

**Final Report of Project**

Project No. : 2009/0408

**Part A**

Project Title: Smart Practice for Healthy Vision for School Children

Name of Organization/School: School of Optometry, The Hong Kong Polytechnic University

Project Period: From February 2011 (month/year) to January 2013 (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

*\* Final Report of Project prior to the 8<sup>th</sup> call should be signed 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.*

*\* Final Report of Project under the 8<sup>th</sup> and subsequent calls 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.*

## Part B:

### 1. Attainment of Objectives

The ultimate Goal of the project is to reduce the incidence of myopia in the community. There are five objectives which the project aims to achieve. Table 1 displays the activities conducted, the extent of attainment and the respected indicators or evidence.

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
1) Encourage teaching staff and parents to be concerned and involved in the understanding of related visual problems such as myopia development and the impending impact on vision with the use of e-books.	<ol style="list-style-type: none"> <li>1. Educational seminars</li> <li>2. Educational booth on Press Conference Day and PolyU Alumni Homecoming Fiesta</li> <li>3. Educational pack (including booklets, interactive website, vision check card and paper ruler with eye care tips) (Appendix 9)</li> <li>4. Survey (Appendix 5 &amp;6)</li> </ol>	<p>90% attained among teachers and 46% attained among parents by attending educational seminar and events as listed.</p> <p>30% attained among parents by reading the booklets and 15% by viewing the online mini website.</p> <p><b>** press conference report in the newspaper would reach a wider public and cannot be counted (Appendix 10).</b></p>	<p>-540 teachers and 914 parents have attended either educational seminars or booths (90% and 46 % of target achieved respectively)</p> <p>- Positive feedback received after the seminars (Appendix 1 &amp; 2)</p> <p>- Booklets are delivered to all schoolchildren; expect more parents can reach the information.</p>	<p>Parents of secondary school students are not active in attending school activities in general.</p> <p>Two educational booklets and the student vision screening report are provided for the parents, which is an indirect approach to encourage their understanding of vision health.</p>
2) Both school teachers and parents will be engaged in creating school and home	<ol style="list-style-type: none"> <li>1. Education seminars</li> <li>2. Educational pack</li> </ol>	<p>90% attained among teachers</p> <p>46% attained</p>	-No. of beneficiaries (same as above)	



environments that are conducive to good visual hygiene.	(Appendix 9)	among parents	-Positive feedback received after the seminars (Appendix 1 & 2) and during the meeting of quality assurance committee.	
3) Establish the service needs of myopia problems among school children.	1. Vision Screening 2. Educational seminars	Fully achieved	-5,148 students (103% of target) received vision screening and 5,893 students (118% of target) attended seminars.  -A lot of parents and teachers requested to conduct vision screening for their children regularly and increased number of beneficiaries. (Appendix 1 and 2)	
4) To establish good reading style for the children and elevate their visual health awareness in all aspects.	1. Education seminars 2. Educational booth 3. Educational pack (Appendix 9)	Fully achieved	-5,893 students (118% of target) attended seminars.  -Positive feedback received after the seminars (Appendix 3)	
5) Select Study- to find out  a. Prevalence of refractive error in particular myopia among school children.  b. The visual habits and possible risk factors in causing myopia.  c. The effect of the use of e-book on visual functions and behaviour adaptation among school children.	1. Vision screening 2. Individual school reports (Appendix 4)  1. Survey  1. E-book research	Fully achieved  Fully achieved  Fully achieved	-5,148 students (103% of target) received vision screening -15 school reports delivered  -5,349 students and 226 teachers participated the survey -Survey results (Appendix 5 & 6)  - 54 school children have participated in the research - E-book study report (Appendix 7)	

