

付 属 資 料

1. 署名済みミニッツ（含む Annex）
2. 面談者リスト
3. シンド州ハイデラバード県で実施された教員研修報告書

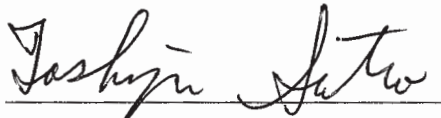
1. 署名済みミニッツ (含む Annex)

MINUTES OF MEETING
BETWEEN THE JAPAN INTERNATIONAL COOPERATION AGENCY
AND
THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF ISLAMIC REPUBLIC OF PAKISTAN
ON JAPANESE TECHNICAL COOPERATION FOR
THE PROJECT FOR PROMOTION OF STUDENT-CENTERED AND INQUIRY-BASED SCIENCE EDUCATION

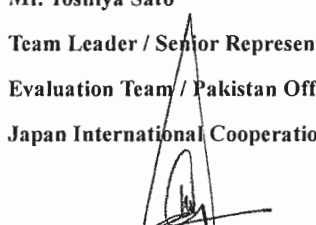
The Japanese Terminal Evaluation Study Team (hereinafter referred to as "the Team") organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") headed by Mr. Toshiya Sato, Senior Representative of JICA Pakistan Office, carried out the review and evaluation with the authorities concerned of the Government of Islamic Republic of Pakistan (hereinafter referred to as "the Pakistan side") on the final result of the Project for Promotion of Student-Centered and Inquiry-Based Science Education (hereinafter referred to as "the Project") on the basis of the Record of Discussions signed on February 18, 2009 and September 5, 2011 (hereinafter referred to as "the R/D"). The terminal evaluation was implemented by the Team which held a series of discussions on the Project progress, achievement and matters pertaining to successful implementation of the Project.

As a result of the discussion, both sides mutually agreed upon the results of the terminal evaluation attached as the Joint Evaluation Report hereto.

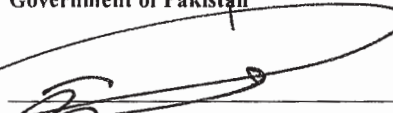
Islamabad, January 25, 2012



Mr. Toshiya Sato
Team Leader / Senior Representative
Evaluation Team / Pakistan Office
Japan International Cooperation Agency



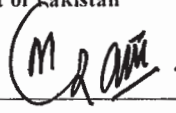
Mr. Waqar Hussain Abbasi
Deputy Secretary (ADB/Japan)
Economic Affairs Division
Government of Pakistan



Mr. Atif Mehmood Kayani
Director General
Federal Directorate of Education



Mr. Imtiaz Inayat Elahi
Secretary
Capital Administration & Development Division,
Government of Pakistan



Prof. Muhammad Rafique Tahir
Joint Secretary / Director General
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JOINT EVALUATION REPORT

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Abbreviations

CADD	Capital Administration & Development Division
C/P	Counterpart
DEA	Deputy Educational Advisor
DG	Director General
DSD	Directorate of Staff Development
EAD	Economic Affairs Division
FDE	Federal Directorate of Education
ICT	Islamabad Capital Territory
JCC	Joint Coordinating Committee
JICA	Japan International Cooperation Agency
M/M	Minutes of Meeting
MoE	Ministry of Education
MT	Master Trainer
MTT	Master Trainer Training
NISTE	National Institute of Science and Technical Education
ODA	Official Development Assistance
PDM	Project Design Matrix
PIMC	Project Implementation and Monitoring Committee
PO	Plan of Operations
SCIB	Student-Centered and Inquiry-Based
TPD	Teaching Plan Development



1. Introduction

1-1 Outline of the Project

National Institutes of Science and Technical Education (hereinafter referred to “NISTE”), Capital Administration & Development Division in close collaboration with JICA, is implementing the Project for Promotion of Student-Centered and Inquiry-Based Science Education since May 2009. The Project aims to introduce Student-Centered and Inquiry-Based Science Education in light of curriculum 2006 through developing the teaching plans, training master trainers and pilot teacher trainings for the period of 3 years with the federal, provincial and regional stakeholders.

(1) Overall Goal of the Project

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 of the Project

Effective SCIB training model that ensures teachers to deliver SCIB science lessons is established.

