative to the tax payers, "sustainability" is increasingly becoming a key concern of the donor agencies, as well. An intervention approach is needed that includes the creation of a mechanism that ensures that the results are firmly cemented and widely disseminated and that both institutional and technical conditions are established in the aid recipient country. The central focus of such efforts should be placed on capacity building, supporting the steps which the recipient country should take to develop its own problem-solving capability under the stimulus of the influx of new knowledge and technology and through adoption and adaptation of institutional practices patterned after those of the donor country. Japan's development experience since the beginning of its modernization in the middle of the 19th century is firmly based on this approach, which, in turn, is reflected in its technical cooperation to developing countries (Sawamura 2002).

JICA holds up the capacity development concept as emblematic of technical cooperation work, insisting on a process for developing 'capacity' (problem-solving capabilities) that empowers individuals, organizations, systems and society, individually and collectively, to perform their roles, solve problems, and establish and achieve objectives. In the area of primary and secondary education, this concept was elaborated through a comparative evaluation study of 12 technical cooperation projects carried out in different Asian and African countries with JICA support (JICA 2004c). The study was not so much focused on the outcome of these projects but, rather, on the implementation process, especially how the intervention process was organized and executed, and with what kind of impact. The study found the following elements to be particularly important in terms of contribution to local capacity-building:

(1) Building a logical framework in which needs analysis is taken into account at the planning and design stage
(2) Selection and implementation of means of dissemination taking into account the characteristics of cascade or cluster methods
(3) Strengthening links between institutions involved inside and outside the project
(4) Handling of policy and systems support for the project
(5) Project revision via project monitoring and evaluation

These elements serve as lessons for future projects in this area. Above all, they may be

[3] The April 2004 issue of this journal featured a 'Special Issue' section on "International Education Cooperation: Towards Greater Autonomy or Dependency in Sub-Saharan Africa", with Dr. Kenneth King as a Guest Editor and carrying some papers addressing this aspect of sustainability (King 2004).

regarded as key process indicators for planning purposes. They not only relate to capacity building in a narrow technical sense, such as provision of expert teaching techniques to their counterparts, but also to efforts to enhance more general problem-solving capacity in an institutional and project management sense. One manifestation of this effort is how to implant within the recipient country's own national context what Japan has learned through its own national experience. It should constitute a process in which the country adapts the experience to create its own way of solving problems. The whole process emphasizes looking at whether sustainable activities on a regional and national scale are being established, how activities increase the commitment and ownership of the participants vis-à-vis the project, and whether recipient country personnel are taking leadership in activities[4]. In other words, what should be asked is how the project is organized and managed from the point of view of creating technical and institutional conditions to contribute to generation of sustainable effects.

It is significant that the JICA study identified the project revision through monitoring and evaluation as an important contributing factor for sustainability. When combined with the increasing orientation towards greater local ownership of the projects, this points to participatory trends in evaluation. Participatory evaluation means that stakeholders are involved in evaluation, so the evaluation framework reflects the interests and concerns of the people involved. Accordingly, it can explain changes in awareness on the part of people involved about the activities that are taking place in the implementation process. In evaluating the intervention process, much of the qualitative aspect regarding the consciousness and behavioral change of the parties involved is to be examined. Working from a process of gaining agreement of the people involved about proxy indicators and evaluation criteria, it is possible to elicit 'highly plausible' evaluation results. Consequently, contributing factors to sustainability can be evaluated from the viewpoint of people involved in the initiative, including primary beneficiaries. By applying participatory evaluation approach, it may be possible to deepen the understanding of the people involved concerning the evaluation targets, which could constitute a learning process for the people involved about the project itself. It may also be expected to increase the extent to which evaluation results are utilized, thereby contributing to enhancement of the project's impact.

