

2. 終了時評価用の PDM 及び調査グリッド

4 EVALUATION AND ANALYSIS

4-1 Efficiency

(1) Achievement of Outputs

The following outputs are observed:

- a. The Project enhanced the quality and content of existing training programs conducted by the RSTCs and DECS through the implementation of Practical work approach.
- b. New training programs were initiated and promoted in the RSTCs by the JOCV volunteers.
- c. RSTC counterparts, Teacher Counterparts and Teachers have acquired and deepened knowledge and skills on practical works.
- d. RSTC counterparts, Teacher Counterparts and Teachers have acquired knowledge and skills on improvisation of low cost equipment used in the practical works.
- e. Science laboratory equipment and tools are maintained properly and used effectively.
- f. The Teachers and students have come to show more interests in science and mathematics compared to the time when the Project started. Science and mathematics education became more interesting through the infusion of the new ideas introduced by the JOCV members.
- g. The RSTCs' activities were strengthened with Mobile Schools, Stargazing, Science Circus/Magic Show, publication of Newsletters and other related activities.

(2) Actual Inputs and the Usage

a. Japanese Inputs

There were times when the deployment of some JOCV volunteers were delayed and some posts remained vacant because of the difficulties encountered on recruitment. Volunteers for mathematics were not recruited for the first five years because project priority was put onto science. Two mathematics JOCV volunteers were requested by the RSTCs during the extended period of cooperation. Accordingly, two mathematics volunteers were deployed out of 34 volunteers actually posted.

Most of JOCV volunteers quickly improved communication skills for conducting their activities, but there are some who did only to lesser extent. Their knowledge and skills in science and mathematics are generally satisfactory to conduct the activities.

Equipment and tools were provided as planned and are maintained properly and used effectively. However, in one RSTC, there is no particular person identified for the maintenance of the equipment and tools. The provided vehicle was out of order at the time of the evaluation and needs prompt attention in one RSTC.

Seven counterparts were sent to Japan for training, and all of them assessed it positively as

an opportunity to know Japanese science and mathematics education. They have willingness to share their experience and knowledge in Japan with their co-workers.

b. Philippine Inputs

Appropriate counterparts have been assigned at DOST-SEI and two RSTCs. Counterparts at one RSTC were assigned to the JOCV volunteers at the initial stage of the Project, but at the later stage they worked with Teacher Counterparts only.

Provision of office and laboratory spaces were made available in the four Project Sites and considerable amount of budget including running and maintenance expenses were allocated to the Project. Necessary equipment was made available for the JOCV volunteers and their Counterparts for their activities.

4-2 Effectiveness

(1) Achievement of the Project Purpose

The practical work approach has been increasingly applied in the classes by the Teachers. In addition, most of them have used some improvised materials that they learned into their lessons. The Project contributed much to nurturing Teachers' and students' interest in science and mathematics.

(2) Difficulties to achieve the Project Purpose

Majority of the Teachers rarely have difficulties to prepare and conduct practical works. However, there are some Teachers who have difficulties to get enough preparation time when they try to apply practical works, because of heavy load on their regular classes. In addition, the lack of necessary laboratory equipment and tools prevents some Teachers from conducting practical works.

4-3 Impact

(1) Achievement of the Overall Goal

The Overall Goal is expected to be achieved in the long term but not immediately with the project completion. It is also considered that it will take some time before visible results can be observed especially in the field of education, so that the impact of the Project should be observed and assessed in a long term.

(2) Other significant gains (Extension/Deepening of the Activities)

There have been extension/deepening of the activities as shown below.

- a. Some JOCV volunteers and RSTC counterparts were invited as lecturers or advisers to

some areas other than their coverage areas in the target Regions.

- b. Some JOCV volunteers and RSTC counterparts were invited as resource persons to outside the target Regions such as Region VII & XIII in case of ADDU-RSTC and BU-RSTC.
- c. Some Teachers organized a number of workshops on their own to study the improvised materials.
- d. The Project contributed to gaining more publicity for the RSTCs. As a result, some teachers visited the RSTCs to ask JOCV volunteers and RSTCs Counterparts questions on practical works.
- e. The RSTC counterparts were able to conduct their existing training programs more appropriately by getting to know the real situation of the schools.
- f. JOCV volunteers' assistance in DECS-SBTP for science and mathematics education has been very helpful for producing substantial results in terms of practical works.

(3) Other Impacts

There have been indirect or unexpected impacts as shown below.

