

How Does the Newly Added DAC Evaluation Criterion “Coherence” Contribute to Achieving the SDG Target 4.c¹ for Teachers?

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Abstract

The OECD DAC’s Network on Development Evaluation (EvalNet) adapted definitions for the five DAC evaluation criteria and added one new criterion – coherence – in 2018 to advance the 2030 Agenda. Quality education (SDG4) provides various synergy effects to all other Sustainable Development Goals (SDGs). Besides SDG4’s contribution to the other SDGs, it is necessary to understand the positive and negative interactions between SDG4 and other goals and targets for more effective project formulation and implementation. This research aims to understand how to practice the concept of coherence for achieving target 4.c (teacher professional development) by teachers via scoring the key interactions based on the ICSU framework and conducting a meta-evaluation of the JICA *ex-post* evaluations of INSET projects. To achieve target 4.c, it was found that at least 27 targets have positive interactions; however, they are seldom checked in an *ex-post* evaluation. To ensure that key interactions for producing the project outcomes are assessed in evaluation, mapping out tradeoffs and synergies across a matrix is important policy analytical work that can provide a broad view of the challenges of the 2030 Agenda.

¹ The SDG target 4.c is one of the three targets on MOI (means of implementation) for SDG 4: “Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.” By 2030, target 4.c aims to substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries—especially least developed countries and small island developing states.

Introduction

In 2018, the Network on Development Evaluation (EvalNet), of the Organization for Economic Cooperation and Development (OECD) Development Assistance Committee (DAC), adapted the definitions for the original five evaluation criteria. Moreover, they added the new criterion of “coherence” to further contribute to the achievement of the Sustainable Development Goals (SDGs).

By taking advantage of this opportunity from the Journal of International Cooperation in Education (JICE) Special Issue related to the SDG4 target regarding teachers, this study aims to discuss how to practice the concept of coherence to improve the process and success of international cooperation projects for teacher professional development in developing countries.

A New DAC Evaluation Criterion: Coherence

From May to November 2018, the EvalNet of the OECD/DAC conducted the adaptation process of “*DAC Principles for Evaluation Development Assistance (the original DAC principles)*.” This has been considered the key program/project evaluation document by most of the international and bilateral aid agencies over the past 30 years. The adaptation process aimed to revisit and update its evaluation criteria following the 2015 agreement on the 2030 Agenda for Sustainable Development (2030 Agenda). This endeavor included the Sustainable Development Goals (SDGs) and the Paris Agreement within the United Nations Framework Convention on Climate Change (Paris Agreement). It was believed that better evaluation contributes to better policymaking and better project formulation to advance the 2030 Agenda and to achieve national contributions to the Paris Agreement, among others.

The original DAC principles were set out in 1991—through a growing international interest in evaluation—to improve resource use for development through learning from experience as well as for accountability to political authorities and the general public. The principles were mainly prepared for use by aid agencies to evaluate aid-financed activities. Concurrently, they were also designed to be useful for authorities in developing countries to make their own evaluations of aid-financed activities and other public programs and projects (DAC, 1991).

The aid agencies and authorities were equipped with the original principles, with the original five evaluation criteria: i) relevance, ii) efficiency, iii) effectiveness, iv) impact, and v) sustainability. These particular items have been well followed and practiced by the relevant agencies. The original DAC principles define aid evaluation as follows:

An evaluation is an assessment, as systematic and objective as possible, of an ongoing or completed project, its design, implementation, and results. The aim is to determine the relevance and fulfillment of objectives, developmental efficiency, effectiveness, impact, and sustainability. An evaluation should provide information

that is credible and useful, enabling the incorporation of lessons learned into the decision-making process of both recipients and donors. (DAC, 1991)

After extensive consultations and discussions of the adaptation process, the EvalNet was adapted with regard to the definitions for the original five evaluation criteria, including relevance, effectiveness, efficiency, impact, and sustainability. Furthermore, they added one new criterion: coherence. The criteria play a normative role and describe the desired attributes of intervention (DAC, 2019).