In participatory evaluation, there are various theories and methodologies with respect to the purpose of evaluation and the degree of stakeholders' contribution to the evaluation work (Cousins & Whitmore 1998). A comprehensive representation of different alternatives is provided by Owen's notion (or form) of interactive evaluation, whose key characteristic is that "those with a direct vested interest in programmatic interventions ... should also

[4] A major characteristic of cooperation like this is the effort, through capacity development, to incorporate within the cooperation framework ways of disseminating the development effects to the broader society, beyond the target group, after the cooperation has ended. In other words, there is a greater demand for cooperation based on the perspective of "sustainability" in evaluation. Until now "dissemination" activities were typically seen as the responsibility of the aid recipient country, but now for the sake of capacity building there is a call for cooperation efforts that build mechanisms and systems which allow for dissemination. (JICA 2004b)

control the evaluation of these interventions" (Owen 2006, p.44). The principal focus of interactive evaluation is project delivery, especially its improvement. According to Owen, it may take different approaches, such as 'responsive evaluation', involving the documentation of program delivery and articulation of stakeholders' values and interests, 'action research', focusing on the learning to be gained from trial of innovative schemes, 'developmental evaluation', geared to continuous improvement on the basis of collaborative work between evaluators and program deliverers, and 'empowerment evaluation', designed to facilitate the control of the program by the stakeholders, including the direct beneficiaries, through their engagement in the development and evaluation of the program itself.

In the conventional development aid project evaluation, there usually is an unequal two-tier structure that differentiates the evaluating side and the evaluated side, that is, the aid provider and the aid recipient. When introducing participatory or interactive evaluation approaches, both sides must have a shared definition and understanding about performing an evaluation that emphasizes dialogue on an equal footing. On that basis, a project can be designed to incorporate evaluation into its implementation process so as to raise both evaluation capabilities and the consciousness of the concerned parties with respect to that process. Here the role of evaluators differs from that of conventional evaluators, who perform judgment based on evaluation techniques. Instead the techniques required here are those which enhance collaboration with, or cede leadership to, the people involved with respect to the work of evaluation. A significant feature of this approach is that the evaluation process promotes the 'buy-in' of the stakeholders, assuring the utilization of the evaluation results (Patton, 1997). Adoption of this approach, however, calls for facilitation capability, interpersonal communication skills, negotiating techniques, and so on. In addition, because it is important to make evaluation an integral part of the project, evaluators must often act as trainers or technical advisors (Weiss1998).

Enhancement of Sustainability through Process-focused Evaluation

The practice of process-focused evaluation could lead to greater sustainability of the project's impact. There are four ways to ensure this.[5] First, the people who will participate in the evaluation should be selected at the same time the project is launched, in order to integrate the evaluation function into the project implementation process itself. With aid intervention processes, the objective is to implement the project effectively so as to ensure sustainability and capacity building among stakeholders. Establishing a relationship between project implementers and beneficiaries is desirable. If the aid donor also becomes involved as a stakeholder, knowledge and experience that can be applied to analogous projects can be accumulated through reflection of how interventions should proceed. Furthermore, specialists in evaluation techniques, including participatory evaluation methodologies, could be assigned

[5] The following discussion is based on the many evaluations conducted by one of the authors on technical cooperation projects in the human and educational service areas.

to projects on an ongoing basis to collaborate with the people involved in order to build an evaluation system that can handle design, data collection and analysis, and reporting. In contrast to conventional evaluations, participatory evaluation requires time for those who will take part to have dialogue and negotiations, receive training as well as reach consensus. In order for evaluation activities to be implemented smoothly, it is essential to establish trust among those involved and understand the social context in which the evaluation will occur.

Secondly, in the process of examining the evaluation questions for the aid intervention process, there needs to be an effort to unearth information about the process that does not appear in the logical framework. Japanese aid agencies, among many others, use a logical framework as the basis for the project agenda. This takes the form of a matrix, in which information about the intervention process is recorded. But it has limitations, since certain activities that do not render themselves to readily identifiable causal relations, such as heightened consciousness on the part of those involved and changes in their behavior, are difficult to enter into the matrix. Naturally, the most appropriate evaluation criteria for apprehending an aid intervention process differ among projects with varying qualities and activity content. So a step to highlight dimensions of aid intervention approach specific to the project is essential.