(3) Outputs

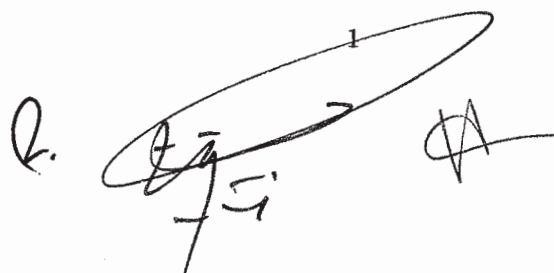
- 3.1 SCIB teaching plans for class 4-8 science are developed.
- 3.2 Master trainers are equipped with skills and knowledge to deliver SCIB science lessons.
- 3.3 Necessary interventions for effective teacher training are identified through pilot activities in Islamabad Capital Territory (ICT).
- 3.4 The experience of model SCIB teacher training is shared among other educational related stakeholders and their interest in SCIB is increased.

At the end of the Project period, JICA organized the evaluation team for the purpose of evaluating the achievement of the Project.

1-2 Objectives of Evaluation

Main objectives of the evaluation are as follows:

- (1) To review the achievements and assess the major outputs of the Project according to the Project Design Matrix (Revision was agreed on July 2011 and signed on September 2011).
- (2) To evaluate the Project with the evaluation frame work of 5 criteria, i.e. relevance, effectiveness, efficiency, impact and sustainability.



(3) To recommend further actions to be taken for successful completion of the Project and to extract lessons learned.

1-3 Schedule of Evaluation

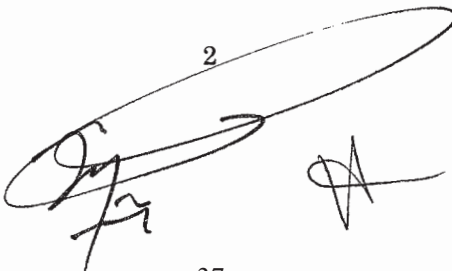
Date		Activity
11 Jan	Wed	Collecting Necessary Information
12 Jan	Thu	Collecting Necessary Information
13 Jan	Fri	Collecting Necessary Information
14 Jan	Sat	Document Compilation
15 Jan	Sun	Document Compilation
16 Jan	Mon	Collecting Necessary Information
17 Jan	Tue	Meeting with Joint Secretary / DG NISTE Interview with NISTE members
18 Jan	Wed	Meeting with FDE Interview with JICA Project team
19 Jan	Thu	Visiting 2 ICT schools for observing science classes and interviewing with teachers Meeting with DEA Curriculum & Textbook Wing, CADD
20 Jan	Fri	Interview with Provincial Stakeholders Interview with JICA Project team
21 Jan	Sat	Team Meeting
22 Jan	Sun	Preparing M/M
23 Jan	Mon	Preparing M/M
24 Jan	Tue	Discussion with CADD, NISTE and FDE on M/M
25 Jan	Wed	Joint Coordination Committee Signing of M/M Meeting with EAD Report to Embassy of Japan

1-4 Members of Evaluation Team

Mr. Toshiya Sato

Team Leader

Senior Representative, JICA Pakistan Office

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Mr. Norihiro Nishikata Science Education
Senior Advisor (Education), JICA HQ

Ms. Ami Ikeda Evaluation Planning
Staff, Basic Education Division I, Human Development Department,
JICA HQ

Ms. Noriko Hara Cooperation Planning
Project Formulation Advisor, JICA Pakistan Office

1-5 Methodology of Evaluation

Major items evaluated are the following aspects based on Project Design Matrix (PDM), Version 1 dated 5 July 2011 and Plan of Operations (PO):

- 1) Achievements of the project based on the indicators set in the PDM
- 2) Implementation process
- 3) Analysis by the five evaluation criteria

Five evaluation criteria are as follows.

(1) Relevance

Relevance of the project plan is reviewed in terms of the validity of the project purpose and the overall goal in connection with the development policy of the Government of Pakistan, aid policy of the Government of Japan, needs of beneficiaries, and by logical consistency of the project plan.

(2) Effectiveness

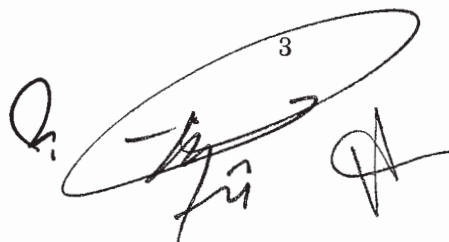
Effectiveness is assessed by evaluating the extent to which the project has achieved its purpose and by clarifying the relationship between the purpose and outputs.

