

**エジプト・アラブ共和国
小学校理数科教育改善プロジェクト
終了時評価調査報告書**

平成 18 年 3 月
(2006 年)

独立行政法人 国際協力機構

エジプト事務所

エジ事
JR
06-002

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序 文

エジプト・アラブ共和国では、教育の近代化が優先度の高い政策の一つであり、理数科教育についても、従来の暗記的な手法のみに頼った授業方法を質的に改善していくことが重要な課題となっている。

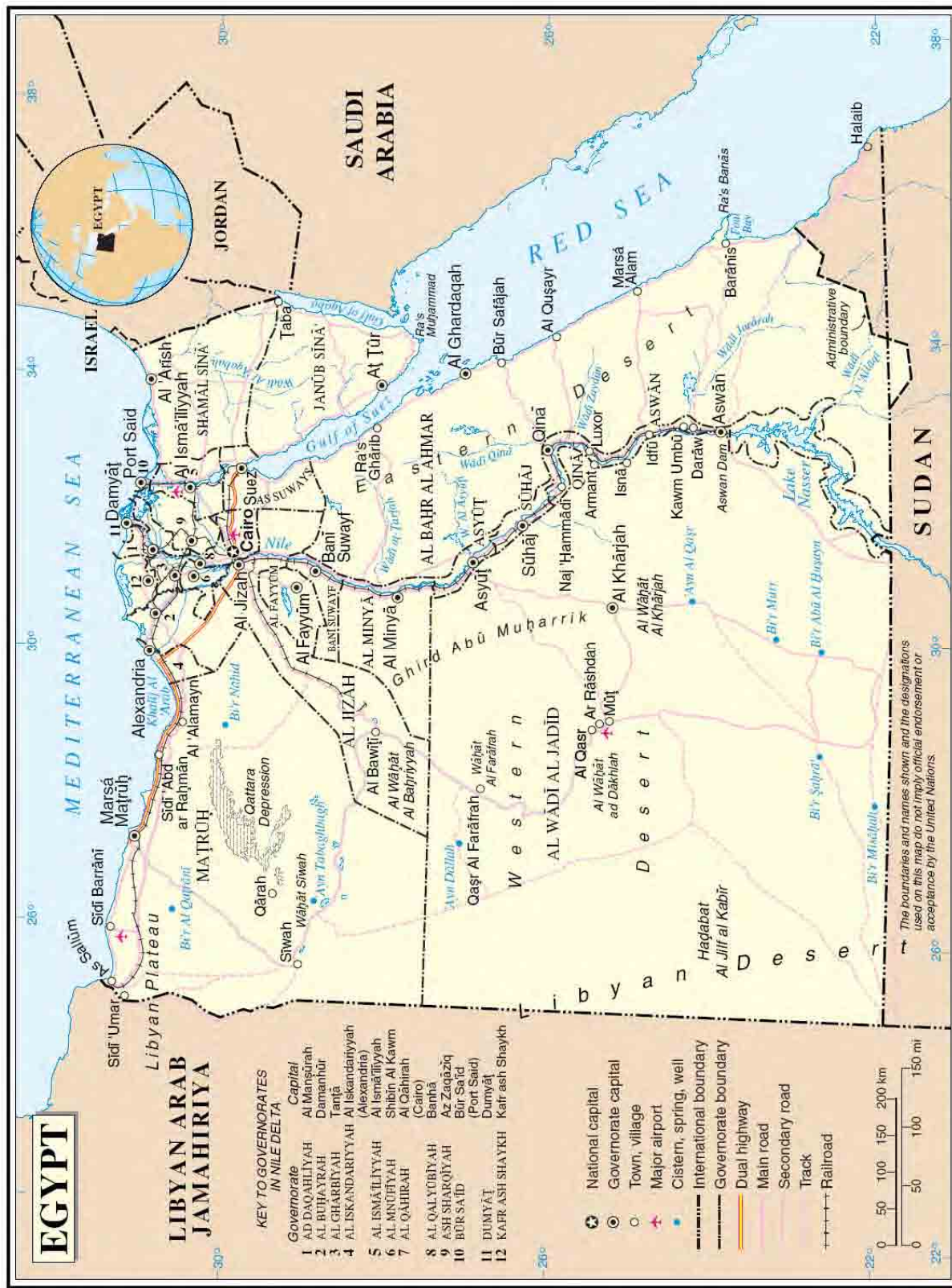
このためエジプト政府は、同国の理数科教育に、児童が自ら考え、自ら答えにたどり着くプロセスを重視した新たな教授法を導入しようと、その支援を我が国に要請してきた。これを受けて JICA は、1997 年から 2000 年の 3 年間、専門家チームを派遣し、「小学校理数科授業改善」を実施し、小学校教師用の指導書（ガイドブック）を作成した。本プロジェクトは、このガイドブックを用いた新しい教授法をモデル校において定着させ、さらなる普及のための基盤を整備することを目標とし、2003 年 4 月より 3 年間の予定で実施してきたが、両国関係者の協力により、概ね順調に進捗してきたといえる。

今般、同プロジェクトの終了時評価を行うことを目的として、2005 年 11 月に調査団を派遣し、エジプト政府および関係機関との間で、プロジェクトの進捗状況を確認し今後の方向性について協議した。本報告書は、同調査結果を取りまとめたものであり、今後のプロジェクトの展開に、さらには類似のプロジェクトに活用されることを願うものである。

ここに、本調査にご協力をいただいた内外関係者の方々に深い謝意を表するとともに、引き続き一層のご支援をお願いする次第である。

2006 年 3 月

独立行政法人 国際協力機構
エジプト事務所長 岡本 茂



Department of Peacekeeping Operations
Cartographic Section
Map No. 3795 Rev. 2 UNITED NATIONS
January 2004

略 語 表

C/P	Counterpart	カウンターパート
GB	Guide Book	ガイドブック
JCC	Joint Coordination Committee	合同調整委員会
NCERD	National Centre for Educational Research and Development	国立教育研究開発センター
PCM	Project Cycle Management	プロジェクト・サイクル・マ ネージメント
PDM	Project Design Matrix	プロジェクト・デザイン・マ トリックス
PPMU	Program Planning and Monitoring Unit	教育省プログラム計画・モニ タリングユニット
R/D	Record of Discussions	協議議事録
SBTU	School Based Training Unit	スクール・ベースド・トレ ニング・ユニット
TP	Teaching Plan	授業計画

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第1章 終了時調査団の概要

1-1 調査団派遣の目的

エジプト・アラブ共和国では、教育の近代化は優先度の高い政策の一つである。とりわけ理数科教育においては、従来の暗記的な手法のみに頼った授業法を質的に改善していくことが重要な課題となっている。

エジプトの理数科教育に、児童が自ら考え、自ら答えにたどり着くプロセスを重視した新たな教授法を導入するため、我が国は1997年から2000年の3年間、専門家チームを派遣し、「小学校理数科授業改善」を実施し、小学校教師用の指導書（ガイドブック）を作成した。

新しい教授法のさらなる普及を図ろうと、2003年4月より国立教育研究開発センター（National Centre for Educational Research and Development: NCERD）をカウンターパート（Counterpart: C/P）機関として、本プロジェクトが3年間の予定で実施されており、現在、4名の長期専門家（チーフアドバイザー、業務調整／教育計画、理科教育、数学教育）を派遣中である。カイロ県に4校のモデル校を設けて、専門家チーム派遣時に作成したガイドブックの改訂を行いつつ、C/P機関と共に実際にモデル校理数科教師に対して新たな教授法を実践指導するとともに、教育省関係者や周辺校の教師を対象に公開授業などの機会を設け、同教授法を用いた授業の様子を広く伝え、効果を示すことで同教授法の定着を図ろうとしている。

2004年8月に実施された中間評価では、校内研修を担当するスクール・ベースド・トレーニング・ユニット（School Based Training Unit: SBTU）がまだ十分に機能しておらず、同教授法の普及を同ユニットに担わせることは困難であると判断されたことから、2005年4月以降、カイロ県の教育委員会と連携し教員研修をプロジェクトの新たな活動としてC/P機関と共に企画・実施してきている。

本プロジェクトの協力期間終了を2006年3月31日に控え、本終了時評価調査ではプロジェクト目標の達成状況などを把握し、プロジェクト・デザイン・マトリックス（Project Design Matrix: PDM）に基づき、評価5項目（妥当性、有効性、効率性、インパクト、自立発展性）の観点からC/P機関と合同評価するとともに、今後の小学校理数科教師の能力向上に関する先方政府の方針や日本の協力方針についてエジプト側関係機関と協議することを目的に、本調査団を派遣した。

1-2 調査団の構成

担当分野	氏名	所属
団長／総括	岡本 茂	JICA エジプト事務所長
教育協力	原 智佐	JICA 人間開発部 第一グループ 基礎教育第一チーム長
理科教育	長谷川俊雄	北海道教育大学 旭川校 教授
数学教育	大久保和義	北海道教育大学 札幌校 教授
企画評価	丹原 一広	JICA 人間開発部 第一グループ 基礎教育第一チーム
効果分析	星 光孝	JICA エジプト事務所
評価分析	渡辺亜矢子	株式会社 地域計画連合

1-3 調査日程

1	11月5日	土	17:55 カイロ着 (EK923) (渡辺団員)
2	11月6日	日	10:00 JICA 事務所打合せ
			12:00 NCERDC/P 個別協議 (1)
			13:00 日本人専門家との協議
3	11月7日	月	09:00 NCERD 所長協議
			10:00 NCERDC/P 協議 (2)
			12:00 対処方針会議
4	11月8日	火	09:00 NCERD 協議
			11:00 モデル校協議 (1) Aziz Abaza School
			13:00 モデル校協議 (2) Garden City School
			15:00 NCERDC/P 個別協議 (3)
5	11月9日	水	09:00 カイロ県教育委員会
			12:00 モデル校協議 (3) Mohammad Farid School
			13:30 モデル校協議 (4) Ramsis School
6	11月10日	木	10:00 教育省協議
			12:00 NCERDC/P 協議 (4)
			15:00 JICA 事務所にて経過報告
7	11月11日	金	資料整理
8	11月12日	土	17:55 カイロ着 (EK923) (長谷川、大久保団員)
			21:45 カイロ着 (MS965) (原、丹原団員)
9	11月13日	日	10:00 事務所打合せ
			14:00 日本大使館表敬
			15:00 教科専門家との協議
10	11月14日	月	10:00 教育省協議
			14:00 カイロ県教育委員会
11	11月15日	火	10:30 教育省表敬
			12:00 モデル校授業視察 Mohammad Farid School
			14:00 PPMU 訪問
12	11月16日	水	09:00 ミニッツ協議
13	11月17日	木	10:00 JCC 開催
			11:30 合同評価メンバーと協議
14	11月18日	金	ミニッツ作成
15	11月19日	土	資料整理
16	11月20日	日	09:30 日本人専門家と協議 (原、長谷川、大久保)
			11:30 Mubarak City of Education 視察 (丹原、星、渡辺)
17	11月21日	月	09:30 カイロ県教員研修視察
			13:00 ミニッツ署名
18	11月22日	火	14:00 日本大使館報告
			15:00 団内協議、報告書打合せ
19	11月23日	水	02:20 カイロ発 (AF521) (原、丹原団員)
			20:00 カイロ発 (EK924) (長谷川、渡辺団員)

1-4 主要面会者

教育省

Dr. Reda Abu Seria	First Undersecretary for General Education
Dr. Amin Mohammad Abu Bakr	Undersecretary for Basic Education
Ms. Karima Ahmed Ahmed Saed	Counselor, Science Education
Mr. Mohamed Salama Mohamed El Magiry	Counselor, Mathematics Education
Mr. Mustafa Mohamad	General Inspector of Science

カイロ県教育委員会(Cairo Governorate Education Modereya)

Ms. Susan Mahmoud Ibrahim El Misery	Director of General Education
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国立教育研究開発センター (NCERD)

Dr. Mustafa Abd El Samie Mohammad	Director
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Mubarak City of Education

General Mahmodi	Director of
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Program Planning and Monitoring Unit (PPMU)

Mr. Mohamed M. M Bondok	Head of Monitoring and Evaluation Unit
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在エジプト日本大使館

下野 哲史	二等書記官
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プロジェクト専門家チーム

杉山 佳彦	チーフアドバイザー
宮島 茂	業務調整／教育計画
関原 睦	理科教育
石郷岡 卓	数学教育

第2章 プロジェクトの概要

2-1 基本計画

名称	小学校理数科教育改善プロジェクト Improvement of Science and Mathematics Education in Primary Schools
協力期間	2003年4月1日～2006年3月31日（3年間）
上位目標	理数科のガイドブックを用いた新しい教授法が、カイロ県及びPPMU研修対象県の小学校で導入される
プロジェクト目標	理数科のガイドブックを用いた新しい教授法がモデル校に定着し、さらなる普及のための基盤が整備される
期待される成果	1. NCERDのスタッフ(C/P)が、教員に対して新しい教授法（授業案作成を含む）を的確に指導することが出来る 2. モデル校の教員(C/P教員)が新しい教授法を習得し、授業で実践することができる 3. 新しい教授法が、効果的であると実証される 4. ガイドブックが改訂される 5. 新しい教授法が、既存の教員訓練コースの中で導入される 6. 新しい教授法が、教育関係者によって認知される

2-2 プロジェクト・デザイン・マトリックス

JICAでは、1990年代前半からプロジェクト管理手法の一環としてプロジェクト・サイクル・マネージメント（Project Cycle Management: PCM）手法を導入した。PCM手法において中心的役割を果たすのは、PDMと名付けられたプロジェクト計画概要表である。これは「目標」、「活動」、「投入」等のプロジェクトの主要構成要素や、プロジェクトをとりまく「外部条件」との論理的相関関係を示したものである。本プロジェクトにおいても2003年2月、協議議事録（Record of Discussions: R/D）締結時にPDMを作成しR/Dの付属文書として承認されている。

2-3 実施体制

（1）実施体制

本プロジェクトのカウンターパート機関は、教育省下部組織のNCERDであり、NCERD所長をプロジェクトダイレクター、NCERDカリキュラム局長をプロジェクトマネージャーとした。本プロジェクトは、教授法普及に向けた活動の一環としてカイロ県教育委員会と連携しカイロ県の言語実験校教員を対象にした教員研修を実施しているほか、プログラム計画・モニタリングユニット（Program Planning and Monitoring Unit: PPMU）がエジプト全27県の代表教師を対象にカイロで実施した夏季研修にも3ヵ年協力した。¹

（2）対象地域

本プロジェクトでは、パイロット的に生徒中心の学習方法、問題解決型学習方法を導入し、効果を測定することを目的にカイロ県内の言語実験校4校（Ramsis校、Mohamad Farid校、Garden City校、

¹ PPMUは、世銀・EUとエジプト教育省が連携し、教育分野の協力を担う実施主体として設置したユニットであり、NCERD所長はPPMUの代表も兼務している。PPMUは、全国27県を対象に協力を行っており、その一環として2002年から2004年の3ヵ年にかけて各県から理数科それぞれ2名ずつ教員をカイロに集め、夏季研修を実施した。JICAは、全3年の研修すべてに講師を派遣し、本プロジェクトが勧める教授法の実践法を取り入れた講義を各回2日間の日程で実施した。

Aziz Abaza 校) をモデル校として位置づけ協力を行った。²プロジェクト期間を通し同一の生徒達に対し上記学習方法を用いた指導を行い、3 ヶ年を通した学習方法導入効果を測定できるよう、対象の生徒はプロジェクト開始時に 4 年生とした。彼らが 5 年生、6 年生と進級するのに応じて、プロジェクトの指導対象学年も 5 年生、6 年生と変更していった。また、モデル校との比較のためカイロ県内に 4 校のコントロール校を設置し、モデル校と同一のプレテスト、ポストテストを実施し、相対比較を実施した。

(3) その他、合同調整委員会等

本プロジェクトでは、NCERD 所長を議長として合同調整委員会 (Joint Coordination Committee: JCC) が設置され、広義のカウンターパートとして、中央行政部門の教育省基礎教育局長、理科、数学のカウンセラーを含む教育省関係者のほかに、カイロ県教育委員会の一般教育担当局長と職員、モデル校の校長と教員など多様なグループがあるが、関係者間のコミュニケーションは概して円滑であった。

² 言語実験校は公立校であるが、試行的に小学校入学時から英語の授業を部分導入した教育を行っている。理科、算数は英語による授業が実施されている。現在同実験校はカイロ県内に約 110 校設置されている。

第3章 プロジェクトのアプローチ

3-1 プロジェクトの構成について

本プロジェクトでは、教師用ガイドブック(Guide Book: GB)を活用した理数科の授業方法の実践、検証を核としていて、その概要は次のとおりである。

(1) プロジェクトの活動内容

- ① モデル校における実践指導
- ② 実践を通じた指導書の改訂
- ③ 新しい指導方法が児童に与える影響の検証
- ④ 授業見学等の普及活動の実施

(2) プロジェクトの実施体制

- ① 長期専門家の派遣
 - ア. チーフアドバイザー 1名：理数科教育の研究者（教授または助教授クラス）
 - イ. 理科教育 1名：初等理科教育に関する実践研究の実績を有する者
 - ウ. 数学教育 1名：初等数学教育に関する実践研究の実績を有する者
 - エ. 業務調整 1名：（JICA）
- ② 短期専門家の派遣
 - ・ 大学研究者が年間 3 名程度：事業の円滑遂行のための指導助言

北海道教育委員会には、この事業が GB を使用した実践指導や実践を通しての GB の改訂が中心となるため、その指導者として小学校の理科教育と算数教育で優れた実践をされている先生方の協力・派遣について要請した。

具体的には、上記（2）① のイとウの教員各 1 名（2004 年度～2005 年度の 2 年間）の派遣がなされ、北海道教育委員会との連携のもとにこのプロジェクトが推進されてきた。

3-2 NCERD カウンターパートの指導

3-2-1 指導方法、体制、頻度

毎週火曜日の午前中（10:00-11:30）に C/P 全員の参加を条件に開催されている。

内容としては、月・週の行事の確認や、C/P に割り当てられ C/P が作ってきた授業計画（Teaching Plan: TP）の検討、議論を通して、GB の活用の仕方、実際の授業の進め方、TP の書き方などについて指導をしてきた。モデル校では、GB を活用した指導案の作成の仕方や関連資料の検討、授業後の授業検討を通して、教師の活動、授業の構築の仕方、指導法についての指導を行ってきた。また、カイロ県での教員研修に関する内容、研修のあり方について、特に小学校教員への研修では、実践に即した研修の必要性について指導を行ってきた。

3-2-2 カウンターパートの評価

（1）C/P スタッフ全員が、新しい教授法のコンセプト（考え方）を適切に理解する。

専門家により、2003 年度-2004 年度にかけて C/P が作成した学習指導案についていくつかの点から評価を行っている。2003 年度と 2004 年度では評価の観点が変わっている（2003 年度は問題解決におけるグループ学習を中心的に取り上げたが、2004 年度は問題解決学習の考え方に焦点を当てた）が、いずれも 0-4 点（平均 1.5 点）で評価をした。結果として、本プロジェクトから参加した 2 人が

2003年度は平均して1.5点を下回ったが、それ以外は平均1.5点以上をとっており、概ね力をつけてきていると考えられる。

(2) C/P スタッフ全員が、新しい教授法による授業案を作成できる。

同じ単元内でも指導する時間によって波があり、コンスタントに問題解決的な授業案を考えられる力をつけることが求められる。特筆すべきこととして、資料からあるC/Pは、日本での研修を受けた後に飛躍的に向上していることがわかり、本国研修の有用さが示されている。

(3) C/P スタッフ全員が、新しい教授法によりの確に教員を指導できる。

NCERDのC/Pがパイロット校のC/Pを評価した観察シート(導入、展開、まとめに関して、それぞれ0-2の3段階による評価)からは、確実に力がついてきているとは認められないが、専門家の目からみて、この期間を通して、全体的に子どもの考え方を大事にし、子ども中心の問題解決的な学習の理解は確実に定着しているとのことである。なお、NEERDのC/Pは、6人が2つのグループに分かれてそれぞれ2つのパイロット校での指導を行う体制をとった。少なくとも、3人のうち1人は各授業に参加することにしていたが、昨年度はC/Pの出張、別の用事などで必ずしもそうならない場合があったが、今年度は昨年度に比べて参加率が高くなっている。

3-3 モデル校への巡回指導

3-3-1 指導方法、体制、頻度

エジプトの算数の授業は、教師が子ども達に対して学習内容を説明し、その内容を記憶させるためにドリルに時間をかける授業が多くなる傾向にある。これに対し、子ども達が自ら主体的に授業に関わり、各自の考えや発想を出し合い、練り合って結論を導く学習を支援する「子ども中心」「問題解決」による授業の構築を目指す。そのような授業改善を求めた本プロジェクトの共通理念に基づいてGBを使い、学習指導案を作成し、その指導案をもとに授業の実践を行った。その際、今後の発展性を考え、NCERDのC/Pがグループを組んで指導の中心になり、JICA専門家がサポートする体制をとっていたが、C/Pが当日他の仕事、用事と重なって来られないことがあり、実際には専門家が関わる機会が多かった。各パイロット校には、毎週1回の学校訪問を行い、授業案の検討をしたり、実際の授業を参観したりして、その授業についての検討をすることが主であった。3年次になってからは、本プロジェクトの仕事としてGBをもとにした授業の普及を意識し、カイロ県研修に重点をおくようになり、パイロット校への週1回の学校訪問はできなくなったが、カイロ県研修が授業を通じた実践的な研修に重きをおいたため、授業参観をも含んでおり、そうした機会にパイロット校の教員の授業公開をお願いするなどして、モデル校への指導を行ってきた。

3-3-2 カウンターパート教員の評価

(1) 全C/P教員が、新しい教授法のコンセプト(考え方)を適切に理解する。

カイロ県の研修等でもモデル校のC/Pに参加してもらっているが、研修に参加している教員の模擬授業等の実践において、問題解決的な授業とは何かを指摘したり、自ら子どもを相手に授業実践を公開したりするなど、新しい教授法に関して、自らが授業計画を立て、実践ができるようになってきている。

(2) 全C/P教員が、新しい教授法によりの確に授業を計画し実践できる。

パイロット校の教員による研修における参加教員による評価においても、全員が良い評価をされている。

3-4 ガイドブックの改訂

3-4-1 作業の進め方

2003年7月に行われた北海道教育大学でのプロジェクト会議でGB改訂作業に関わることが議論された。この会議でミニプロ時に考えられたGB作成の考え方についての説明をし、改訂に関してプロジェクト委員会の考え方として、以下のように決定した。

- ① 実際に内容を検討した結果、全面的に大幅な改訂が必要である
- ② 理科はコンセプトを変える必要がある（仮説実験授業→問題解決的手法）
- ③ 改訂は日本人専門家が中心となっていく（この理由として、C/Pはパイロット校での授業実践で忙しいこと、C/Pの力量、コンセプトをつけるのには時間がかかり期間内では間に合わないこと、があげられる）
- ④ 新学年に合わせた学年、内容で改訂する