The coherence criterion includes internal and external coherence. Internal coherence addresses the synergies and interlinkages between different interventions carried out by the same institution/government as well as the consistency of the intervention with relevant international norms and standards to which the institution/government adheres. External coherence considers the consistency of the intervention with those of other actors in the same context. A lack of coherence leads to a duplication of efforts and undermines the overall progress. Including coherence encourages evaluators to understand the role of an intervention within a particular system such as organization, sector, thematic area, and country (DAC, 2019).

SDGs cannot be achieved by applying single, sectoral approaches. There is a strong and urgent need for more integrated and coordinated approaches in planning and policy. Considering how the SDGs interact with each other is essential to addressing the core crosscutting priorities of the 2030 Agenda, such as empowerment, inclusiveness, and equality. Because of the integrated nature of the SDGs, both domestic and international policies are required to consider the synergies and tradeoffs between economic, social, and environmental policy areas in achieving sustainable development. Namely, this is accomplished through policy making, project formulation, and implementation, along with monitoring and evaluation from the viewpoint of coherence.

Coherence is essential to ensure that progress on one goal contributes to accelerating the progress of other goals, rather than occurring at the expense of another one (OECD, 2017). With SDGs in today’s context, there is a need for greater attention to coherence, with an increased focus on the synergies or tradeoffs between policy areas and cross-government coordination, particularly in settings of conflict and humanitarian response and to address the climate emergency (OECD, 2019).

Coherence in Promoting Inclusive and Equal Educational Development

SDG 4 requests all countries to ensure inclusive and equitable access to quality education and to promote lifelong learning opportunities for all. Worldwide, in the past 15 years, there have been considerable gains observed in education enrollment. However, around 263 million children and youth were still out of school, including 61 million children of primary school age in 2014. Sub-Saharan Africa and Southern Asia account for over 70% of the global out-of-school population in primary and secondary education (UN, 2018).

The second UN SDGs progress report points out that equity issues form a major, complicated challenge in educational development. It finds that in all countries with data, children from the richest 20% of households achieved greater proficiency in reading at the end of their primary and lower secondary education than children from the poorest 20% of households. Besides income differences, geographical conditions influence learning achievement—namely, urban children showed higher scores in reading than rural children (UN, 2017).

Figure-1 depicts the SDGs horizontally and the targets vertically to show how the targets, which relate to equal rights and equal access to various elements of sustainable development—including quality education—are spreading across the 2030 Agenda (OECD, 2019). Among the 169 targets, 43 (25.4%) focused on the importance of equal rights and equal access for all valuable resources, including target 4.c, which is related to teacher professional development.

Figure-1: SDG targets related to equal rights and equal access

		Goals																Means of Implementation						
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17						
		Poverty	Hunger	Health	Education	Gender	Water	Energy	Economy	Industry	Inequality	Cities	SCP	Climate	Oceans	Ecosystem	Peace	Finance	Tech	Capacity	Trade	PCSD	Partners	Data etc.
Targets	1		2.1		4.1	5.1	6.1	7.1		9.1	10.1	11.1							17.6		17.10			
	2				4.2	5.2	6.2				10.2	11.2												
	3		2.3		4.3	5.3				8.3	10.3							16.3				17.12		
	4	1.4				5.4					10.4													
	5		2.5		4.5	5.5				8.5	10.5													
	6					5.6					10.6													
	7			3.7							10.7	11.7												
	8			3.8																				
	9																							
	10																							16.10
	Targets on MoI	a				4.a																		
b					4.b											14.b		16.b						
c					4.c					9.c														
d																								

(This figure is based on OECD Figure 1.1, 2019).

Note 1: The SDG target numbers, which explicitly mention the importance of equal rights and equal access of all people to various elements of sustainable development.

