優質教育基金
Quality Education Fund

M:FR/E

Final Report of Project	**Project No. : 2013 / 0063**

Part A

Project Title: Loop Program

Name of Organization/School: Pui Kiu Primary School

Project Period: From 4/2014 *(month/year)* to 3/2015*(month/year)*

Part B

*Please read the **Guidelines to Completion of Final Report of Quality Education Fund Projects** before completing this part of the report.*

Please use separate A4-size sheets to provide an overall report with regard to the following aspects:

1. Attainment of objectives
2. Project impact on learning effectiveness, professional development and school development
3. Cost-effectiveness – a self-evaluation against clear indicators and measures
4. Deliverables and modes of dissemination; responses to dissemination
5. Activity list
6. Difficulties encountered and solutions adopted

Name of Project Leader: Name of Grantee*:

Signature: _____ Signature: _____

Date: _____ Date: _____

** Final Report of Project should be submitted via "Electronic Project Management System" (EPMS). Once submitted, these reports are regarded as already endorsed by the supervisor of the school/the head of the organization or the one who signed the Quality Education Fund Agreement for allocation of grant on behalf of the organization.*

This form/guidelines can be downloaded from the QEF webpage at http://qef.org.hk.

優質教育基金
Quality Education Fund

Guidelines to Completion of Final Report of Quality Education Fund Projects

Please elaborate the following items in your evaluation of the project. It is expected that the guide would provide a reference to the project leader/team in reflecting on the effectiveness of the project.

1. Attainment of Objectives

The following items should be included in the evaluation of the attainment of each of the project objectives stated in the project proposal *(the information may be presented in a table form in the format of Table 1 in this Annex or in short paragraphs)*:

Items	Details
Objective statement	The goal of the project is to educate the students on the importance of human's connection to the environment. The specific objectives are: (a). Raise environmental awareness (b). Develop good environmental habits among each individual student (c). Create a ripple effect to influence community behaviour (d). Pave ways to create a sustainable green community
Activities related to the objective Organic farming learning	Pui Kiu deployed a holistic environmental education program for Primary 4, 5, 6 students, with an aim to educate the students on the importance of the natural ecology cycle captured in the concept the "Loop". In particular a series of activities were carried out including the following: (i.) Organic garden - an organic garden was developed together with food waste composting; (ii.) Theoretical teaching on environmental issues educating the current environmental issues that the society is facing; (iii.) Scientific analysis of the environmental factors influencing the organic garden development by utilising wireless sensor monitoring; (iv.) Behavioural changing via a 21 day challenge program; and (v.) Legacy development through Aquaponic by training the participants to become green ambassadors to train 200 students from Year 4, 5, 6 in aquaponics.

Extent of attainment of the objective Students bringing in food waste for composting Scientific monitoring platform	The following summarises the extent of attainment of the objective in relation to the activities carried out during the project. (a). Raise environmental awareness Organic garden – through the practical activities of collecting and composting the food waste, the students developed an awareness of waste as a resource. Also by applying the composted food waste into the organic garden, the students were able to fully understand the process of utilizing food waste as a resource. In addition The students were able to experience for themselves how different types of plant grow (i.e. carrots, beetroot, tomato) in a practical sense, which could not have happened without a green garden on site. Scientific monitoring - The data from the remote sensors provided a great learning opportunity for the students to gather first hand information to examine the different environmental factors for planting. The students were able to check the real-time data from the sensors. Site selection for installing the remote sensors was critical for a successful learning experience for the students. The control and experimental sites must have contrasting factors to demonstrate the differences. Theoretical teaching – different environmental topics were covered during the program including topics on organic farming, waste issues in Hong Kong, water pollution, greenhouse gas. The students were able to link the problems to their daily activities which greatly enhanced their awareness of the situation.
Online version of the 21 day program	(b). Develop good environmental habits among each individual student During the 21 day Behavioural Challenge Program, students were required to login on the web to report on their behaviour on the day. Together with this program, a "21day Behavioural Change Challenge" booklet was designed for the students to follow to implement selective good environmental habits. It was a success as a majority of the students completed the booklet with high scores. We also developed a website displaying the environmental data (i.e. sunlight, temperature, humidity) for the students to check on a

	regular basis. The data helped the students to learn about the suitable environmental factors for plant growth. (c). Create a ripple effect to influence community behaviour A sharing day which included the organic vegetable charity day was held on the 4th of July in which the entire school was involved. There were five different booths for the Loop Program students to share their knowledge, including: Organic farming, 21 day behavioural program, Scientific monitoring, and Ecological Cycle. Students from Year 2 – 6 visited the 5 booths in classes and in different timeslots. In addition, a 3-minute video was played for the students to understand more about the program and actions undertaken at the school to protect the environmental.