- a. repairing equipment in schools and the RSTCs
- b. improving computer skills and knowledge of the RSTCs' staff and Teachers
- c. influencing positively the counterparts' and Teachers' work attitude in terms of punctuality, proper planning and evaluation of activities, proper maintenance of a laboratory.
- d. having university faculty members involved more in the RSTCs' activities
- e. strengthening the relationship between the RSTCs and teachers
- f. developing and strengthening the relationship among the RSTCs, DECS regional and division offices, teachers and other agencies.

4-4 Relevance

(1) Relevance of the Overall Goal

Improvement of science and mathematics education still remains as the Philippine Government's priority policy, and therefore it is considered to be relevant.

(2) Relevance of the Project Purpose

The Project Purpose is considered as relevant by people concerned.

(3) Relevance of the Project Design

The Project was a part of the Package Cooperation, but the JOCV volunteers' roles and function in the Package Cooperation were not clear enough to JOCV volunteers. In the first five years of the Project, the RTP and DPT conducted under Package Cooperation and the RSTC's training programs mentioned in the Minutes of Discussion signed on November 24,

1994 as JOCV volunteers' main activities, often coincided with each other during the summer vacation. It was difficult for some JOCV volunteers to identify their priority training programs. However, in the extended period, the JOCV volunteers' functions and roles were specified and there were no more problems in this aspect.

The relationships between the Purpose of the Project and the Objectives of the Project, as well as the one between Objectives of the Project and Activities of the Project were not properly stated in the Minutes of Discussion signed on November 24, 1994. A project design should be described as properly as possible at the first stage and should include anticipated activities. It is also very important to have periodic revising process while the project is going on. However, there were no more of such problem in the Minutes of Discussion on the extension period.

(4) Negative Social or Economic Factors

No economic factors effected the implementation of the Project.

The JOCV volunteers are not able to serve all the areas in the one target Region because of unstable peace and order situation of some areas.

4-5 Sustainability

(1) Institutional Aspect

The Philippine government is determined to continue the training of science and mathematics teachers. Both DOST and DECS have their own training programs, which are being implemented.

Improvisation of materials has already reached the stage where high quality products can be produced at relatively low costs and has been made available to teachers. This shows the probable sustainability of the activity.

At present, publishing of newsletters on science and mathematics education relies heavily on JOCV volunteers. This is due to the heavy workload of their RSTC counterparts. Therefore there is a probability that this activity can not be sustained by the RSTCs.

The handouts prepared for the Project have already been compiled into some series of booklets. Setting up a web site on the Internet is being planned in ADDU-RSTC so that teachers can easily access the information stored by the Project.

Stargazing became very popular in WVSU-RSTC. This activity is receiving a number of requests from schools and communities. To some extent, the knowledge on how to use the astronomical telescope has been transferred to counterparts. This activity has high

probability of sustainability.

Schools can now obtain chemicals through RSTCs. However, setting up a reliable system of supply, order, packing, budget, etc. is necessary for a smooth operation.

(2) Financial Aspect

The Philippine government is serious in pursuing programs for teacher training in science and mathematics. Accordingly, the budget for training is expected to be secured. It is suggested that training should be carefully planned with appropriate budget for securing its sustainability.

(3) Administrative Aspect

The counterparts and Teachers obtained many skills and knowledge on practical works through the Project. They became aware of the importance of practical works in science and mathematics education. They are interested in continuing the activities that they did in the Project with JOCV volunteers. The quantity and quality of their contribution to the activities depends heavily on RSTC Directors and RSTC counterparts, who have very heavy workload in their universities. Support should be provided to lessen their teaching load, so that they can continue to share the skills and the knowledge that they acquired in the Project with the teachers outside the RSTCs and universities.

The counterparts who had an opportunity of training in Japan are willing to share the acquired skills and knowledge with their co-workers.

Practical works have already been integrated into the process of planning and conducting classes of science and mathematics. It shows great sustainability of the practical work approach.