Note 2: MOI = means of implementation

SCP = sustainable consumption and production

PCSD = policy coherence for sustainable development

Quality education (SDG4) provides various synergistic effects to all of the other SDGs. For example, education and lifelong learning opportunities are fundamental

enablers for nearly every other goal, especially for breaking the cycle of poverty (SDG1). Education facilitates access to a sufficiently rich and balanced diet. Additionally, education helps find innovative approaches to agricultural production and the sustainable use of land and other natural resources (SDG2). Needless to say, education creates opportunities for better health (SDG3). In developing countries, education that provides women with reading and numeracy skills helps them acquire critical knowledge for everyday life (SDG5).

Besides fulfilling basic human needs, as mentioned above, inequality-reducing policies in education and labor markets will generate greater total welfare returns as they spill over into other areas. Equal access to quality education can empower people and help them find decent employment, increase their incomes, and achieve higher levels of economic productivity (SDG8). Education fosters equality (SDG10) by promoting the social, economic, and political inclusion of all. It helps to inform and build support for climate action (SDG13) as well as for sustainable consumption and production (SDG12), natural resource efficiency, and the transition to a circular economy (OECD, 2019).

Beyond the one-way contribution from SDG4 to other SDGs, it is necessary to understand the two-way positive or negative interaction between them. Moreover, SDG4 targets and other SDG targets should be considered when designing and implementing interventions to achieve their own goals and targets.

In the case of target 4.c, which targets quantitative and qualitative improvement in teacher professional development, possible interactions with other SDG4 targets as well as those of other SDGs need to be checked when designing and implementing such a project to make it more effective and sustainable. However, international cooperation projects for teacher professional development are designed and implemented to accomplish project purposes. Notably, one such purpose is developing an in-service education and training (INSET) system or training a certain number of teachers for transferring pedagogy or curriculum—newly introduced by the government or by the aid agency—without considering how teachers practice or students understand in the classroom in the different contexts of developing countries.

Purpose of the Research

This research aims to understand how to practice the concept of coherence, which was newly introduced as the 6th DAC evaluation criterion. This particular concept improves the process and success of international cooperation projects for teacher professional improvement in developing countries with the following research questions:

- (1) Which of the other SDG targets positively contributes to the achievement of target 4.c?
- (2) How are they taken into consideration when evaluating international cooperation projects for teacher professional development?
- (3) What might be improved by introducing the concept of coherence in evaluating

international cooperation projects for teacher professional development?

Data and Methods

Two methods were adopted: i) the International Council for Science (ICSU) framework with a seven-point scale to classify goals and targets, and ii) the meta-evaluation of *ex-post* evaluations to accomplish the research purpose, as described below:

ICSU Framework to Classify Goals and Targets

The ICSU² developed a framework for classifying interactions between SDGs and targets on a seven-point ordinal scale, indicating the nature of the interaction with other targets, and the extent to which the relationship is positive or negative. In this research, the author classified the relationship between target 4.c and the other SDG targets by adopting the ICSU's seven-point scale.

The framework identifies the categories of causal and functional relations underlying the progress or achievement of SDG targets. The scale ranges from -3 to +3, from where progress on one target acts to cancel progress on another, to where progress on one goal is inextricably linked to progress on another. Most interaction scores depend on the key dimensions of time, geography, governance, technology, and directionality; further, there is the putting in place of the right policies and technologies that might shift the score to a more positive one.

The magnitude of the score, in either direction, provides an indication of how influential a given goal or target is on another one. Positive interactions are assigned scores of either “+1 (enabling),” “+2 (reinforcing),” or “+3 (indivisible)”;

additionally, interactions characterized by tradeoffs are scored as “-1 (constraining),” “-2 (counteracting),” and “-3 (canceling)” as shown in Table-1.

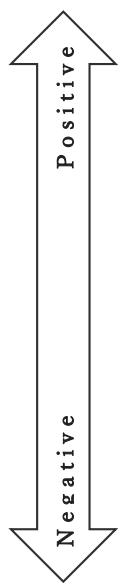
In this research, the author checked all SDG targets and indicators to score the level of interaction between target 4.c and the other SDG targets. This was based on the ICSU framework in order to see how the other targets are expected to influence target 4.c.