Thirdly, with respect to evaluation design, evaluation questions and evaluation indicators that reflect the interest in and awareness of the intervention process on the part of people involved should be examined. In evaluations of such aid intervention processes, it is difficult to establish numerical targets and benchmarks in advance at the project design stage, thus there are limits to quantitative approaches using normative questions with numerical targets. According to Patton, the role of evaluators in development evaluation that supports the development of individuals and organizations is to promote a series of discussions related to evaluation, addressing evaluation questions, data collection, data interpretation, etc., and also to encourage decision making based on data (Patton 1997).

Finally, it is important to note that the people involved should collectively interpret the collected data. “Interpretation” means adding context to data to give it meaning. The interpretive process looks at what the data means and why the survey results are what they are, so the contribution of the people involved to it is fundamental. An interpretation which reflects the ideas of the people involved can be expected to contribute to the subsequent meaningful application of the results and strengthening of initiatives and organizations.

Use of Formative Monitoring As a Tool of Project Development: An Illustration

As explained earlier, the interactive form of evaluation may involve different approaches and different patterns of relations between evaluator and project deliverer. A particular combination of approach and pattern is selected or made to evolve in accordance with the particular contextual factors. The variability of the latter can not be under-estimated in the case of educational assistance projects because of the complexities inherent in the education development process, variability of motives behind the project between the donor and the

recipient and the impact of the partnership-ownership discourse. It is perhaps not an overstatement to say that each such project should require an innovative solution for the project to exist. In this section, an illustrative case of such a project is presented in order to point to one promising direction for the process focus in evaluation – one that incorporates elements of empowerment evaluation. The example is drawn from a secondary mathematics and science teacher retraining project in South Africa in which one of the authors has participated as a member of the JICA team.

The Mpumalanga Secondary Science Initiative (Mpumalanga Dept. of Education 1999; Nagao 2004a) is a project of the Mpumalanga Department of Education in South Africa to improve the quality of mathematics & science (hereafter to be referred to 'M & S') teaching in classrooms in the province's 540 secondary schools (Please see the project outline in Figure 3). The Department proposed to do this by retraining its M & S teachers. The retraining was needed not only to compensate for whatever gaps and deficiencies that existed in their instructional capacity owing to the training shortfall dating back to apartheid times , but also to facilitate the introduction of a major curriculum reform which was based on an ambitious outcome-based approach. The retraining has been done with the collaborative support of JICA and the University of Pretoria (UP) by applying a cascade model of training. and aiming at establishing of a system of school-based in-service training for M and S teachers.

MSSI had several distinct characteristics. It tried to combine different teacher training concerns into a single in-service training program. It targeted all the secondary schools and all the M & S teachers in the Province, rather than employing a pilot approach. It aimed at establishing a system of in-service training by which teachers would come together once a month at their own schools to engage in peer collaboration exercise for improving lesson plans and teaching methods in M & S. It sought to utilize technical inputs from both foreign (i.e., JICA) and domestic (i.e., University of Pretoria) sources. This last was by necessity.

Figure 3. Main Elements of the MSSI Project

- Goal: Improved M & S understanding of secondary students
- Aim: 1. Improvement M & S teaching via teacher retraining
  2. Development of a Province-wide system of School-based in-service training (INSET)
- Duration: Phase 1 Nov. 1999 ~ March 2003
  Phase 2 April 2003 ~ March 2006
- Partners: Mpumalanga Dept of Education / JICA / University of Pretoria (UP)
- Target population: M & S teachers in all (540) secondary schools

- Characteristic approaches:
  1. Retraining for teacher capacity improvement and curriculum reform
  2. Cascade model of training targeted at school-based INSET
  3. Promotion of Peer Teacher Learning as a project instrument
  4. Individual teacher incentives through UP accreditation scheme
  5. Extensive use of monitoring and evaluation as a tool of project development

Although Japan did possess a lot of accumulated knowledge and experience in M & S education, JICA's experience in providing M & S education assistance was still limited – only since the mid 1990's, so it could not claim to be an accomplished service provider (Nagao 2004b). Besides, for JICA, this was the first major cooperation engagement in South Africa, and its knowledge base about education in the target country was no more than a few hastily conducted studies. For these reasons the department had some skepticism about the utility of Japanese technical assistance. [6] The University of Pretoria could serve as a local 'guide-cum-interpreter'; JICA's presence, on the other hand, could help lessen the historical tension that could have existed between the university and the department.