5 CONCLUSION

5-1 Summary of Evaluation

- (1) The Project was generally successful and effective. The dispatch of the JOCV volunteers resulted in significant improvement of teaching and learning processes in science and mathematics education.
- (2) All the expected Outputs are observed at the time when the survey was conducted.
- (3) JOCV volunteers participated in the activities which have been implemented by the RSTCs even before their assignment. JOCV volunteers organized new educational events in cooperation with RSTCs.
- (4) As for Japanese inputs on the deployment of some JOCV volunteers which were sometimes delayed, such had little negative impacts. The equipment and tools provided are utilized and maintained generally well. The training of counterpart personnel was done in Japan, and all the participants assessed it positively.
- (5) As for Philippine inputs, appropriate counterparts have been assigned in two RSTCs. Counterparts were found in schools at one RSTC. Office space and other necessary equipment are provided for the Project in the three RSTCs and the DOST-SEI head office.
- (6) There was noticeable increase in application of practical works in the classes of the Teachers. Many of the Teachers are able to use improvised materials and teaching aids that they learned in their lessons.
- (7) The Philippine government has committed to pursuing programs that are conducted by DECS and DOST.
- (8) There are some activities initiated and organized by the JOCVs that are to be institutionalized in the RSTCs, such as Stargazing.
- (9) The counterparts especially the ones in RSTCs have heavy workloads in their universities, that prevents them from being more active in RSTCs programs.

5-2 Recommendation

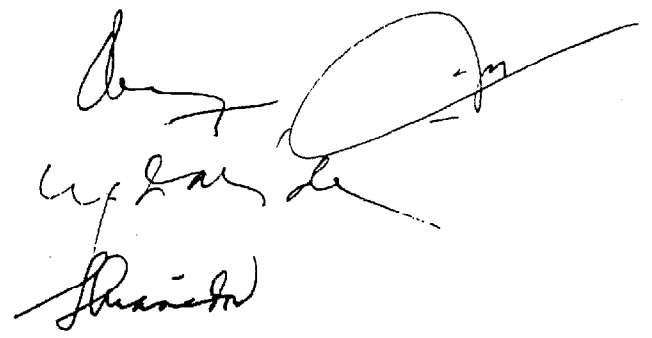
- (1) Equipment and materials provided are mainly under JOCV volunteers' care in RSTCs at present. There should be a system in which someone will be responsible to ensure equipment and materials maintained and utilized properly.
- (2) It is suggested that JOCV volunteers who remain deployed in the target Regions after the termination of the Project continue their activities related to the Project.
- (3) It is suggested that the JOCV senior volunteer assigned in DOST-SEI continue monitoring and coordinating the JOCV volunteers mentioned above after termination of the Project until the senior volunteer's term of service comes to an end.
- (4) DOST and DECS should continue monitoring the implementation of practical work approach in schools which were assisted by JOCV volunteers and the RSTCs to ensure

its sustainability.

- (5) As part of their Outreach Program, the RSTCs should continue the implementation of some of the activities initiated by the JOCV volunteers to maintain continuing relationship with the Teachers.
- (6) The dispatch of JOCV in the Regions resulted in a significant improvement of teaching and learning process in science and mathematics education in Philippine schools. It is suggested that the possibility of extending the cooperation to other Regions be studied by the Philippine and Japanese sides. However, the Philippine side strongly recommends the continuation of the Project in other Regions.

5-3. Lessons learned

- (1) There should be permanent counterparts assigned to every JOCV volunteer from the beginning of a project, and the permanent counterparts should have reasonable time to work with JOCV volunteers to maximize their performance..
- (2) Target group and target Regions should be clearly defined at the design stage of a project, so that the achievement of the project purpose can be measured more easily.
- (3) Every JOCV volunteer should have a more concrete plan of major activities in consultation with his/her counterpart in order to effectively conduct their activities and to measure the progress and performance of his/her activities.



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評価用PDM (Version 4)

プロジェクト名：フィリピン国地方理数科教育向上プロジェクト
 実施期間：1994,3,24－1999,5,31 及び1999,6,1－2001,5,31（延長分）
 ターゲットグループ：対象地域の全初等・中等学校の理数科教員
 （中心は、RSTCスタッフ、リポートレーナー、地方での研修受講者）
 作成者：日本側評価チーム
 作成日：2001年2月21日

対象地域：
 (1)Region V
 (2)Region VI
 (3)Region XIの東側半分
 (参考)：プロジェクト・サイト
 (1)DOST-SEI（マニラ）
 (2)ピコール大学RSTC（レガスビ）
 (3)西ビサヤ州立大学RSTC（イロイロ）
 (4)アテネオ・デ・ダバオ大学RSTC（ダバオ）