Meta-Evaluation of Ex-Post Evaluations

A meta-evaluation is an evaluation of the evaluation; accordingly, it is an instrument used to aggregate findings from a series of evaluations. It also assesses the quality of the series of evaluations and its adherence to established good practice (DANIDA,

² As the result of a merger between the ICSU and the International Science Council (ISSC), the International Science Council (ISC) was created in 2018. The ISC is a non-governmental organization with a unique global membership that brings together 40 international scientific unions and associations and over 140 national and regional scientific organizations including academies and research councils.

Table-1: Goals scoring in the ICSU framework



+3	Indivisible	The strongest form of positive interaction in which one objective is inextricably linked to the achievement of another objective.
+2	Reinforcing	One objective directly creates conditions that lead to the achievement of another one.
+1	Enabling	The pursuit of one objective enables the achievement of another one.
0	Consistent	A neutral relationship where one objective does not significantly interact with another one or where interactions are deemed to be neither positive nor negative.
-1	Constraining	A mid-form of negative interaction when the pursuit of one objective sets a condition or a constraint on the achievement of another one.
-2	Counteracting	The pursuit of one objective counteracts another one.
-3	Canceling	The most negative interaction is where progress in one goal makes it impossible to reach another goal and possibly leads to a deteriorating state of the second. A choice has to be made between the two.

(ICSU 2017)

2004). The objective of the meta-evaluation in this research is to provide an overview of, and perspective on, how coherence-related issues have been checked or assessed by *ex-post* evaluations of the International Cooperation Projects for teacher professional development. The meta-evaluation also attempts to draw lessons learned from earlier evaluations of some of the major, direct intervention instruments for teacher professional development.

In this research, a meta-evaluation was conducted on all 21 *ex-post* evaluations of the teacher professional development projects by the Japan International Cooperation Agency (JICA) between 2008³ and 2018, listed in Appendix-1, through desk studies and literature searches. The JICA *ex-post* evaluations were conducted following the five DAC evaluation criteria and the JICA Project Evaluation Guidelines, where coherence had yet to be included.

In the meta-evaluation step, the author checked how other SDG targets, identified as having stronger positive interactions, were considered under the five DAC evaluation criteria in the *ex-post* evaluation reports.

³ A new JICA launched in October 2008 when JICA merged with the development assistance section of the Japan Bank for International Cooperation (JBIC). On this occasion, JICA introduced a new evaluation system covering all of their assistance schemes: technical cooperation, grant aid, and yen loans.

Findings and Discussions

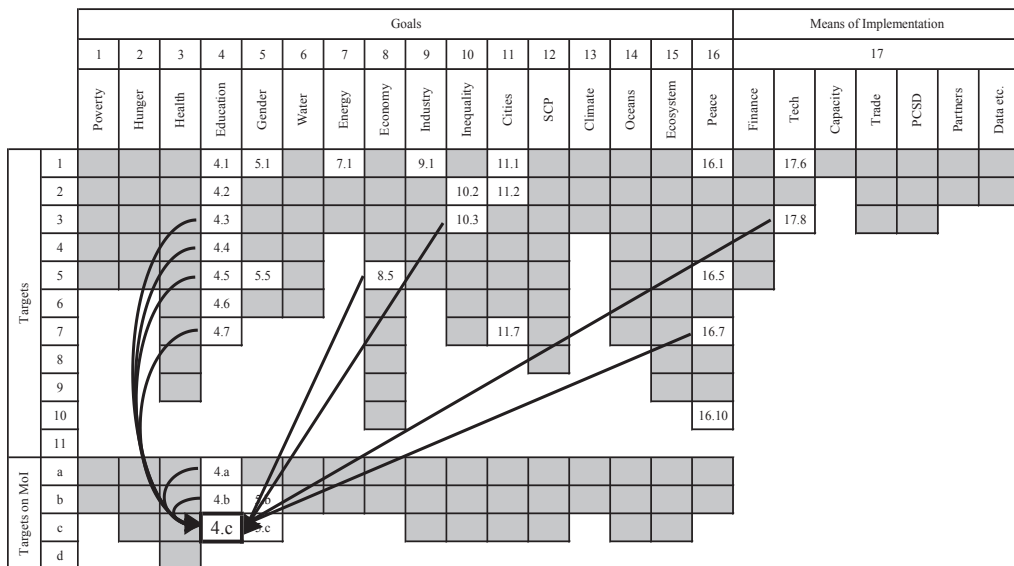
Interactions Between Target 4.c and Other Targets

