終了時評価調査結果要約表（英文）

I. Outline of the Project		
Country: Pakistan		**Project title**: The Project for Promotion of Student-Centered and Inquiry-Based Science Education
Issue/Sector: Education		**Division in charge**: JICA Pakistan Office
Division in charge: JICA Pakistan Office		**Total cost**: Approx.269 million Yen (as of Jan. 2012)
Period of Cooperation	1 May 2009 to 30 April 2012	**Partner Country's Implementing Organization**: National Institute of Science and Technical Education
		Supporting Organization in Japan: KRI International Corp.
Related Cooperation: NIL		

1 Background of the Project

Improving the quality of education at elementary education is one of the highlighted challenges in the "National Education Policy 1998-2010" in Pakistan. In 2006 Ministry of Education (MOE) moved away from "Teacher-centered rote learning" method and introduced new curricula based on the concepts of "Student-centered, Inquiry-Based, and Outcome based". MOE planned to introduce new curricula based text book in 3 years starting from 2009 and implement new teaching methodology in the class room. Teachers in schools, however, 1) lack practical skills to implementing new teaching method, 2) lack training opportunities to equip those skills, 3) lack teachers guides, 4) lack enough science subject knowledge. National Institute of Science and Technical Education (NISTE) has been offering training of science teachers for last 20 years, however, their achievements have not been properly translated into the classroom activities of teachers.

Since 2003, JICA Pakistan has been dispatched senior volunteers to NISTE for assisting the "development of experimental tools with easily available materials". The activities of senior volunteers were highly appreciated and NISTE requested JICA's assistance to expand the activities to the other provinces. In response to NISTE's request, JICA dispatched the study team to formulate the project. The study team, in addition to the needs of development of experimental tools, found the needs of development of teacher's guide and training of master trainers to implement the new curricula and strengthening the relationship between NISTE and provincial education departments. The project, finally, formulated as "the Project for promotion of Student-centered and Inquiry-based (SCIB) Science Education" based on the results of the study. The project is implemented with the collaboration with NISTE and JICA for 3 years staring from May 2009 and ending April 2012.

2 Project Overview

The project aims to establish to effective SCIB training model. The project activities include development of teaching plans, training of master trainers from all over the country and pilot teacher training in Islamabad Capital Territory. The project is implemented by NISTE located in Islamabad.

（1）Overall Goal: Effective teacher training model that ensures teachers to deliver Student-centered and inquiry-based (SCIB) science lessons is utilized by other provinces and areas other than 5 pilot clusters in ICT according to their setup.

（2） Project Purpose: Effective teacher training model that ensures teachers to deliver SCIB science lessons is established.

（3） Outputs:

3-1: SCIB teaching plans for class 4-8 science are developed.

3-2: Master trainers are equipped with skills and knowledge to deliver SCIB science lessons.

3-3: Necessary interventions for effective teacher training are identified through pilot activities in Islamabad Capital Territory (ICT).

3-4: The experience of model SCIB teacher training is shared among other educational related stakeholders and their interest in SCIB is increased.

（4） Inputs

Japanese side:(Total Cost 350 million Yen)

Long-term Expert: NIL	**Equipment**	1,784,310	**Yen**
Short-term Expert: 9	**Local cost**	44,318,705	**Yen**
Trainees received: 22			

Pakistan's Side:

Counterpart: 25 (NISTE Technical Staff)

Land and Facilities: Project office rooms, Training venue, Hostel, Air conditioner
Cost for development of Grade 8 teaching plans

II. Evaluation Team

Members of Evaluation Team	Mr. Toshiya Sato, Team Leader, Senior Representative JICA Pakistan Office Mr. Norihiro Nishikata, Science Education, Senior Advisor (Education), JICA HQ Ms. Ami Ikeda, Evaluation Planning, Basic Edu Div.1, Human Development Dept. JICA HQ Ms. Noriko Hara, Cooperation Planning, Project Formulation Advisor, JICA Pak Office	
Period of Evaluation	11/ 1/ 2012~ 25/ 1/ 2012	**Type of Evaluation :** Terminal

III. Results of Evaluation

1 Summary of Evaluation Results

（1） Relevance: The relevance is **relatively high.** The Project is consistent with the policy and needs of education sector in Pakistan and with Japanese ODA policy towards Pakistan. However, based on the 18th constitutional amendment in Pakistan, Ministry of Education was developed. Consequently, the dissemination of teacher training model in provinces became the jurisdiction of each province, which made the federal institutions and the project team difficult to pursue the initial goals designed in the original PDM. The project, therefore, revised the overall goal to match with the situation and put more focus on the activity 4 to influence the provinces.