3-4-2 留意したこと（コンセプト、コンサイス版と完全版を作成した意図）

作成したGBの完全版のほかに、エジプトの理数科教員が持ち運ぶのに便利なコンサイス版を作成し、GBの普及のための教員研修において使用した。

3-5 現職教員研修実施

3-5-1 PPMU 研修

平成14年4月5日-17日に今フェーズに関連するJICA関連短期調査団が派遣された。その調査団にPPMUから、GBの活用についての話があり、PPMUではそのGBを授業実践で活かすため、すでに2つの県（イスマエリア、ケナ）でGBのダイジェスト版を使用してNCERDのC/Pが指導教員となって、トレーニングを行っていることが示された。また、GBの活用に関して、PPMUから以下のようなカスケード方式によって、教員教育を行いたいという要望があった。

- 1段階 県単位の指導者(A)の養成（ここに教育大の専門家が関わってほしい）
- 2段階 県の地方の指導者(B)を養成（Aが指導）
- 3段階 各学校のシニア教師(C)を指導(Bが指導）
- 4段階 各学校の教師を指導

プロジェクト側としては、GBの普及に関しては、①GBを全国に広めること、②GBを実践で使ってよりよいものに修正すること、また、実践を通して普及させる（研究授業等）こと、が必要であり、支障のない限り①に関しても手助けをしていくが話された。さしあたり、2002年8月にプロジェクトに先駆けて、調査団として理数科の専門家を1カ月程度派遣することになった。

内容としては、5日間のPPMU研修のうち初めの3日は算数・理科のガイドブックを用いた研修を行い、後の2日でPPMU独自の研修を行うというものであった。この年の参加者は、PPMU対象県（15県）のうち7県のインスペクター、シニアティーチャークラスの教師が対象となって研修を受けた。また、この研修は2003年、2004年にも延長され、エジプト27県全県からの理科、算数それぞれ2人ずつのインスペクター、シニアティーチャークラスの教師が集まり、研修を受けた。研修は毎年、前半、後半それぞれ2回ずつ行われた。

算数の研修の講師はJICAの専門家を中心として、NCERDのC/Pが加わり、また、内容としては、①数学教育の目的 ②問題解決 ③数学的活動 ④ガイドブックの紹介 ⑤ガイドブックと学習指導案で、②～⑤に関しては、ワークショップと取り入れて研修が行われた。研修後の参加者へのアンケート調査によれば、この研修に対する満足度は第1週、2週を合わせて95%程度を超えており、その

成果の大きさが分かる。特に、算数教育の目指している方向性、算数での問題解決による指導法、算数の授業を行う際の授業案の作成に関しては、ほとんどすべての参加者からその重要性について同意が得られた。また、最もよくなかったのは、VTR で日本の授業を見てもらい、ストラテジーや活動の大事さを理解してもらおうと思ったが、約 20%の受講生が役に立たなかったという回答をしていた。これは多分に、言葉の問題もあるものと考えられる。

研修での指導法や使用した教具などについては、授業で役立つかという質問に対しても、すべての受講生から有用であるという回答があり、用意した内容と方法が適切だったと思われる。

3-5-2 カイロ県研修

2004年7-8月の本プロジェクトに関する中間調査で、カイロ県教育委員会と協議し、既存の教員研修コースの一部として、「子ども中心」「問題解決」による授業についての研修を行うこと、カイロ県の教員向けに公開授業を開催することが決定した。実際に研修は2005年2月から始まり、今までに6回の研修（2日間研修が3回、3日間の研修が3回）行われた。

内容としては、子どもの学ぶ意欲・動機を重視した指導はどうあるべきかを、可能な限り具体的な実践に役立つように解説し、受講者の今後の実践的な自己研修や授業改善に役立つことを意識した。具体的な内容としては、数学教育における問題解決授業についての説明、具体的な単元、内容を取り上げたガイドブックの説明、具体的な学習指導案の作成、研修に参加した教師の学習指導案による模擬授業を通じた授業の検討などを行ってきた。

後半の3回は3日間の日程にして、パイロット校教師による研究授業を行い、その後に授業検討会を行った。指導者は、前半の2回は日本人専門家が中心となっていたが、3回目以降はNCERDのC/Pが中心となって研修を進めていった。

アンケート結果によると、研修に参加したほぼ全員の教員は「子ども中心」「問題解決」による授業が理解できたとしており、満足しているようであった。一方、オープンクラスの項目でも述べたように、「この考え方がエジプトで受け入れられるか」という質問に対しては、他の質問項目と比べやや否定的な回答が多かった。

この研修を通して、C/Pの欠点として、小学校算数をどのように教えるのか、その基盤となる概念は何なのかなどを参加した教員が十分に説明できないところがみられ、今後の普及に向けてはそうした点の理解と指導力を育成することが大事である。この点については、日本側も十分に専門家を派遣できなかったこと、派遣の時期が適切でなかったことにも原因があると思われる。

3-6 オープンクラスの実施

プロジェクトの中盤以降においては、広く教育行政関係者や理数科教師などを対象として、パイロット校での授業を見学する機会を設けたり、新しい授業方法に関する各種の講習会を開催したりするなど、普及活動を積極的に展開することが大切であると考えた。

モデル校におけるオープンクラス（授業公開）では、それまでに日本側専門家、NCERDのC/Pが指導してきた「子ども中心」「問題解決」による理科、算数の授業を公開することによって、教師が中心となっている従来の授業と比較して、子どもたちが主体となり生き生きとした姿で学習をしている様子を参観してもらい、その授業のよさを分かってもらうことが大切であった。実際、今までに初年度はMohamed Farid Experimental Language School（2003年12月15日）とAziz Abaza Experimental Language School（2004年3月18日）、2年目はRamsis Experimental Language School（2004年12月19日）とGarden City experiment language school（2005年3月23日）の合わせて4回、すべてのモデル

校で授業公開を行っている（参加者は合計 250 名程度）。4 回のアンケートの集計では、参加者のうち 95 名から回答をもらっているが、ほとんどの人（94 名）が授業参観に満足していた。ただ、「問題解決の授業がエジプトの学校に受け入れられるか」という質問に対して、同意したのは 81 名（85%）、同意しない 4 名（4%）、それ以外が分からないという回答である。理由としては、カリキュラムの過密化、1 学級の人数が多いという点があげられていた。

なお、3 年目の今年、Aziz Abaza Experimental Language School で、このフェーズで最後の第 5 回のオープンスクールが 2005 年 12 月 13 日に行われることになっている。

3-7 プレテスト・ポストテスト

3 年間の調査を通して、モデル校で理科、算数の GB を使用し、授業実践をしてきた効果を検証する。研修を始めるときに、8 校のモデル校とコントロール校で基礎的な調査(Baseline Survey)を行い、学校間に成績、態度面でも差がないことを確認している。

GB を用いた指導法は、「子ども中心」「問題解決」を柱にし、「考える力」や「問題解決能力」を養うとともに子どもの主体的な活動を大事にし、また、子ども自らが解決する過程を大事にし、「算数の活用能力」などを高めていくこと、さらに、「考えることの楽しさ」を味わわせ、算数への関心・意欲・態度を育てていくことを目指す授業といえる。

このため、プロジェクトの実施に当たっては、モデル校、コントロール校でプレテストを含めて児童の学力調査を計 4 回実施した。なお、学力調査の実施に当たっては、プロジェクトが目指す意図が的確に評価されるよう、独自の調査方法を開発することを心がけた。実際には、基本的な学習内容、方法の到達度と、算数・数学に対する態度の面でモデル校とコントロール校の比較を行い、このプロジェクトによる学習指導法の効果を検証することにある。整理すると以下のことが考えられる。

- ① 各学年で学習した内容、方法の習得に効果があったか
- ② このプロジェクトが始まってから 3 年間で子どもの算数・数学に対する態度がどのように変化してきたか
- ③ コントロール校と比較してどのような違いが出てきたか

この 3 年間の指導で、アチーブメント成績の急激な成長は期待できない。しかし、数学的な見方・考え方、算数学習に対する意識、態度、興味等に変化が生じるものと期待する。

プレ・ポストテストの実施時期は以下のとおり。

<プレテスト>

4 学年 2003.9 - 2003.10

<ポストテスト>

4 学年 2004.4.

5 学年 2005.4 - 2005.5

6 学年 2005.12

ポストテスト内容としては、以下の点が挙げられる。

- ① 生徒に対する算数学習への態度、興味に関する質問
- ② 生徒に対する学習内容に関するアチーブメントテスト（その学年で学習した内容）
- ③ 教師に対する態度、興味に関する質問

生徒に対する算数学習への態度、興味に関する質問についての分析は以下のとおり。

(1) 4年生（ポスト）から5年生（ポスト）にかけての比較

- ・モデル校間の比較では「数学の問題を解くときには、友達と一緒に解くことが効果的である」「いろいろな方法で問題を解くことは大変大切である」に関して有意に上昇していて、それ以外の質問項目については変化がない。
- ・コントロール校間の比較では、ほぼすべての項目について有意に上昇している。

(2) モデル校とコントロール校の比較

- ・4年生では、ほとんどの項目に関してモデル校が有意に上位にあった。
- ・5年生では、「数学の問題を解くときには、友達と一緒に解くことが効果的である」「数学の問題を解くときには、友達と一緒に解くことが効果的である」「先生は上手に教えてくれるが算数は難しい」が、モデル校が有意に上位にいる。

3-8 本邦研修の活用

(1) 日本での「子ども中心」「問題解決」の実際の授業について

- ・日本で主に小学校での理科と算数の授業参観を通して、エジプトと日本の授業法の相違点を理解する。
- ・授業活動に関して、エジプトと日本の児童の相違を理解する（教師の問いかけ、児童同士の意見交流などの観察から）。

(2) 日本の学校について

- ・教師の学校内研修はどのように行われているか（大学での講義、訪問した学校での聴き取り調査）。
- ・教師の学校外での研修はどのように行われているか（文部科学省、国立教育政策研究所、北海道教育研究所、北海道立理科センター、札幌市教育センターなどの視察）。

(3) 教育行政研修について

- ・日本の教育制度・教育行政を学び、同時に管理職等の役割などについて理解を深める。
- ・校内研究会や教科研究会、教育委員会、研究所が主催する教員研修の多様な形態について理解を深める。
- ・研修の成果を本プロジェクトの事業推進に反映させ、将来的にはエジプトでの教員研修制度の確立に寄与する。

(4) 6週間（教育行政研修、平成17年度C/P研修は2週間）の研修からエジプトの教育に活かされること

日本での実際の授業参観をすることにより、C/Pが研修している「子ども中心」「問題解決」の授業がどのように展開されているか、また、どのように子どもの考え方を引き出し、その考え方をまとめていくかを理解し、TPやModel Lesson PlanをC/Pが考えていく際に、授業のイメージを描きながら、作成することができるようになった。

また、教育省の理科、算数のカウンセラー等の教育行政研修では、算数、理科の実際の授業について理解するとともに、文部科学省、国立教育政策研究所を訪問し、日本の教育全般、特に教員研修のあり方について理解し、その考え方を教育省で報告したり、教員研修時に示したりして、そのよさを取り入れようとする姿勢がみられる。

3-9 国内支援体制とその取り組みの特徴

国内では、エジプトに派遣されている専門家を支援する体制をとってきた。北海道教育大学からこのプロジェクトに参加している実質教員の人数は、算数、理科合わせて35人程度になる。

主な仕事は、1つ目に、GBの改訂がある。C/Pがモデル校での実際的な指導に当たるため、十分な時間を確保できないこと、算数班ではC/Pの人数も少なく、これ以上の負担を強いることが適切とは思われなかったことから、北海道教育大学の教科教育の専門家に加え教科内容（代数学、解析学など）の専門家がチームを組んで改訂作業を進めることになった。

また、学校での実践的な指導を行ってきているエジプト側の質問、要請に対して迅速に対応すべき体制をとり、実際にそのように進めてきた。

第4章 終了時評価の方法

4-1 評価の手法

本終了時評価は、前述の日本側団員と下記のエジプト側団員からなる合同評価調査団によって実施された。

Dr. Mustafa Abd El Samie Mohammad	NCERD 所長
Dr. Amin Mohammad Abu Bakr	教育省基礎教育局長
Ms. Karima Ahmed Ahmed Saed	教育省理科カウンセラー
Mr. Mohamed Salama Mohamed El Magiry	教育省数学カウンセラー
Ms. Susan Mahmoud Ibrahim El Misery	カイロ県教育委員会

評価作業は、日本側、エジプト側が共同して PDM 達成状況について計測、分析を行い、その結果を踏まえて日本側エジプト側共同で 5 項目評価とこれに基づき提言と教訓を導き出した。評価 5 項目については以下を参照。

妥当性	評価時におけるプロジェクトの上位目標とプロジェクト目標の正当性
有効性	プロジェクトのアウトプットによって得られるプロジェクト目標の達成度
効率性	プロジェクトの実施過程における生産性。投入を用いてアウトプットが達成される度合い
インパクト	プロジェクトの実施により生じる直接的または間接的なプラスとマイナスの変化。計画当初に予想されなかった変化も含む
自立発展性	プロジェクトが終了した後の便益・開発効果の持続性

4-2 PDMe（評価用 PDM）の作成

本調査では主に中間評価において修正を加えた第 2 版の PDM を、指標設定、指標入手手段の明確化で補完することによって、評価用 PDM（PDMe）を作成した。（付属資料 II 参照）

4-3 情報・データ収集方法

（1）調査票（調査グリッド）の作成

PDMe をもとにして、本調査に必要な主要調査項目と情報収集方法を網羅した以下のような 2 種類の調査グリッドを作成した。

① 計画達成度・実施プロセス調査票（達成度グリッド）

評価 5 項目による価値判断の対象となる「事実」の把握。「実績」の確認と「実施プロセス」の把握を目的とする。

② 評価調査票（評価グリッド）

上記の事実に基づき評価 5 項目による価値判断と因果関係の分析を行うための情報の入手を目的とする。

（2）調査票記入

以下の手段により情報を入手し、合同評価調査団内の協議の結果を調査票に記入した。

① 資料レビュー

- ・国内において入手できる資料（過去の調査報告書やプロジェクトの記録など）
- ・現地プロジェクトからの提出資料（PPMU やカイロ県教員研修実績、C/P 本邦研修実績、プレテスト・ポストテスト分析結果など）

② プロジェクト関係者との面談調査

予め各自に対する質問項目を設定した上で、教育省関係者、NCERD 所長・C/P 研究員、モデル校 4 校の校長・C/P 教員、カイロ県教育委員会との面談調査を実施した。また、NCERDC/P とモデル校 C/P 教員に対しては、別途質問表を事前に作成・配布し、質問表の回答内容に基づいて個別面談を行い補足的な情報収集を行った。

③ 現場調査

各校にてモデル校 C/P 教員の個別面談を実施した。加えて、モデル校（Mohammad Farid 校）の C/P 教員による授業風景やカイロ県教育委員会が実施する教員研修を視察し、評価に反映した。

（3）調査の結果

調査票に基づき合同評価団内の協議を経て調査報告書を作成し、合意結果を合同報告書としてまとめ署名、交換した。

第5章 調査結果

5-1 PDMeに基づく計画達成度

5-1-1 上位目標の達成度

上位目標： 理数科のガイドブックを用いた新しい教授法が、カイロ県及びPPMU研修対象県の小
学校で導入される

指標としては、「27 県すべての教員が新しい教授法を導入する」と「(新しい教授法について説明した)ガイドブックが、エジプトの全小学校に配布される」の2つが設定されている。上位目標の指標としては適切と判断されたため、終了時評価時点における現状を確認した。

指標1の「27 県での教授法の導入」については、PPMU研修を通じてエジプト27 県の教員と教育関係者多数に対し、児童中心、問題解決型学習の教授法に関する研修を実施してきているものの、全国的に幅広く授業に導入される状況には至っていない。カイロ県研修において実施した、モデル校での公開授業や教員研修を通じて、同県教育関係者における同教授法の効果の認識は広まった。こうした中で、研修受講後に実際に授業に活用しようとしているケースがあるとは報告されているが、詳細は不明である。

指標2の「ガイドブックの配布」については、概要版が、理科については英語への翻訳、算数についてはアラビア語への翻訳の途中であるため、いずれの教科についても配布を開始していない。

5-1-2 プロジェクト目標の達成度

プロジェクト目標：理数科のガイドブックを用いた新しい教授法がモデル校に定着し、さらなる普
及のための基盤が整備される

教授法のモデル校への定着については、指標2「モデル校のすべての理数科教員が肯定的な評価をする」で、さらなる普及のための基盤整備状況については、指標1「10 名のカウンセラー及びインスペクター」と指標3「80%の教育関係者」が肯定的な評価をすることで測ることとなっている。

モデル校への定着度では、4 つのモデル校には終了時評価時点で計 29 名の理数科教員が在籍しており、うち 16 名が本プロジェクトの C/P 教員として参加している。今回評価に際しては、C/P 教員へは質問票とインタビュー調査を実施し、C/P 以外の理数科教員については、直接インタビュー調査を第一としつつも時間的制約を考慮して、補足的に C/P 教員やモデル校校長からの間接的な聞き取りを通じて、C/P 教員以外の理数科教員の、同教授法に対する評価・姿勢を確認した。まず、C/P 教員では、18 名全員が同教授法を高く評価していることが明らかとなった。C/P 教員以外の理数科教員についても、ほぼ全員が同教授法に対して肯定的であり、同僚である C/P 教員から実施方法を教えてもらったり、同僚 C/P 教員の授業を観察したりするなどの行動を起こしていることがわかった。さらに、こうして C/P 教員から得た知識を実際に授業に活用しているケースもあることが報告された。

普及のための基盤整備状況については、教育省の算数と理科のカウンセラー（計 2 名）の評価は肯定的であり、エジプトの現状では、例えば公立校における 1 クラスの生徒数が多いことや実験機材が整備されていないことなど制約要因はあるものの、積極的に導入すべきという考えが表明された。カイロ県教育委員会の 10 名のインスペクターは、プロジェクトが実施した公開授業に参加しており、その中で同教授法に対して肯定的な評価を表明している。また、上記の公開授業をはじめ PPMU 研修、カイロ県研修、モデル校の巡回指導などへの参加者は、これら活動の実施後に行っているアンケート調査において、90%以上が本プロジェクトの教授法を高く評価していることが確認されており、

指標3の「80%以上の教育関係者」による評価を得ているといえる。ただし、同手法のエジプトにおける適用可能性については、現行カリキュラムとの兼ね合いやコスト増加の可能性、実験器具等の不足などの現状から、懸念を示す声も1割程度あり、留意が必要である。

5-1-3 「成果」の達成状況

本プロジェクトで達成が期待される成果（PDMeに記載のもの）

1. NCERDのスタッフ(C/P)が、教員に対して新しい教授法(授業案作成を含む)を的確に指導することができる
2. モデル校の教員(C/P教員)が新しい教授法を習得し、授業で実践することができる
3. 新しい教授法が、効果的であると実証される
4. ガイドブックが改訂される
5. 新しい教授法が、既存の教員訓練コースの中で導入される
6. 新しい教授法が、教育関係者によって認知される

成果については、概ね計画通りに進捗していることが確認された。プロジェクト期間中の達成が見込まれると判断された。

成果1. NCERDのスタッフ(C/P)が、教員に対して新しい教授法(授業案作成を含む)を的確に指導
することができる

NCERDのC/Pは、児童中心、問題解決型学習の教授法のコンセプトについて、完璧ではないものの概ね十分なレベルの理解を有しており、同コンセプトを授業案の作成やC/P教員の指導に反映させることができるようになったことが確認された。理科については、2年目よりC/Pが作成した授業シナリオに対し、日本人専門家が評価を行ってきている。この評価結果から、彼らの理解度が満足できるレベルに達していることが見て取れる。算数については、すべてのC/Pが2004年の基準を満たすかあるいは超えており、このことから彼らがコンセプトを適切に理解しているといえる。

全17名のC/Pは、プロジェクト活動を通じ、ガイドブックのコンセプトに基づく教員指導やカイロ県研修における講師業務を行う能力を得るに至っている。理科については、カイロ県研修後に実施してきた受講者への質問票調査で、本来研究者であり研修講師ではないC/Pたちが、教員研修に際して十分に実践的な指導を行う能力を得ていることが確認されている。一方、算数については、C/P教員によるC/Pへの評価は高く、こちらも能力的に実践的な指導が可能であることが確認されている。

成果2. モデル校の教員(C/P教員)が新しい教授法を習得し、授業で実践することができる

モデル校のC/P教員は、プロジェクト前半期間では、教授法を正しく理解できていないケースが見られたが、終了時評価時点では理解度が向上し、教授法のコンセプトを授業案に反映できるレベルの、適切な理解が得られている。さらに、一部ではあるが、C/Pの指導の域を超え、自らの考えにより教材を準備することができるC/P教員も出てきている。理科については、公開授業参加者の約80%が同教授法の効果を認めていることから、モデル授業を実施したC/P教員の適切なコンセプト理解が見て取れる。算数については、理科同様にC/P教員がモデル授業を実施することができるほか、事後検討会においてのコメントも適切であり、十分なレベルの理解度であることがわかる。

また、授業での実践能力についても着実に向上している。すべてのC/P教員が、NCERDのC/P

が作成した授業案をもとに、必要に応じて微修正を行いながら、教授法に従った適切な授業構成ができるようになってきている。ただし、質の面においては、実践面で依然向上を必要とする教員もいる。理科については、2年目の前半と後半を比較すると、C/P による評価は明らかに向上している。算数についても、児童中心の学習方法を重視した授業運営において着実な向上が見られる。

成果 3. 新しい教授法が、効果的であると実証される

生徒の理解度や教科に対する関心・態度については、経年変化の調査結果から、いずれもコントロール校よりもモデル校で向上がみられる。両者の間の差異は、統計的に有意なものであり、算数、理科ともにモデル校のほうが高い伸びを示している。ほぼ全 C/P 教員が、プロジェクト開始後、算数、理科に対する生徒の関心が高まったと報告している。

C/P 教員による教授法の評価は、2005 年にプロジェクトが調査を実施しているが、それによると全 C/P 教員は非常に肯定的で、同教授法の効果を認識している。

成果 4. ガイドブックが改訂される

ミニプロ時代に作成したガイドブックを再度見直し、必要個所については記載を追加したり、部分的には内容を向上させたりしながら、不正確だった部分、不適切であった部分は改訂版ガイドブックではすべて修正されている。したがって、修正の必要な個所はすべて対応済みであるといえる。改訂作業は、ガイドブックに基づく C/P への技術移転や C/P 教員への指導と並行して実施されてきているが、技術移転や指導に必要な個所は單元ごとに準備され、スケジュールに遅れをきたさないよう随時日本から送付され、プロジェクト活動に活用されてきた。改訂作業は当初予定よりも若干の遅れをみているが、完全版 (Complete version)、概要版 (Concise version) とともにプロジェクト期間中に完成見込みである。

改訂版ガイドブックは、授業に先立ち該当する單元ごとに C/P 教員の手元に送られてきたため、1冊の本としてまとまった形のものには彼らの手元には届いていない。ただし、單元ごとのものに対しては、C/P 教員はその効果を高く評価していることが確認された。