The lack of trained teachers in many parts of the world is jeopardizing prospects for quality education. Sub-Saharan Africa has relatively low achievements in terms of the means of implementation (MOI), including target 4.c. A majority of schools in the region have a relatively low percentage of trained teachers in pre-primary, primary, and secondary education; moreover, they may not have access to electricity, computers, the Internet, or even potable water. Demographic change poses challenges to the fair distribution of limited education resources among heterogeneous school profiles. Increasing system complexity requires ensuring coherence in policy design and implementation processes. People have high expectations for the quality of their education systems, and the number of education system stakeholders is larger than ever before (OECD, 2018).

In the last decade, psychological theorists and researchers, drawing on motivational lenses, began to examine questions concerning teachers’ motives to improve teachers’ teaching practices and attitudes in the classroom.

What person and contextual factors sustain teacher commitment, interest, and

Figure-2: Identifying positive interactions between target 4.c and the other targets



(This figure is based on OECD Figure 1.1, 2019).

Note 1: The SDG target numbers, which have relatively stronger positive interactions to achieve target 4.c, are shown. The directions of the arrows indicate the cause→effect relationship.

Note 2: MOI = means of implementation

SCP = sustainable consumption and production

PCSD = policy coherence for sustainable development

Table-2: The results of scores and the cause-effect relationships between target 4.c and the selected targets

SDGs and targets	Scoring of interaction	Cause-effect relationship
target 4.3 Equal access to technical, vocational, and higher education → target 4.c	+3 synergy (Indivisible)	Equal access to quality pre-service training for teachers will directly lead to an increase in quality teacher supply.
target 4.4 Have relevant skills → target 4.c	+3 synergy (Indivisible)	Having relevant skills for decent jobs will directly lead to increased quality teacher supply.
target 4.5 Gender equality → target 4.c	+3 synergy (Indivisible)	By eliminating gender disparities in education, quality teacher supply will increase.
target 4.7 Education for sustainable development → target 4.c	+3 synergy (Indivisible)	Acquiring knowledge/skills needed for sustainable development leads to increased quality teacher supply.
target 4.a Inclusive and effective learning environment → target 4.c	+3 synergy (Indivisible)	Providing a safe, non-violent, inclusive, and effective learning and teaching environment for all is indivisible with increased quality teacher supply.
target 4.b Expand the number of scholarships → target 4.c	+3 synergy (Indivisible)	Increased number of scholarships for higher education leads to an increase in quality teacher supply.
target 8.5 Decent work and equal pay → target 4.c	+2 synergy (Reinforcing)	Decent work and equal pay for work of equal value motivates youth to pursue teaching and strengthens teachers’ motivation to improve their skills.
target 10.3 Eliminate discrimination → target 4.c	+2 synergy (Reinforcing)	Ensuring equal opportunity and reducing outcome inequalities will lead to teachers’ self-efficacy and motivation.
target 16.7 Participatory decision-making → target 4.c	+2 synergy (Reinforcing)	Responsive, inclusive, participatory, and representative decision-making leads to improved teacher attitudes and leadership.
target 17.8 Use of enabling technology → target 4.c	+2 synergy (Reinforcing)	Enhancing the use of enabling technology, including ICT, improves teachers’ teaching capacity.

enthusiasm? Why do teachers in many countries experience high levels of early career burnout and attrition? Could the results obtained in Western countries be replicated in different sociocultural contexts (Richardson et al., 2014)? International cooperation projects for teacher professional development have been designed and implemented without answering these questions.