（2） Effectiveness: Effectiveness is **relatively high.** The Project purpose and outputs have been almost achieved. It can be said that the SCIB training model has been established as the pilot training cycle was completed successfully and training guidelines were finalized and endorsed by PIMC. The quality of SCIB science lesson delivery has been improved according to the result of end-line survey.

（3） Efficiency: Efficiency is **medium.** All the inputs from Japanese side are implemented almost as planned

and well utilized. Unexpectedly, the budget for master trainer training could not been disbursed from the Pakistan side because of the financial constraints. However, activities were implemented without major delay and the majority of indicators of outputs have been achieved.

(4) Impact: Impact is **relatively high.** Both NISTE and FDE have the plan to continue SCIB training. Even though, budget disburse is the main issue to achieve the overall goal in ICT. In other provinces, some master trainers have voluntarily conducted SCIB trainings and awareness events. Besides, the General Science textbooks linked with the SCIB science approach can contribute to achieve the overall goal in other provinces.

(5) Sustainability: Promotion of SCIB science lesson is expected to be continued based on the curriculum 2006. Even C/P has enhanced institutional and organizational capacity for further dissemination of SCIB science trainings in ICT, planning and financial arrangement are still remained to be considered. However, textbooks linked with SCIB science approach can contribute to expand the SCIB science lessons in other provinces.

2. Factors that promoted realization of effects

(1) Factors concerning to Planning

The demands for teachers training for them to introduce student-centered and inquiry-based concept in 2006 curricula was high. The curriculum wing of MOE supported the project concept and activities.

(2) Factors concerning to the Implementation Process

C/P's Positive involvement in the project contributed to the realization of the effects. The understanding the SCIB concept and its' effectiveness was deepened gradually. The commitment of the C/P increased as the project progressed. Project team tried to introduce simple, feasible and effective technical skills to C/Ps so that C/P could gain enough confidence. This strategy was well worked and NISTE now felt confident and appreciated the training program is simple and feasible one. Though efficiency was compromised, the strategy of capacity building of the human resources in the system is expected to bring impact of the project in future.

3. Factors that impeded realization of effects

(1) Factors concerning to Planning

Based on the 18th constitutional amendment in the country, Ministry of Education was devolved. Newly established CADD has more control over the ICT but less towards provinces compared to previous set-up. This change did not match with the pre-condition of the initial project design, which weakened the relevance between project purpose and overall goal, as well as project purpose and output 4. PC1, which ensure the ownership of the project of the government, of the project was not formulated by the Pakistani C/P. The project, therefore, was not properly placed in the plan of provincial education department, which adversely affected the sustainability of the project, especially in the provinces.

(2) Factors concerning to the Implementation Process

Frequent changes of the administration of C/P organization and absence of full-time Director General (DG) of NISTE affected the progress of the activities to some extent. Cost for master trainer training was not disbursed by the Pakistani C/P due to budgetary constraints. The uneven capacity of the Teaching Plan Development (TPD) members hampered the scheduled teaching plan development. Against all the odds, the project managed to keep the pace of project progress and completed all the activities.

4. Conclusion

Though the close cooperation between the Pakistan and Japanese sides, the project overcame constraints during the project implementation and achieved the project purpose. The Project has contributed the first step of SCIB science lesson implementation in Pakistan. Positive changes such as improvement of students' interest, willingness and positive attitudes in science lessons were observed in the pilot schools compared to before. This is a distinct paradigm shift to Pakistan science education. Therefore, the project would be terminated as scheduled because the Project purpose is almost achieved. Furthermore, it is expected to consolidate the foundation to utilize teaching plans, training guidelines and master trainers so as to extend the effects and impacts of the Project throughout the country in a sustainable manner.