<p>d. Children identified with visual problems or high myopia will be referred or channeled for myopia control intervention.</p>	<p>1. Vision Screening 2. Individual screening report (Appendix 4) to each participant</p>	<p>100% attained</p>	<p>-5,148 students (103% of target) received vision screening - Individual screening report (Appendix 4) with recommendations given to their parents via the school children</p>	<p>Children were reminded to follow-up with comprehensive eye examination after the screening.</p>
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## 2. Project impact on learning effectiveness, professional development and school development

The effects of the project are evaluated with regard to four aspects:

### a. *Broadening students' / teachers' horizons*

Besides “What is my prescription?” another common question raised during the diagnosis section on the vision screening day was “What is astigmatism?” Both students and teachers are usually familiar with short-sightedness and long-sightedness, they are scanty of the knowledge of the consequences of other visual problems and eye diseases related to myopia; this can be reflected from the questionnaires as well. The participants especially primary pupils, showed great interest in the seminars’ content and their feedback are collected and shown in Appendix 1, 2 & 3. Primary pupils are more aware of the consequences and vision hygiene to protect their vision.

### b. *Elevate students' awareness on eye care and eye health (training students to better meet social demand)*

Through vision screening, seminars and educational pack (including booklets, paper ruler, vision check card and interactive website (Appendix 9)), students are introduced about some visual problems, smart practice in maintain good eye health and the consequences of developing high myopia. Self-quiz are provided in the educational booklets and at the interactive website. Last but not the least; the message that “the school children are responsible in looking after their eyes themselves” is conveyed and well received. The impact can be translated from the feedback of students (Appendix 3)

### c. *Increasing training opportunities for teachers and enhancing their professional development*

Through seminars, teachers are encouraged to concern and to understand the related visual problems such as lazy eyes, myopia development, signs of myopic children and smart practice of healthy vision. In addition, their role in helping identifying problematic behaviors, reading posture of students, creating school environments that are conducive to good visual hygiene, for instance, classroom lighting evaluation and control, are emphasized. (See teacher’s feedback in Appendix 2)

d. *Enhancing the overall image of school*

Most teachers were very appreciative about the vision screening, the school report (Appendix 4) about the screening result and the seminar content. They commented that unfortunately, not all parents were able to join the seminars. One teacher told us that her school has put up partial screening result, eye-care tips and signal of short-sightedness onto the newsletter to parents (the respected newsletter is shown in Appendix 8). On one hand, the parents would not miss the important information about their children; on the other hand, the school believed this project can enhance the overall image of the school.

3. **Cost-effectiveness**

Budget checklist is enclosed in Appendix 11. The project's cost-effectiveness is evaluated with regard to:

a. *Utilization of available resources*

Two major optometric equipments in this project, auto-refractor and IOL Master were borrowed from Centre for Myopic Research of The Hong Kong Polytechnic University (PolyU). Auto-refractor is needed to capture the refractive error of the children. IOL Master is used to measure the axial length and corneal curvature of the eyeball. All these data are essential in this study.

In addition, the Center provides the main bulk of optometric equipment which includes eye examination rooms for the e-book study; the in-kind is equivalent to HK\$1.2M. PolyU provides space for storage of the equipment.

Participated schools provide venues, computers and projectors for the seminars, and venues for the vision screening event. Moreover, the teacher associates help printing the seminar evaluation forms and individual vision screening reports for the participants.

Hong Kong Paediatric Foundation contributes \$50,000 for promoting this project.

b. *Sustainability of the learning programme and materials developed*

The vision screening record, individual screening report for participants and school reports developed in this project can be re-used in other similar activities. The powerpoint of the education seminars can be re-used for other educational events. The interactive learning mini-site is open to public and can sustain for a very long period.

c. *Unit cost for the direct beneficiaries*

Total number of beneficiaries including students, teachers and parents are 31,837 and total

expenditure including the equipment cost is HK\$1, 445,781.95. Unit cost for the direct beneficiaries is \$45.

*d. Expenditure items which require no injection of resources when the project is replicated by other schools*

There are master file of the booklets for future re-print. As stated in point b, all kinds of forms, report and seminar content developed in this project can be replicated. The electronic books (e-book readers) can be re-deployed in other research study.