Among the 168 other SDG targets, it was found that 27 have a direct positive interaction with target 4.c, as shown in Figure-2.

Out of these 27 targets, the four (4) targets and the two (2) MOI targets of SDG 4 directly contribute to target 4.c; therefore, they are given the score, +3 indivisible. They are: target 4.3 (equal access to higher education); 4.4 (have relevant skills); 4.5 (gender equality); 4.7 (mainstreaming of global citizenship education and education for sustainable development); and 4.a (non-violent, inclusive, and effective learning environment), and 4.b (expanding scholarships)

From the viewpoint of teachers' motivation, target 8.5 (decent work and equal pay), 10.3 (eliminate discrimination), 16.7 (participatory decision-making), and 17.8 (use of enabling technology) seem to have positive interactions with target 4.c and are given the score, +2 reinforcing. When teachers' self-efficacy is increased and the teaching environment improves with enabling technologies, their qualitative and quantitative enhancement might be realized.

In Figure-2, the arrows from the selected targets to target 4.c show the cause-effect relationship between the relevant target pairs. The scores and the cause-effect relationship between target 4.c and the selected targets are outlined in Table-2.

Meta-Evaluation of JICA Ex-Post Evaluations

As mentioned above, a meta-evaluation was conducted involving all the 21 *ex-post* evaluations of the teacher professional development projects conducted by JICA between 2008 and 2018, which are listed in Appendix-1. Thirteen projects (61.9% of the total) aim to strengthen the INSET of mathematics and science teachers in primary or lower secondary education. Additionally, others aim to introduce and disseminate new educational development concepts, such as student-centered education, school-based management with community participation, and utilization of information and communication technology (ICT) in school education.

The JICA *ex-post* evaluations were conducted following the five DAC evaluation criteria and the JICA Project Evaluation Guidelines, where coherence had yet to be included.

A JICA study report on the evaluation criteria and viewpoints used to assess the achievement values of official development assistance (ODA) projects was created in 2012. It indicated that, among the evaluation viewpoints used to assess "Relevance" per the JICA evaluation handbook, the viewpoints of i) regional/sectoral development needs and ii) relevance to both Japan's aid policy and to recipient country policies were most

frequently used. Development needs were checked by referring to general descriptions of the regional/sectoral development plans (JICA, 2012b). The extent to which a project goal met teachers’ or students’ needs was not assessed in any of the 13 *ex-post* evaluations of the INSET projects or in the other eight *ex-post* evaluations. Any assessments related to coherence with the SDG targets listed in Table-2 were not performed in the 21 *ex-post* evaluation reports.

As for the criterion, “Effectiveness/Impact,” the extent to which the project’s overall goals, purposes, and outputs were accomplished are assessed based on quantitative and qualitative data collected through the evaluation survey (JICA, 2012b). All 13 *ex-post* evaluations of the INSET projects assessed how many training programs were conducted and how many teachers were trained. Yet, no evaluations checked the relationship between pre-service and INSET training or how teaching environment or enabling technologies were considered in INSET programs.

Even when assessing “Efficiency,” issues related to the teaching environment, gender equality, equal opportunity in joining INSET training, etc. were not examined. “Sustainability” was evaluated from four viewpoints: i) institutional support, ii) financial capacity, iii) technical capacity in how the technology transferred, and iv) how facilities/equipment improved by the project were used and maintained. To check sustainability, an evaluator predicts future sustainability based on data collected at the time of the *ex-post* evaluation. When evaluating sustainability, it is necessary to see how teachers can practice what they learned in their own classrooms, notably, what is their teaching environment or what enabling technology is available at school. However, these are not currently being assessed.