(3) Efficiency

Efficiency of the project implementation is analysed with emphasis on the relationship between outputs and inputs in terms of timing, quality and quantity of inputs.

(4) Impact

Impact of the project is assessed on the basis of both positive and negative influences caused by the project.

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(5) Sustainability

Sustainability of the project is assessed in terms of political, institutional, financial and technical aspects by examining the extent to which the achievements of the project would be sustained or expanded after the project period.

2. Evaluation

2-1 Achievements of the Project

The achievements of the Project are as follows. For the details, see Evaluation Grid in Annex 2.

2-1-1 Outputs

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

SCIB teaching plan for grade 4 and 5 have been printed and distributed. Grade 6 and 7 are completed and are planned to be printed and distributed in January 2012 and February 2012, respectively. Grade 8 will be completed in January 2012 and will be printed in February 2012. All Grade 4-8 teaching plans will be compiled in DVD and distributed in March 2012. All the teaching plans were developed with the participation of stakeholders from both federal and provincial members.

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

More than 70% of the master trainers have improved their skills and knowledge through SCIB master trainer training. Skills and knowledge include 1) making the assigned practical materials, 2) improving lesson plans through group work, 3) improving their knowledge on science. The training program, therefore, is considered to be effective.

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

The Pilot teacher training activities were successfully completed and compiled as a training guideline. The guideline contents were consulted with the provincial stakeholders and endorsed among PIMC members. During the monitoring of the teachers of pilot schools in ICT it was found that more than 80% of teachers of pilot schools were utilizing the teaching plan.

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

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3 National/Provincial forums and 7 Awareness Raising Meetings were organized till date. Through the forums and events, majority of the participants 1) understood the necessity of SCIB, 2) understood the SCIB education, 3) felt usefulness of lesson study, 4) felt usefulness of lesson plan making. Though it was effective to share the SCIB teacher training through forums and meetings, more awareness may be required for future dissemination. Four kinds of SCIB promotion DVDs were produced, but there is some room for quality improvement and need to be translated into Urdu.

2-1-2 Project Purpose

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

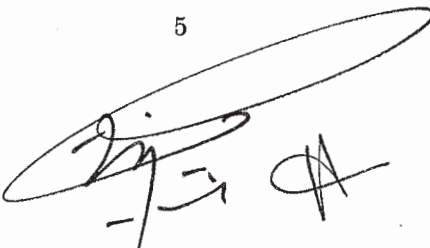

Project Purpose is mostly achieved. Training Guideline based on the ICT pilot teacher training implemented in the Project was compiled and endorsed. According to the end-line survey and monitoring report, 70% of trained teachers for Grade 4 & 5 (Primary) are practicing at least 1 aspect of SCIB concept, while 55% of teacher for Grade 6 & 7 (Elementary) are practicing at least 1 aspect of SCIB concept.

End-line survey was conducted shortly after the main course training of Grade 6&7 teachers and before the lesson study workshop, the effect of trainings, therefore, might not be fully reflected in the result of end-line survey, which showed only 55% of teachers were practicing at least 1 aspect of SCIB concept. Grade 6 & 7 teachers might need more time to practice through lesson study to equip SCIB teaching skills. It may also be assumed that contents of Grade 6&7 are more and complicated than those of Grade 4&5, which may make teachers to rely on more traditional way of teaching.

2-1-3 Overall Goal

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.

Overall goal is expected to be achieved in ICT non-pilot area provided the concerned department could secure the financial resource for that. CADD has vision to further pilot the SCIB training and disseminate it for 100% schools in ICT. NISTE is already in the process of preparing the next year's budget which includes Grade 8 master trainers training for ICT and provinces as well as other master trainers for Grade 4 to 7. While FDE tries to continue SCIB training program with their annual training budget, they requested the annual budget for the training which includes SCIB training. While in the provinces, though there are several impacts of the SCIB training in the training program of the provinces, the overall goal achievement will be limited scale compared to

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ICT. Support from the management, technical support from expert and financial resources are challenges for the provinces to achieve the overall goal.

2-2 Results of the Evaluation

2-2-1 Implementation Process

The Project has been implemented as planned in general and most of the activities were completed as per the schedule. The frequent changes of the management of the C/P organizations made NISTE and the Project team take more time for coordination and sometimes resulted in delayed decision making. Despite all these difficulties NISTE and the Project team made best efforts to keep the Project management system functioning and continued communication with stakeholders. As a result of their efforts, the project was implemented as per the schedule, which is one of the commendable points in the implementation process of the Project.