**4. Deliverables and modes of dissemination; responses to dissemination**

There are six tangible deliverables in this project. They are individual screening reports, individual school report about screening result, educational booklets, interactive website, paper ruler and vision check card. Their dissemination values and activities are described in Table 2.

Table 2: 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.
Individual vision screening report (Appendix 4)	All participants would understand their own visual conditions and they are advised to have a follow-up check where necessary.	Distributed to all participants (5,148 school children) immediately after vision screening; teachers welcomed it as the message/ result can be transmitted to the respected parents.	No

<p>Individual school report showing result of the vision screening (Appendix 4)</p>	<p>Principals and teachers could have a thorough understanding on the myopic prevalence and other visual problems of their schoolchildren, as well as a comparison with other participated schools. The lighting condition of some randomly selected classrooms was displayed with recommendations in the report as well.</p>	<p>Distributed to all 15 participated schools, most of them during the teachers' seminars; and 2 reports are sent by mail in Feb/2013 as no teachers' seminars were arranged finally; Teachers revealed that they would further study the report especially on the part about classroom lighting.</p>	<p>No</p>
<p>Two educational booklets for school children in three languages (English, traditional and simplified Chinese). (Appendix 9)  Name of the booklets: "Myopia and You" &amp; "Smart Use of E-book"</p>	<p>The main purposes are to establish good reading style and habits and elevate their visual health awareness in all aspects. In addition, there are two sections talking about the roles of teachers and parents in helping children protecting their eyesight.</p>	<p>Distributed to 8,714 school children and 627 teacher associates in 15 participated schools in 11/2012;  Distributed 1,000 sets of booklets to Hong Kong Paediatric Foundation in 11/2012; the booklets would be further distributed to its members (paediatricians).</p>	<p>Yes; - List in "QEF product catalogue" &amp; sell via online - Distribute to government health clinics in paediatric and optometry and Hospital Authority (HA)</p>
<p>Interactive website named "Smart Practice of Healthy Vision" which covers the main contents of the two booklets above; in three languages as well</p>	<p>Same purpose as above but display in an interesting/ interactive way to attract the children to read through all the contents and get impressed.</p>	<p>The mini-site is uploaded and attached to the website of School of Optometry, PolyU (<a href="http://www.polyu.edu.hk/so/">www.polyu.edu.hk/so/</a>) in 1/2013;  Open to public.</p>	<p>Yes; - List in "QEF product catalogue" &amp; sell via online - Inform public relation (PR) department of HA</p>
<p>30 cm long paper ruler with eyecare tips (Appendix 9)</p>	<p>Similar purpose as above; one extra function is reminding the school children maintain the reading distance no less than 30cm.</p>	<p>Distributed to 200 participants at the events of press conference (7/10/12) and 200 at PolyU Alumni Homecoming Fiseta (11/11/12).</p>	<p>No</p>



Vision check card with 2013 calendar at the back (Appendix 9)	On-site vision record card combined with quiz on eyecare and high myopia related eye diseases.	Distributed to 200 participants at the events of press conference (7/10/12), 200 at PolyU Alumni Homecoming Fiseta (11/11/12) and 280 to schools together with the booklets delivery.	No
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### 5. Activity conducted in this project

There are four kinds of activities carried out in this project. They are vision screening, education seminars to teachers, students and parents respectively, press conference and booth at PolyU Alumni Fiesta. Table 3 listed the theme, venue and date of the activities, and the number of beneficiaries.