プロジェクトの要約	指標	指標データ入手手段	外部条件
●上位目標 対象地域において、初等・中等学校生徒の理数科の成績が向上する。			政府の理数科重視の方針が変わらない。
●プロジェクト目標 対象地域の理数科教員が実験実習を採り入れた授業を行っている。	(評価グリッド参照)		研修を受けた教員から他の教員へ、知識・技能を伝達する機会が設けられる。 全ての学校に、実験実習に必要な基本的機材がある。
●成果 1. RSTCによる研修と、INSETシステム関連の研修が適切に実施される。 2. RSTCスタッフ、及びトレーナーを含む教員が、実験実習に関する知識・技能を身につけている。 3. 理科実験器具が適切に管理され、効果的に活用されている。 4. 理数科教員が、理科実験用の低価格器具、その他実用教材の作製方法を身につけている。 5. 教員、生徒の理数科への関心が高い。			研修を受けた教員が獲得した知識・技術を授業で使う。
●活動 1-1. RSTCによる理数科教員を対象とした実験実習に関する研修を支援する。 1-2. INSETシステム関連のNTP, RTP, DTPにおいて、特に実験実習に関して支援を行う。 2. RSTCスタッフ、及びトレーナーを含む教員に、実験方法・教材の紹介を行う（研修会の準備も含む）。 3. 初等・中等学校で、理科実験器具の適切な保守・管理と効果的な活用についての指導を実施する。 4. 理科実験用の低価格器具、その他実用教材の紹介・改良・普及を行う。 5. 教員・生徒の理数科への関心を高めるために、サイエンスショーへの出演、ニュースレターの発行等を行う。	投入		研修を受けた教員・スタッフが離職しない。
	日本側	フィリピン側	RSTC、学校に最小限の施設、機材がある。
	一般隊員、シニア隊員、車輛、RSTCの実験室と事務室の機材、 必要に応じて選定された小中学校向け実験器具 研修員招聘	事務所とその必要機材、出張旅費、JICA/JOCVが提供した以外の機材、 車輛維持管理、カウンターパート等	教員が研修に参加する機会を得る。 前提条件 必要な条件を満たす隊員が派遣される。

PDM_E (Version 4)

Project Title : Enhancement of Practical Works in Science and Mathematics Education at Regional Level

Implementation Period : Mar.24,1994 – May 31,1999 & Jun.1,1999–May 31,2001 (extension)

Target Group : Science and mathematics teachers of all the elementary & secondary schools in the Target Areas
(around 5,000 teachers)

(Core Target Group :RSTC staff, leader trainers & trainees of regional-level training)

Prepared by : Joint Evaluation Team

Date of Preparation : Feb.16, 2001

Target Area :

(1)Region V

(2)Region VI

(3)Region XI (East Half)

Project Site :

(1)DOST-SEI (Manila)

(2)RSTC at Bicol University (Legazpi)

(3)RSTC at West Visayas University (Iloilo)

(4)RSTC at Ateneo de Davao University (Davao)

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
●Overall Goal The performance of the elementary/secondary school students on science and mathematics is upgraded.			-The government's policy that puts emphasis on science and mathematics education remains unchanged.
●Project Purpose High quality science and mathematics classes with laboratory works are conducted by the teachers	(See Evaluation Grids)		-Trained teachers have chances to transfer their acquired knowledge and skills to other teachers.
●Outputs 1. RSTC's training and INSET system related training are held properly. 2. RSTC staff and teachers including trainers have knowledge and practical skills on laboratory works. 3. Laboratory equipment/tools are managed properly and used effectively. 4. Science and mathematics teachers have skills on improvisation of low cost tools/materials used in the science experiment. 5. Both teachers and students get more interested in science and mathematics.			-Trained teachers utilise the acquired knowledge and skills in their school lessons.
●Activities 1-1. To assist the RSTC staff in the implementation of training programs by RSTCs for the teachers concerning laboratory works 1-2. To assist the organisers in the implementation of training programs in the NTP, RTP and DTP related to INSET system 2. To introduce the science experiment methods and teaching materials to the teachers (including preparation of training programs) 3. To instruct teachers on proper maintenance and useful use of science laboratory equipment in the schools 4. To introduce/improve/distribute low cost equipment/materials for laboratory works 5. To help teachers/students become interested in science through assisting science shows and issuing newsletters	<div>Inputs</div> <div>Japanese Side</div> JOCV volunteers, JOCV senior volunteers, vehicles, basic laboratory and office equipment/tools of the RSTCs laboratory tools to the selected elementary/secondary schools invitation of trainees to Japan (to be filled later in detail)	<div>Philippine Side</div> office space, necessary facilities, transportation expenses for official travels expense of petroleum and maintenance of vehicles counterparts (to be filled later in detail)	-Trained teachers/RSTC staff continue working. -There are the minimum facilities/equipment in the RSTCs and schools. -The teachers can get the opportunities to participate in the training programs. <div>Precondition</div> -Volunteers that meet the requirements are dispatched.