成果 5. 新しい教授法が、既存の教員訓練コースの中で導入される

既存の教員訓練への導入の試みとして、プロジェクトでは 2005 年 2 月以降カイロ県教育委員会の教員研修において、教授法の実践に関する研修を実施しており、これまでに 12 回実施し、参加者数は約 300 名(延べ人数)に上っている。参加者の 9 割が、同教授法に賛意を表している。このほか、PPMU 研修として 2003 年、2004 年に各 2 回ずつ、計 4 回の研修を実施している。この研修は、算数、理科ともに 1 回 5 日間のコースであり、参加者はエジプトの全 27 県のシニア教員やインスペクターである。参加者数は 213 名に上っている。

研修参加者による同教授法の評価については、まず PPMU 研修では、研修後実施した質問票調査結果から、理科では参加者の 80~90%、算数では 95%以上が毎回研修内容に満足と回答している。理科では「講義の内容」、「教授法」、算数では「算数教育の方向性」、「問題解決型教授法」、「授業計画の作成」が好評であった。一方、カイロ県研修においても同様に研修後の質問票調査を実施しているが、こちらも非常に高い評価を得ており、毎回、いずれの教科についても参加者全員が「大変満足」あるいは「満足」と回答している。

成果 6. 新しい教授法が、教育関係者によって認知される

これまでに4回の公開授業を実施しており、約200名の参加者を得ているが、その9割以上が同教授法の効果を高く評価している。本成果については、指標を「教育関係者500名が教授法を認知する」としているが、上記公開授業をはじめ PPMU 研修、カイロ県研修への参加者、教育省関係者（基礎教育局長、理数科カウンセラーなど）、NCERD 関係者（所長、カリキュラム部長など）で、同教授法への評価を表明した人数は500名を超えており、同指標は達成されたといえる。

5-1-4 「活動」の実績

本プロジェクトにおいては、13の活動がPDMに記載されている。各活動の進捗の詳細については、添付資料4(要確認)「達成度グリッド」を参照のこととするが、全体としては概ね計画通りに進捗しており、大幅な遅延は生じていない。活動4-1「ガイドブックの改訂」は、若干の遅れをみてはいるものの活動への実質的な影響は生じておらず、またプロジェクト期間中に完了する見込みであるため、問題はないと判断された。

5-1-5 「投入」の実績

(1) エジプト側投入

・カウンターパートの配置

2005年11月時点で、計33名の人員がプロジェクトに配置されている。

NCERD： 17名 モデル校： 16名

・施設・設備の供与

エジプト側からは、下記のもの供与された。

- NCERD 内部の日本人専門家の執務スペース
- 日本側から供与された機材・設備の維持管理コスト

(2) 日本側投入

・長期専門家の派遣

チーフアドバイザー、理科教育、算数教育及び業務調整／教育計画分野において、計9名の長期専門家が派遣されている（現時点で計135M/M、プロジェクト終了時には151M/Mとなる予定）。

・短期専門家の派遣

計28名の短期専門家が派遣されている（現時点で計44.5M/M、プロジェクト終了時には46M/Mとなる予定）。

・カウンターパートの本邦研修受け入れ

2005年11月現在で、19名のカウンターパートを本邦研修に受け入れている（計17.5M/M）。

・機材の供与

2005年10月時点で、計89,105ドル（約10,175,000円）に相当する機材が供与されている（換算レート：1ドル=114.19円、1エジプシャン・ポンド=19.8532円。JICAの2005年10月のレートによる）。

5-2 実施プロセス評価

5-2-1 計画内容の変更

プロジェクト期間を通じて、当初計画より内容面で変更された部分は、以下のとおりである。

まず、中間評価時における SBTU 関連活動の削除である。当初計画においては、各学校に設置が決まっていた SBTU を活用して校内普及活動を計画していたが、中間評価時点では SBTU の目的が単なる情報伝達に終始しており、新しく入手した教授法、技能などを校内の教員で共有する目的では活用されていなかった。こうした状況を考え、本プロジェクトにおける SBTU 関連の活動は不適當（効果が期待できない）と判断し、PDM より削除した。しかし、今回終了時評価調査においては、徐々にモデル校内部での SBTU 活動が活発化しており、C/P 教員が習得した教授法を同僚教員に教えるために活用しているケースが散見された。モデル校以外でも SBTU が定期的に実施されているケースが増えてきていることが確認されている。

次に、モデル校での巡回指導の位置づけの変更が挙げられる。この変更は明示的に行われたものではないが、プロジェクトの運営過程において関係者による考え方が次第に変わってきた、というのが実際のところである。当初は、ガイドブックのエジプトにおける有効性を確認する目的で設定したモデル校であり、そのため、特に優秀な教員、条件的に恵まれた学校を C/P 教員、モデル校として選定することはしなかった。どのような条件の学校でも、教員誰でもが適切に教授法を実践できるガイドブックを作成することが必要であり、そのため、モデル校選定に際しても学校の特徴や周辺環境など可能な限りバラエティに富んだ選択を行い、C/P 教員についても採用試験等は実施していない。ところが、プロジェクト活動が進捗するに従い、NCERD の C/P、教育省関係者等を含む関係者の間では、C/P 教員は「将来の指導員（ToT）候補」として位置づけられるようになり、当初計画で期待された役割以上の役割を C/P 教員は期待されることとなって現在に至っている。

最後に、計画内容ではないが、本プロジェクトの主管が、JICA 本部よりエジプト事務所へと変更されたことが挙げられる。プロジェクトの実施運営の面からは、この変更は良い方向に作用したと考えられる。プロジェクトと JICA 担当とのコミュニケーションがより容易になり、また迅速に行うことが可能となった。

5-2-2 活動のプロセス

活動のプロセスにおいては、（１）コミュニケーションの問題、（２）NCERD の C/P によるプロジェクト関与不足の問題、（３）C/P 教員の抱える時間的制約の問題、がみられた。

（１）コミュニケーションについては、日本人専門家とエジプト側（NCERD、モデル校、教育省等）、プロジェクト（主に日本人専門家、NCERD）と外部機関（教育省、カイロ県教育委員会等）との間にそれぞれ問題が生じていた。前者については、プロジェクトの実施運営に必要な情報が、迅速かつ正確に、適切なルートを通じてエジプト側から日本人専門家側に伝えられないことがあった。特に、プロジェクトの前半期間においてはこうした問題が多くみられた。後者については、NCERD の前所長と教育省の担当次官との個人的な人間関係の影響により、外部機関との適切なコミュニケーションが非常に困難な時期があった。ただし、両者とも現在はほぼ解決されている。

（２）C/P の関与不足については、彼らが本プロジェクトの専任ではなく、他に多くの業務を抱えていることが主な原因と考えられる。NCERD 研究者としての業務形態（毎日決まった時間に出勤する義務がない）ことと相まって、彼らの時間的制約が大きく、技術移転のための日本人専門家とのミー

ティング、モデル校の巡回指導への参加率が向上しない状況が続いた。専門家側は、開放的なオフィススペースの整備、グループリーダーの配置とリーダーによるモニタリングの強化、出席簿の活用などの対策を講じ、また NCERD の現所長と現カリキュラム部長の支援を得ることにより、これまでに大幅な向上をみている。特に、理科については C/P の積極性が増しており、グループリーダーを中心としたチームとしてのまとまりを持つようになってきており、プロジェクト終了後の活動継続に向けて良い傾向を示している。

(3) 最後に、C/P 教員の抱える時間的制約であるが、エジプトの公立小学校教員は一般的に報酬が低く、担当すべき授業数は非常に多く（週 23 コマ以上）、その他に校務があり、授業終了後は低い報酬を補うためアルバイトを行っているケースが非常に多いことから、教員が 1 つの授業の準備に費やすことができる時間は、おのずと限られてしまうのが現状である。本プロジェクトの実施に際しても、当初計画では、例えば授業計画は NCERD の C/P のみでなく C/P 教員も行うこととしていたが、現状を考えると現実的な計画ではないことが明らかとなり、途中で変更した。教材の準備においても当初予定していたよりも少ない役割を C/P 教員に期待することとし、残りの部分は日本人専門家側で負担する、という役割分担を行い、可能な限り C/P 教員の負担を軽減しつつ、必要な技能・知識の移転ができるような工夫が施された。

5-3 評価 5 項目による評価

評価 5 項目による評価結果は、以下のとおりである。

5-3-1 妥当性

エジプトは、1990 年代以降「万人のための基礎教育」の実現に力を入れてきている。この背景には、経済のグローバル化の進行に伴い柔軟で創造力豊かな、質の高い人材のニーズが高まっていることがある。こうした流れの中で、基礎教育の強化プログラムが開始され、教育分野に対する投資が増加しており、なかでも特に理数科教育の質の向上に努めている。一方、JICA の対エジプト援助政策では、5 つの重点分野の 1 つとして「人材育成と教育の向上」が掲げられており、特に基礎教育、なかでも理数科教育の質の向上に重点を置いている。本プロジェクトは、基礎教育課程における理数科教育の質の向上を目指すものであり、エジプト、日本いずれの政策にも整合していることが確認された。

本プロジェクトにおいては、ミニプロ時代に作成した教師用ガイドブックについて必要箇所を修正するほか、同ガイドブックに沿って教員を指導できる指導員を育成し、実際にガイドブックを活用するための実用的な指導を行うことを目的とするものである。ここで用いられる技能やアプローチは、プロジェクト期間中に活動を行ったモデル校やカイロ県のみでなく、エジプト全土において適用可能なものである。また、プロジェクト期間中において、JICA や他のドナー国により実施されたプロジェクトとの間には、内容面における重複はみられなかった。一方で、PPMU やカイロ県との積極的な連携・協力が行われている。

以上より、本プロジェクトは十分に妥当であったと判断された。

5-3-2 有効性

プロジェクトの活動については、概ね計画通りに進捗していることが確認された活動 4-1 のガイドブックの修正が、当初計画に比べてやや遅れを生じてはいるものの、プロジェクト期間中には完了する見込みである。したがって、プロジェクト終了時までに、すべての活動が完了しプロジェクト目標が達成される見込みであると判断された。NCERD の C/P と 4 つのモデル校の C/P 教員は、「子ども

中心型」、「問題解決型」学習の概念を正しく理解し、これら概念を反映した指導計画を作成し、授業に活用することができるようになった。ただし、数名の C/P については、依然知識面や技能面において目標水準に達していないことから、プロジェクトの残り期間においてこれら C/P の能力向上に努める必要がある。

本プロジェクトで導入を図っている教授法とその実践方法については、エジプトの教育関係者から高い評価を得ており、その効果については広く認識されるに至っている。

このように、プロジェクト活動の進捗を促進し、その効果を増加するのに貢献した要因としては、プロジェクトと PPMU、エジプト教育省、カイロ県教育委員会との間に良好な連携・協力の関係や仕組みができたことが挙げられる。

5-3-3 効率性

日本側、エジプト側投入のいずれについても、量、質及び供与・設定のタイミングにおいて概ね適切に行われたと判断された。ただし、日本側投入による短期専門家派遣については、派遣時期がラマダン（断食月）に重なるなど派遣のタイミングが適切でないケースや、ガイドブック修正のために必要な情報を収集するために2週間程度の非常に短い派遣期間で短期専門家がチーム派遣されたケースなどがいくつかみられた。その結果、それらの短期専門家の必要性をエジプト側関係者と共有することができず、C/P との共同作業を行う機会も少なく、結果的に C/P の能力向上の効率性を阻害したと判断された。また、NCERD の C/P は本プロジェクトの専任スタッフとして配置されておらず、時間的制約からプロジェクトに対する彼らの積極的な関与を得ることができないという問題に直面してきたが、プロジェクトの後半期間に入り、問題は概ね解決された。プロジェクトと NCERD 以外の関係機関（教育省など）との間のコミュニケーション不足という問題もあったが、これについても現在までに大幅な改善をみている。

NCERD の C/P とモデル校の C/P 教員は、本プロジェクトへの関与に際し時間的な制約を抱えているが、NCERD 所長をはじめとする幹部職員による支援と、C/P と日本人専門家との役割分担を適切に行うことにより、これまでのところ負の影響は最小限に抑えられているといえる。

これらのことから、本プロジェクトは十分に効率的に実施されてきていると判断された。

5-3-4 インパクト

これまでのところ、負のインパクト及びその可能性はみられない。正のインパクトについては、一部ではあるが、NCERD の C/P やモデル校の C/P 教員及びその同僚教員などによる自主的な普及のケースが出てきていることが挙げられる。少なくともすべてのモデル校においては、教科ごとに教員による定期的な会合がもたれており、会合を通じて新たに入手した情報や知識、技能などを互いに学びあい共有する試みが行われている。他の正のインパクトとしては、NCERD の C/P が、教員をグループ化することにより教育の質を向上させる、というアイデアを検討するようになったことが挙げられる。これは、本プロジェクトの活動を通じて、教員同士による授業観察やその後に行われる研究会議論の経験を通じて得られたアイデアと考えられる。

上位目標については、エジプトの教育関係者の間で同教授法の効果が広く認識されるようにはなっていないものの、その活用は依然として限定的なものにとどまっており、全面的な活用には至っていない。改訂版ガイドブックについても、現在、理科は英訳、算数はアラビア語訳の過程にあり、いずれも教員への普及には至っていない。

5-3-5 プロジェクトの自立発展性

本プロジェクトは、プロジェクト実施期間を通じて、エジプト教育省と NCERD による政策支援を得てきている。プロジェクトの目的はエジプトの教育政策に整合しており、この傾向はプロジェクトの終了後も継続する見込みである。したがって、終了時評価調査団は、本プロジェクトの活動に対するエジプト教育政策における自立発展性は、十分に高いと判断した。

資金面においては、プロジェクト期間を通じて、エジプト側からのローカルコスト負担に問題が生じたことはほとんどなかった。NCERD の C/P とモデル校の C/P 教員は、勤務時間中に本プロジェクト活動に従事したため、交通費などの手当での支払いは受けていない。将来的な普及に際しては、C/P が継続して教員指導に従事できるよう、NCERD はこれら手当などで必要な予算を措置する計画である。また、PPMU を通じての諸手当支給を検討する方法もあるが、PPMU については今後の活動計画が未定であることから、この方法の実現可能性については現時点では詳細不明である。

組織面の自立発展性については、NCERD がカイロ県研修受講者に対して行う定期的なモニタリングは、プロジェクト終了後も含めて同組織が責任を持って実施して行くべき活動と認識している。すべてのモデル校においては、週 1~2 回の割合で各教科について教員の定期会合が実施されており、同会合においてプロジェクトの教授法の実践に関する普及が行われている。モデル校以外の学校においても、SBTU として週ごとの定期会合が実施されているという報告があるが詳細は不明であり、より詳しい調査が必要である。

プロジェクト活動とその成果により、教育関係者や教員は、プロジェクトの教授法やガイドブックが子ども中心の学習の実現に効果的であることを認識するようになってきている。教授法の効果は、プロジェクト活動を通じても評価がなされてきているが、このほかエジプト全土で新たに導入されたポートフォリオ評価においても、生徒の試験の成績や教科に対する関心・態度の変化をみることができると考えられる。教育省は、モデル校のみならず、本プロジェクトの教授法とガイドブックをより広く導入したいとする明確な方向性を示している。しかし、教員の間では、同教授法やガイドブックがカリキュラムの全過程を通じて適用されることとなった場合、現カリキュラムが膨大であること、1名の教員が担当する授業時間数が多いこと、授業準備に時間がかかることなどにより実施が困難となるのではないかと懸念がみられる。さらに、1クラスの生徒数の問題、卒業試験との兼ね合い、教員自身に対する評価や実験器具などの購入コストなども、同教授法導入に際しての制約要因と考えられる。

これらの制約要因を除去し、プロジェクトの教授法をより広く適用するためには、教育省による教授法やガイドブックの承認が不可欠である。

また、教授法の適用は、単なるガイドブックの配布では実現が困難であり、実用的な知識の提供が不可欠である。このため、ガイドブック配布は教員研修とセットにして行われる必要があり、教員研修の実施体制を明確にすることも必要である。

社会面、文化面及び環境面においては、これまでのところプロジェクトにより生じた負の影響は生じておらず、将来的に生じる可能性も低いと判断された。

5-4 結論

- ・ プロジェクトでは、ガイドブックの改訂や NCERD 及びモデル校 C/P の教授法に関する理解と実践能力の向上など初期の成果が得られ、期間中にプロジェクト目標を達成することが見込まれる。プロジェクトによる教授法の導入により、生徒の学力や関心の向上もみられている。
- ・ モデル校での実践、公開授業、PPMU やカイロ県での研修などを通じ、教育省、県教育委員会、

教員など幅広い関係者から、生徒中心や問題解決型の教授法に関する前向きな認識が得られている。特に、教授法の概念のみならず、授業における実際の進め方と効果が、授業における実践を通じて理解されたことの意義は大きいといえる。

- 他方、今後のより広範囲な普及のためには、教授法とガイドブックの何らかのオーソライゼーション、カリキュラムとの関係、学力試験との関係や教員評価との関係などの課題がある。

第6章 提言と教訓

6-1 提言

(1) プロジェクトの成果に関する提言

- ・ 教員が実際に教授法とガイドブックを授業に適用するためには、ガイドブックの配布は不可欠ではあるが、それだけでは十分ではない。教員研修を通じて、実践的な経験を得ることが必要である。
- ・ カリキュラムの全単元をカバーするガイドブックの完全版（Complete version）は、現在英語で作成されているが、同ガイドブックは教員にとって手元において必要な時に参照する参考資料として活用することを考慮し、効果的な活用をめざしてアラビア語に翻訳することが望ましい。
- ・ プロジェクトが産出した成果が持続するよう、ガイドブックのさらなる改訂と教授法の指導に関する NCERD の C/P の継続的な能力向上、同能力の活用が望まれる。モデル校の C/P 教員については、SBTU を含む各種教員研修機会を通じた能力向上が重要である。教育省は NCERD を通じて SBTU の強化を支援しており、具体的には必要な機材・設備の供与などを行っている。また、指導員研修（ToT）への参加も能力向上のための良い機会となると考えられる。
- ・ 教授法とガイドブックのより広範囲な普及のための基盤を形成するという本プロジェクトの目標については、カイロ県における教員研修が 2005 年 2 月以降実施されている。ただし、1 回きりの導入的な研修では、教員が適切に教授法を適用する力を身につけさせることは困難であり、そのためには少なくともあと 1 回、実践的な研修を実施することが不可欠である。加えて、研修の実施能力の向上が必要である。教員の実践に際しては、カウンセラーやインスペクターの肯定的な姿勢が重要であり、彼らの継続的な支援が期待される。

(2) 将来の普及に関する提言

- ・ ガイドブックを活用した教授法のさらなる普及については、教育省による承認が必要不可欠である。その理由は、以下のとおりである。
 - 現場の教員は、教授法とガイドブックが教育省の方針に沿ったものであるかどうか、という懸念がある。背景には、同教授法は効果的ではあるものの、準備や授業に際して必要な時間が多く、現カリキュラムの全単元を同教授法で実施することは、現時点では非常に困難であるという状況がある。
 - 仮に同教授法を授業に適用した場合、インスペクターやスーパーバイザーによる教員評価が適切に行われるのかどうかという懸念もある。
- ・ 普及に際しては、実践的な知識や経験が教員研修を通じて教員に提供されることが必要不可欠である。
- ・ プロジェクトにより実施されたカイロ県研修を通じて、プロジェクト終了後も継続して普及と活用を行っていく必要がある。教員研修に際しては、NCERD の C/P による教員指導が重要である。SBTU も、教員の能力向上のための実践的な方法となると考えられる。
- ・ エジプトのすべての県に同教授法を普及し、活用を図っていくためには、これらの県における現職教員研修が不可欠である。教員研修の計画と実施に際しては、講師、予算、ロジなどを含む関係諸機関（教育省基礎教育局、カウンセラー、NCERD、教育省教員研修部(GDIST)、県教育委員会）による役割分担が必要である。現在設立が検討されている現職教員研修アカデミー（Teachers

Professional Academy) が設立されれば、同アカデミーとの関係も明らかとなると思われる。

- ・ NCERD の C/P がプロジェクト期間中に指導員として活躍したことを考慮し、将来の教員研修においても積極的に活用する方向で検討することが必要である。

6-2 教訓

成果 1.

- ・ 「理数科教育協力」のように理科と数学をセットにすると、どうしても両教科が同じように進むと思われる恐れがある。実際は教科の性質が異なることから、全く同様のアプローチを取ると、特に中等教育以降、行き詰ってしまう。それぞれの教科の協力アプローチについて方向性を予め決めておく必要がある。
- ・ 理科と算数をセットにしたプロジェクトが確かに多いが、それぞれの教科の特徴もあり、必ずしも両者を同様に扱うものではなく、実際は本プロジェクトと同様、理科と算数の2本のラインが走っているという状況である。確かに理科は実験があり、見る人にアピールするところはあるが、反面イベント的になってしまうところもあり、実験と理論の間をきちんとつないでいかなければ、ただ実験を行いました、というだけになってしまう。一方、算数は概念化を要する教科であるため、概念化に至る過程でどうしても詰め込み式の教育が必要な場面がある。しかし、詰め込み式教育以外の部分では、文章題など問題解決型の教授法が活かされる部分がある。こうした教科によるアプローチの違いは、JICA 内でもきちんと理解されている。
- ・ NCERD の C/P は教育学が専門であり、詳しい理数科の知識はなくても教師に対する指導には問題ないという意識が強い。しかし、問題解決型の教授法を教師に移転する場合には、やはりそれぞれの教科の背景にある理論面を理解する必要がある。したがって、現在プロジェクトでは、とにかく C/P も教員指導に先立ってガイドブックを読むよう指導すること、また読んで分からない個所については、日本側関係者に確認すること、の2点を指導している。

教訓	・ 理数科分野の協力では、各教科の特徴もあり、協力開始当初から教科ごとの協力アプローチを明確にし、日本側・相手国側双方が同アプローチに対する共通の理解をもって活動に取り組むことが重要である。 ・ 理数科教授法の協力を行う際は、C/P 選定時に、教育学のバックグラウンドだけでなく、教科の専門知識を備えた人材を選定することが望ましい。
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成果 2.

- ・ C/P のみでなく教科教師も、小学校で教える以上の理論を理解していない教師が多いが、それでは教室で問題解決型の教授法を実施するのは困難と思われる。

教訓	教授法の技術移転において、学校教育現場では特にその実践面に重点を置くことが重要であるが、実践応用力を養うには、実践手法の背景にある理論面を正しく理解させることも必要であり、プロジェクト期間中に教員に対し理論面も含めた技術移転を行うことが望ましい。
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成果 3.

- ・ (教授法の効果について) 成果として出せるデータがそろっているのであれば、対外説明用の簡単なリーフレットを作成すると、教授法普及の一助になることが期待される。

教訓	教授法のように、見ただけでは効果が分かりにくい内容を技術移転する場合は、効果がデー
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タで提示できるのであれば、それらを取りまとめ簡単なリーフレットを作成・配布すると、目に見える形で効果を提示でき、普及の一助になると思われる。特に協力期間中に配布すると協力関係者の理解促進につながりより効果的である。

成果4.