The motivation of C/P members was generally high and became higher as the Project progressed.

2-2-2 Analysis by the Five Evaluation Criteria

The results of analysis by the Five Evaluation Criteria are summarized below. For the details, refer to Evaluation Grid in Annex 2

(1) Relevance

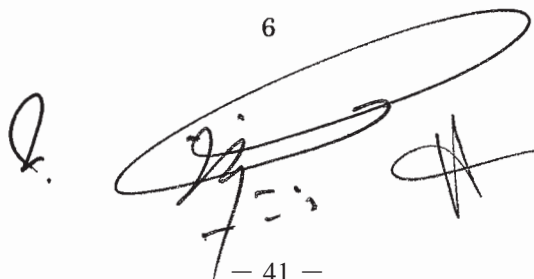
The relevance is **relatively high**. The Project is consistent with the policy and needs of education sector in Pakistan and with the Japanese ODA policy toward Pakistan. However, based on the 18th constitutional amendment in Pakistan, Ministry of Education was devolved. Consequently, it has not been easy for institutes involving the Project to manage the Project as planned in PDM.

(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 Training Guidelines finalized and endorsed by PIMC. The quality of SCIB science lesson delivery has 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 be disbursed from the Pakistan side because of the financial constraints. However, activities were implemented without

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major delay and the majority of Indicators of Outputs have been achieved. In the latter half of the project period, Pakistan side decided to undertake the grade 8 teaching plan development and kept the activities in the project framework by their own expense. The grade 8 teaching plan development activities were also carried out as per the schedule with the intensive efforts by the NISTE. As a result, all the activities will be completed during the project period.

(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 lessons 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.

2-2-4 Conclusions

Through the close cooperation between the Pakistan and Japanese sides, the Project has contributed the first step of SCIB science lesson implementation in Pakistan. Positive changes such as improvement of students' interest, willingness, and a positive attitude 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.

3. Recommendations and Lessons Learned

3-1 Recommendations

1) Importance of dissemination of the curriculum 2006

Through the implementation process of the trainings organized by the Project, the trainers have

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faced the fundamental problem that the majority of the trainees did not understand the main concepts of the curriculum well, including the concept of student centered, inquiry-based, outcome-focused and so on. That's why the Project had to explain these main concepts mentioned above before training of practical skills on how to deliver SCIB lesson. It is recommended for concerned departments to disseminate the curriculum, especially fundamental concepts, as soon as possible in various Pakistani languages.

2) Extend the Project activity to remaining ICT area

It seems that through the Project activities, NISTE and FDE have built their capacity of conducting lesson study. Therefore, it is recommended that FDE in collaborations 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

The majority of stakeholders, whom the terminal evaluation mission has interviewed during the stay in Pakistan, pointed out the lack of financial resource is a challenge for expanding the Project experience in each province. Ideally, as mentioned in the recommendation 1), appropriate teacher training occasion should be provided so that all teachers can study the 2006 curriculum and deliver SCIB lesson. However, unfortunately because of the financial constraints, it might be difficult to establish feasible dissemination plan currently. In that sense, provinces who are willing to promote the activities should secure the necessary budget. For that purpose, it is recommended 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 the approval for promotion plan in the mechanism by top managements, are required.

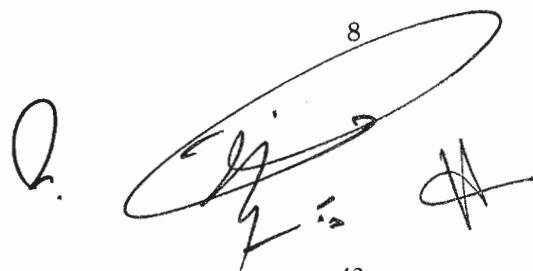
Also, it is recommended that if provinces ask some assistance for promotion of SCIB Science Education activities in provinces, CADD/FDE/NISTE try to help to be introduced in some ways.

4) Increase the number of the master trainer

The master trainers strengthened by the Project are one of the essential factors which can ensure the dissemination process. However, the number of the master trainers is limited so as to be able to cover other areas besides targeted area of the Project. It is necessary for the authorities to attempt to increase the number of the master trainer through master trainers training designed by the Project in each province and ICT.