All these facets of the project were worked out in a tentative manner in the initial process of planning and elaborated in the process of project implementation. One of the authors of this paper, who participated from the initial conception of this project as the leader of the JICA team with an evaluation function, contributed to the adoption of this evolutionary approach. The principal considerations which underlined this approach were the following:

1. The project holder was the department and the project was to be implemented as part of the regular program of the department. Key decisions were to be taken by a Steering Committee established within the department, but the project operation was to be managed by a Coordinating Committee consisting of the representatives from the three partners.
2. The project emphasized learning by all three partners. In order to mobilize the Japanese M & S education experience as inputs of the project, the department's teacher trainers were sent to Japan, accompanied by a UP instructor, to learn and develop learning materials to be used in the cascade system of training. The JICA team members, who helped in this process through sharing of their knowledge and experience, visited Mpumalanga for short durations (at the time of training workshops) in order to learn by observation how the Japanese inputs could be better presented. UP and the Japanese team members who were mostly university professors conducted joint studies in order to improve the training methods and materials.
3. The project identified the Japanese teachers' practice of 'lesson study', which is a 'learning by sharing' exercise by fellow teachers for improving lesson plans and teaching methods, as relevant, and the Mpumalanga teacher trainers adopted it as the project's training instrument, giving it a new name of 'Peer Teacher Learning' (MSSI 2001).
4. The project adopted 'group reflection' as a daily routine whenever MSSI activities took place, taking after the Japanese practice of reflection for continuous improvement.

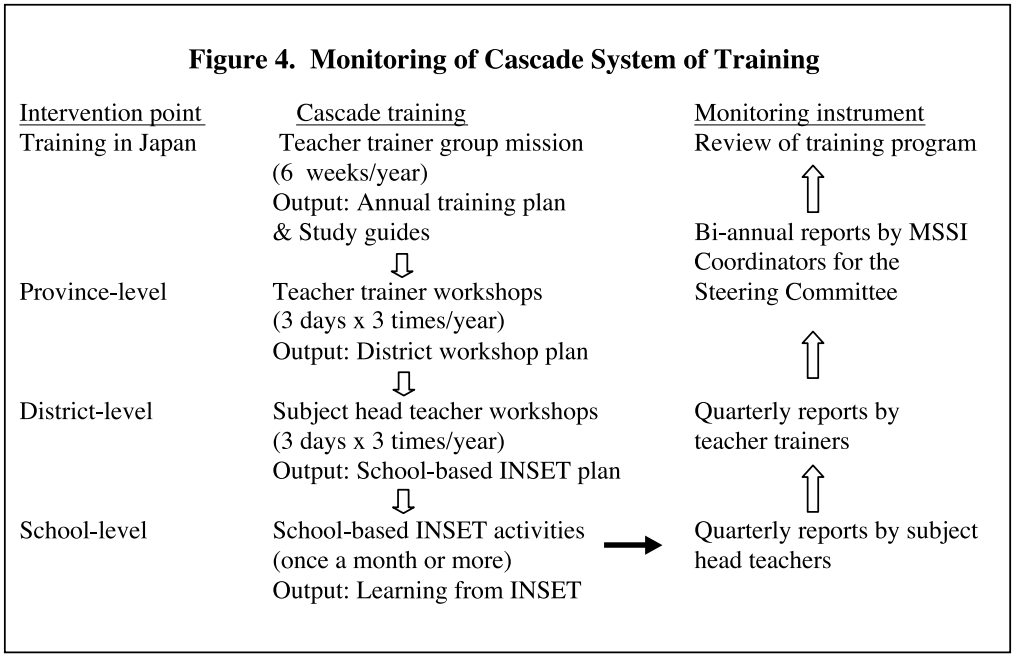
Given this evolutionary approach, the partners agreed from the beginning that systematic monitoring of the project activities would be essential for the success of the project. As the