Table 3: 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	Parents/ adults	
Vision screening	<p>Theme: To identify school children who have visual problems and need immediate comprehensive eye examination</p> <p>Venue: school hall or activity room of participated schools</p> <p>Date:            2011: 20-22/6, 7-9/9, 14-16/9, 19/9, 22-23/9, 26/9, 30/9, 3/10, 17/10, 19/10, 20-21/10, 2-3/11, 9-10/11, 17-18/11, 30/11-2/12;            2012: 9-10/1, 12/1, 16-17/1, 22-24/2, 29/2, 13-15/3, 23-25/4, 3-5/7. (47 days in total)</p>	15	75	5,148		<p>They appreciated the tests and would join again in future if possible.</p> <p>School children, teachers and parents, all 3 parties requested to conduct vision screening regularly and better to all instead of selected children.</p>



Education seminars	<p>Theme: To enhance the understanding of related visual problems such as squint, lazy eye, myopia development, etc. and consequences of high myopia as well as smart practice on healthy vision.</p> <p>Venue: school hall or lecture room of participated schools</p> <p>Date: 2011: 7/12, 14/12 2012: 20/1, 3, 7, 9, 10, 22/2, 10, 21, 22, 24/3, 21, 23, 27/4, 3/5, 6, 25, 26, 27, 29, 30/6, 10, 13/7, 21/8, 21/9, 22/10, 22, 30/11, 1, 12/12. (41 sessions in total)</p>	14	540	5,893	412	Feedbacks are positive mainly (Appendix 1, 2 & 3)
Press conference (including 2 sessions of seminar & 1 educational booth)	<p>Theme: To announce the findings of the project and to arouse the public awareness on visual health</p> <p>Venue: Phase I, City Walk Shopping Mall, Tsuen Wan</p> <p>Date: 7/10/2012</p>			200	250	15 media press has reported the findings on the next day. (Appendix 10)
PolyU Alumni Homecoming Fiesta (1 educational booth)	<p>Theme: To arouse the public awareness on visual health</p> <p>Venue: Campus of Hong Kong Polytechnic University</p> <p>Date: 11/11/2012</p>			38	252	Participants found impressive when they tried on the goggles with simulated visual effect of high-myopia related eye diseases.

## 6. Variations and difficulties encountered, and solutions adopted

The target number of schools recruited was 20 and the final participated number of school was 15. The most common reason of rejecting our invitation was that there were many school activities already, some were internal and some were co-organized with other institutions. The disciplines of the co-organized activities include but not limited to foot, spinal cord, psychology, pressure relief, parent-children communication, effective learning, etc. It was difficult for the schools to engage in all kinds of activities. On the other hand, the school schedules were tight especially that of secondary level so the final number of secondary schools was behind the target.



In order to achieve the target number of school children beneficiaries (5000), we invited more students from each school to participate in the vision screening and seminar. Finally, the total number of beneficiaries exceeded the target number by 3% and 18% respectively. Moreover, the educational booklets are distributed to all primary students and all junior secondary students, and some even including Form 4 students (no matter they have participated the two events or not). The total number of sets of booklets distributed to school children was 8,714.

There were only forty-three educational talks instead of sixty (3 x 20 schools) provided to school children, teachers and parents. The reasons were, firstly, only 15 schools joined the project and secondly, due to the tight school schedules and the low motivation of the parents to join school activities so some schools especially secondary schools were reluctant to arrange the seminars.

The actual number of parents attending the seminars was 662 which were far below the expected number, 2000. The main reason according to schools' comment, was the general low motivation of parents to participate school activity. This may be due to the heavy work load and /or long working hours of most of the parents. The schedule arranged may not suit all the parents.

In order to increase the beneficiary number of parents, in addition to the original plan, we set up educational booths in the carnival held by Hong Kong Paediatric Foundation (HKPF) on 7 October, 2012 and also in the carnival held on PolyU Alumni homecoming Fiesta on 11th November, 2012. At the booths, optometrists and optometry students briefly explained and demonstrated the ocular complications of high myopia and introduced the significance of the two educational booklets. Moreover, children could have a vision test in the carnival of HKPF. A total of 250 adults and 200 children, and 252 adults and 38 children have visited the two booths respectively.

One of the optometrists has resigned from the post in August 2012 and a new staff has been recruited in late September as replacement.