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

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paying daily allowance. It is very useful and recommendable for the authorities to adopt this type of teacher training as a part of continuous professional development. Since Pakistani teachers are very motivated to be trained, this type of school based teacher training could be started with official notice and some appropriate orientation by the authority such as Bureau of Curriculum and Extension Center, Directorate of Curriculum and Teachers Education, DSD and FDE.

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, which focuses on practical skill in general, can be more efficient.

3-2 Lessons Learned

1) Strong commitment of Pakistan side

The majority of the stakeholders have been participating positively in the activities of the Project, according to interview results by the mission. 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. It is obvious that one of the main reasons that the Project will be able to finish successfully is Pakistan side strong commitment toward the Project, which shows strong commitment of the Pakistan side is crucial factor for any Project to obtain successful results.

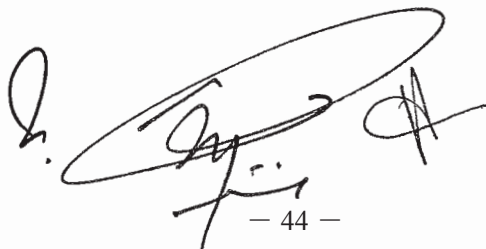
2) Teacher's strong motivation to participate in unpaid allowance training

It has been noticed that teachers are seeking training opportunities and they are 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

One of the reasons that Teaching Plan developed by the Project addresses real teacher's necessity is that some teachers who are actually teaching to students in classroom were selected as part of the members of Teaching Plan Development. Because not only deep understanding of subject matter and curriculum but also rich experience as a teacher are the requirements for elaborating good teaching plan.

When Pakistan side needs to develop such kind of pedagogical materials, it is recommended to



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incorporate some teachers with rich experience as member to improve the quality of these materials.

4) Importance of capacity development process for officers inside the system

TPD members were selected among officers from textbook related departments, teacher training departments as well as teachers in the government system. The Project did not rely on the human resources outside the system. It has not been easy process for the Project to complete all the teaching plans with quality. This challenging process, however, contributed a lot for the capacity building of the members and intensified the sense of ownership towards teaching plans among the members. 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

For the smooth implementation of Lesson study as efficient unpaid allowance school based training, the Project conducted training for school principals so that they could understand well about the meaning of lesson study. After the above training, schools and teachers became more cooperative towards the lesson study conducted in schools.

It shows that principals' understanding and leadership will contribute to conducting school based teacher training smoothly.

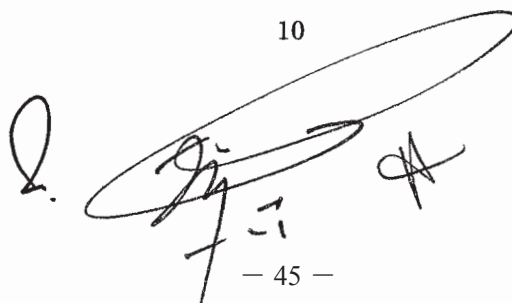
6) Importance of teacher's discretion for teacher training

Many teachers have been involved in coordination 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 teacher's participation, not only just participating training but also all process of training, can contribute to improve their commitment and effectiveness because teachers could have their autonomy to customize training by their own at their discretion.

7) PC-I formulation

For the implementation of the Project, PC-I has not been formulated either in Federal or provincial level. Therefore, some issues for sustainability of project activities in provincial level are arisen, after closing the project. In the case of nation-wide projects, therefore, PC-I must be formulated and approved in the project target provinces to secure the project sustainability at the time of launching the project.

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ANNEX 1

Project Design Matrix: Project for Promotion of Student-Centered and Inquiry- Based Science Education

(Ver. 1, 5-Jul-11)

Target groups : NISTE faculty of science education, teaching plan developers of ICT and provinces, master trainers and 4-8 class science teachers in Islamabad Capital Territory.
 Project duration : May 2009- April 2012 (3 years)

Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
<p>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 than 5 pilot clusters in ICT according to their setup.</p>	<p>1. SCIB teacher training model utilized in ICT other than 5 pilot clusters. 2. SCIB teacher training model is introduced to provinces with adoption/adaptation.</p>	<p>Survey on training programs and contents of provinces</p>	
<p>Project Purpose Effective SCIB training model that ensures teachers to deliver SCIB science lessons is established.</p>	<p>1. Well planned and implemented SCIB teacher training model including 1) preparation, 2) training deliver/method, 3) training contents, 4) monitoring and evaluation is compiled, documented and endorsed. 2. 70% of teachers in pilot areas in ICT who received training are acquired and practices at least one criteria of SCIB science lessons concept.</p>	<p>1-1. Documented Training Model 1-2. PIMC Minutes of Meeting (by March 2012) 2-1. End-line survey in selected schools in ICT 2-2. Monitoring report and progress/annual report</p>	<p>- Provincial authorities secure the budget for teacher training on SCIB science education. - New textbook on science are employed no later than 2012 academic year. - Federal and Provincial Governments and provincial education authorities put high priority on dissemination of SCIB science education.</p>
<p>Outputs 1. SCIB teaching plans for class 4-8 science are developed. 2. Master trainers are equipped with skills and knowledge to deliver SCIB science lessons. 3. Necessary interventions for effective teacher training are identified through pilot activities in Islamabad Capital Territory (ICT). 4. The experiences of model SCIB teacher training is shared among other educational related stakeholders and their interest in SCIB is increased.</p>	<p>1. The developed SCIB teaching plans receives endorsement from the provincial education departments. 2-1. 70% of the MTT participants succeeded in making the assigned practical materials (skills). 2-2. 70% of the participants improved lesson plans through the group work (skills). 2-3. 70% of the MTT participants improved their knowledge on science at the Post training survey (knowledge). 3-1. Documented pilot teacher training model are developed by the end of 2011.</p>	<p>1-1 Endorsement letter from MOE (for Grades) Name of education departments printed on the teaching plan as co-authors 2. Project progress report which include the following 1) MTT facilitators' assessment of the participants, 2) Group assessment of lesson plan.</p>	<p>- Teaching environment will not be deteriorated than the current situation.</p>

Project Design Matrix: Project for Promotion of Student-Centered and Inquiry- Based Science Education

(Ver. 1, 5-Jul-11)

<p>Activities</p> <p>1-1. The Project organizes the Teaching Plan Development Team involving representatives from participating provinces.</p> <p>1-2. The Development Team studies the new curriculum, textbooks and other existing teaching learning materials.</p> <p>1-3. The Project conducts baseline survey at selected schools for identifying current situation of science education and for collecting data for impact analysis.</p> <p>1-4. The Development Team develops draft prototype SCIB teaching plans based on new curriculum and available new textbooks through field testing at selected schools.</p> <p>1-5. The Development Team revises the draft prototype reflecting feedbacks from implementation in ICT.</p> <p>1-6. The Project facilitates the ownership of prototype teaching plans by the Provincial Education Departments and Institutions under CADD.</p> <p>1-7. The project supports adjustment of the prototype to be in line with the provincial textbooks.</p> <p>1-8. The Project prints SCIB teaching plans for training.</p> <p>2-1. NISTE designs the master trainer training programs based on the consultation with provincial institutions/FDE, reflecting needs and contexts of respective provinces/FDE.</p> <p>2-2. NISTE and provincial institutions/FDE improve selection process of training participants.</p> <p>2-3. NISTE develops training materials in collaboration with the Development Team.</p> <p>2-4. NISTE conducts the master trainer trainings.</p>	<p>3-2. SCIB teaching plans are utilized in 80% of pilot schools in ICT.</p> <p>4-1. NISTE organizes forums/events on SCIB science education at least twice.</p> <p>4-2. Lessons learned through pilot activities are shared in forums/events, and the importance is understood by provinces.</p> <p>4-3. Promotion materials are developed.</p>	<p>Improvement by MTT participants. 3) Result of Pre-Post survey of MTT</p> <p>3-1. Documented Training Model</p> <p>3-2. End-line survey report</p> <p>4-1,2. Project progress report / Result of questionnaire given at forums and other events</p> <p>4-3. SCIB Promotion materials</p>	<p>Inputs (Pakistan side)</p> <ol style="list-style-type: none"> 1. CIP Joint Coordinating Committee SCIB teaching plans developers from provinces Full-time/part time counterparts from NISTE and FDE <ol style="list-style-type: none"> 2. Facilities Project office at NISTE Utility at NISTE Meeting / Training room at NISTE <ol style="list-style-type: none"> 3. Local Cost Expenses for material development for Grade 8 Expenses for NISTE personnel to work in Islamabad 	<p>- NISTE faculty members and master trainers continue to work.</p> <p>- NISTE PC1 budget for the Project is disbursed until the implementation of master trainer training in July 2010.</p>
<p>Inputs (Japan side)</p> <ol style="list-style-type: none"> 1. Japanese experts (long and short-term) Chief advisor Educational evaluation expert Physical science expert Biological and earth science expert Master trainer training and teacher training expert <ol style="list-style-type: none"> 2. CIP training in Japan or in the third countries Equipment Office equipment <ol style="list-style-type: none"> 4. Local Cost Expenses for material development for Grade 4-7 Expenses for master trainer training Expenses for provincial members to work in Islamabad (travel costs and daily allowance) Expenses for NISTE personnel to work in provinces 	<p>2</p>	<p>2</p>		