[6] Based on personal communication in October 2005 to one of the authors from the Mpumalanga Department of Education official who was in charge of negotiating the technical cooperation agreement with JICA.

project's objective was to establish a system of school-based INSET, this monitoring function was to be built around capturing what went on at the province's schools in terms of INSET activities. As shown in Figure 4, the project's intervention was organized as a cascade chain of training activities – starting with (i) a study-cum-training mission to Japan for a teacher trainer group, who prepared an annual training plan and study guides on the basis of material development work, (ii) a province-level workshop for all the teacher trainers to share what the Japan mission group prepared, the result of which was District-level workshop plans, (iii) District-level workshops for M & S subject head teachers from the participating schools, and (iv) school-based INSET activities (e.g., once a month) organized by the subject head teachers. The interventions at the Provincial and District level, as well as training in Japan, were generally well accounted for. The key monitoring activity consisted of capturing the INSET activities which went on at each school. Each time the M & S subject head teacher organized an INSET activity at his/her school, he/she was to write a half-a-page account of the activity using a standard format (i.e., date, place, topic, presenter's name, activity content, resources/materials used/assessment of the session quality) generated by the coordinators' team. At the end of each quarter the subject head teacher collate all the session accounts and prepares a quarterly report. This report is presented by the principal of respective schools in a joint periodic review exercise organized on the first day of each District-level workshop. These reports from the schools are collated and compiled into a quarterly District-level report by the teacher trainers concerned and sent to the MSSI secretariat, which will prepare a status report twice a year for submission to the Steering Committee.

For secondary school M & S teachers in the Mpumalanga Province, MSSI represented

Figure 4. Monitoring of Cascade System of Training



the first systematic INSET and the notion of school-based training was something unheard of. So the cascade system of training did not work as was planned. Monitoring based on self-assessment of school-based INSET took even longer to be adopted by schools. The following quote from a memo prepared by one of the authors 2 and a half years after the initiation of the project provides a glimpse of how the monitoring system was evolving:[7]

> The MSSI project has by now reached all the Districts, and out of the 232 schools covered in the reports for the latest period of March-May 2002, 130 schools (56%) have reported having carried out some M & S INSET activities in their schools. The total number of INSET carried out amounted to 370 activities/sessions, which works out to an average frequency per school of 0.8 times for the three-month period. If only the schools reporting INSET activities are counted (15%), the average frequency is 2.8 times per school, which would amount to nearly 'monthly' INSET activity undertaken.

The over-all functioning of monitoring system was far from satisfactory. Yet in about 15% of the schools which picked up the INSET practice, the combination of self- assessment of INSET conducted by each school's M & S subject head teachers and the joint periodic review with the participation of the principals worked to give this monitoring a formative character. At the joint periodic review comments were made on positive and negative features of INSET conducted on a particular topic or using a cascaded teaching module and suggestions were exchanged for tackling the problems schools faced in organizing INSET sessions. Formative character was to be enhanced in two ways. One was by way of encouraging the visits of teacher trainers to schools to guide and advise the INSET sessions. The other was by promoting the sharing of information among schools concerning the 'quality' INSET sessions held at particular schools, for example, using an improvised experiment or inviting a UP instructor for provision of in-depth knowledge associated with a particular topic.

The whole scheme worked in the image of Patton's collaborative evaluation practice with its emphasis on a group approach (Patton 1982). Although the formal, systemic construction of the monitoring system was slow, the adoption of group practice, such as peer teacher learning and group reflection, apparently took roots much sooner. MSSI project internalized monitoring and continuous reflection in its project process and, thereby, helped foster empowerment of both the officials and organization of the department (Fetterman 2000). Thus, the internal system of formal monitoring was accepted by all the key stakeholders as the shared project instrument. There remained the question of validation associated with the internal character of the monitoring system of MSSI. Given still the rudimentary state of development of the whole system, a broad-based external evaluation was conducted in the third year of the project by a South African evaluator, whose conclusion read, in part, as follows:

[7] Based on a project memorandum prepared by M. Nagao (2002).