- ・ コンサイス版と完全版の位置づけに関し、もしコンサイス版は教員研修用教材、完全版は学校現場でのリファレンス用、との位置づけであれば、完全版はアラビア語に翻訳されることが望ましいと思われる。本プロジェクトの予算状況をみつつ余裕があればアラビア語への仮訳まで実施することを検討する。
- ・ ガイドブックを、学年別に分冊化しておけば先に完成した4年生、5年生の分は印刷し関係者への配布も行え、本プロジェクトの活動に対する理解を深め、活動の円滑な実施に貢献したかもしれない。
- ・ 完全版については、ページ数も多いのでCD版の作成も検討してはどうか。
- ・ ガイドブックは、エジプトの教科書に沿った内容構成になっており、使い勝手はよいものと思うが、教育省側には作成コンセプトが十分に伝わっていないという印象を持った（JCCの開催をもっと頻繁に行い、その場を活用してエジプト側に情報提供を行う余地があった）。

教訓 ・複数学年を対象にした教育教材を成果品として作成する場合、学年ごとに分冊化し、完成ごとに配布できれば、副教材が実際にどのようなものなのかプロジェクトの実施期間中に形で示すことができ、関係者の理解を深め副教材の普及の一助になると思われる。
・教育教材が学校教育現場に受け入れられるためには、現地使用言語に翻訳されることが必須である。
・教育教材の普及にあたっては、教育関係者に対し、教材の作成コンセプト、使い勝手の良さ、使用方法をうまく広報していくことが重要であると思われる。日常から関係者とコミュニケーションをとり、伝えていくことが重要である。

成果5.

- ・ PPMU 研修は、NCERD 所長が PPMU の長を兼務していたために PPMU からの要望により追加発生した活動ではなく、JICA としても PPMU が持つネットワーク（協力対象県 15 件、後に全 27 県に拡大）は有効な教授法普及の手段として認識しており、活用したかったという意図があり相互合意されたものと理解する。
- ・ PPMU が、来年 4 月ごろにこれまで PPMU が実施してきた研修（JICA が 2002 年から 3 年間協力してきた夏季研修含む）の成果を調査する予定があるとの情報もあり、JICA が夏季研修で実施した教授法の評価を図るための調査項目を含めてもらうのも一考である。

教訓 教員研修において他ドナーとの連携が行われている場合には、連携ドナーが独自に行うモニタリング、評価においても積極的に連携を図り、これら機会を利用して日本側協力部分の成果・達成度につき把握していくことも、効率的、効果的である。

フォローアップ（発言要旨のみ）

- ・ カイロ県、モデル校と NCERD の関係をつなぎとめ、カイロ県教員研修の継続性を確保していくことが必要。
- ・ カイロ県教員研修の内容は、まだ試行錯誤しながら実施をしている段階であり、改善の余地はある。

ると思われる。

- ・ カイロ県教員研修の参加者が終了後に自分たちの学校で生徒中心の学習、問題解決型学習を導入しているかについて 2006 年 2 月にモニタリングを予定。モニタリングの結果によって、同教員研修に対するフォローの必要性がどの程度あるか見えてくるのではないかと。
- ・ 教員研修を言語実験校から一般校に広げる場合は、使用する研修所とカイロ県側の担当研修スタッフが変わるので、対象拡大時にはエジプト側 C/P 機関を含むプロジェクト関係者から何らかのサポートが必要。
- ・ (日本として何を行いたいのか教育省に企画書を提示して、教育省が内容を審査し実施するかを決定すると以前伝えられた、ということに関し) 次期フェーズがあるとするれば、まずエジプト側のイニシアティブによって実施体制、活動内容案などが提示されるべきである。エジプトは各機関の縦割り行政が色濃く、予めエジプト側が組織間の調整などを行って実施基盤の整備を行う必要がある。教育省が設置を検討中の現職教員研修アカデミーの動向も踏まえて行く必要がある。
- ・ カリキュラム教材開発センター (CCIMD) との関係が良好になってきたので、本プロジェクトで作成したガイドブックを見てもらうことになっている。プロジェクト期間中に、より良い関係を築いておく。

付属資料

1. 終了時評価ミニッツ
2. 終了時評価用PDM e (和文)
3. 評価グリッド調査結果 (和文)
4. 達成度グリッド調査評価 (和文)

CONFIRMATION REPORT
ON
THE JAPANESE TECHNICAL COOPERATION FOR THE PROJECT ON
IMPROVEMENT OF SCIENCE AND MATHEMATICS EDUCATION
IN PRIMARY SCHOOLS

The Japanese Evaluation Team (hereinafter referred to as “the Team”), organized by Japan International Cooperation Agency (hereinafter referred to as “JICA”) and headed by Mr. Shigeru Okamoto, visited the Arab Republic of Egypt from November 6 to November 21, 2005. The purpose of the Team’s visit was to evaluate jointly with the Ministry of Education the achievement of the Japanese Technical Cooperation Program regarding the Project on Improvement of Science and Mathematics Education in Primary Schools (hereinafter referred to as “the Project”) based on the Record of Discussions, signed on February 19, 2003, by the Resident Representative of JICA in the Arab Republic of Egypt and Authorities Concerned of the Government of the Arab Republic of Egypt, and the Minutes of Meetings signed on August 3, 2004, by the Japanese Project Mid-Term Evaluation Team and the National Center for Educational Research and Development (hereinafter referred to as “NCERD”).

During its stay in the Arab Republic of Egypt, the Team exchanged views and had a series of discussions about the evaluation of the Project with Egyptian Authorities Concerned. In the course of the evaluation, NCERD expressed their gratitude to the technical support of the Japanese Government. As a result of the discussions, both sides mutually agreed upon the matters referred to in the document attached hereto.

Cairo, November 21, 2005



Mr. Shigeru OKAMOTO
Leader,
Japanese Evaluation Team,
Japan International Cooperation Agency



Dr. Mustafa Abd El Samie Mohammad
Director, National Center for Educational
Research and Development, Ministry of
Education, The Arab Republic of Egypt



Dr. Amin Mohamad Abo Bakr
Under Secretary of Basic Education,
Ministry of Education,
The Arab Republic of Egypt

ATTACHED DOCUMENT

JOINT EVALUATION REPORT
ON
THE PROJECT
ON
IMPROVEMENT OF SCIENCE AND MATHEMATICS EDUCATION
IN PRIMARY SCHOOLS
IN
THE ARAB REPUBLIC OF EGYPT

November 21, 2005

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LIST OF ABBREVIATION AND ACRONYMS USED

C/P	Counterpart Personnel
NCERD	National Center for Educational Research and Development
EOJ	Embassy of Japan
JICA	Japan International Cooperation Agency
M/M	Minutes of Meetings
M/M	Man Month
PDM	Project Design Matrix
PO	Plan of Operation
R/D	Record of Discussions
MOE	Ministry of Education

AMS

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ANNEX 1: Framework of Evaluation

1-1 Schedule of Japanese Evaluation Team

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ANNEX 2: Achievements of Input

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3-1 PPMU Workshops and Training Courses of Cairo Governorate

ANNEX4: Achievement Grid

ANNEX5: Evaluation Grid

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1. INTRODUCTION

1-1 Purpose of Evaluation

The purposes of the Joint Final Evaluation on the Project are

- (1) to verify the achievements of the Project compared to those planned (achievements of inputs, outputs and the Project purpose);
- (2) to evaluate the Project based on the five evaluation criteria (Relevance, Effectiveness, Efficiency, Impact and Sustainability); and
- (3) to make recommendations for the actions to be taken in the future.

1-2 Schedule of the Team

The meetings of the Joint Evaluation Committee were held from November 6 to 21, 2005. In the evaluation process, the Committee members interviewed and discussed with the governmental authorities and institutions relevant to the execution of the Project, including the Ministry of Education and Cairo Governorate, Pilot Schools, and the National Center for Educational Research and Development (hereinafter referred to as "NCERD"). The detailed schedule is attached as 'ANNEX 1-1'.

1-3 Evaluators

The evaluation and the recommendations on the Project were done by the following members, which forms the Joint Evaluation Committee (hereafter referred to as "the Committee").

1-3-1 Egyptian Side

Ministry of Education (including NCERD)

Dr. Mustafa Abd El Samie Mohammad Director, National Center for Educational
Research and Development, Ministry of Education

Dr. Amin Mohamad Abo Bakr Under Secretary for Basic Education, Ministry of
Education

Mr. Mohamed Salama Elmegeri Mathematics Counselor, Ministry of Education

Ms. Karima H. Said Science Counselor, Ministry of Education

Cairo Governorate

Ms. Suzan Al Mesiry General Director of General Education,
Education office, Cairo Governorate

1-3-2 Japanese Side

Japanese Evaluation Team

Mr. Shigeru Okamoto Leader of the Final Evaluation Study Team

Mr. Kazuyoshi Okubo Mathematics Education / Vice Chairman of the
Advisory Committee

Mr. Toshio Hasegawa Science Education/Member of the Advisory Committee

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Ms. Chisa Hara	Project Planning Evaluation
Mr. Kazuhiro Tambara	Project Planning Evaluation
Mr. Mitsutaka Hoshi	Evaluation Planning
Ms. Ayako Watanabe	Evaluation Analysis

1-4 Methodology of Evaluation

The Project was evaluated based on the Project Design Matrix (hereinafter referred to as “PDM”) of this Project. The PDM is a summary table describing the outline of the Project. The evaluation for this Project refers to the PDM which was revised and agreed by both Egyptian and Japanese sides in August 2004.

1-4-1 Evaluation Procedure

The Committee developed the evaluation grid which identified the specific evaluation points and the data collection methods. For the data and information collection, the Committee applied various methods such as the questionnaire, the interview, and the observation of the training institutions and the counterparts’ demonstration on site. The Committee analyzed and evaluated the Project from the viewpoint of the achievement level of the Project, the implementation process, and five evaluation criteria such as Relevance, Effectiveness, Efficiency, Impact and Sustainability. Finally, the Committee made the recommendations and drew the lessons learned from the results.

1-4-2 Points for the evaluation

Achievement level and Implementation Process of the Project

The achievement level in terms of Inputs, Activities, Outputs, and Project Purpose was assessed in comparison with the Record of Discussion (hereafter referred to as “R/D”), the PDM and the Plan of Operation (hereafter referred to as “PO”). The implementation process of the Project was also confirmed from the various viewpoints.

Evaluation Criteria

The following five evaluation criteria are applied to the project evaluation.

- (1) Relevance: Relevance of the Project was considered from a viewpoint of the validity of the Project Purpose and Overall Goal in connection with the development policy of the Government of Egypt and the needs of beneficiaries of the Project.
- (2) Effectiveness: Effectiveness whether the Project has actually benefited the target group and whether the project is effective. It also assesses whether the Project Purpose is being achieved as expected and whether that is in the result of the project’s Outputs.
- (3) Efficiency: Efficiency verifies whether the project was efficient in terms of effective use of resources. The relationship between Inputs and Outputs is reviewed. In essence,

Efficiency examines whether the input cost is appropriate for the degree of achievement on the Outputs and the Project Purpose and whether other means would have been more efficient than the current project.

(4) Impact: Impact examines the indirect effects and extended effects by the project in the long run. The analysis also includes the positive and negative impacts that were not expected when the project was planned.

(5) Sustainability: Sustainability of the Project is focused on institutional, financial and technical aspects by examining the current extent of the achievement of the Project and the possibility to be sustained or expanded.

1-4-3 Sources of information used for Evaluation

The sources of information used for this evaluation are as follows:

- The Record of Discussion (R/D) signed by the Authorities concerned of the Government of the Arab Republic of Egypt and JICA on February 19, 2003:
- The Minute of Meetings between the Japanese Project Consultation Team and the NCERD of the Arab Republic of Egypt, August 2004:
- The PDM (ANNEX 1-2):
- The records of inputs and outputs from the Japanese and Egyptian sides and activities of the Project:
- The questionnaires distributed to the Japanese experts and the Egyptian authorities/counterparts concerned:
- Interview with Japanese experts and the Egyptian authorities/counterparts concerned:
- The observation at the Training center at Cairo Governorate in Egypt: and
- The information collected in the seminars/trainings on Implementation Process.

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2. BACKGROUND AND SUMMARY OF THE PROJECT

2-1 Background

Egypt's education indicators have made remarkable progress since President Mubarak assumed the presidency in 1981. While the access to primary education has been greatly improved, Egypt has been keenly aware that equal opportunities are not enough to achieve "education for excellence and excellence for all." In 1997, upon the request from Egypt, JICA started the Mini-project on the development of creative science and mathematics lessons in primary education. With NCERD as a counterpart organization, this project produced plenty of tangible and intangible results, in which the guidebooks in science and mathematics were included, and successfully ended in 2000.

The original guidebooks were written in English, and then translated into Arabic by NCERD staff who learned expertise from Japanese experts. The guidebooks in Arabic were used for the training of inspectors and senior teachers. However, the training was intended for the limited number of people, and its use was merely on a test basis. Moreover, it was assumed that some parts of the guidebooks needed to be revised, and the underlying concept of the guidebooks needed to be correctly understood by educators such as inspectors, senior teachers, and especially subject teachers, who directly teach students in class.

To tackle such challenging issues, the Egyptian Government requested again the Japanese Government to give necessary advice and guidance in order that the new teaching methods using the guidebooks could take root and a solid base for further dissemination could be formed.

In response to the request, the Government of Japan, through JICA, dispatched the preliminary study teams three times over the term of April 2001 to August 2002, and the Record of the Discussions (R/D) was signed on 19th February, 2003. In accordance with the R/D, three-year technical cooperation started in April 2003.

JICA dispatched the Japanese Project Mid-Term Evaluation Team to the Arab Republic of Egypt from July 24, 2004 to August 5, 2004 for discussing with the NCERD technical and administrative matters regarding the Project and both sides agreed to revise the PDM and the PO in view of the Project's progress and situations around the Project.

In November 2005, about five months before the cooperation period of the Project ends, JICA dispatched the Japanese Evaluation Team to evaluate the Project jointly with the Egyptian side.

2-2 Summary of the Project

The original PDM was formulated in the Minutes of Meetings (M/M) signed on February 19, 2003, and was revised by the M/M signed on August 3, 2004. In order to facilitate the final evaluation of the Project, there are a few amendments made and PDMe was created. The summary of the Project is shown below.

(1) Objective of the Project

1) Overall Goal

The new teaching methods that use the guidebooks in science and mathematics education are used at the primary schools in Cairo governorates and PPMU's target governorates. (PPMU: Project Planning and Monitoring Unit. PPMU is consisted of World Bank and European Union and the Ministry of Education).

2) Project Purpose

The new teaching methods that use the guidebooks in science and mathematics education take root at the selected schools and form a solid base for further dissemination.

(2) Output of the Project

- 1) NCERD staff can give proper instruction to teachers on the new teaching methods, including lesson planning.
- 2) The teachers at the selected schools master the new teaching methods and practice them in class.
- 3) The new teaching methods are proved to be effective.
- 4) The guidebooks are revised.
- 5) The new teaching methods are introduced in existing teachers training courses.
- 6) The new teaching methods are recognized by the people in the education field.

(3) Activities of the Project (Refer to the PDM: ANNEX1-2 for details)

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3. ACHIEVEMENT OF THE PROJECT

3-1. Actual Input

Inputs from the Japanese side - as of November, 2005

(1) Long-term experts (ANNEX 2-1)

A total of nine (9) long-term experts were dispatched in the fields of Chief Advisor, Science Education, Mathematics Education, and Coordinator/Educational Planning (total 135 MM [man month], and it will amount to 151 MM by the end of the project).

(2) Short-term experts (ANNEX 2-1)

A total of twenty eight (28) short-term experts have been dispatched (total 44.5 MM, and it will be amount to 46 MM by the end of the Project.)

(3) Counterpart training (ANNEX 2-3)

Nineteen (19) counterparts were accepted for training in Japan as of November 2005 (total 17.5 MM).

(4) Provision of Machinery and Equipment (ANNEX 2-4)

Machinery and equipment amounting USD 89,105 (approximately JPY 10,175,000) was provided as of October 2005 (The exchange rate: USD 1 = JPY 114.19, EGP 1=19.8532 as of JICA control rate October, 2005)

Inputs from the Egyptian side

(1) Counterpart personnel assigned for the Project (ANNEX2-2)

A total of thirty-five (35) personnel¹ were assigned as of November 2005.

NCERD: 17 personnel

Pilot Schools: 18 personnel

(2) Provision of facilities and equipment

The followings were provided by the Egyptian side.

- Office space for Japanese Experts inside NCERD
- Maintenance cost for facilities and equipment donated by Japanese side

3-2. Accomplishment of Activities

Activities consist of thirteen (13) fields as indicated in the original PDM. The progress of the activities can be found in Annex 5 Achievement Grid.

¹ The number of counterpart personnel excludes the workers and drivers.

3-3. Achievement of Outputs

(1) Output 1: NCERD staff can give proper instruction to teachers on the new teaching methods, including lesson planning

Verifiable Indicators	Results (as of November 2005)
1-1 All the C/P staff understand the concept of the new teaching methods properly.	<ul style="list-style-type: none"> - The NCERD C/Ps has obtained proper understanding of satisfactory level to reflect the concept of the teaching methods into their preparation of teaching plans and instructions to the C/P teachers, though not of perfect level yet. - Regarding science, the assessment of the teaching scenarios which the C/Ps prepared in the second year shows that they have reached to the satisfactory level in their understanding of the methods. - As for mathematics, all of the C/Ps have reached or exceeded the standard in 2004, which means they have obtained proper understanding of the methods.
1-2 All the C/P staff can prepare teaching plans based on the new teaching methods.	<ul style="list-style-type: none"> - The Project has fostered human resources, i.e. NCERD C/Ps, with capability of satisfactory level and almost all of them have become able to prepare teaching plans properly.
1-3 All the C/P staff can give proper instruction on the new teaching methods.	<ul style="list-style-type: none"> - All of the sixteen (16) C/Ps have obtained capability to provide proper instructions to teachers based on the concept of the guidebooks as well as to give lectures in trainings of Cairo Governorate. - For science, the questionnaire survey results conducted in the training of Cairo Governorate shows that the C/Ps, who are researchers, not trainers, have obtained sufficient capability to provide practical training to teachers. - Regarding mathematics, all the C/Ps have obtained good assessment from the C/P teachers in their capability to give hands-on instruction of the methods.

(2) Output 2: The C/P teachers at the selected schools master the new teaching methods and practice them in class.

Verifiable Indicators	Results (as of November 2005)
2-1 All the C/P teachers at the pilot schools understand the concept of the new teaching methods properly.	<ul style="list-style-type: none"> - Though there were several misunderstandings on the concept among them during the first half of the Project term, the C/P teachers have obtained proper understanding of the concept of the teaching methods and the capability to reflect the concept in their teaching plans till now. - Some of them have gone up to the level of preparing teaching materials with their own ideas. - As for science, 80% of the open class participants recognized the effectiveness of the methods to upgrade students' understanding of the subject as well as their creativity. It can be said, thus, that the C/P teachers, who conducted model classes for the open

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	<p>classes, have sufficient and proper understanding of the methods.</p> <ul style="list-style-type: none"> - Regarding mathematics, the C/P teachers have made proper comments on the model classes in the open classes and also they themselves made the model classes, which shows their capability of sufficient level.
<p>2-2 All the C/P teachers at the pilot schools can properly make plans and practice the new teaching methods.</p>	<ul style="list-style-type: none"> - All the C/P teachers have become able to make proper structures of classes following the teaching methods, based on the teaching plans that the NCERD C/Ps prepared with modifications in case of necessity. - Still, in terms of quality, some of them have not reached to the satisfactory level in their application yet. - Regarding science, when compared with the former half of the second year and the latter half of the same year, the average scores show a clear improvement in the C/P teachers' capability. - As for mathematics, proper improvement could be found in their classes putting importance on child-centered learning methods.

(3) Output 3: The new teaching methods are proved to be effective

Verifiable Indicators	Results (as of November 2005)
<p>3-1 Students' academic performance; effects on their understanding, attitudes and interest in pilot schools are improved more than those of control schools.</p>	<ul style="list-style-type: none"> - Understanding and increasing interests in mathematics and science could be found better in the pilot schools than in the control schools. It was found scientifically significant that the higher scores have been marked in the former than in the latter for both subjects. - Almost all the C/P teachers have reported the increases in students' interest in those subjects after the Project implementation.
<p>3-2 All the C/P teachers at the pilot schools make positive evaluation about the new teaching methods.</p>	<ul style="list-style-type: none"> - In 2005, survey was conducted by the Project targeting the C/P teachers. The results show that all of them are quite positive to the teaching methods of the Project and recognize the effectiveness.

(4) Output 4: The guidebooks are revised

Verifiable Indicators	Results (as of November 2005)
<p>4-1 All the parts and contents of the guidebooks are reviewed and revised</p>	<ul style="list-style-type: none"> - Inaccuracy and incorrectness have been all corrected in the revised guidebooks, with reviewing, adding, and improving some parts. Thus, it was found all the necessary revisions have been made by now. - Revision works have been conducted simultaneously with training based on the guidebooks. However, necessary parts have been prepared and applied in the pilot schools unit by unit on timing of each class. - Though the progress has been slightly delayed, the complete

	version of the guidebooks will be finalized within the Project term.
4-2 The C/P teachers give high marks on the revised guidebook.	- The full books of the revised guidebooks have not been at the C/P teachers' hands yet. However, almost all of them give high marks on the effectiveness of the guidebooks when they were asked their assessment about the parts of the guidebooks at their hand.

(5) Output 5: The new teaching methods are introduced in existing teachers training courses.

Verifiable Indicators	Results (as of November 2005)
5-1 Contents and frequency of activities in existing teachers training courses	<ul style="list-style-type: none"> - The Project started collaboration in training about practical application of the methods with Cairo Governorate since February 2005 with twelve (12) sessions participated by approximately 300 people till now. 90% of them expressed their agreement on the methods. - The Project provided trainings in conjunction with PPMU in 2003 and 2004, twice for each, four (4) in total. It took five (5) days for one session of the course both for mathematics and science. The participants consist of senior teachers and inspectors from 27 governorates from all over Egypt, counting 213 people in total.
5-2 The new teaching methods obtain positive reputation in the existing teachers training courses.	<ul style="list-style-type: none"> - Questionnaire surveys to PPMU training participants revealed the success of the training with 80-90% of them satisfied for science and more than 95% for mathematics in each session. "Contents of lectures" and "teaching methods" for science and "directions of mathematics education", "problem-solving" methods, and "preparation of teaching plans" for mathematics obtained good assessment from the participants. - In the training of Cairo governorate also, the participants were quite satisfied with the training, all of them answered "considerably satisfied" or "satisfied" for both subjects.

(6) Output 6: NCERD staff can give proper instruction to teachers on the new teaching methods, including lesson planning

Verifiable Indicators	Results (as of November 2005)
6-1 500 people in the education field recognize the new teaching methods through open classes and seminars before the project terminates.	<ul style="list-style-type: none"> - Four (4) open classes have been held with approximately 200 participants, more than 90% of who gave high marks for the effectiveness of the methods. - The target of "500 people in the education fields" has been almost attained through the above activities, with the satisfied participants to the open classes, PPMU training, Cairo Governorate training, MOE executive officers and NCERD officers.

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3-4 Achievement of Project Purpose

Project Purpose: The new teaching methods that use the guidebooks in science and mathematics education take root at the selected schools and form a solid base for further dissemination.