5. Recommendations

1) Importance of dissemination of the curriculum 2006

Lack of understanding of the main concepts of new curriculum was the fundamental problems for effective SCIB training. It is recommended for concerned departments to disseminate the curriculum, especially fundamental concepts, in various Pakistani languages.

2) Extend the Project activity to remaining ICT area

It is recommended that Federal Directorate of Education (FDE) in collaboration with NISTE will continue the SCIB science education promotion in the remaining area of ICT, where the Project did not cover.

3) Extend the Project activity to the provinces

Lack of financial resources is a challenge for expanding the project experience in the provinces. Nevertheless, provinces who are willing to promote activities should secure the necessary budget. For that purpose, it is recommended for provincial focal persons with support of NISTE that a)persuading top managements to be understood the benefit and effectiveness of SCIB methodology, b)formulating the systematic promoting mechanism as a provincial system, c)getting approval of plan by the competent authority. CADD may also need to play some role for dissemination of SCIB.

4) Increase the number of the master trainer

The number of master trainers trained by the project is limited and it is difficult to cover all the areas for dissemination by these master trainers. It is necessary for authorities to attempt to increase the number of master trainer through master trainers training designed by the Project.

5) Lesson study as a low cost continuous teacher training

During the implementation process of the Project, it has been noticed that lesson study approach was effective and efficient for teachers to develop their professional knowledge and skills without paying daily allowances. It is very useful and recommendable for the authorities to adopt this type of teacher training as a part of continuous professional development.

6) Necessity of deep understanding of subject matter

It has been noticed that it is very important for all teachers to understand subject matters deeply, especially for higher grade, so that they can apply SCIB lesson. It might be necessary that science knowledge and skills should be enhanced more during pre-service teacher training period, so that in-service training could focus on practical skills and be more efficient.

6. Lessons Learned

1) Strong commitment of Pakistan Side

Throughout the Project period, the Project experienced the changes of the administration and different level of commitment. The level of commitment has been increased towards the end of the Project as the Project activities progressed. Strategy of the project, such as capacity development of officers inside the system and application of simple and feasible technical transfer might also contribute increase of commitment of the C/Ps. Strong commitment of the C/P is crucial factor for any Project to bring successful results.

2) Teacher's strong motivation to participate in unpaid allowance training

It was found that teachers were seeking training opportunities and they were willing to participate in even training without allowance if training contents are in line with their demands. It is important for the authorities to take measures to increase training opportunities for teachers, which match with their demands by analyzing real teacher's needs.

3) Member selection for Teaching Plan Development

It is recommended to include teachers with rich experience in the members of material development for teachers since they could contribute a lot to improve the quality of materials based on their experience in the classrooms.

4) Importance of Capacity Development Process for officers inside the system

The project was implemented aiming to build the capacity of officers inside the system. This process, though it was challenging, contributed a lot for the capacity building of the members and intensified the sense of ownership. This strategy of the Project is very important since the human resource developed in the Project can continue to work and contribute to the educational development within the official educational system in future.

5) Importance of school principals involvement

The project conducted the training of principals as well. After the training, schools and teachers became more cooperative towards lesson study conducted in schools. It shows that principals' understanding and leadership will contribute to conducting school based teacher training smoothly.

6) Importance of teacher's discretion for teachers training

Many teachers have been involved in preparation and implementation process of lesson study as one of the Project strategy for capacity development. This Project strategy let teachers have some kind of discretion for teacher training and, as a consequence, made positive impact on increasing teacher commitment toward lesson study. It shows that teachers' participation, not only as trainee, but also in as one of the training organizer, can contribute to improvement of their commitment and effectiveness of the training because teachers could have their autonomy to customize trainings by their own at their discretion.

7) PC-1 formulation

PC-1 has not been formulated either at federal or provincial level for this project. Sustainability of the project in the provinces, therefore, was challenged. In case of nation-wide project, therefore, PC-1 must be formulated and approved at the time of launching the project for the project targeted provinces to ensure the project sustainability.