ANNEX 1

Project Design Matrix: Project for Promotion of Student-Centered and Inquiry-Based Science Education (Ver. 1, 5-Jul-11)

<p>3-1. The Project and FDE formulate effective strategy to ensure implementation of teacher training at the cluster level in ICT. 3-2. Master trainers trained at NISTE conduct teacher training in pilot areas of ICT. 3-3. The Project conducts workshops for school supervisors and headmasters in collaboration with FDE. 3-4. The Project monitors the teacher training and usage of SCIB teaching plans. 3-5. The Project conducts post-training survey at selected schools. 3-6. The Project supports necessary activities on trial basis to ensure teachers to deliver SCIB science lessons.</p> <p>4-1 The Project organizes nation-wide forums and supports provincial level forums to share and disseminate good practices on SCIB science lessons among provinces. 4-2 The Project organizes awareness-raising activities on SCIB science lessons.</p>	<ul style="list-style-type: none"> • Expenses for teacher trainings in pilot areas • Expenses for printing and distribution of materials with training delivery for master trainers and teachers • Other Project activity expenses such as impact analysis, monitoring, holding forum, etc. 	<ul style="list-style-type: none"> • Remuneration for teaching plan writing for NISTE counterparts • Accommodation for provincial members to work in Islamabad. 	
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Annex 1-2 Plan of Operation (Level 1) Project for Promotion of Student-Centered and Inquiry-Based Science Education

Ver. 0, 4-Feb-09

Activity	2009												2010												2011												2012											
	Year 1				Year 2				Year 3				Year 4				Year 5				Year 6				Year 7				Year 8				Year 9				Year 10				Year 11				Year 12			
	Project Year	Month	School Year		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4				
Output 1: Teaching plans development																																																
1-1 The Project organizes the Teaching Plan Development Team involving representatives from participating provinces.																																																
1-2 The Development Team studies the new curriculum, textbooks and other existing teaching learning materials.																																																
1-3 The Project conducts baseline survey at selected schools for identifying current situation of science education and for collecting data for impact analysis.																																																
1-4 The Development Team develops draft prototype SCIB teaching plans based on new curriculum and available new textbooks through field testing at selected schools.																																																
1-5 The Development Team revises the draft prototype reflecting feedbacks from implementation in ICT.																																																
1-6 The Project processes the recognition of prototype teaching plans by the Curriculum Wing of MOE.																																																
1-7 The Project supports adjustment of the prototype to be in line with the provincial textbooks.																																																
1-8 The Project prints SCIB teaching plans for training.																																																
Output 2: Master teachers training																																																
2-1 NISTE designs the master trainer training programs based on the consultation with provincial institutions/FDE, reflecting needs and contexts of respective provinces/FDE.																																																
2-2 NISTE and provincial institutions/FDE improve selection process of training participants.																																																
2-3 NISTE develops training materials in collaboration with the Development Team.																																																
2-4 NISTE conducts the master trainers trainings.																																																
Output 3: Pilot areas implementation																																																
3-1 The Project and FDE formulate effective strategy to ensure implementation of teacher training at the cluster level in ICT.																																																
3-2 Master trainers trained at NISTE conduct teacher training in pilot areas of ICT.																																																
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3-5 The Project conducts post-training survey at selected schools.																																																
3-6 The Project supports necessary activities on trial basis to ensure teachers to deliver SCIB science lessons.																																																
Output 4: Strengthening collaboration between NISTE and provincial institutions/FDE																																																
4-1 The Project organizes nation-wide forums and supports provincial level forums to share and disseminate good practices on SCIB science lessons among provinces.																																																
4-2 The Project organizes awareness-raising activities on SCIB science lessons.																																																

Note: Mid-term review will be conducted in October 2010, and project evaluation will be conducted 6 months before the end of the cooperation period, October 2012.

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