> The evaluation has found that the MSSI has achieved significant results over three years. Its approaches and methods provide many lessons for future INSET activities. It has some remarkable and unique strengths which must be explored in greater detail. It has been successful in ensuring that the elements of a school-based INSET system is in place. Improvements can now be made towards the achievement of the desired outcomes and impact. Continuation into a second phase is strongly supported by the evaluation results. (Ofir 2002)

Conclusion

The process considerations in evaluation of education cooperation projects have received changing focus reflecting the changing concerns of aid donors and recipients. For a long time, education has been regarded as an essential investment beyond the economic cost and benefit calculus, so that it would be sufficient for the policy makers to account only for the investment process in terms of input and output indicators. In more recent years, however, the spreading practice of Results-Based Management has necessitated a more strict accountability to donor agencies for aid in all sectors, including education, in respect to project outcome and delivery. The process focus in this context seems to be essentially for explanation of the extent of outcome achievement.

Since the late 1990s the ownership discourse has been gaining ground, with the increasing adoption of sector wide approaches and pooling of donor funds in the national budgets of the aid-receiving developing countries. The developing countries are claiming more and more to occupy the driver's seat for development initiatives. This trend has raised a new policy concern for sustainability of aid project impacts and need for local capacity building. Whereas political commitment and financial sustainability issues are decided in the political domain often beyond the reach of project personnel and stakeholders, the technical and institutional sustainability issues are receiving increasing attention as genuine project concerns and object of evaluation nearer to the project site. Aid project implementation is receiving a renewed attention with increasing adoption of participatory or interactive forms of evaluation. A project with an objective to build an in-service training system for teachers could employ a formative monitoring as a project instrument, making the process almost as an end in itself, as was a case of JICA's teacher retraining project in South Africa.

References

Bamberger, M. (2000). The Evaluation of International Development Programs: A View from the Front. *American Journal of Evaluation*, 21 (1), 95-102.

Binnedijk, A. (2001). *Results Based Management in the Development Co-operation Agencies: A review of experience*. Paris: Organization for Economic Cooperation and Development.

Cousin, J. B. & Whitmore, E. (1998). Framing Participatory Evaluation, *Understanding and*

Practicing Participatory Evaluation, New Direction for Evaluation (pp.5-23). Jossey Bass, San Francisco: American Evaluation Association.

DAC (1996). Shaping the 21st Century: The Contribution of Development Cooperation. In DAC, *Development Cooperation 1996 Report* (pp.12-28). Paris: OECD.

DAC (2000). *Results Based Management in the Development Co-operation Agencies: A Review of Experience, Executive Summary*, Working Party on Aid Evaluation. Paris: OECD.

Fetterman, D. (2000). Steps of Empowerment Evaluation: From California to Cape Town. In Stufflebeam, Daniel L. et. al. (Eds.) *Evaluation Models: Viewpoints on Educational and Human Services Evaluation*, 2nd Edition (pp.395-408). Boston: Kluwer Academic Publishers.

Garaway, G. (2003). Evaluating Educational Programs and Projcets in the Third World. In Kellaghan, T. & Stufflebeam, D. L (Eds.) *International Handbook of Educational Evaluation* (pp.701-720). Dordrecht: Kluwer Academic Publishers.

Japan International Cooperation Agency (Nov. 2002). *Kenya Chutourikakyoiku Kyokakeikaku Shuryojihyokahoukokusyo* (Post Evaluation Report of the Strengthening of Mathematics and Science in Secondary Education Project in the Republic of Kenya), JICA.

Japan International Cooperation Agency (2004a). Purojekuto Hyoka no Jittusentekisyuhou (Practical Methods of Project Evaluation), JICA.

Japan International Cooperation Agency (2004b). *Ghana Shouchyukakkorisukakyoiku Kaizenkeikaku purojekuto Shuryojihyokahoukokukai Siryo* (Post Evaluation Paper of the Improvement of Educational Achievement in Science and Mathematics in Basic Education in the Republic of Ghana), JICA.