優質教育基金
Quality Education Fund

Table 1: Attainment of Objectives

Objective statement	Activities related to the objective	Extent of attainment of the objective	Evidence or indicators of having achieved the objective	Reasons for not being able to achieve the objective, if applicable
(a). Raise environmental awareness	Organic garden Scientific monitoring Theoretical teaching	Fully achieved	93.75% of the respondents replied agree and/or strongly agree to the effectiveness of Loop Program in increasing their environmental knowledge.	
(a). Develop good environmental habits among each individual student	21 day Behavioural Challenge Program	Fully achieved	100% completion of program	
(b). Create a ripple effect to influence	Organic vegetable charity sale and Sharing Day	Fully achieved	Over 3000 students, parents and teachers war	

students'/teachers' horizons	understanding of environmental knowledge. 100% of the students responded strongly agree/agree that the field trip to the organic farm helped them to understand better.
Increasing students'/teachers' sense of achievement	The Loop Program Ambassadors received certification for completing the course which helped to increase their sense of achievement. In addition, the Organic Vegetable Charity Sale day and Sharing day offered under the Loop Program has become a signature tradition at the school, which is very popular with both the parents and the students. Both the teachers and students were very proud to have raised over $1000 and donate the money to local NGO in Hong Kong that deals with the food waste problem.
Training students to better meet social demands	As part of the program, the students were trained to become ambassadors to promote environmental awareness. During the process, the students were trained to communicate effectively by offering them many opportunities to talk to their fellow schoolmates, teachers and guests. This helped to boost their confidence in public speaking and also encouraged them to consolidate their understandings through communicating with others.
Fostering team spirit and enhancing the overall image of the school	Loop program T shirt were provided for the students through private sponsorship. This helped to create a strong team spirit during the Sharing Day because the Loop Program students could be easily identified by the T shirt they wear.

3. Cost-effectiveness

Grantees are required to complete the 'Budget Checklist' at Table 2 in this Annex and enclose it as an appendix of this report. Please adopt the classification of budget items in Schedule II of the Agreement.

Table 2: Budget Checklist

Budget Items *(Based on Schedule II of*	**Approved Budget (a)**	**Actual Expense (b)**	**Change [(b)-(a)]/(a) +/- %**

Agreement)			
Staff Cost	47,887.00	47,887.00	0%
General Expenses	10,450.00	8,750.00	-16%
Equipment	90,460.00	90,425.20	-0.04%
Services	92,800.00	92,800.00	0%
Works	0.00	0	0%

Items	**Details**
Utilization of available resources (e.g. equipment, human resources of applicant school/ participating school(s))	● The school provided two General Studies teachers to overlook the program which minims the resource funded by QEF to support the school administration work. ● The stationery and printing fee funded by the QEF were not utilised because the school's resources were able to cover for the need. Thus, this sum of money was returned to QEF. Refer to the Audit report for the actual amount returned. ● The transportation of organic vegetable was covered under the cost which was recovered by the profit generated from selling the organic vegetable, thus this sum of money was returned to QEF. Refer to the Audit report for the actual amount returned.
Sustainability of the learning programme and materials developed	● The Loop Program website including the 21 day Behavioural Challenge Program was packaged and migrated to the school IT system for future deployment. ● The wireless sensor platform was packaged and migrated to the school IT system for future deployment. A documentation to explain the process of migration was also provided by the developer for ease of migration. ● The 21 day Behavioural Challenge Program booklet can be reused for any future environmental challenge program.