Evaluation Grid

A. Efficiency

Evaluation Items	Inquiry Items	Indices	Information Source
1. Achievement of Outputs	<p>1-1. Are RSTC's training and INSET system related training conducted properly?</p> <p>1-2. Do RSTC staff and teachers including trainers have knowledge and practical skills on laboratory works?</p> <p>1-3. Are science laboratory equipment/tools managed properly and used effectively?</p> <p>1-4. Do science and mathematics teachers have knowledge and skills on improvisation of low cost equipment/materials used in the science experiment?</p> <p>1-5. Are both teachers and students more interested in science and mathematics?</p>	<p>1-1. Evaluation by themselves</p> <p>1-2. Evaluation by themselves</p> <p>1-3-1. Existence of the person in charge of maintenance</p> <p>1-3-2. Number of teachers who used the equipment/tools at classes</p> <p>1-3-2. Times of utilisation of the equipment/tools</p> <p>1-4. Number of low cost equipment/materials a teacher improvise to be used for their classes</p> <p>1-5. Evaluation by themselves</p>	<p>Hearing from RSTC staff and Japanese Experts</p> <p>Hearing from RSTC staff and teachers</p> <p>Hearing from teachers & JOCV</p> <p>Hearing from teachers</p> <p>Hearing from teachers</p> <p>Hearing from teachers</p>
2. Actual Inputs	<p>2-1. Were Japanese Inputs delivered as scheduled?</p> <p>2-2. Were Philippine Inputs delivered as scheduled?</p>	<p>2-1-1. JOCV volunteers</p> <p>2-1-2. Equipment/tools</p> <p>2-1-3. Invitation of trainees</p> <p>2-2-1. C/P</p> <p>2-2-2. Office space/equipment</p> <p>2-2-3. Expense</p> <p>2-2-4. Others</p>	<p>Project documents</p> <p>Project documents</p> <p>Project documents</p> <p>DOST-SEI</p> <p>Project documents</p> <p>Project documents</p>
3. Use of Inputs	<p>3-1. Were inputs utilised effectively and efficiency?</p>	<p>3-1-1. JOCV's activities</p> <p>3-1-2. Use of equipment/tools</p> <p>3-1-3. C/P's activities</p>	<p>JOCV reports</p> <p>Quarterly reports*</p> <p>Quarterly reports*</p>

* Quarterly reports are available from 1997.

B. Effectiveness

Evaluation Items	Inquiry Items	Indices	Information Source
1 . Achievement of Project Purpose	1-1. Do the science and mathematics classes have more laboratory works ?	1-1. Change of the numbers of laboratory works in classes	Hearing from teachers
2 . Obstacles to achieving Project Purpose	2-1. The condition of the teachers to utilise their acquired skills in their classes have been improved?	2-1. Availability of preparation time, material/tools and support from other staff	Hearing from teachers

C. Impact

Evaluation Items	Inquiry Items	Indices	Information Source
1. Achievement of Overall Goal	1-1. Is performance of the elementary/secondary school students on science and mathematics upgraded?	1-1. Result of DECS performance test (average by region)	DECS Annual Report
	1-2. Is the number of the students who are good/fond of science and mathematics increased?	1-1. Change of the number of such students	Hearing from teachers
2. Expansion/Deepening of Activities	2-1. Is there expansion of activities outside the target areas?	2-1. Opportunities for JOCV to be invited by other regions	Hearing from RSTC and JOCV (especially by Region 10)
	2-2. Is there deepening of the activities inside the target areas?	2-2. Teachers' own voluntary activities (ex. Workshop)	Hearing from teachers
3. Other Positive Impacts	3-1. Is there support by JOCV apart from their work?	3-1-1. Support for coordination between RSTC & DECS (ex. Preparation of guideline on the activities of JOCV)	Hearing from RSTC & JOCV
		3-1-2. Lesson support other than science & mathematics	Hearing from RSTC & JOCV
		3-1-3. Repair of facilities/equipment	Hearing from RSTC & JOCV
	3-2. Are there impacts on consciousness of teachers/students on utilising unnecessary materials?	3-2. Upgrade of consciousness to utilize unnecessary materials	Hearing from RSTC & JOCV
3. Other Negative Impacts	4-1. Are there RSTC's activities stopped with the start of JOCV's activities?	4-1. RSTC's activities stopped with the start of JOCV's activities?	Hearing from RSTC & JOCV
	4-2. Does the Philippine side depend on JOCV too much?	4-2. Degree of dependence	Hearing from RSTC & JOCV