Verifiable Indicators	Results (as of November 2005)
1) 10 education officers such as counselors and inspectors make positive evaluation about the new teaching methods.	<ul style="list-style-type: none"> - MOE counselors for mathematics and science (2 people) are positive to the teaching methods of the Project, with mentioning some constraints such as large number of students in a class and lack of facilities for experiments in public schools. - Ten (10) inspectors in Cairo governorate have participated in the open classes the Project has conducted and given positive assessment on the methods.
2) All the science and mathematics teachers in the pilot schools make positive evaluation about the new teaching methods.	<ul style="list-style-type: none"> - All of the C/P teachers are quite positive for the teaching methods of the Project. - As for the other mathematics and science teachers at the pilot schools, almost all of the non-counterpart teachers at the pilot schools were found positive and some of them are keen to learn the application of the methods from the C/P teachers while others sometimes attend the class of the C/P teachers to observe and learn. Cases of application on their own were found.
3) 80 percent of the people concerned make positive evaluation about the new teaching methods.	<ul style="list-style-type: none"> - As found above, in all the events, i.e. open classes, PPMU training, Cairo governorate training, and regular visits to the pilot schools, more than 90% have expressed their positive assessment about the methods of the Project. - Still, it is also true that part of those in educational fields are not so sure about the applicability of the methods in Egypt with the anticipation due to the heavy curriculum, potential increase of costs, and lack of necessary equipment in many of the schools.

4. EVALUATION

4-1 Relevance

Egypt has been putting focus on the provision of “primary education for all” since 1990s due to the increasing needs in the globalizing economy to have flexible, creative and high quality human resources. Primary education enhancement programme has been started and increased investment into the field, with special attention to the upgrading of mathematics and science education in quality. As for JICA policy, one of the five (5) target fields for support for Egypt has been set as “human resource development and improvement of education” with special focus on basic educational field, especially in mathematics and science to improve in quality. The Project was found, thus, highly consistent with both the policy of Egyptian as well as Japanese policies.

The Project aims to revise guidebooks, foster trainers, and give hands-on instructions to



teachers on how to apply the guidebooks. The techniques and approach can be applied in all over Egypt. During the Project period, no duplication has been found with other JICA or other donors' projects in its contents while collaboration with PPMU and Cairo Governorate has been sought actively.

Based on the above, the Project was found sufficiently relevant.

4-2 Effectiveness

The progress was found on schedule in most cases except Activity 4-1, that is the revision of the guidebooks, which is highly likely to be completed within the Project term, though. The Committee has found that it would be possible to finalize all the activities and to attain the Project purpose by the end of the term. The C/P personnel assigned by NCERD and the four pilot schools have been obtaining correct understanding of the concept of "child-centered" and "problem-solving" learning and capability to prepare teaching plans and apply them in their classes of satisfactory level. There is still room for some C/Ps to further improve their knowledge and skills compared with the standards to be met, and it is required for the Project to make further efforts to meet those standards.

The teaching methods and the application have been highly assessed by those concerned in education in Egypt and received wide recognition of the effectiveness.

The followings have contributed much to facilitate the progress and increase effectiveness of the Project: Good coordination and collaboration mechanism established between the Project and PPMU, MOE and Cairo Governorate.

4-3 Efficiency

Inputs both from Japanese and Egyptian side were found mostly appropriate in quantity, quality and timing of provision and installment. An exception was short-term experts, which, in some cases, was not on good timing, without sharing the recognition of their necessity with Egyptian side, and without joint works with the C/Ps either, which has decreased the efficiency in supporting the development of the C/Ps' capability. The Project had faced difficulties to guarantee the active involvement of the C/Ps due to their time constraints as part-time staffs for the Project, which have been solved in the latter half of the Project term. There was shortage of communication between the Project and organizations outside NCERD, which have been also much improved till the present.

Although both NCERD C/Ps and the C/P teachers face time constraints for their involvement in the Project, negative influence has been minimized due to careful support by NCERD executive officers' proper division of roles between them and Japanese experts. The Committee found that the Project has been efficiently carried out at satisfactory level.

4-4 Impact

No negative effect and its potential have been found. As for positive one, several cases of

voluntary dissemination by the C/Ps, the C/P teachers and their colleagues have been found, though partly. At all the pilot schools, at least, regular meetings among teachers by subject are being held to share new information, knowledge, skills and the like. Another positive impact can be exemplified as that NCERD C/Ps has obtained an idea to formulate teachers' groups for improving quality of education, which is considered as a result of their experience of class observation and discussions for learning by teachers themselves.

Regarding the overall goal, Full application of the methods has not been found yet, though wide recognition of the effectiveness of the methods has been found among those in educational fields in Egypt. The revised guidebooks are in the process of translation into English for science and into Arabic for mathematics, both of which have not been distributed to teachers yet.

4-5 Sustainability

The Project has obtained policy support from MOE as well as NCERD throughout the project period. The objectives of the Project have fitted the educational policy of Egypt, which can be expected to continue even after the completion of the Project. Therefore, the Committee found the sustainability in relation to education development policy is satisfactorily high for the Project activities.

No problem has been found regarding the allocation of the local cost from the Egyptian side throughout the Project term. The C/Ps and the C/P teachers have been engaged in the Project activities during their office hours without any extras such as transportation fees. For future dissemination, NCERD is planning to prepare the budget for the C/Ps to continue their engagement in instruction of the teaching methods. Another idea has been expressed that finance would be provided from PPMU, but the details has not been decided yet.

As for institutional aspect, NCERD recognizes the task of monitoring on training participants on regular bases as their own tasks even after the Project finished. In all the pilot schools, teachers hold regular meetings of 1-2 times a week for each subject, which are utilized for disseminating the application of methods. It has been reported that other schools than the pilot schools have also held weekly meetings as SBU, but the details are not known yet. Further study is required.

As results of the Project activities and achievements, those in education administration as well as teachers realized that the teaching methods and the guidebooks are effective for realizing child-centered learning. The effects of the teaching methods are evaluated within the Project with positive results. It will also be evaluated in newly introduced portfolio evaluation which includes examination results as well as students' attitude. Ministry of Education has clear direction to introduce the teaching methods and the guidebooks more widely, not only to model schools. However among teachers, there is concern that if the teaching methods and the guidebooks are applied throughout the curriculum, it will be

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difficult to manage in relation to curriculum volume, lesson hours and teachers' preparation time. The number of students in one class, graduation examination, teaches performance evaluation, and cost to purchase some tools like experimental equipment are also considered as constraints for introduction of the teaching methods.

For the teaching methods to be widely accepted and applied, Ministry's authorization of or consent on the teaching methods and the guidebooks is essential.

Application of the teaching methods is not realized by just distributing the guidebooks. Provision of practical knowledge to teachers are indispensable. In this sense, distribution of the guidebooks needs to be accompanied by in-service teacher training. Administration structure for in-service teacher training also needs to be clarified.

No negative impact or the potential has been found in social, cultural, and environmental sustainability of the Project.

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5. CONCLUSION

5-1 Results of Evaluation

- The project is most likely to achieve its purpose with expected outputs such as revised guidebooks, improvement in NCERD C/P's capacity of giving instructions on the teaching methods and its application by C/P teachers in pilot schools. Positive effects on achievement and interest of students in pilot schools are also found.
- Through the practice in pilot schools, open classes, and teacher training of PPMU and Cairo Governorate, the teaching methods have acquired positive recognition from wide range of the people concerned such as officials of Ministry of Education, Cairo Governorate, and teachers. In particular, it is of great significance that not only the concept of child-centered and problem-solving learning, but also actual ways of its application and effects in the classroom are understood.
- As for further dissemination of the teaching methods, there still remain several issues to be solved such as some kind of authorization of the methods and guidebooks, coordination with curriculum, achievement test, and evaluation of teachers and so on.

5-2 Recommendations

(Recommendations regarding the Project achievements)

- For the teachers to apply teaching methods and guidebooks in their classes, distribution of guidebooks is necessary but not enough condition. Teachers need to have practical experiences through teacher training.
- The complete version of the guidebooks which covers all the units in the curriculum are now prepared in English. The complete version can be useful reference materials for teachers. For effective utilization of them, translation into Arabic is desirable.
- For the Project's achievements to be maintained, continuous improvement of NCERD C/Ps capacity in both guidebooks development and the teaching methods instruction, as well as utilization of their capacity is desirable. Capacity improvement of the pilot school counterpart teachers through various teacher training opportunities, including school-based training unit, is also important. MOE through NCERD is assisting to strengthen school-based training unit by providing educational equipment. For the pilot school counterpart teachers, experiencing training of trainers (ToT) will also be good opportunities to improve their capacity.

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- With regard to the Project purpose to form solid base for further dissemination of the teaching methods and the guidebooks, teacher training in Cairo Governorate is conducted since February 2005. However, introductory training for one time is not enough to apply the teaching methods in classrooms. For these teachers to be able to apply it in the classroom, at least one more training with practical experiences is crucial. In addition, administrative capacity for implementing training needs to be upgraded. The counselors' as well as inspectors' positive concerns are highly helpful to maintain what are achieved by the Project and their continuous contribution is expected.

(Recommendations regarding further dissemination)

- For further dissemination of the teaching methods, that utilize guidebooks, authorization or consent from the Ministry of Education is essential condition. The authorization or consent is important because;
 - There are teachers' concerns if the teaching methods and the guidebooks are in line with the Ministry's policy. In background of this, there are teachers' concern that though the teaching methods are effective, it is also time consuming in preparation and teaching, and it is very difficult to apply the methods for all the units in the contents of curriculum.
 - Teachers also concern that by applying the teaching methods in their class, performance of teachers themselves are appropriately evaluated by their supervisors.
- For further dissemination of the teaching methods, providing teachers with practical knowledge and experiences through in-service teacher training is indispensable.
- For dissemination and utilization of the teaching methods in Cairo Governorate, teacher training implemented within the Projects need to be continued after the termination of the Project. For the teacher training, contributions from NCERD counterparts as teacher instructors are valuable. School based training unit will also be a practical tool to upgrade teachers capacity.
- For dissemination and utilization of the teaching methods in all the Governorates, in-service teacher training for teachers in these Governorates is indispensable. For planning and implementation of teacher training including resource persons, budget, and logistics, division of labour among Ministry's Central Department of Basic Education, Counselors, NCERD, CDIST, as well as Education Department of each Governorate is indispensable. When the new Teachers Professional Academy is established, the relation with this new institution will also head to be clarified.
- For future teacher training, function of NCERD counterparts, who has made remarkable contribution during the Project as instructors, needs to be positively considered

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ANNEX

ANNEX 1-1 Schedule of Japanese Evaluation Team

Date			Schedule
1	Nov. 4	Fri	Leave Japan
2	Nov. 5	Sat	→Arr. Cairo
3	Nov. 6	Sun	10:00 JICA Office
			13:00 Internal Meeting with Experts
4	Nov. 7	Mon	09:00 NCERD
5	Nov. 8	Tue	09:00 Pilot Schools
6	Nov. 9	wed	09:00 Cairo Governorate
			12:00 Pilot Schools
7	Nov. 10	Thu	09:00 Interview at MOE
8	Nov. 11	Fri	Data Analysis
9	Nov. 12	Sat	Data Analysis
10	Nov. 13	Sun	10:00 Internal Meeting among Japanese members
			14:00 Embassy of Japan
			15:00 Meeting with Japanese Experts
11	Nov. 14	Mon	10:00 Discussion with Ministry of Education
			14:00 Officers of Cairo Governorate
12	Nov. 15	Tue	10:30 Courtesy Call at Ministry of Education
			12:00 Observation of Pilot school
			13:00 Interview with teachers at Pilot school
			14:00 Meeting with PPMU
13	Nov. 16	Wed	09:00 Discussion with NCERD
14	Nov. 17	Thu	10:00 Joint Coordination Committee
			11:30 Meeting among Joint Evaluation Members
15	Nov. 18	Fri	Data Analysis
16	Nov. 19	Sat	Data Analysis
17	Nov. 20	Sun	11:00 Observation of Mubarak City of Education
18	Nov. 21	Mon	10:00 Observation of Teacher Training of Cairo Governorate
			13:00 Signing the Minutes of Meeting
19	Nov. 22	Tue	10:00 JICA Egypt office
			14:00 Report to Embassy of Japan,
20	Nov. 23	Wed	→Return to Japan
21	Nov. 24	Thu	→Arr. Japan

Project Design Matrix for Evaluation (PDMe)

Title of the Project: Project on Improvement of Science and Mathematics Education in Primary Schools
 Project Period: 1 April 2003 – 31 March 2006
 Project Site: NCERD and the selected governmental language schools in the Cairo Governorate
 Target Group: NCERD counterparts and teachers in science and mathematics at the selected schools

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Overall Goal: The new teaching methods that use the guidebooks in science and mathematics education are used at the primary schools in Cairo governorate and PPMU's target governorates. ('NOTE: Overall goal is shared by JICA, NCERD and PPMU. It won't be achieved only by one side. Thus both of them cooperate each other. However, one is not accountable for the outputs of the other.)</p> <p>Project Purpose: The new teaching methods that use the guidebooks in science and mathematics education take root at the selected schools and form a solid base for further dissemination.</p>	<p>1) All the teachers of 27 governorates introduce the new teaching methods. 2) Guidebooks are distributed to all the primary schools in Egypt</p> <p>1) 10 education officers such as counselors and inspectors make positive evaluation about the new teaching methods. 2) All the science and mathematics teachers in the pilot schools make positive evaluation about the new teaching methods. 3) 80 percent of the people concerned make positive evaluation about the new teaching methods.</p>	<p>1) Questionnaire survey to the teachers in the 27 governorates 2) Record of distribution</p> <p>1)-2) Questionnaire survey (Evaluation sheet) prepared by the Project team. 3) Questionnaire survey (Evaluation sheet) to the people concerned (teachers who were introduced GB, participants of open classes and seminars, and MOE).</p>	<p>-The education offices in Cairo Governorate and PPMU's target governorates are supportive of dissemination of the new teaching methods - PPMU's teachers training are appropriately implemented and their target governorates are supportive to the dissemination of the new teaching methods.</p>
<p>Outputs: 1. NCERD staff can give proper instruction to teachers on the new teaching methods, including lesson planning 2. The C/P teachers at the selected schools master the new teaching methods and practice them in class.</p>	<p>1-1-1. All the C/P staff understand the concept of the new teaching methods properly. 1-2. All the C/P staff can prepare teaching plans based on the new teaching methods. 1-3. All the C/P staff can give proper instruction on the new teaching methods. 2-1. All the C/P teachers at the pilot schools understand the concept of the new teaching methods properly. 2-2. All the C/P teachers at the pilot schools can properly make plans and practice the new</p>	<p>1-1-1-3. Periodical evaluation reports by JICA experts (3 times a year), Attendance sheet, and Class observation sheet 2-1-2-3. Periodical evaluation reports by JICA experts (3 times a year), Attendance sheet, and Class observation sheet</p>	

<p>3. The new teaching methods are proved to be effective</p>	<p>teaching methods.</p>	<p>3-1. Students' academic performance; effects on their understanding, attitudes and interest in pilot schools are improved more than those of control schools. 3-2. All the C/P teachers at the pilot schools make positive evaluation about the new teaching methods.</p>	<p>3-1. Research results (from pre- and post-tests) 3-2. Interview with the C/P teachers</p>
<p>4. The guidebooks are revised</p>	<p>4-1. All the parts and contents of the guidebooks are reviewed and revised 4-2. The C/P teachers give high marks on the revised guidebook.</p>	<p>4-1. Revised guidebooks 4-2. Interview with the C/P teachers</p>	<p>4-1. Revised guidebooks 4-2. Interview with the C/P teachers</p>
<p>5. The new teaching methods are introduced in existing teachers training courses.</p>	<p>5-1. Contents and frequency of activities in existing teachers training courses 5-2. The new teaching methods obtain positive reputation in the existing teachers training courses.</p>	<p>5-1. Records of activities of the training course 5-2. Interview with Education Committee of Language Experimental Schools of Cairo Governorate/ PPMU, review of the documents, and questionnaire to participants</p>	<p>5-1. Records of activities of the training course 5-2. Interview with Education Committee of Language Experimental Schools of Cairo Governorate/ PPMU, review of the documents, and questionnaire to participants</p>
<p>6. The new teaching methods are recognized by the people in the education field.</p>	<p>6-1. 500 people in the education field recognize the new teaching methods through open classes and seminars before the project terminates.</p>	<p>6-1. Records of open lessons and seminars</p>	<p>6-1. Records of open lessons and seminars</p>
<p>Activities: 1-1 Transfer knowledge and skills to NCERD staff enough for giving hand-on instruction to teachers at the selected schools on the new teaching methods 2-1 Select the candidate schools 2-2 Select the target schools from the candidates 2-3 Make lesson notes and meet with teachers of the selected schools 2-4 Give hands-on instruction to the C/P teachers at the selected schools on the new teaching methods</p>	<p>Inputs: < Japanese side > - Dispatch of experts (Long-term) 1) Chief Advisor (36M/M) 2) Science Education (36M/M) 3) Mathematics Education (36M/M) 4) Coordinator (36M/M) (Short-term) 1) Science 2) Mathematics - Training in Japan (approximately 3 persons per annum)</p>	<p>< Egyptian side > - Staff allocation - Budget allocation - Provision of facilities Project office within NCERD Project room within the selected schools Arrangements necessary for the activities</p>	<p>- Teachers at the selected schools do not frequently move in and out. - Information and data are duly offered. - Organizations concerned are favorable to mobilize the people for the open lessons and for the seminars held by the Project Pre-conditions: The people concerned in Egypt are cooperative with the Project.</p>

<p>3-1 Study the research methods that measure the effectiveness of the new teaching methods</p> <p>3-2 Conduct the research towards the C/P teachers and students at the selected schools</p> <p>3-3 Analyze the research results and verify the effectiveness of the new teaching methods</p>	<p>Provision of equipment</p>	
<p>4-1 Revise the guidebooks step by step, based on the lessons learned through practice in class</p>		
<p>5-1 Examine existing teacher training system in Cairo governorate</p> <p>5-2. Conduct teacher training on new teaching methods as a part of existing training course</p>		
<p>6-1. Hold open classes for teachers of Cairo governorate</p>		
<p>6-2. Hold the national seminar</p>		

MOE means Head of Department of Primary Education, counselors for science and mathematics, headmasters of the pilot schools, and Education Committee of Language Experimental Schools of Cairo Governorate.

ANNEX 2-1 List of Japanese Experts

Period	Subject	Name
2003.4.7-2004.4.30	Chief Advisor	TANAKA Kuniaki
2003.4.7-2005.3.31	Coordinator/Education Planning	HASHIMOTO Kazuaki
2003.4.7-2004.7.31	Science Education	NAKAMURA Katsumi
2003.4.7-2004.7.31	Mathematics Education	URATA Susumu
2003.4.26-2003.5.24	Mathematics Education	OKUBO Kazuyoshi
2003.4.26-2003.6.25	Science Education	HASEGAWA Toshio
2003.7.21-2003.8.14	Mathematics Education	OKUBO Kazuyoshi
2003.9.1-2003.11.30	Mathematics Education	FUKUI Masaki
2003.12.28-2004.1.14	Project Consultancy	HOMMA Kenji
2003.12.28-2004.1.14	Project Consultancy	OKUBO Kazuyoshi
2004.1.16-2004.3.28	Mathematics Education	KITAYAMA Masashi
2004.3.11-2004.7.9	Science Education	SUZUKI Teruaki
2004.3.30-2004.4.13	Science Education	ASAKAWA Tetsuya
2004.3.30-2004.4.13	Science Education	ABE Osamu
2004.3.30-2004.4.13	Science Education	JAANA Haruo
2004.3.30-2004.4.13	Science Education	SAKUHARA Itsuro
2004.4.1-2005.4.30	Chief Advisor	HASEGAWA Toshio
2004.4.22-2004.5.3	Science Education	WATABE Hideaki
2004.4.22-2004.5.3	Science Education	NAMIKAWA Hiroshi
2004.4.22-2004.5.3	Mathematics Education	IAI Shinichiro
2004.4.22-2004.5.3	Science Education	WADA Keiji
2004.4.22-2004.5.3	Science Education	MISAKI Takashi
2004.4.22-2004.7.31	Mathematics Education	MINAMI Nobuyoshi
2004.5.24-2005.3.29	Science Education	SEKIHARA Mutsumi
2004.5.24-2005.3.29	Mathematics Education	ISHIGOOKA Takashi
2004.7.10-2004.10.31	Science Education	SAKUHARA Itsuro
2004.7.20-2004.8.10	Science Education	TANAKA Kuniaki
2004.7.20-2004.9.19	Mathematics Education	SUGIYAMA Yoshihiko
2004.9.1-2005.2.10	Mathematics Education	MINAMI Nobuyoshi
2004.11.21-2004.12.30	Science Education	KURAGANO Shiro
2005.2.1-2005.3.31	Mathematics Education	KUBO Yoshihiro
2005.3.1-2006.3.31	Coordinator	MIYAJIMA Shigeru
2005.4.2-2006.4.1	Chief Advisor	SUGIYAMA Yoshihiko
2005.4.2-2005.5.31	Science Education	ABE Osamu
2005.4.2-2005.6.30	Mathematics Education	KITAYAMA Masashi
2005.11.23-2005.12.22	Mathematics Education	OKUBO Kazuyoshi
2005.11.23-2005.12.22	Science Education	SUZUKI Teruaki

Annex 2-2 List of Counterparts
NCERD

Math	Mr. Nasser Elsyed Abdel Hamied Ebada
	Ms. Hanan Mohamed Rabie Abd EL Khalek
	Dr. Hany Abd El Meguid Bayome Elsheikh
	Dr. Mohammed Ashraf Mahmoud Almikawey
	Dr. Khaled Aboel Hassan
Science	Dr. Amal Elshahat Hafez,
	Dr. Eid Abou El Maati El Dessoki Ibrahim
	Dr. Hala Mohamed Tawfic Lotfy
	Dr. Raouf Azmy Tawfik
	Ms. Eman Aly Mahmoud Aly El Shehry
	Ms. Shaimaa Hamoda El Haron
	Dr. Maha Abd Elsalam Ahmed Elkhamisy
	Mr. Tamer Ali Abd Ellatif Elmasry
	Ms. Amany Abd El Aziz Ibrahim Abd El Aziz
	Dr. Amany Ahamed El Mohamady Hassaneen Saleh
Dr. Shaban Hamed	
Dr. Tafida Ghanem	

Pilot Schools

School	Subject	Name
Ramsis	Science	Mr. Mohamed Mostafa
	Math.	Mr. Tarek Said Mahmoud
		* Mr. Haroun Mohamed Ezzat # Mr. Mohamed Awad Khedr
Mohamed Farid	Science	Ms. Mervat Freg Mohamed
		Ms. Nahed Ramadan
	Math.	Mr. Bahaa Elsaid
		Mr. Mahmoud Morsi
Garden City	Science	Mr. Ezzat Abd Elhameed
		Mr. Hany Mohamed Saad
	Math.	Ms. Manal Hosni Abd Elghani
		Mr. Mohamed Khalil Elazazi
Aziz Abaza	Science	Mr. Maged Kamal Fahmi
		Mr. Adel Ghebrial
	Math.	Mr. Adel Shalabi
		* Mr. Asharaf Rabiee
		Mr. Sobhei Wadeea
		# Ms. Laila Abd Elsameei

Remarks:

* those who left the Project

those who join the Project during the Project term

Annex 2-3 Counterpart Training in Japan

Mr. Nasser Elsyed Abdel Hamied Ebada	Mathematics Education	2003.10.21-2003.11.30
Dr. Hala Mohamed Tawfic Lofly	Science Education	2003.10.21-2003.11.30
Dr. Raouf Azmy Tawfik	Science Education	2003.10.21-2003.11.30
Ms. Eman Aly Mahmoud Aly El Shehry	Science Education	2003.10.21-2003.11.30
Ms. Shaimaa Hamoda El Haron	Science Education	2003.10.21-2003.11.30
Ms. Ayoub Laila Abd El Sameea	School Administration	2003.12.2-2003.12.15
Ms. El Zahaby Sameha Essawy	School Administration	2003.12.2-2003.12.15
Dr. Maha Abd Eisalam Ahmed Elkhamisy	Science Education	2004.10.11-2004.11.18
Ms. Hanan Mohamed Rabie Abd EL Khalek	Mathematics Education	2004.10.11-2004.11.18
Mr. Tamer Ali Abd Ellatif Elmasry	Science Education	2004.10.11-2004.11.18
Dr. Hany Abd El Meguid Bayome Eisheikh	Mathematics Education	2004.10.11-2004.11.18
Ms. Amany Abd El Aziz Ibrahim Abd El Aziz	Science Education	2004.10.11-2004.11.18
Dr. Amin Mohammed M Abu Bkr	Educational Management	2004.11.23-2004.12.8
Dr. Eid Abou El Maati El Dessoki Ibrahim	Educational Management	2004.11.23-2004.12.8
Mr. Ahmed Reda Amin Mehenna	Educational Administration	2004.11.23-2004.12.8
Mr. Shawky Darwish Moharram	Educational Administration	2004.11.23-2004.12.8
Mr. Mohamed Salama Mohamed El Magiry	Educational Administration	2005.10.9-2005.10.21
Ms. Karema Ahmed Ahmed Saed	Educational Administration	2005.10.9-2005.10.21
Dr. Amany Ahamed El Mohamady Hassaneen Saleh	Science Education	2005.10.9-2005.10.21

ANNEX 2-4 List of Provision of Machinery and Equipment

Purchasing Date	Name of Equipment	Type	Quantity	Amount	
					JPY
2003/4/2	Steel Black Board	PGW-46 HIRUMA	8	21,500	Yen
2003/4/2	Steel Black Board	691-0495 HIRUMA	4	29,700	Yen
2003/4/2	Magnet Seat Card	33-0094 KYOUBUNN	4	30,000	Yen
2003/4/2	Magnet Seat	693-1569 HIRUMA	4	20,000	Yen
2003/4/2	Steel Black Board	692-1356 HIRUMA	4	22,500	Yen
2003/4/30	Laptop Computer	PCG-GRZ77/B Sony	1	283,000	Yen
2003/4/30	Digital Camera	DSC-P9 Sony	1	71,500	Yen
2003/4/30	Digital Video Camera	DCR-TRV38 Sony	1	139,000	Yen
2003/4/30	Software	Office XP Pro Microsoft	1	68,900	Yen
2003/4/30	Software	Premiere 6.5 Adobe	1	76,500	Yen
2003/4/30	Laptop Computer	M8859J/A Apple	1	461,000	Yen
2003/4/30	Laser Printer	LP-3400 EPSON	1	71,000	Yen
2003/4/30	Transformer	220/110N 1KVA	1	20,000	Yen
2003/4/30	Digital Video Camera	DCR-TRV38 Sony	1	136,000	Yen
2003/4/30	Memory Stick	2MSA-128A Sony	1	20,900	Yen
2003/4/30	Digital Camera	DSC-P9 Sony	1	70,000	Yen
2003/4/30	Software	Office V.X for Mac Microsoft	1	55,500	Yen
2003/4/30	Software	Canvas 8.0 for Mac	1	61,800	Yen
2003/4/30	Software	Photoshop 7.0 for Mac Adobe	1	77,000	Yen
2003/4/30	Software	Acrobat 5.0 for Mac Adobe	1	32,000	Yen
2003/4/30	Software	Premiere 6.5 for Mac Adobe	1	75,500	Yen
2003/4/30	Laptop Computer	2658-MBJ IBM	1	249,000	Yen
2003/4/30	Media Projector	FLP-52 EPSON	1	202,000	Yen
2003/4/30	Spare Lamp	ELPLP19D EPSON	1	30,000	Yen
2003/4/30	Software	Office XP Pro Microsoft	1	68,900	Yen
2003/4/30	Video Case		1	100,000	Yen
2003/4/30	Camera Attachment		1	93,000	Yen
2003/6/3	Fax Machine	KX-FM89 Panasonic	1	1,530	EGP
2003/7/11	Laptop Computer	PCG-GRT77/B Sony	1	321,000	Yen
2003/7/11	Digital Camera	DSC-P10 Sony	1	65,000	Yen
2003/7/11	Software	Office XP Pro Microsoft	1	68,900	Yen
2003/7/11	Software	Atlas Super pack V.9.0	1	115,000	Yen
2003/7/11	Software	Premiere 6.5 Adobe	1	76,600	Yen
2003/9/15	Copy Machine	IR2200 Canon	1	9,042	USD
2003/9/23	Software	Office XP Pro Microsoft	1	64,000	Yen
2003/10/9	Desktop Computer	Power Mac G4 Apple	2	325,000	Yen
2003/10/9	Monitor	M8893J/A Apple	2	160,000	Yen
2003/10/9	Desktop Computer	Optiplex GX270 Dell	2	115,000	Yen
2003/10/9	Monitor	E171FP Dell	2	75,000	Yen
2003/10/9	Laptop Computer	Thinkpad R40 2681-GEE IBM	4	204,500	Yen
2003/10/9	Extension Memory	512MB	8	30,000	Yen
2003/10/9	Laser Printer	LP-8700 PS3 EPSON	1	145,000	Yen
2003/10/9	Software	Office V.X for Mac Microsoft	2	57,750	Yen
2003/10/9	Software	Office XP Pro Microsoft	4	58,500	Yen
2003/10/9	Fuel-cell Car	B10-2047 Nakamura	5	29,500	Yen
2003/10/9	Hand Dynamo	B10-2635 Nakamura	5	33,000	Yen
2003/10/9	Binocular Microscope	Nature scope Fabre Mini	5	31,000	Yen
2003/12/8	Digital Video Camera	DCR-TRV33E PAL Sony	2	145,000	Yen
2003/12/8	Accessories kit	ACCKIT-QMM5 Sony	2	27,000	Yen
2003/12/8	Tripod	VCF-1170RM Sony	2	50,000	Yen
2003/12/8	PH meter	1-3042-01 OS ONE	1	40,000	Yen
2003/12/8	Digital Illuminance meter	LX-1334 CUSTOM	1	48,000	Yen
2003/12/8	Digital Noise meter	SL-1370 OS ONE	1	28,000	Yen
2003/12/8	Accessories for above		1	23,000	Yen
2003/12/8	Digital multimeter	CDM-5000E Custom	1	39,000	Yen
2003/12/8	Electronic balance	333-13 OS ONE	1	28,000	Yen
2003/12/8	Accessories for above		1	20,000	Yen
2003/12/8	Electronic balance	333-00 OS ONE	1	22,000	Yen
2003/12/8	Water Purifier	FW-16 OS ONE	1	118,000	Yen
2003/12/8	Cabinet	WN-900HL OS ONE	1	208,000	Yen
2003/12/8	Glove Box SM-1	SM-1 OS ONE	1	36,000	Yen
2003/12/8	Accessories for above		1	20,000	Yen
2003/12/8	Tool Kit	KA51-01-03 OS ONE	1	78,000	Yen
2003/12/8	Vise	8-074-02 OS ONE	1	23,500	Yen
2003/6/3	Van	Hiace COMM15 Toyota	1	169,900	EGP
2004/3/11	Microscope	Nature scope	5	35,800	Yen
2004/3/11	Refractors	D-80M D-29-9961	5	85,000	Yen
2004/3/15	Television	20B2 Panasonic	4	1,579	EGP
2004/3/15	VCR	MV20 Panasonic	4	1,367	EGP
2004/3/15	Overhead Projector	LAH400	4	1,815	EGP
2004/6/30	Publication Board	PGW-46 HIRUMA	12	19,100	Yen

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5,644,350
3,497,955
1,032,506
10,174,811

ANNEX 3-1

Year	Subject	Training		Num. of Participants
2003	Math	2005/7/27	2005/7/31	24
		2005/8/3	2005/8/7	21
	Science	2005/7/27	2005/7/31	54
		2005/8/3	2005/8/7	
2004	Math	2005/7/25	2005/7/29	27
		2005/8/1	2005/8/5	28
	Science	2005/7/25	2005/7/29	29
		2005/8/1	2005/8/5	30

Annex 4 Achievement Grid

Title of the Project: Project on Improvement of Science and Mathematics Education in Primary Schools

Criteria	Evaluation Items	Confirmation Items	Source of Info.	Results
Activities	1-1. Transfer knowledge and skills to NCERD staff enough for giving hand-on instruction to teachers at the selected schools on the new teaching methods	<ul style="list-style-type: none"> Number of the NCERD C/Ps Number and contents of the hand-on instructions that NCERD staff (C/Ps) have given to the C/P teachers 	<ul style="list-style-type: none"> Project reports, Questionnaire/interview with Japanese experts and NCERD C/Ps 	<ul style="list-style-type: none"> Six (6) and eleven (11) counterparts (C/Ps) have been participating in the Project from NCERD, for mathematics and eleven (11) for science respectively. The Project has held weekly meetings between Japanese experts and the C/Ps for technology transfer in preparing teaching plans based on the revised guidebook. For science, lectures have been given to the C/Ps on the basis of making experiments and on how to introduce those experiments into classes, and others. The C/Ps in collaboration with Japanese experts prepared the teaching plans for the units "food and organisms", "energy", "substance", and "magnetism", which were further revised by the C/P teachers at the pilot schools to fit the classes. For mathematics, also, the C/Ps in collaboration with Japanese experts prepared the teaching plans for the units "decimal" and "approximation and division" for 4th and 5th grades. The C/P teachers at the model schools then, revised those teaching plans to fit the classes in the schools. The C/Ps have not been full-time staffs for the Project activities, and sometimes could not participate in the weekly meetings with the Japanese experts with time constraints during the first half of the Project term. The Project has been trying to raise their attendance rate by keeping attendants list more precisely, assigning the group leaders for each of mathematics and science groups, obliging the report on the attendance to Director of NCERD by the group leaders, and the like. Recently, the situation has been much improved partly due to the above-mentioned actions and partly to the kind help of the present head of Curriculum Department in enhancing the monitoring on the issue. In order to objectively measure the attainment of the C/Ps and to reflect for effective transfer of knowledge and skills to them, the Project has been regularly making assessment of the observation sheets, teaching scenarios, and teaching plans which the C/Ps have prepared and submitted. The assessment has been made by giving scores for their work above based on the several viewpoints which were set among the Japanese experts and used throughout the Project term.
	2-1. Select the candidate schools	<ul style="list-style-type: none"> Progress and results of the selection of the candidate schools Process of the selection 	<ul style="list-style-type: none"> Project reports, Questionnaire/interview with Japanese experts 	<ul style="list-style-type: none"> The Project received the recommendation on eight (8) pilot schools from the Ministry of Education (MOE) and Cairo Governorate and set them as the candidates for the model schools. The process of the selection was completed in May 2003.

<p>2-2. Select the target schools from the candidates</p>	<ul style="list-style-type: none"> • Process of selection of the target schools from the candidates • Comparison between the original plan, including schedule, and the actual progress 	<p>Project reports, Questionnaire/interview with Japanese experts and NCERD C/Ps</p>	<ul style="list-style-type: none"> -The process of the selection of target schools from the candidates was carried out from May 2003 and completed in July 2003. -First, the Project conducted surveys on the eight (8) candidates through interviews, observation of the classes and equipment/facilities and the like. For the implementation of the survey, several visits to the candidates were made. The final decisions were made in the joint meeting between the Japanese experts and the C/Ps, based on the survey results, capacity of the Project team, i.e. Japanese experts and NCERD C/Ps, local features in which each school are located, number of students, English levels of the teachers. - This activity was completed in 2003.
<p>2-3. Make lesson notes and meet with teachers of the selected schools</p>	<ul style="list-style-type: none"> • Frequency and contents of the discussion • Process of discussion • Results of discussion (cases) 	<p>Project reports, Questionnaire/interview with Japanese experts and C/Ps teachers</p>	
<p>2-4. Give hands-on instruction to the C/P teachers at the selected schools on the new teaching methods</p>	<ul style="list-style-type: none"> • methods/process, frequency, and contents of hands-on instructions to the C/P teachers • Satisfaction level of the C/P teachers to the instructions 	<p>(Ditto as above)</p>	<ul style="list-style-type: none"> -Visits and instructions for C/P teachers were not conducted during summer holiday, i.e. from mid-May to mid-September, and winter holiday, i.e. from the end of December to the beginning of February. Apart from those holiday seasons, NCERD C/Ps and Japanese experts have been visiting and giving hand-on instruction to the C/P teachers. -The participation of NCERD C/Ps had not been good in the Project activities due to heavy workload and other tasks. Since the present director of NCERD and the present head of curriculum department were moved in their positions, they have been quite supportive to the Project to increase the C/Ps' involvement in the Project. The issue has been almost solved by now. -In July 2005, NCERD C/Ps took the roles of lecturers in teacher training organized by Cairo Governorate. The Project conducted participants' assessment on them and the results show high appreciation on the C/Ps' ability in provision of training. Therefore, courses have been newly designed with the C/Ps as lecturers since then.
<p>3-1. Study the research methods that measure the effectiveness of the new teaching methods</p>	<ul style="list-style-type: none"> • Methods and results of the study on the research methods • Process of the implementation of the study 	<p>Project reports, Questionnaire/interview with Japanese experts</p>	<ul style="list-style-type: none"> -Regarding the research methods to measure the effectiveness of the methods, several were adopted in the first year of the Project. Through the set researches, though, it was found difficult by those researches to measure the effectiveness precisely and properly. The Project, therefore, reconsidered the ways of measurement and set the followings for assessments: <ol style="list-style-type: none"> 1. Questionnaire survey to participants in open classes and workshops 2. Comparative analysis between the results of pre-tests and post-tests 3. Questionnaire survey to teachers
<p>3-2. Conduct the research towards the C/P teachers and students at the selected schools</p>	<ul style="list-style-type: none"> • Number of the C/P teachers who were studied for the purpose • Number of the students who were studied • Process to implement the study 	<p>(Ditto as above)</p>	<ul style="list-style-type: none"> -The first post-test was conducted in April 2004 and comparative analysis was made with the results of the baseline survey made in October 2003. -The second post-test was carried out in April 2005 and, again, compared and analysed with the results of the baseline survey.

<p>3-3. Analyze the research results and verify the effectiveness of the new teaching methods</p>	<ul style="list-style-type: none"> • Process of the analysis • Results of the analysis 	<p>(Ditto as those for Indicator 3-2.)</p>	<ul style="list-style-type: none"> - Researches have been made on the same classes with same students for their 4th, 5th, and 6th grade periods, both in the pilot and control schools to collect sequential data for three years as well as to make comparison between them. It has been aimed to verify the effectiveness of the methods the Project introduced in practical ways in the pilot schools. - The results show more rapid increase in student's scores in the pilot schools than in the control schools both for mathematics and science, comparing the average scores of the examinations held in October 2003 and in April 2004. For mathematics, the score got better from 6.5 to 9.6 in the pilot schools while 6.4 to 8.1 in the control schools. For science, the scores went up from 4.63 to 5.95 in the former while 4.64 to 5.29 in the latter, though the increase was rather small than for mathematics. - In April 2005, when the 3rd examination was implemented, the ways of analysis were modified for more preciseness of the comparison. It could be found statistically significant that the students in pilot schools show better ability both in mathematics and science than those in the control schools. For mathematics, the gap increased between the two groups in their average scores with better variance for the pilot schools. For science, the increase in the average scores was larger in the pilot schools than in the control schools, and again with better variance for the former. - Students' interests and attitudes toward mathematics and science have been rising both in the pilot schools and the control schools with the scores from 87 to 102 and from 82 to 87 respectively, with larger increase in the former. - Researches on changes of students' interests and attitudes have been also conducted to obtain sequential data on the issue. Further consideration is required, though, due to the modification of the analytical methods in JFY 2004. - Besides the above, questionnaire survey conducted by the terminal evaluation mission revealed that almost all of the C/P teachers and their colleagues have found significant increase of students' interest in the subjects. - It is planned to have another post-test in December 2005.
<p>4-1. Revise the guidebooks step by step, based on the lessons learned through practice in class</p>	<ul style="list-style-type: none"> • Concept of revisions • Points and contents revised • Process of the revision 	<p>Project reports, Questionnaire/interview with Japanese experts, members of the Supporting Committee for the Project in Japan, and NCERD C/Ps</p>	<p>[Concept for the revision]</p> <ul style="list-style-type: none"> - For science, it has been aimed to upgrade students ability to solve problems on their own through making classes their opportunities to get closer look on nature, conduct observation, carry out experiments, and the like. Also, careful consideration has been made to guarantee the consistency between the main objectives for each unit dealt in the guidebook with those in the textbooks in Egypt. - For mathematics, the Project has been trying to keep consistency as much as possible with the Egyptian curriculum after the increase of primary education period from five (5) years to six (6) years as well as the changes of the textbooks. Besides, the revisions have tried to provide readers with various scenarios based on the problem-solving study methods.

			<p><u>[Points and contents of the revision]</u></p> <p>-For science, the revisions have been made on several points scientifically incorrect and/or inaccurate found in the previous version. Also, the guidebook has been modified to provide objectives, contents, and scientific explanation for each unit. In the columns of "Tips for teachers", the guidebook tries to indicate teaching materials, experiments, and materials for observation depending on features of students. "Model lesson plans" tries to show clearly the conceptual structure of each unit, time allocation, and teaching plans as models.</p> <p>For mathematics, the revisions have been made mainly to: 1) correct inaccurate points, 2) add, 3) improve, and 4) keep consistency with the new textbooks.</p> <p><u>[Institutional arrangement and process of the revision works]</u></p> <p>-"Committee for the revision of the guidebooks" has been set in Hokkaido University of Education, consisting of two groups for mathematics and science with approximately forty (40) members from the university. The committee has taken a major role in the revision work in Japan.</p> <p>- Simultaneously, Japanese experts and NCERD C/Ps have also been engaged in the revision works in Cairo, mainly in development of model lesson plans, preparation of the draft of "progress check sheet for the revision works" to share the schedule and the division of roles among themselves.</p> <p>- The work has been slightly delayed from the original plan. However, Japanese as well as English versions have been completed for mathematics and the translation into Arabic has been started by now. For science, Japanese version has been completed and in the process of translation into English. Translation into Arabic will be finished in December 2005.</p> <p>- The Project has been collaborating with Cairo Governorate in their teacher training, after reforms of the training facilities and others. The Project has kept close and favourite relationship with the Governorate since then.</p>
5-1. Examine existing teacher training system in Cairo governorate	<ul style="list-style-type: none"> • Process of the existing system • Results of the examining 	Project reports, Questionnaire/interview with Japanese experts and NCERD C/Ps	
5-2. Conduct teacher training on new teaching methods as a part of existing training course	<ul style="list-style-type: none"> • Number of the sessions held, that of the participants, and forms of the sessions held, which introduced the new teaching methods into the existing training courses • Importance put on the above sessions within the existing system 	(Ditto as above) Questionnaire/interview with the Education Committee of Language Experimental Schools of Cairo Governorate	<p>- Since February 2005, the Project has been providing teacher training on practical application of problem-solving methods in conjunction with Cairo Governorate with their facilities. Twelve (12) sessions have been conducted in the scheme with approximately 300 participants by now.</p> <p>- The Project has conducted questionnaire surveys to participants in every session. The results show sufficient participants in satisfaction on the training, with more than 90% of them answering "strongly satisfied" or "satisfied".</p> <p>- Besides the above, the Project has provided training for teachers from 27 governorates in collaboration with PPMU on the methods as well, twice for each of 2003 and 2004, in total four (4) sessions by now. The participants include senior teachers and inspectors and are amounted to 213 persons in number.</p>
6-1. Hold open classes for teachers of Cairo governorate	<ul style="list-style-type: none"> • Number of open classes held, that of the participants, titles and organizations of the participants, and forms of open classes • Assessment of the participants 	(Ditto as above) Questionnaire to the participants	<p>- Open classes were held twice in December 2004 and March 2005 with participants from UNESCO, EU, NGOs, Ministry of Education (MOE) including under secretary of Basic Education Department, counselors and inspectors of mathematics and science, Cairo Governorate, teaches of experimental schools, mass-media, Embassy of Japan, and others, counting 138 persons in total (including the C/Ps and JICA staffs)</p> <p>- Final open class will be held in December 2005.</p>

<p>Output1 NCERD staff can give proper instruction to teachers on the new teaching methods, including lesson planning</p>	<p>6-2. Hold the national seminar</p>	<p>• Number of national seminar, that of the participants, titles and organizations of the participants, and forms of national seminar</p> <p>Source of Information</p> <ul style="list-style-type: none"> • Periodical evaluation reports by JICA experts(3 times a year) • Attendance sheet • Class Observation sheet • Questionnaire/ interview with the C/P teachers • Observation of teachers training in Cairo Governorate 	<p>Project reports, Questionnaire/interview with Japanese experts and NCERD C/Ps, Questionnaire to the participants</p>	<p>- National seminar will be held in March 2006.</p>
	<p>Indicators</p> <p>1-1. All the C/P staff understand the concept of the new teaching methods properly.</p> <p>1-2. All the C/P staff can prepare teaching plans based on the new teaching methods.</p>	<p>Results</p> <ul style="list-style-type: none"> - The NCERD C/Ps has obtained proper understanding as well as capability of satisfactory level to reflect the concept of the teaching methods into their preparation of teaching plans and instructions to the C/P teachers, though not of perfect level yet. - Regarding science, viewpoints for assessment were changed between the first year to the second year due to the change of the evaluators, i.e. Japanese experts, the modification of the methods applied in this Project from hypothetical experimental methods to problem-solving learning methods. For this reason, it is rather difficult to compare the C/Ps' understanding of the methods between the first and the second year with the assessment results the Project has been keeping. However, the assessment of the teaching scenarios which the C/Ps prepared in the second year shows that they have reached to the satisfactory level in their understanding of the methods. Depending on the contents of each unit, some require traditional ways of teaching, i.e. one-way teaching from teachers to students, while some other allow teachers and the C/Ps to apply the problem-solving learning methods in large part of the classes. - As for mathematics, the Japanese expert has made assessment on the teaching plans which the C/Ps prepared during the first and the second years of the Project. The viewpoints for assessment were, again, changed between those two years, that is, from putting focus on utilization of the group learning in 2003 to on problem-solving learning in 2004. However, the standard to be assessed as satisfactory in their understanding has not changed and it is possible to compare the results between those two years. Although there were some C/Ps who were under the standard in 2003, all of them has reached or exceeded the standard in 2004, which means they have obtained proper understanding of the methods. - The Project has fostered human resources, i.e. NCERD C/Ps, with capability of satisfactory level and almost all of them have become able to prepare teaching plans properly. - In the process, there were several constraints for the smooth implementation such as the time constraints for the C/Ps due to their status as part-time staffs for the Project and the delay of revision works of the guidebooks. The former has been diminished by now, though. - Regarding mathematics, in their assessment the fluctuation was found even for the same unit. It is required for them to obtain sufficient capability to keep good quality for all the classes in their preparation of the teaching plans applying the problem-solving learning methods. One point which can be mentioned is that some C/Ps have been rapidly improved their capability in their teaching plans preparation just after the training in Japan, which shows its effectiveness. 		