4. Deliverables and Modes of Dissemination

The following items should be included in the evaluation of each of the project deliverables and their value for dissemination *(the information may be presented in a table form in the format of Table 3 in this Annex)*:

Table 3: Dissemination Value of Project Deliverables

Item description (e.g. type, title, quantity, etc.)	**Evaluation of the quality and dissemination value of the item**	**Dissemination activities conducted (e.g. mode, date, etc.) and responses**	**Is it worthwhile and feasible for the item to be widely disseminated by the QEF? If yes, please suggest the mode(s) of dissemination.**
21 day Behavioural Challenge Program handbook	A well designed booklet fully utilised by students	Distributed to 17 Loop program ambassadors; 1 teacher will reuse for 2015 environmental program for school	The concept and booklet design can be shared as a file or in a hardcopy form for copying.

Electronic Environment 4-Sensors Pack (light intensity, humidity, temperature, soil moisture)	High quality products which withstand the outdoor weather.	Utilised during the program and formed part of the school assets; over 1000 students learned about this new e-technology.	
Compact Outdoor Energy-autonomous Low-power Wireless transmission module with weather-proof casing (Solar panel, rechargeable batteries included)			
Low-power Wireless Sensor Network Basestation with Wifi/3G Internet Gateway, Database and Webserver			
Real-Time Monitoring Software Platform with Notification Centre and Graphical Webpage for PC, Smartphones, Tablets (Education Special License)			
Software Platform Customization for School	A user friend and visually attractive software platform was designed	Useful for discussion during the class for students to check the environmental data.	
Intergrated communication technology (website, QR code, online version of booklet)	A user friend and visually attractive website was designed for students to obtain info and to access the 21 day program		
Stationery (drawings pads for students to record the plant growth and environmental data from web)		Not utilised since the school provided the necessary resources	

Seedlings for organic farm (tomato, oriental giant radish, carrot, mint, romaine lettuce etc.)		Fully utilised in the program; over 20 different types of plants were farmed by the students	
Planter box (model SS1) with fermented manure soil		Instead of buying more planter boxes since the school utilize the existing planter boxes, the budget was spent more on getting new organic soil since the existing soil quality was not good. Also pre-planting service was engaged & organic fertilizer for existing planter were brought which included, labour, delivery charge for soil.	
Planting tools (small shovels, small spading folks)		Fully utilised with satisfactory performance	
Planting essentials (reusable cotton gloves, towels, watering buckets)		Fully utilised with satisfactory performance	
Aerobic composting bins for digesting organic farm refuse		Fully utilised with satisfactory performance	
Anaerobic composting bins with 2 kg [illegible] for digesting food waste		Fully utilised with satisfactory performance	

5. Activity List

Particulars of activities conducted during the project period such as types of activities, brief descriptions of the activities, number of participants and feedback from participants should be reported *(the information may be presented in a table form in the format of Table 4 in this Annex or in short paragraphs)*.

Table 4: Activity List

Types of activities *(e.g. seminar, performance, etc.)*	**Brief description** *(e.g. date, theme, venue, etc.)*	**No. of participants**				**Feedback from participants**
		schools	teachers	students	others (Please specify)	
21 day Behavioural Challenge		1	4	16		75% of the survey respondents suggested the program helped them to develop good environmental behaviours
Organic farm visit	[redacted] organic farm, 16/5/2014	1	3	16		100% of the survey respondents suggested that the organic farm visit enhanced their knowledge of organic farming
Organic vegetable charity sale and sharing day	Pui Kiu Primary School, 4/7/2014	1	50	800	2150 family members	81.25% of the survey respondents suggested that they were able to share their environmental knowledge on the sharing day
Ambassador program	Pui Kiu Primary School, 10/2014 – 11/2014	1	50	200		75% of the survey respondents suggested they would continue to join if there is an environmental club

6. Difficulties Encountered and Solutions Adopted

The information here should explain why the actual project implementation (including the budget, schedule and process) differs from the original plan, if applicable.

Items	**Details**
Wireless sensor system	● The school wifi was not stable which affected the system in transmitting data to the customized software platform. To fix the problem, a portable wifi was installed at the cost of the supplier. However, it did not solve the problem entirely and the supplier had to constantly fix the system which created problems when students logon to read data. As a result, some of the data was not complete during the period of monitoring and affected the accuracy of analysis. It is recommended the school should upgrade the wifi system to ensure smooth data migration for future deployment.