D. Relevance

Evaluation Items	Inquiry Items	Indices	Information Source
1 . Relevance of Overall Goal	2-1. Does the overall goal still coincide with the national policy?	National policy	NEDA's STEP*
2 . Relevance of Project Purpose	2-1. Does the project purpose coincide with the needs of the related people?	-	Hearing from DECS, DOST,RSTC & Japanese experts
3 . Relevance of Project Design	3-1. Was the project design relevant in the mutual relation of overall goal, project purpose, outputs and inputs?	-	Hearing from DECS, DOST,RSTC,senior JOCV & Japanese experts
	3-2. Was the selection of target groups relevant?	-	- do -
	3-3. Was positioning JOCV as a part of the Package Cooperation relevant?	-	- do -
4 . Social/Economic Factors	4-1. Was there a drastic and unexpected social/economic change which may impact on the project?	--	-do-

* Science & Technology Education Plan=five-year plan prepared in 1993

E. Sustainability

Evaluation Items	Inquiry Items	Indices	Information Source
1. Institutional Aspect	<p>1-1. Can the government's support for the science and mathematics teachers training be expected to continue after the project completion?</p> <p>1-2. Is the JOCV's know-how consolidated to be used in the RSTC?</p> <p>1-3. Is there an institutional system to implement the training programs for the teachers concerning laboratory works in the RSTCs?</p> <p>1-4. Is there an institutional system to implement the training programs in the NTP, RTP and DTP related to INSET system?</p> <p>1-5. Is there an institutional system to introduce the science experiment methods and teaching materials to the teachers (including preparation of training programs)?</p> <p>1-6. Is there an institutional system to instruct teachers on proper maintenance and useful use of science laboratory equipment in the schools?</p> <p>1-7. Is there an institutional system to introduce/improve/distribute low cost equipment/materials for laboratory works?</p> <p>1-8. Is there an institutional system to help teachers/students be interested in science through assisting science shows and issuing newsletters?</p>	<p>1-1. Possibility of continuation of regional level training(RTP, DTP and others)</p> <p>1-2. Availability of consolidate documents</p> <p>1-3. Present and future conditions</p> <p>1-4. Present and future conditions</p> <p>1-5. Present and future conditions</p> <p>1-6. Present and future conditions</p> <p>1-7. Present and future conditions</p> <p>1-8. Present and future conditions</p>	<p>national policy</p> <p>Hearing from JOCV</p> <p>Hearing from RSTC and JOCV</p> <p>Hearing from Japanese experts</p> <p>Hearing from RSTC and JOCV</p> <p>Hearing from RSTC, teachers and JOCV</p> <p>Hearing from RSTC and JOCV</p> <p>Hearing from RSTC, teachers and JOCV</p>
2. Financial Aspect	<p>2-1. Can the budget for RSTC to continue the activities be secured after the project completion?</p> <p>2-2. Are the spare parts of the equipment available at the reasonable cost? (excluding the too old ones)</p> <p>2-3. Are the materials available at the reasonable cost to improvise the teaching materials?</p>	<p>2-1. Future budget prospect</p> <p>2-2. How to get the spare parts and the price</p> <p>2-3. How to get the materials and the price</p>	<p>Hearing from DOST and universities</p> <p>Hearing from RSTC and teachers</p> <p>Hearing from RSTC and teachers</p>
3. Technical Aspect	<p>3-1. Do the trained teachers(including trainers) continue working?</p> <p>3-2. Do the trained RSTC staff and C/P continue working?</p> <p>3-3. Do the staff who trained in Japan transfer their knowledge and skills to the co-workers?</p>	<p>3-1. His/her own will and the surrounding conditions</p> <p>3-2. His/her own will and the surrounding conditions</p> <p>3-3. His/her own will and the surrounding conditions</p>	<p>Hearing from teachers</p> <p>Hearing from RSTC staff and C/Ps</p> <p>Hearing from the staff who trained in Japan</p>