<p>Output 2 The C/P teachers at the selected schools master the new teaching methods and practice them in class.</p>	<p>1-3. All the C/P staff can give proper instruction on the new teaching methods.</p>	<p>(Ditto as those for indicator 1-1.)</p>	<p>-All of the seventeen (17) C/Ps have obtained capability to provide proper instructions to teachers based on the concept of the guidebooks as well as to give lectures in trainings of Cairo Governorate. -As for science, added to the assessments on the teaching scenarios, the assessment has been made based on the observation sheets especially in their comments which the C/Ps have made on the classes made by the C/P teachers. The C/Ps have obtained the score over the set standard for the Project, though, for the same reasons found for Output 1-1, there is some missing in accuracy when compared between the first and the second year. On the other hand, the Project has obtained data on the participants' assessment on the C/Ps as trainers in Cairo Governorate training. The data indicate that, for example, 64% of the participants gave the highest mark for the C/Pts answering to the question of "Is the contents of the training useful for your class?", with higher rate of 70% given to the training dealing with concrete units for teaching. This shows that the C/Ps, who are researchers, not trainers, have obtained sufficient capability to provide practical training to teachers. -Regarding mathematics, all the C/Ps have obtained good assessment from the C/P teachers in their capability to give hands-on instruction of the methods.</p>
<p>Indicators 2-1. All the C/P teachers at the pilot schools understand the concept of the new teaching methods properly.</p>	<p>Source of Information</p> <ul style="list-style-type: none"> • Periodical evaluation reports by JICA experts (3 times a year) • Attendance sheet • Class observation sheet • Questionnaire/interview with headmasters of the pilot schools • Questionnaire/interview with NCERD C/Ps • Review of the results of questionnaire survey to the participants to the open classes 	<p>Results</p> <ul style="list-style-type: none"> -The C/P teachers have obtained proper understanding of the concept of the teaching methods and the capability to reflect the concept in their teaching plans. Some of them have gone up to the level of preparing teaching materials with their own ideas. -During the first half of the Project term, there were several misunderstandings among them such as the one that they should apply "hypothetical experimental methods" to all classes for science and another that they should apply "group works" to all classes for mathematics. Those misunderstandings have been corrected properly by now and they have made much improvement in their understandings of "child-centered learning" concept. -Regarding science, the results of the questionnaire survey, which was conducted after open classes in the second year, show that 94% of the participants have obtained satisfaction as well as proper understanding of the concept of the child-centered and problem-solving learning methods. 80% of them recognized the effectiveness of the methods to upgrade students' understanding of the subject as well as their creativity. It can be said, thus, that the C/P teachers, who conducted model classes for the open classes, have sufficient and proper understanding of the methods. -Regarding mathematics, the C/P teachers have joined the training of Cairo Governorate and others. In those cases, they have shown their capability to prepare teaching plans and apply them in their classes based on the problem-solving learning methods by making proper comments on the model classes in the open classes and conducting the model classes in the open classes. 	

<p>Output 3 The new teaching methods are proved to be effective</p>	<p>2-2. All the C/P teachers at the pilot schools can properly make plans and practice the new teaching methods.</p>	<p>(Ditto as those for indicator 2-1.)</p>	<p>-All the C/P teachers have become able to make proper structures of classes following the teaching methods the Project targets, based on the teaching plans that the NCERD C/Ps prepared with modifications in case of necessity.</p> <p>-In the former half of the Project period, there was much room for the C/P teachers to further improve their ways of application of the methods despite their efforts. However, all of them have been developing their capability properly by now with the advices and instructions from NCERD C/Ps and Japanese experts.</p> <p>-Still, in terms of quality, some of them have not reached to the satisfactory level in their application yet.</p> <p>-Regarding science, the Project has obtained the results of the assessment on the C/P teachers with observation sheets. The sheets have been filled in the C/Ps of NCERD for each point such as "introduction", "problem setting", "hypothesis/discussion", "development", "conclusion", and "evaluation" and after filling in, the scores are totaled. When compared with the former half of the second year and the latter half of the same year, the average scores show a clear improvement in the C/P teachers' capability. Still, in general with some exceptions, relatively low scores have been given on "development", possibly due to insufficient preparation for experiments. For further application of their proper understanding in their practices, several constraints such as time shortage and insufficient facilities for experiments are found, added to the further efforts from the teachers' side.</p> <p>-As for mathematics, the C/Ps of NCERD have filled in the observation sheets for the C/P teachers' assessment. The sheet consists of "introduction", "development" and "conclusion" to be scored. The results cannot show their improvement clearly, but still the Japanese experts can see good improvement in their classes putting importance on child-centered learning methods. The C/Ps of NCERD have been divided into two groups to be in charge of each pilot school. Their involvement has increased this year than last year.</p>
<p>Output 3 The new teaching methods are proved to be effective</p>	<p>Indicators 3-1. Students' academic performance; effects on their understanding, attitudes and interest in pilot schools are improved more than those of control schools. 3-2. All the C/P teachers at the pilot schools make positive evaluation about the new teaching methods.</p>	<p>Source of Information • Research results (from pre- and post-tests) • Interview with the C/P teachers</p>	<p>Results - Better understanding and increasing interests in mathematics and science could be found in the pilot schools than in the control schools. It was found scientifically significant that the higher scores have been marked in the former than in the latter for both subjects. - Almost all the C/P teachers have reported the increases in students' interest in those subjects after the Project implementation. - In 2005, survey was conducted by the Project targeting the C/P teachers. The results show that all of them are quite positive to the teaching methods of the Project and recognize the effectiveness.</p>
<p>Output 4 The guidebooks are revised</p>	<p>Indicators 4-1. All the parts and contents of the guidebooks are reviewed and revised</p>	<p>Source of Information • Revised guidebooks • Questionnaire to the members of the Supporting Committee for the Project in Japan • Questionnaire/Interview with the C/P teachers • Questionnaire/Interview with the MOE officers</p>	<p>Results - Though the progress has been slightly delayed compared with the original schedule, Japanese as well as English versions of mathematics guidebook have been completed and translation into Arabic is in process. As for science, Japanese version has been completed and under translation into English. - Inaccuracy and incorrectness have been all corrected in the revised guidebooks, with reviewing, adding, and improving some parts. Thus, it was found all the necessary revisions have been made by now.</p>

<p>Output 5 The new teaching methods are introduced in existing teachers training courses.</p>	<p>4-2. The C/P teachers give high marks on the revised guidebook.</p>	<p>• Interview with the C/P teachers</p>	<p>- The full books of the revised guidebooks, as found above, have not been at the C/P teachers' hands yet. However, almost all of them give high marks on the effectiveness of the guidebooks when they were asked their assessment about the model lesson plans that are part of the guidebooks at their hand.</p>
<p>Indicators 5-1. Contents and frequency of activities in existing teachers training courses</p>	<p>Source of Information • Records of activities of the training course • Records on PPMU teachers training • Records on PPMU teachers training of Cairo Governorate *for the above last two, the followings should be checked: numbers of holding them, and that of participants.</p>	<p>Results - The Project started collaboration in training about practical application of the "child-centered learning" and "problem-solving learning" methods with Cairo Governorate since February 2005 with twelve (12) sessions participated by approximately 300 people till now. 90% of them expressed their agreement on the teaching methods the Project has been dealing with. - In July 2005, the Project made a trial of assigning NCERD C/Ps as lecturers in trainings of Cairo Governorate. They obtained successful results for their assessment from the participants. In the September session and afterward, then, the Project formulated courses handled by the C/Ps as lecturers. - The Project provided trainings in conjunction with PPMU in 2003 and 2004, twice for each, four (4) in total. It took five (5) days for one session of the course both for mathematics and science. The participants consist of senior teachers and inspectors from 27 governorates from all over Egypt, counting 213 people in total. PPMU training was terminated in 2004. - Besides the above, Japanese experts provided lectures in PPMU training courses, once for mathematics and another for science, twice in total, when preparatory study mission for the Project stayed in Cairo.</p>	<p>Results - Questionnaire surveys were conducted in every session of PPMU training to know the degree of the participants' satisfaction toward the contents the Project provided. The results were quite successful with 80-90% for science and more than 95% for mathematics considerably satisfied in each session. "Contents of lectures" and "teaching methods" were given the highest marks for science, with more than 90% of the participants quite satisfied. "Directions of mathematics education", "problem-solving type teaching methods", and "preparation of teaching plans" obtained good assessment from the participants. - In the training of Cairo Governorate also, the participants were quite satisfied with the training, all of them answered "considerably satisfied" or "satisfied" for both subjects. It can be highly appreciated as a success of the Project, when compared with other training courses obtaining approximately 40% of satisfied participants. The training conveyed by the Project contains practical ways of teaching and activities, which have been receiving appreciation from the participants, while the latter consists of rather theoretical contents.</p>
<p>Output 6 Indicators</p>	<p>5-2. The new teaching methods obtain positive reputation in the existing teachers training courses.</p>	<p>• Interview with Education Committee of Language Experimental Schools of Cairo Governorate/ PPMU • Review of the documents • Questionnaire to participants</p>	<p>Results</p>

<p>The new teaching methods are recognized by the people in the education field.</p>	<p>6-1. 500 people in the education field recognize the new teaching methods through open classes and seminars before the project terminates.</p>	<ul style="list-style-type: none"> • Records of open lessons and seminars • Number of participants in open classes • Number of participants in PPMU teachers training • Number of participants in teachers training of Cairo Governorate • MOE officers • Inspectors • Teachers in the pilot schools excluding the C/P teachers 	<ul style="list-style-type: none"> - Four (4) open classes have been held with approximately 200 participants. More than 90% of them gave high marks for the effectiveness of the teaching methods of the Project. - It is planned to hold the 5th and 6th open class in December 2005. - Besides, the Project has been trying to inform as much people in educational fields in Egypt as possible through trainings of PPMU and Cairo Governorate. - The officers of MOE, i.e. under secretary of basic education department and counselors for mathematics and science, have deepened their understandings in the application of the methods of the Project through training in Japan, which has contributed in dissemination of the methods in Egypt. - The target of "500 people in the education fields" has been almost attained through the above activities. - All the results of the questionnaire surveys show positive assessment on the teaching methods of the Project from the C/P teachers and participants in open classes and training of Cairo Governorate. Director of NCERD, executive officers of MOE and those of Cairo Governorate have been quite supportive for the Project. 	
<p>Project Purpose</p>	<p>Description</p> <p>The new teaching methods that use the guidebooks in science and mathematics education take root at the selected schools and form a solid base for further dissemination.</p>	<p>Indicators/Expected Results</p> <p>1) 10 education officers such as counselors and inspectors make positive evaluation about the new teaching methods.</p>	<p>Source of Information</p> <p>① Questionnaire survey (Evaluation sheet) prepared by the Project team. ② Questionnaire / Interview survey to the counselors ③ C/Ps' evaluation on the new teaching methods after joining the training in Japan ④ Questionnaire / Interview survey to the inspectors</p>	<p>Evaluation</p> <p>- MOE counselors for mathematics and science are quite positive to the teaching methods of the Project, with mentioning some constraints such as large number of students in a class and lack of facilities for experiments in public schools. - Counselors for science and mathematics of MOE have recognized the child-centered and problem-solving learning methods through their observation trips to Japan, while all the inspectors for those subjects of Cairo Governorate have attended the open classes which the Project conducted. All of them have given positive assessment on the methods.</p>
	<p>2) All the science and mathematics teachers in the pilot schools make positive evaluation about the new teaching methods.</p>	<p>① Questionnaire survey (Evaluation sheet) prepared by the Project team. ② Questionnaire / Interview survey to the science mathematics teachers (29 in number) in the pilot schools</p>	<p>- All of the C/P teachers are quite positive for the teaching methods of the Project. - As for the other mathematics and science teachers at the pilot schools, the terminal evaluation mission made interviews with them as well as the C/P teachers if they are positive or negative. Almost all of the non-counterpart teachers at the pilot schools were found positive and some of them are keen to learn the application of the methods from the C/P teachers while others sometimes attend the class of the C/P teachers to observe and learn. Cases of application on their own were found.</p>	

		<p>3)80 percent of the people concerned make positive evaluation about the new teaching methods.</p>	<p>① Questionnaire survey (Evaluation sheet) to the people concerned (teachers who were introduced GB, participants of open classes and seminars, and MOE).</p> <p>② Records on open schools</p> <p>③ Records on PPMU teachers training</p> <p>④ Records on teachers training of Cairo Governorates</p> <p>*for the above ②, ③, and ④, the followings should be checked: numbers of holding it, that of participants, and questionnaire survey to participants</p>	<p>-As found above, in all the events, i.e. open classes, PPMU training, Cairo governorate training, and regular visits to the pilot schools, more than 90% have expressed their positive assessment about the methods of the Project.</p> <p>-Still, it is also true that part of those in educational fields are not so sure about the applicability of the methods in Egypt. Less than 10% of the participants to the open classes and trainings expressed their anticipation or neutral stances towards the teaching methods of the Project. It can be considered due to the heavy curriculum at present, the potential increase of costs, and lack of necessary equipment in many of the schools.</p>
<p>Overall Goal</p>	<p>The new teaching methods that use the guidebooks in science and mathematics education are used at the primary schools in Cairo governorate and PPMU's target governorates.</p>	<p>1) All the teachers of 27 governorates introduce the new teaching methods.</p> <p>2) Guidebooks are distributed to all the primary schools in Egypt</p>	<p>1) Questionnaire survey to the teachers in the 27 governorates</p> <p>2) Record of distribution</p>	<p>- Full application of the methods has not been found yet, though the Project has given many teachers and those in educational fields in the 27 governorates in Egypt through PPMU training.</p> <p>- Wider recognition of the effectiveness of the methods has been found among those in the educational fields in Cairo Governorate through open classes held at the pilot schools and teacher training held in collaboration with the Governorate. Still, full or wider application of the methods has not been found yet, either.</p> <p>- The revised guidebook is in the process of translation into English for science and into Arabic for mathematics, both of which have not been distributed to teachers yet.</p> <p>- Some cases of voluntary actions of teachers have been reported after their participation in the training.</p>

Annex 5 Evaluation Grid

Criteria	Evaluation Items		Confirmation Items/ Methods	Results
	Main Items	Sub Items		
Comparison between the plan and the actual inputs/ outputs	Has the input been made as planned?	Input from Japanese side	No significant gaps with the original plan, No significant delay/obstacles led by the delay, insufficiency, or low quality of input	<p>- Nine (9) long-term experts, i.e. three (3) chief advisors, two (2) science education, two (2) mathematics education and two (2) coordinators, have been dispatched from Japan with twenty-eight (28) short-term experts. It was originally planned to send about three (3) short-term experts per year, that is nine (9) in total, which exceeded the plan considerably. The timing of sending short-term experts was found sometimes not suitable, e.g. during school holidays in Egypt and others, and the amount was found a bit over the needs for the Project.</p> <p>- The quality, quantity and the timing of procurement and installment of facilities/equipment were found appropriate and highly evaluated by the Egyptian side. Most of those facilities/equipment have been properly utilized for the activities and maintained in appropriate manner with some exceptions such as mackintosh computers that were provided but switched to windows ones in the second year of the Project and some for experiments that did not fit the Egyptian conditions. Also, though it was aimed to check teaching plans the C/P teachers prepared before the application in their classes by receiving the plans and facsimile machines were installed in the pilot schools, they have not been utilized for the original purpose without some positive exceptions.</p> <p>- Nineteen (19) C/Ps and those in educational administration have been received for training in Japan. The contents consist of mathematics education, science education, school administration, education management, education administration and the like. Those in the field of education administration, in particular, have contributed much to deepen the participants' understanding and appreciation on educational system in Japan, which were joined by the executive officers of MOE. Visits to Japanese school in Cairo have also led similar positive impact on the inspectors and the C/P teachers. There were found some cases for the C/Ps to utilize the knowledge obtained from the training in Japan in their instructions for the C/P teachers as well as increasing their involvement in the Project activities, though with some exceptions not indicating sufficient impact as planned.</p>

		Input from Egyptian side	Ditto as above	<ul style="list-style-type: none"> - The selections were found suitable all about the C/P organization, i.e. NCERD, four and (4) pilot schools. The Project Director, i.e. director of NCERD, has been quite supportive for the Project throughout the term, especially the present director who has been in the position since August 2004 has provided kind attention and support to guarantee smooth progress of the Project. As for the coordination and collaboration with MOE, the situation has been much improved by now though it was rather difficult during the former half of the Project term. - Egyptian side has assigned seventeen (17) NCERD researchers, consisting of six (6) for mathematics and eleven (11) for science), as the C/Ps for the Project, who have been found with sufficient capacity for the positions. Regarding number of the C/Ps, no increase has been seen though it was discussed for mathematics, which has not led any significant difficulty/problem in the Project implementation. Still, since all the C/Ps are part-time staffs for the Project with other tasks and researches, their involvement had been not satisfactory especially during the former half of the Project. The Project discussed the issue with the present director of NCERD and the present head of curriculum department who has been in the position since August 2005, which contributed much for improvement by her tightening up the check-up of the C/Ps' attendance to the meetings with Japanese experts. - Four (4) pilot schools with sixteen (16) C/P teachers have been assigned for the Project. During the Project term, two (2) out of sixteen (16) were moved to other positions but two (2) others were promptly supplemented as the C/P teachers. They have been found quite positive and actively involved in the Project. - Necessary facilities and equipment such as the Project office have been provided in proper manner and no significant difficulty/problem was found till now. - Local cost has been provided without delay, which has not caused any constraint for the Project implementation. - The outputs have been produced as planned with an exception of the guidebooks. - The concise versions of the guidebooks can be expected to be translated into Arabic by the end of December 2005, that is, within the Project term, though being slightly delays from the original schedule. - Project purpose is highly likely to be attained by the end of the Project term. - Each activity has been making proper progress as planned in most of the cases. - As for the revision of the guidebooks, though seeing slight delay in its progress, all the works will be completed within the term. The one for mathematics has been already prepared both in Japanese and English and in the final process of translation into Arabic.
	Have the outputs been produced as planned?		No significant gaps with the originally set indicators (the degree to which the Project is expected to produce by the time of the terminal evaluation)	
	Is it possible to expect the full attainment of the Project Purpose at the end of the Project period?		Ditto as above	
Process of Activities	Has each activity been carried out as planned?	No significant delay in the progress, if yes, what is the reason(s) of the delay?		

	<p>Has the Project adopted adequate approach for technology transfer?</p>	<p>If no, which approach is inappropriate? How should we modify it, and is it possible?</p>	<p>No significant delay in the progress, Improvement in the C/Ps' understandings and capacity as expected</p>	<ul style="list-style-type: none"> - The Project has been holding weekly meetings with NCERD C/Ps for providing new knowledge, skills, and advices on the "problem-solving" teaching methods and "child-centered learning". Their involvement, however, was not satisfactory due to their status, i.e. part-time staffs, for the Project. In order to improve their attendance in the activities, the Project has been trying various measures such as using the check list of their attendance, assigning group leader for each subject, and monitoring by the group leaders, while making the experts' office friendly, easily visited space for the C/Ps. Since the head of curriculum department moved in her present position, much improvement in the C/Ps' involvement has been seen with her tightening the monitoring of the C/Ps' attendance. - The instructions to the C/P teachers have been provided mainly through the visits of the pilot schools and the observation of their classes, including those on the preparation of teaching plans. The Project has been seeking ways to avoid several constraints that teachers in Egypt faces such as time limitation in order to guarantee efficient and effective upgrading their capability. - Both NCERD C/Ps and the C/P teachers have been improving their understandings and capacity as expected with proper progress of the Project. - Measurement of the NCERD C/Ps' capability has been made with observation sheet, teaching scenarios, and teaching plans all of which they produced during the Project term. Japanese experts have set several viewpoints for evaluation, given scores on each point, totaled those points for each C/P, and made assessment on each of them on regular basis. - The assessment of the C/P teachers has been made with observation sheet for each class, giving scores for each issue set in the sheet, totaling those scores, and make assessment on each C/P teacher. - Assessment on students' understanding, interest, and attitude toward mathematics and science has been made regularly by the Project by questionnaire surveys. - Joint Coordination Committee for the Project was held just once at the time of the mid-term evaluation in 2004 and not on regular basis to monitor the progress prepare annual action plan of the Project, which are written in the Record of Discussion (R/D) as the responsibilities of the JCC. It was mainly due to the lack of coordination between NCERD and MOE and other concerned organizations before the present NCERD director has come in the position in August 2004. The annual action plans had been prepared within NCERD in the former half of the Project term. It was rather difficult for the Project to share information and collaborate with those concerned organizations except NCERD. However, the situation has been much improved after the present NCERD director has moved in his position. With his support, the Project has obtained reliable and regular reporting mechanism to MOE and close and favourable relationship with the counselors for mathematics and science.
<p>Is there any problem in the management system of the Project?</p>	<p>Has the monitoring system been already set and operated?</p>	<p>Person(s) in charge of monitoring each activity has been set, Format for monitoring prepared and formally adopted, it has been set and agreed on who and how to deal with the monitoring results, Regular meetings held with participation of those who are concerned</p>		

				<p>No serious problem led by lack of/ insufficient communication, Progress as planned, Sufficient support from the government provided in financial and policy term</p>	<p>- Communication between the Project and the Egyptian side was sometimes not sufficiently smooth and incorrect. However, it has been much improved till now. - In the former half of the Project term, Japanese experts cleaned the project office to prepare the space where is easily accessible for the C/Ps for advices, discussions, and others. As a result, the increase of their visits was seen as a result, though frequency is different for each C/P. - Japanese experts and NCERD director has held monthly meetings to share the information on the progress of the activities, difficulties/problems the Project faced, and others. Director has been open and welcomed Japanese experts for discussions on those issues including the one about the C/Ps throughout the Project term. Communication with MOE, DCIST, Cairo Governorate, and others has become much more smooth compared with the former half of the Project term. Regarding the project office, two (2) extra rooms were provided due to the shortage of the space once, but one of them was taken again for other purpose. - Weekly meetings of the C/Ps and Japanese experts, which had been held at the floor of the project office, are held at the floor of the C/Ps' office to enhance communication between the C/Ps and Japanese experts. - Political support has been provided by MOE for the Project throughout the Project term. Closer linkage has been established in the latter half of the term. - Decision-making within NCERD has been smooth and no significant negative impact has been made on the progress of the Project.</p>
	<p>Has sufficient and smooth communication been made among the C/Ps and Japanese experts?</p>	<p>Has the decisions been made without delay or obstacles?</p>	<p>Has JICA, both Headquarter and office in Egypt, provided sufficient and on-timing support for facilitating the progress of the Project?</p>	<p>Decision-making made on good timing within / among the implementation bodies No serious problem or significant delay due to lack of support from JICA side</p>	<p>- The Project has been provided sufficient support from JICA Headquarter and JICA Egypt office on good timing, without any problem on the issue. Particularly after switching the key role of management from the Headquarter to Egypt office, reporting and decision-making have become further smooth.</p>
		<p>Have the concerned organizations functioned in good communication/ collaboration among Egyptian side? Ministry of Education, Egypt</p>		<p>Ditto as above</p>	<p>- As described above, there was a problem of inefficient communication and collaboration between the Project\NCERD and others such as MOE during the former half of the Project term. The problem has been solved till now.</p>
	<p>How is the ownership of those who are concerned?</p>			<p>No significant delay in the progress or serious obstacle for activities due to budget matter, Necessary support has been provided on time.</p>	<p>- No delay or problem has occurred on local cost payment during the term. Quite few extra cost has occurred to the Egyptian side apart from the salaries for the C/Ps and some fees for electricity, water and others to use the office.</p>