Japan International Cooperation Agency (2004c). *Hyokakekka no Sougoubunseki 'Shochutoukyoiku/Risukabunya' Saishyuhoukokusyo* (Summary of "Synthesis Study on Evaluation": Mathematics and Science/Basic Education" final report), JICA.

King, K. (1998). New Challenges to International Development Cooperation in Education. *Journal of International Cooperation in Education*, 1 (1), 3-16.

King, K. (2004). The External Agenda of Educational Reform: A challenge to Educational Self-Relaiance and Dependency in Sub-Saharan Africa. *Journal of International Cooperation in Education*, 7 (1), 85-96.

Miyoshi, K. (2003). Editorial: New Currents in Evaluation of ODA Projects. *Journal of Japan Evaluation Studies*, 3 (1), 1-5.

Morita, S. (2003). *JICA niokeru Kekkajushi Manejimento no Kakuritsu to Gyosekisokutei Dounyu no Yukouseinikansuru Kenkyu* (Research Paper on Establishement of Results-based Management in JICA and Effectiveness of Introducing Performance Measurement), JICA Institute of International Cooperation.

Mpumalanga Department of Education (1999). Mpumalanga Secondary Science Initiative (MSSI). Project Document, Middelburg, South Africa.

MSSI (2001) *Peer Teacher Learning – Teachers Learn from Teachers*, Guidebook No. 2, Pretoria.

Nagao, M. (2001). *Enjoniokeru Hyouka no Mokuteki to Katuyouhouhou: Minami Afurika Risukakyoikusienjigyou niyoru Jirei* (Evaluation Objectives of International Cooperation and Its Use: Case of International Education Cooperation Project in Math and Science in the

Republic of South Africa), *Journal of International Cooperation in Education*, 4 (1), 89-100.

Nagao, M. (2002). Present Status of MSSI School-based INSET activities. Evaluation Mission, Memo: No. 4, June 29.

Nagao, M. (2003). *Kyoikuenjo Hyoka no Genjo to Kadai* (Present concerns and issues in evaluation of educational cooperation). *Journal of International Cooperation in Education*, 6 (1), 1-18.

Nagao, M. (2004a). Mpumalanga Secondary Science Initiative. Project description document.

Nagao, M. (2004b). Could Japan be a Good Math and Science Teacher for Africa. *Journal of International Cooperation in Education*, 7 (1), 53-70.

Netherlands Ministry of Foreign Affairs (2003). *Local Solustions to Global Challenges: Towards Effective Partnership in Basic Education*, Joint Evaluation of External Support to Basic Education in Developing Countries, Final Report, The Hague.

Ofir, Z. (2002). An Evaluation of the First Phase of the Mpumalanga Secondary Science Initiarive (MSSI), Pretoria.

Owen, J. (2006). *Program Evaluation: Forms and Approaches*. Third edition, Crows Nest NSW: Allen & Unwin.

Patton, M. Q. (1982). Practical *Evaluation*, Sage Publications, Chapter 3, pp.55-98.

Patton, M. Q. (1997). *Utilization-Focused Evaluation*, The New Century Text, 3rd edition, Sage Publications.

Psacharopoulos, G. (1995). Using evaluation indicators to track the performance of education programs. In World Bank, *Evaluation and Development*, Proceedings of the 1994 World Bank Conference, Washington, D. C.

Sawamura, N. (2002). Local Spirit, Global Knowledge: a Japanese approach to knowledge development in international cooperation. *Compare*, 32 (3), 339- 348.

Sheirer, M.A. (1996). Designing and Using Process Evaluation. In Wholey, J. S., Hatry, H. P. & Newcomer, K. E. (Eds.), *Handbook of Practical Program Evaluation* (pp.40-68). San Francisco: Jossey-Bass Publishers.

Weiss, C. H. (1998). *Evaluation: Methods for Studying Programs and Policies*, 2nd ed., Prentice-Hall.

Yokozeki, Y. (1999). Sahara-inan afurika chiiki no Kyoiku to Kyoiku sekutaa puroguramu (Education and Education Sector-wide Program in Sub-Saharan Africa). *Journal of International Cooperation in Education*, 2 (1), 101-112.