評価項目・評価対象の対照表

(1)～(5)と評価グリッドの項目と、調査対象との関連を示した。

	(1)プロジェクト効果	(2)P/Cの1コンポーネントとしての連携の有効性	(3)プロジェクト終了後の持続可能性・協力継続必要性	(4)隊員の活動、経験の全体像	(5)チーム派遣によるプロジェクトの特徴、今後の提言等	(追加)評価グリッドの内容
1. 隊員 (Q1を使用)						
シニア隊員	○	○	○	○	○	○
緊急派遣隊員	○	○	○	○	○	○
一般隊員	○	○	○	○	○	○
1. 専門家 (Q2を使用)						
プロ技専門家		○	○		○	○
個別専門家		○	○		○	○
3. 比政府 (Q3を使用)						
DOST-SEI	○	○	○		○	○
DECS	○	○	○		○	○
PNVSCA	○	○	○		○	○
4. その他の比側関係者 (Q4を使用)						
RSTCスタッフ	○	○	○			○
理数科教員	○	○	○			○
C/P	○	○	○			○
研修経験者	○	○	○			○
備考	質問は 評価グリッド 「A.効率性」 も利用		質問は 評価グリッド 「E.自立発展 性」も利用			

3. アンケート (DOST - SEI 及びシニア隊員作成分)

Survey Form I: Teacher

Evaluation of the implementation of "Enhancement of Practical Works in Science and Mathematics Education at Regional Level"

Dear Teacher:

Thank you for your kind cooperation to the project "The extension period of the Enhancement of Practical Works in Science and Mathematics Education at Regional Level". This project will be terminated on May 31, 2001 after 7-years of implementation involving 34 Japan Overseas Cooperation Volunteers (JOCV) members in the 3 Regional Science Teaching Center (RSTC), BU-RSTC in Regions V, WVSU-RSTC in Region VI and ADDU-RSTC in Region IX

We would like to know the impact of the said project among the Filipino teachers. We would also like to hear your suggestion/s or comment/s regarding this project.

SUMIYO FUKUDA

Field Coordinator

DOST-SEI

Respondent: Teacher counterpart

Name: _____ Age: _____ Designation: _____ Date: _____
School: _____ Tel #: _____
School address: _____
Subject area: _____ Teaching experience: _____

Please check the appropriate box ☐ or/and write your answer in the space provided for. For your answers, please use typewriter or print in block letters.

I. Implementation of the project

1. Were the materials used in the experiments made by the JOCV members available in your school?

☐ yes ☐ no

If yes, please specify the materials used. _____

2. Were you able to manipulate science equipment in your school after you attended Practical Work training involving the JOCV members/ after the JOCV members assisted your lesson?

☐ Yes ☐ no

If yes, what kind of equipment were you able to manipulate? Please specify.

✓

3. Please list down the following materials provided by the JOCV members and check yes if you and your students are using this in your classes. You may use additional sheet if necessary.

A) Simple equipment/low cost materials

Name of the equipment	Yes	No	Remarks/Comment

B) Handouts for the experiments/laboratory activities

Title of the handout/topic	Yes	No	Remarks/Comment

C) Lesson Plan provided by JOCV members

Title of the topic	Yes	No	Remarks/Comment

4. Please answer the following activities prepared by the JOCV members.

A) Science News Letter

a) Did you read Science News Letter?

☐yes ☐no

If yes, did you use the activities found in the News Letter in your class?

☐yes ☐no

If yes, what activities did you apply to your class? Please specify.

If no, why not?

b) Suggestion/Comment

B) Science Magic Show

a) Did you/your students observe Science Magic Show?

☐yes ☐no

If yes,

1) Did you/your students appreciate the science concept/s related to the magic show?

☐yes ☐no

2) Did you apply the activities/magic found in the show in your lesson?

☐yes ☐no

If yes, what activities/magic did you apply to your class? Please specify.

b) Suggestion/Comment

C) Star/Sky gazing

a) Did you/your students attend Star/Sky gazing seminar?

☐yes ☐no

If yes, what did you learn/enjoy? Please check all the applicable descriptions.

- ☐ solar system ☐ eclipses ☐ moons of planets
☐ constellation ☐ comets ☐ galaxy
☐ position of the stars/planets ☐ size of the stars/planets ☐ distance of the stars/planets
☐ others, please specify _____

b) Suggestion/Comment

5. Did the laboratory activities in your class change after the JOCV members assisted your lesson?

☐ yes

☐ no

a) If yes, please specify.

☐ increase

☐ decrease

b) If increase, how often do you let your students perform the laboratory activities?

☐ every day

☐ 2~3/week

☐ 1/week

☐ 2~3/month

☐ 1/month

c) If no or decrease, why? _____

6. Did you improvise some equipment/teaching materials by yourself after you attended Practical Work training involving the JOCV members?

☐ yes

☐ no

If yes, what kind of equipment/materials did you improvise? Please specify.

7. Using the given rating scale of 1 – 4 in increasing intensity, please rate the following changes after the JOCV members assisted your lesson.