Conclusion

To achieve target 4.c, it was found that at least 27 targets had positive interactions. Some of them have indivisible interactions or reinforcing interactions; yet, they are seldom checked in an *ex-post* evaluation. This means that they are rarely assessed by an *ex ante* evaluation or an on-project appraisal. The concept of coherence should be utilized to ensure that key issues, which might have synergistic or tradeoff interactions with the project achievements, are to be assessed in evaluation. This assessment is done by mapping out tradeoffs and synergies as simple pluses or minuses across a matrix is important analytical work that can provide a broad view of the challenges of the 2030 Agenda.

In this research, some possible coherence relationships between target 4.c and the other targets are identified. This can be referred to as horizontal coherence across sectors or sub-sectors. However, it is necessary to be aware of other relationships when utilizing the concept of coherence in evaluation. Another type of coherence relationship exists across jurisdictions. To what extent the pursuit of objectives in one country has international repercussions or affects the abilities of another country to pursue its

objectives must be observed, as this leads to cross-jurisdictional concerns that should be addressed through appropriate indicators (ICSU, 2017). Besides jurisdiction, coherence can be examined across local and national levels, across actions, or along with the implementation steps from policymaking to actual implementation. By further discussing the above, a common analytical framework can be developed to make a coherence criterion more practical and useful for achieving different SDGs and targets.

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Appendix-1:**21 JICA technical cooperation projects for teacher professional development, on which ex-post evaluations were conducted between 2008 and 2018**

No.	Project Title	Country	Project Implementation Period	Ex-post Evaluation Year (Japanese Fiscal Year)
1	Improvement of Educational Achievement in Science, Technology and Mathematics in Basic Education	Ghana	March 2000 - February 2005	2009
2	Project for Strengthening the Capacity of INSET Management	Ghana	June 2009 - March 2013	2015
3	Strengthening Mathematics and Science in Secondary Education (SMASSE) Phase 2	Kenya	July 2003 - December 2008	2011
4	Strengthening Mathematics and Science Education (SMASE)	Kenya	January 2009 - December 2013	2016
5	Strengthening of Mathematics and Science Education Phase 2	Nigeria	August 2010 - February 2014	2016
6	Project on Strengthening Mathematics and Science in Secondary Education Phase 2	Niger	March 2010 - September 2013	2016
7	National Pilot Project for Strengthening Mathematics and Science Education	Ethiopia	March 2011 - July 2014	2017
8	Strengthening In-Service Teacher Training of Mathematics and Science Education at Junior Secondary Level	Indonesia	May 2006 - October 2008	2016
9	The Integrated Program for Junior Secondary Education Improvement	Indonesia	December 2007 - December 2010	2014
10	Program for Enhancing Quality of Junior Secondary Education	Indonesia	March 2009 - March 2013	2016
11	Project for Strengthening Cluster-based Teacher Training and School Management	Vietnam	September 2004 - September 2007	2010
12	Strengthening Child Centered Approach in the Union of Myanmar	Myanmar	December 2004 - March 2012	2014
13	Project for Improving In-service Teacher Training for Science and Mathematics Education	Laos	February 2010 - October 2013	2017
14	Teaching Methods Improvement Project towards Children's Development	Mongolia	May 2006 - July 2009	2014
15	Teaching Methods Improvement Project towards Children's Development Phase 2	Mongolia	March 2010 - August 2013	2015
16	Strengthening Primary Teacher Training on Science and Mathematics	Bangladesh	October 2004 - March 2010	2012
17	Project for Promotion of Student-centered and Inquiry-based Science Education	Pakistan	May 2009 - April 2012	2015
18	Strengthening of Teacher Education Promotion Phase 1 & 2	Afghanistan	June 2005 - December 2010	2016
19	Capacity Development of Learning Resources Centers (LRCs) for Science Education Utilizing ICT	Jordan	March 2006 - February 2009	2011
20	The Quality Improvement of Primary School Education	Bolivia	July 2003 - July 2010	2015
21	Project for the Improvement of Teaching Method in Mathematics	Honduras	April 2003 - March 2011	2013

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