			<p>The implementing bodies, judging from the assignment / employment of personnel, public relation activities, and others</p>	<p>Keen or not in proper staff assignment in terms of their number and their capacity, Well understanding on the Project or not, Quick and proper responses in communication and decision-making</p>	<ul style="list-style-type: none"> - The C/Ps was assigned properly in number, on timing, and on their capability both at NCERD and the pilot schools. - Regarding NCERD, the C/Ps' involvement had been insufficient due to their part-time status for the Project, but it has been much improved till now. The director kindly accepted the C/Ps' involvement in training (as trainers) as their one of their regular tasks for NCERD. Sufficient support has been given from NCERD to the Project. - NCERD director has been open and welcomed Japanese experts for discussions on various issues on the Project. The present head of curriculum department has also paid careful attention and given support for the Project, one of which her support much contributed to increase the involvement of the C/Ps in the Project. - Both NCERD director and the head of curriculum department have been supportive. - Communication with other organizations has been improved in the latter half of the Project term, as described above, and properly made till now. - The C/P teachers have been quite active in the Project activities, while the managers of the pilot schools have been supportive throughout the Project period. - The C/Ps have been assigned as scheduled in number. - Thus, no significant problem has occurred due to the shortage of the C/Ps in number.
	<p>Has the staff (C/Ps) been assigned in the best or favourable manner to achieve the Project purpose?</p>	<p>Have sufficient C/Ps been assigned both in quantity as well as in quality for carrying out the Project activities effectively?</p>		<p>Staffs are assigned as planned in number, No significant delay /problem due to inappropriate staff assignment</p>	
	<p>Have the concerned organizations/ individuals committed themselves sufficiently to the Project activities?</p>	<p>Do they recognize the Project as a useful support for themselves?</p>		<p>The Project has been widely known with good reputation among the concerned organizations such as MOE and schools, Active public relation activities such as information exchange or plans of joint activities with other donors and/or NGOs,</p>	<ul style="list-style-type: none"> - To inform those concerned in the educational field in Egypt of how to apply the "problem-solving" teaching methods into classroom is one of the set outputs of the Project and activities have been made for this purpose within the Project framework. The concept and contents of the Project have been explained repeatedly in teacher training, seminars, visits to MOE and others. Those participated in the above events or so to be informed of the Project and the methods have amounted to approximately 500 people in total. - Information exchange has been made with MOE, PPMU including the WB and EU, Cairo Governorate, and CDIST. Among them, the Project has particularly close collaboration with PPMU and Cairo Governorate through the joint work in teacher training. With CDIST, the Project made some discussion on the future dissemination of the Project outputs through teacher training. - Besides, the Project made visits to SMASSEE-WECESA, Kenya, and discussed the potential to join it and other future prospect of the Project. - Trainers have been fostered and the guidebooks are in the final process of translation. One potential obstacle is that no single institution including NCERD is not equipped with both functions of technical support, i.e. dispatching trainers, and of institutional mechanism to disseminate.
	<p>Is there any other obstacle/problem for the progress of the Project?</p>	<p>If yes, what is it?</p>			
Relevanc e	Necessity	Consistency with the needs of the target areas/ communities in Egypt			<ul style="list-style-type: none"> - The Project has targeted four (4) experimental schools in Cairo governorate. "Child-centered learning" and "problem-solving" classes have been required not only in the present targets but also all over Egypt, which shows social needs in Egypt for the application of those methods.

				<ul style="list-style-type: none"> - Egypt has been shifting their focus in primary education from their traditional methods to child-centered one. Under this basic policy, NCERD also has been directed toward the application of the latter. It can be found in other donors' support in mathematics and science education such as the one by France. - NCERD director has been telling the Project to expand the target of the Project. - The above shows the Project meets the needs of NCERD. - Since Jomtien Declaration in 1990, the Egyptian Government has been putting focus on the provision of "primary education for all." It is due to the increasing needs in the globalizing economy to have flexible, creative and high quality human resources. In 1991, primary education reconstruction programme has been started and increased investment into the field, while in 1992 the Government issued the document named "Mubarak and education" indicating its policy to increase classrooms in schools. In October 2002, MOE has started setting National Education Standard for upgrading the quality of education. - Regarding mathematics and science education, the Government has been making efforts to equip "creative science" laboratories and establish "science clubs" at each primary school to prepare opportunities for students to make experiments on their own to deepen their understanding of the subject. - JICA has set five (5) target fields for support for Egypt, one of which is "human resource development and improvement of education" with special focus on basic educational field. Reflecting the shortage of educational opportunities in mathematics and science in Egypt, JICA put its focus on improvement of quality of basic education through teacher training, revision of guidebooks, improvement of textbooks and teaching materials. - The Project is highly consistent with the policy of JICA as described above.
	Consistency with the needs of the target group			
Priority	Consistency with the national development policies of Egypt			
	Consistency with Japan's ODA policy including JICA's for each target country			
	Relevance in approach/method: Is the Project useful enough for The new teaching methods that use the guidebooks in science and mathematics education to be used at the primary schools in Cairo governorate and PPMU's target governorates?	Appropriate or not in its approach/method of technology transfer and the selections of the target areas in geographical term Proper demarcation, linkage and collaboration with other JICA projects being implemented in the neighbouring areas and the results, if yes, what is the result?	Applicability of the approach/method in other geographical areas, No significant duplication with other JICA projects, Active trials/operation of information exchange and/or collaboration with them	<ul style="list-style-type: none"> - The Project aims to revise guidebooks, foster trainers, and give hands-on instructions to teachers on how to apply the guidebooks. The techniques and approach can be applied in all over Egypt. - Still, it should be mentioned that the proper methods of disseminating the techniques is not a simple distribution of the guidebooks but that in conjunction with teacher training. - The results of questionnaire surveys conducted at the PPMU training, that targeted senior teachers and inspectors from twenty-seven(27) governorates in Egypt, show that about 10% of them feel constraints in its application in classes with the reasons why it should be provided with training as follows: difficulties of full application under the present, rather long curriculum, and potential increase of costs for the application. As for the latter reason, there are several ways to apply without large increase of costs, which does not harm the potential of dissemination. - Other JICA project has not been conducted in the field of mathematics and science education in Egypt. Thus, no duplication was found with others. - The Project made visits to SMASSE-WECESA, JICA project in Kenya, to seek possibility to join it. However, it decided not to join at this stage.

				<ul style="list-style-type: none"> - The Project has been collaborating with PPMU supported by the World Bank and the European Union, which shares common concept for activities in the field of education in Egypt. Through this collaboration, the teaching methods of the Project have become widely recognized in the country. - It is also expected to coordinate and/or collaborate with the coming education project supported by France government since it shares common concept with the Project. - NCERD has a function to prepare teaching materials as their major tasks. Therefore, it was found advantageous in the revision of the guidebooks in technical sense. - CDIST is the central institution under MOE organizing teacher training in Egypt, with dissemination mechanism but without trainers and training contents of its own. On the other hand, while it does not equipped with function to provide teacher training, NCERD possesses technical advantages in development of teaching materials. As found above, no single organization handles both preparation of the guidebooks and provision of teacher training at present. Considering the above situation, the Project decided to work with NCERD as the C/P organization. - Although the number of the C/Ps has been sufficient, they have not been full-time staffs for the Project, which posed some difficulties to the Project. - Plan on the mechanism through which the Project outputs will be disseminated has not clearly prepared nor made a consensus yet among those concerned organizations. No single organization can bear all the responsibilities for dissemination at this stage, with NCERD as trainers, MOE as key policy and administrative institution, and maybe CDIST, teachers' academy, or governorates as mechanism for dissemination. - The Project has been given good assessment and strong interest from those concerned in the educational fields in Egypt. The details can be found in "Annex 5 4 Achievement Grid". - Although the Project has directly dealt with four (4) experimental schools only as pilot schools, the approach can be applicable for other schools, not only experimental but public as well, in future after dissemination. Therefore, it can be said that the Project is open to all those in need and no discriminative limitations have been set in case of application. - JICA has carried out twelve (12) support project in mathematics and science educational improvement in Kenya, Ghana, Philippines, Honduras, and others, some of which prepared guidebooks and provided teacher training. Thus, JICA has obtained experience in the fields. - Hokkaido University of Education, main organization for dispatching experts and providing technical inputs for the Project, has a rich accumulation of knowledge and technologies in research and development of teaching methods, teacher training, and the like. The Project has been supported with those specialists in the fields in Japan, which guarantee the superiority in technical sense.
Potential or actual trials/ operation of collaboration with other donors' projects for gaining multiplier effect		Advantaged in technical and/or physical terms, Equipped with proper system for further transfer and application of technologies, Proper administrative and legal status, Sufficient staffs in number	Mechanism for technologies transfer established, Strong interest for the Project activities, High applicability of the technologies to broader areas in Egypt	
Relevance in selection of target group in their specialities and scale				
Potential of the Project outputs to be further transferred not only to the target group but also to the others in need				
Relevance in terms of equity: distribution of benefits, cost-sharing, etc.				
Superiority of Japan in concerned technologies				

	Others	Have we got significant changes in the political, social, economic, and natural environment during the Project term, which have affected, either positively or negatively, the Project?		<ul style="list-style-type: none"> - Primary education system was extended from five (5) years to six (6) years in Egypt during the Project period. Following this change, new textbooks for the 6th grade was prepared by Egyptian side. The Project could not obtain the one on time as scheduled and needed to wait for that for the 2nd term till the end of February 2005. It negatively influenced the progress of the revision of the guidebooks.
Effectiveness	Progress in attaining planned outputs			(See Annex 4)
	Perspective on achievement of the Project Purpose by the end of the Project period: <i>The new teaching methods that use the guidebooks in science and mathematics education take root at the selected schools and form a solid base for further dissemination.</i>	<p>1) 10 education officers such as counselors and inspectors make positive evaluation about the new teaching methods.</p> <p>2) All the science and mathematics teachers in the pilot schools make positive evaluation about the new teaching methods.</p> <p>3) 80 percent of the people concerned make positive evaluation about the new teaching methods.</p>		<ul style="list-style-type: none"> - MOE counselors for mathematics and science (2 people) are positive to the teaching methods of the Project, with mentioning some constraints such as large number of students in a class and lack of facilities for experiments in public schools. - Ten (10) inspectors in Cairo governorate have participated in the open classes the Project has conducted and given positive assessment on the methods. - All of the C/P teachers are quite positive for the teaching methods of the Project. - As for the other mathematics and science teachers at the pilot schools, almost all of the non-counterpart teachers at the pilot schools were found positive and some of them are keen to learn the application of the methods from the C/P teachers while others sometimes attend the class of the C/P teachers to observe and learn. Cases of application on their own were found. - As found above, in all the events, i.e. open classes, PPMU training, Cairo governorate training, and regular visits to the pilot schools, more than 90% have expressed their positive assessment about the methods of the Project. - Still, it is also true that part of those in educational fields are not so sure about the applicability of the methods in Egypt with the anticipation due to the heavy curriculum, potential increase of costs, and lack of necessary equipment in many of the schools. - No negative factor was found for the attainment of the project purpose.
		Is there any factor preventing the Project from attaining the Project purpose?		
		Is there any factor facilitating attainment of the Project purpose?		<ul style="list-style-type: none"> - Good coordination and collaboration mechanism has been established between the Project and those concerned such as MOE and Cairo Governorate with much support from NCERD director and head of curriculum department. - Collaboration has started with Cairo Governorate in teachers training. - The set outputs were found sufficiently correlated to the project purpose. - By the time of the mid-term evaluation, one output on school-based training unit was not properly correlated with the project purpose. However, the issue was deleted from the PDM during the mid-term evaluation and no other inconsistency has been found since then.
	Correlations	Are the outputs properly correlated with the Project purpose?		

		Are the Important Assumptions set in the PDM still crucial for attaining the Project purpose after attaining all the set Outputs? Is it highly likely to be met?			- The important assumptions are found still crucial for the attainment of the project purpose and highly possibly to be met.
Efficiency	Achievement of Outputs	Have the Outputs been achieved up to the target level? Is there any factor preventing the Project from attaining the Outputs? Is there any factor facilitating attainment of the Outputs?	Achieved to the level originally planned for the period		- (See Annex 5 4) - Generally speaking, it is not easy for teachers who bear loads of tasks besides teaching such as school activities and others to spare sufficient time for the preparation of classes and experiments. The Project has been trying to work out ways of application of the methods without heavy burden on them to guarantee the achievement of the outputs. - It is also not easy to complete experiments within one class unit by giving students sufficient time to carry out, consider, and discuss on their own. - The pilot schools are not sufficiently equipped with facilities for experiment to carry out those written in the textbook. The Project has been trying to modify the ways of application to fit the given conditions. - Much support has been given by NCIERD, especially by the present director and the present head of curriculum department. - The Project made proper division of roles between the C/Ps who are part-time staff for the Project and Japanese experts so that the C/P can make balance with other tasks. - Collaboration with Cairo Governorate has been made for training.
	Correlations	Have the inputs been sufficient for producing the Outputs as planned?	No significant delay / obstacle caused by insufficiency / inappropriateness of inputs		- No insufficiency of inputs was found. - Contrarily, inputs of short-term experts seemed to be over the need from the Egyptian side. Some of them were dispatched on improper timing. - All of the NCIERD C/Ps have been received in Japan for training, some of which did not make contribution to the progress of the Project as planned. - No delay in provision and installment of equipment/facilities was found.
	Timing	Have the inputs been made as scheduled? Have they facilitated the progress of the activities as planned?	Making inputs as scheduled, No significant delay / obstacle caused by improper timing of inputs		- Inputs have been made on good timing without delay or any problem.
	Cost	Is the Project relevant in terms of the total cost even compared with other similar projects?	Not too large in financial scale even compared with the other similar cases		- There are some similar projects conducted in the fields of improvement of mathematics and science education such as those in Honduras, Kenya, and others. When compared with those projects, the costs for this Project are found rather small both in that for provision of equipment/facilities and that for dispatching experts.

Impact	Prospect of Achieving the Overall Goal: The new teaching methods that use the guidebooks in science and mathematics education are used at the primary schools in Cairo governorate and PPMU's target governorates.	1) All the teachers of 27 governorates introduce the new teaching methods. 2) Guidebooks are distributed to all the primary schools in Egypt	/	<ul style="list-style-type: none"> - Full application of the methods has not been found yet, though the Project has given many teachers and those in educational fields in the 27 governorates in Egypt through PPMU training. - Wider recognition of the effectiveness of the methods has been found among those in the educational fields in Cairo Governorate through open classes held at the pilot schools and teacher training held in collaboration with the Governorate. Still, full or wider application of the methods has not been found yet, either. - The revised guidebook is in the process of translation into English for science and into Arabic for mathematics, both of which have not been distributed to teachers yet. - Some cases of voluntary actions of teachers have been reported after their participation in the training.
		Is there any factor that would potentially prevent the Egyptian side from attaining the Overall Goal?		/
Correlations		Does the attainment of the Project Purpose take the main role for attaining the Overall Goal?	/	
		Are the important Assumptions for the Project Purpose still crucial for attaining the Overall Goal? Are those conditions likely to be met?		/
Unexpected effects		Have we got, or are we going to get, unexpected effect of the Project except the Overall Goal? If yes and it is negative, how is the Project trying to avoid or reduce it?	Any changes, positive or negative, when compared between before and after the Project	

			Ditto as above	<ul style="list-style-type: none"> - The Project has dealt with only four (4) experimental schools as pilots and other experimental schools as trainees in training of Cairo Governorate, thus there is a gap between them and public schools at this moment. - Conditions to enter to experimental schools include that parents can speak English, can pay slightly higher school fees than public schools, and the like. This puts the Project some limitation to reach the students from not so rich families at this stage. - In the future, however, the gap can be diminished as well after further dissemination. - No other negative effect has been found.
Sustainability	Policy and administrative aspects	Any gaps in degrees of effect by gender, ethnicity, or class, either positive or negative?		<ul style="list-style-type: none"> - To further apply "child-centered" and "problem-solving" learning in the classes is in line with the educational policy of Egypt and MOE has been considering and conducting the revision of the curriculum to fit the methods to the classes.
		Negative effect other than the above and the potential ways to avoid or reduce it		<ul style="list-style-type: none"> - No specific regulations or legal system has been prepared, but as described above, the curriculum is under revision to decrease the contents in its volume to fit the guidebooks the Project has prepared. - Also, MOE is quite positive for the authorization of the guidebooks after obtaining them in their hands.
	Institutional and financial aspects	Will the Project be likely to obtain policy support even after its termination? Have the regulations and/or other legal systems concerned been prepared and in operation? Or will they be soon? Has the Project set up the operational and managerial mechanism that is functional enough to maintain and increase the effectiveness of the activities?		<ul style="list-style-type: none"> - No single institution concerned possesses necessary functions for future operation of teacher training as well as preparation of the guidebooks. Therefore, it is necessary for the Egyptian side to further consider desirable forms of joint works among which organizations with what kind of division of labour.
		Has the Project set up the mechanism to disseminate useful and applicable outputs in wider scale?		<ul style="list-style-type: none"> - In all the pilot schools teachers hold regular meetings of 1-2 times a week for each subject, which can be found a kind of school-based training unit (SBU), for the purpose to prepare weekly schedules and to share various matters including teaching methods. The meetings were found utilized for disseminating how to apply the methods of the Project from the C/P teachers to their colleagues. - It has been reported that other schools than the pilot schools have also held weekly meetings as BSU, but the details are not know yet. Further study is required. - MOE has the set curriculum for teacher training which is applied all over Egypt. - Cairo Governorate also has its plans for teachers' teaching, but it is sometimes changed depending on the budget for the year.
		Has the implementing bodies prepared its long-term and short-term plans containing the utilization of the Project outputs?		

			<ul style="list-style-type: none"> - Regarding NCIERD, the director has been quite positive for further dissemination even within the Project term with his strong interest and kind support for the Project throughout the Project term. The increase of the C/P involvement heavily owes to his and head of curriculum department' care and support for the Project. Coordination with other concerned organizations has been made promptly and properly. - The managers of the pilot schools have been also supportive for the Project activities and positive to the sharing of the methods of the Project among teachers. - MOE has expressed its will to obtain authorization to the guidebooks the Project has prepared. Also, MOE has been considering to decrease the contents of the curriculum to prepare favourable conditions for further applying the guidebooks in classroom.
			<ul style="list-style-type: none"> - No problem has been there regarding the allocation of the local cost from the Egyptian side throughout the Project term. NCIERD recognizes the task of monitoring on training participants on regular bases as their own tasks even after the Project finished. - During the Project term, however, it is the fact that not a large amount of cost has been required for the Egyptian side since the C/Ps and the C/P teachers have been engaged in the Project activities during their office hours, which means they have been paid with regular salary without any extras. It is quite unclear if it is possible for the C/Ps and C/P teachers to engage in dissemination of the methods under the present conditions. - One idea has been expressed that finance would be provided from PPMU for transportation fees of trainers and trainees and others, but the details has not been decided yet.
			<ul style="list-style-type: none"> - At this stage, no clear vision to increase budget for the Project activities has been made within each concerned organizations.
			<ul style="list-style-type: none"> - The methods and skills the Project provided training on can be widely applied in Egypt. - Still, the applicability largely depends on the further efforts of the Egyptian side to decrease several existing constraints such as difficulties of application under the rather heavy curriculum, the matter of costs to purchase some tools like experimental equipment, and time constraints that teachers have been facing.
	Has the Project obtained good ownership of the concerned people?		
	Has the Project been allocated sufficient budget for the activities?		
	Can the Project activities expect further increase in its budget? How can it be?		
	Are the technologies transferred by the Project highly practical and applicable in Egypt?		
	Technical aspect		

		Are the technologies transferred by the Project highly practical and applicable in Egypt?	Mechanism to provide training, technologies, and learning materials to those concerned	<ul style="list-style-type: none"> - The C/P teachers could be found obtained the capability of applying the methods of the Project at the satisfactory level, though there still is a variety in quality. In all the pilot schools teachers hold regular meetings of 1-2 times a week for each subject, which can be found a kind of school-based training unit (SBU), for the purpose to prepare weekly schedules and to share various matters including teaching methods. Still, the meetings seemed to be voluntary work among teachers, that means no official mechanism has been set up from the management side of schools. Application of the teaching methods of the Project as well depends on the will of each teacher. Therefore, it can be said that each C/P teachers have obtained capability for application but it has not been institutionalized in the school system yet. - Educational Committee of Cairo Governorate holds functions to organize and operate teacher training as well as the place and facilities for it, but without trainers of its own. Thus, it needs to collaborate with other organizations which possess trainers and rent them to the committee. One idea has been expressed to the mission to utilize the C/P teachers as trainers, but the details have not been decided. - The relationship between NCERD and MOE and other concerned organizations has been developed and favourable, which provides future prospect to develop further their collaborations. - No institutional arrangement has been made among MOE, NCERD, and Cairo Governorate for the future dissemination of the Project outputs.
	Have the collaborative linkages been developed among the concerned institutions? Has it got favourable prospect on it?	Can it be highly expected that the C/Ps will continue to work for the C/P institutions even after the Project finished?		<ul style="list-style-type: none"> - Quite few NCERD staffs leave their positions and change their jobs in general, which allow the Project to expect that the C/Ps will continue to work for NCERD and teacher training even after the Project finished. - Some of the C/P teachers have expressed their hope/plan to leave for foreign countries such as Saudi Arabia to better salary by obtaining certificate from the Project. Still, they are just a part of the whole C/P teachers and the rest can be expected to continue teaching at schools in Egypt.
	Have the provided equipment been properly treated and utilized for the Project?	Records of maintenance and use kept, Assignment of persons in charge of maintenance of each equipment		<ul style="list-style-type: none"> - Records of maintenance and use of equipment has not been kept due to rather small amount of the provided equipment/facilities. It was found mostly appropriate.
Social, cultural and environmental aspects	Has the Project been carried out in the sensible manner to the socially vulnerable such as women and the poor?			<ul style="list-style-type: none"> - No potential negative impact has been found on the socially vulnerables.

		Has the Project made well consideration to the environment issues to maintain its sustainability?		- No potential negative impact has been found on environment from the Project.
Others		Any other factors which decrease sustainability of the Project		- No other factor which potentially decrease sustainability of the Project has not been found.