8.

Rating Scale

A) Your attitude/competence towards teaching in terms of :

a) enjoyment

b) enthusiastic

c) desire to learn more

d) interest in hands-on activities

e) laboratory skills, as applicable

f) time management

g) proper use of support instructional materials

h) others, please specify. _____

decrease

increase

1

2

3

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decrease

increase

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3

4

B) Your student's attitude in the class

a) active participation in class activities

b) desire to learn more

c) enthusiastic

d) level of interest

e) others, please specify. _____

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9. What major advantage/s/disadvantage/s have been done by the JOCV members for you/your students?

A) For the teacher

a) Advantage/s _____

b) Disadvantage/s _____

B) For the students

a) Advantage/s _____

b) Disadvantage/s _____

II Future training

10. What kind of topic/skill do you still need in the future training regarding Practical Work approach?

11. Where/when is the period most convenient for you to attend the said training?

Venue: _____

When : ☐ summer ☐ weekday ☐ weekend

☐ others, please specify _____

III About JOCV members

12. Please rate the JOCV members in terms of the following.:

Rating Scale

	Rating Scale			
	poor			excellent
	1	2	3	4
a) laboratory skill	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) laboratory knowledge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) science concepts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) enthusiasm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) cooperation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) creativity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) teaching experience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) English language	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) Filipino dialect	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13. A) What skill/knowledge aside from laboratory activities did you learn from the JOCV members? Please check all the applicable descriptions.

- | | | |
|--|---|---|
| <input type="checkbox"/> writing lesson plan | <input type="checkbox"/> technique on black board writing | <input type="checkbox"/> questions techniques |
| <input type="checkbox"/> making visual aide | <input type="checkbox"/> making handout/activity sheet | <input type="checkbox"/> repairing equipment |
| <input type="checkbox"/> maintenance of laboratory equipment | <input type="checkbox"/> handling delicate chemicals | <input type="checkbox"/> using computer |
| <input type="checkbox"/> recycling simple materials | <input type="checkbox"/> science concepts | <input type="checkbox"/> science quizzes |
| <input type="checkbox"/> Japanese language | <input type="checkbox"/> Education system in Japan | <input type="checkbox"/> Japanese Culture |
| <input type="checkbox"/> others, please specify _____ | | |

B) Please suggest the JOCVs qualification as a science teacher to be dispatched in the Philippines.

14. A) What training do you want JOCVs support in the future? Please check all the applicable descriptions.

- ☐ Introduction of simple experiment using local materials
☐ how to make equipment using local materials
☐ how to make lesson plan with laboratory activities
☐ how to manipulate science equipment
☐ maintenance of laboratory equipment
☐ science magic show for the students
☐ mobile training in remote school
☐ how to use the computer
☐ no need for training from JOCVs
☐ others, please specify _____

B) What office assigned with the JOCV members do you feel is good for you?

- ☐ RSTC ☐ DECS Regional Office ☐ DECS Division Office
☐ One of the schools (like S& T oriented high school)
☐ others, please specify _____

IV. Remarks

Thank you for your cooperation.

To the interviewer:

Date _____

Name of the interviewer _____

Please ask the teacher for any suggestion/s/comment/s regarding JOCV activities and write them below.

2 派遣計画関係

U 国調整員のあなたのところに、首都の〇〇学院に派遣され、日本語教師をしている M 隊員が「配属先に日本語教育をやる気がないので、配属先を変更して欲しい。次期募集期に新規要請としてあがっている△△大学に変更したい。」と申し出てきた。

事情を聴取すると、M 隊員の言い分は次のとおり。

- (1) 配属先で単位にならないのは日本語だけで、第 3 外国語的な位置付けである。教室も与えられず、毎回、予約が必要である。
- (2) 学習者は 4 名しかおらず、午後 5 時からの授業のため欠席する生徒が多い。C/P はいるが、生徒が少ないせいか、全く来なくなってしまった。
- (3) もっと切実に、日本語教師が求められている所で活動したい。

しかし、あなたが得ている情報では、

- (1) 学習者は少ないが生徒は非常に熱心に取り組んでいる。
- (2) 〇〇学院は、政治・経済分野で活躍する人材を育成する機関で、日本から専門家を派遣するなど協力実績があり、大使館から日本語教師派遣を強く求められた経緯がある。
- (3) M 隊員は新しく変わった学科長と人間関係がうまくいっておらず、話し合いができていない。

あなたは、この隊員の配属先変更について、どう考えますか。