

Final Report of Project

Project No. : 2013 / 0831

Part A

Project Title: Promoting healthy eating to adolescents in Hong Kong: A school-based health intervention

Name of Organization/School: David C Lam Institute for East-West Studies, Hong Kong Baptist University

Project Period: From 3 / 2015 (month/year) to 2 / 2016 (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: 26 May 2016 Date: 26 May 2016

** 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.*

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*):

- 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

2. Project Impact on

The project's effects on the learning effectiveness / professional development / school development should be evaluated, in evidence-based approach, with regard to:

- broadening students'/teachers' horizons
- increasing students'/teachers' sense of achievement
- fostering students' development in their potential and specific abilities
- training students to better meet social demands
- increasing training opportunities for teachers and enhancing their professional development
- improving learning atmosphere
- fostering team spirit and enhancing the overall image of the school
- inducing collaboration with other schools / professional organizations.

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.

The project's cost-effectiveness should be evaluated with regard to:

- utilization of available resources (e.g. equipment, human resources of applicant school/ participating school(s))
- unit cost for the direct beneficiaries
- sustainability of the learning programme and materials developed
- expenditure items which require no injection of resources when the project is replicated by other schools (including setup cost of the project, deliverables ready for use)
- alternative approaches for equivalent benefits at less cost

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*):



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- description of the deliverable (e.g. type, title, quantity, etc.)
- evaluation of the quality and dissemination value of the deliverable
- the dissemination activities conducted (please state the date, mode, etc.) and the responses of the participants/recipients to such dissemination activities
- the value and feasibility for the deliverable to be widely disseminated by the QEF as well as suggested modes of dissemination.

A brief description of the elements/experiences contributing to the success of the project and feasibility of continuing the project should also be given.

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*).

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.

Final report on the project titled “Promoting healthy eating to adolescents in Hong Kong: A school-based health intervention”

SUMMARY

Advocating adolescents to build up a healthy eating habit, a promotional programme regarding healthy eating was proposed and targeted at the students at Buddhist Tai Hung College who had a lower than normal BMI and the habit of skipping breakfast, according to the data from the Student Health Service of Department of Health as well as from the partner School.

This project consisting of 2 phases has started since March 2015. In phase 1, self-report food diary and focus group interviews have been conducted to collect the data regarding student’s eating habit. Taking the data of phase 1 as-reference, phase 2 interventions including three student health talks, one parent health talk, a healthy cooking workshop, a healthy eating public service advertisement (PSA) design workshop and competition, and the production of winner work of healthy eating PSA design competition have been implemented as proposed. The above project activities were recorded and regularly updated in the project Facebook page during the project period for mass circulation within the partner School.

Post-activity self-report food diary and one focus group interview with the students who have been participating in the project were conducted for project evaluation purpose. Although participating students did not show significant improvement in their eating habit, the feedback about the project from them is positive and evidence shows that they have improvement in the knowledge of pursuing a healthy eating habit.

BACKGROUND

Unhealthy eating practice and poor diet quality are major public health concern as it can trigger cardiovascular and endocrinal diseases (Traill et al., 2011) on one hand, and eating disorders on the other (Quiles-Marcos, 2011). Many physical health problems can be caused by eating disorder which often significantly correlated with parents' psychological and emotional symptoms (Weisbuch et al., 2011). As adolescents require sufficient and diversified nutrition to enable their growth, the problem of unhealthy eating habit should not be procrastinated in life to increase health risks.

Adolescents' eating habits are shaped by different determinants. Various studies have indicated that family support and guidance is crucial in assisting adolescents to cultivate a healthy eating habit (Rhoades et al., 2011; Al-Shookri et al., 2011). Although friends play an important role in facilitating regular exercise, families, particular mothers, are essential in developing adolescent's healthy eating habit (Yung et al., 2010). Parents' eating behaviours and preference of healthy food consumption promote good eating habits to their school-aged children. An appropriate support network from schools and primary care providers can empower families to make a practice of healthy behaviours across socio-environmental domains, which can ensure the addressing of health messages to adolescents (Wilfley et al., 2011). A healthy eating habit among adolescents in a sustainable manner thus can be achieved. On the other hand, family relations can constitute a risk for the development of eating disorders. Maternal bond affects adolescents' eating habits and can either protect against or amplify the risk for eating problems (Back, 2011).

Considering the significant role played by parents, literature suggests that parents should be informed about the consequences of having unhealthy diets and poor lifestyle and be motivated to correct their children's unbalanced nutritional habits (Scaglioni et al., 2011). Although it is necessary to convey healthy eating to adolescents, healthy eating promotion programs should also target on parents whose eating behaviors, lifestyles, and eating-related attitudes significantly mould their children's eating habits. Informed and motivated parents can become a model for children by providing a healthy and balanced diet.

Besides families, the ability of children developing their dietary preferences involves a complex interplay with environmental factors (Scaglioni et al., 2011). Evidence supports that environment plays an important role in shaping children's eating behaviors. Body dissatisfaction, which is often originated from mass media and peer pressure, is demonstrated as a cause to unhealthy food pattern and to make young people more prone to suffering from eating disorders as a result (Schembre et al., 2011). Also, internalization of the thin appearance as ideal body from media exposure is noted as a significant explanation of the unhealthy weight control behaviors and eating disorders among young females (Nouri et al., 2011).

Student interpersonal factors, which primarily concern their peers, closely associated with the food choices of students. As indicated in Chan et al.'s studies (2009a; 2009b), adolescents are more prone to unhealthy eating behaviors during peer social gatherings. On the other hand, adolescents' unhealthy eating behaviors and restrained eating behaviors are shown to result from unpleasant experiences in schools such as suffering from verbal bullying from fellow classmates (Farrow & Fox, 2011). Institutional factors, such as school rules and policies, are also noted to be closely associated with students' eating behavior (Lee et al., 2010; Townsend & Foster, 2011).

In this sense, school as another key institution other than family for adolescents' primary socialization are the good arena for sustainably educating adolescents the concept of healthy eating. In fact, students can exercise and sustain healthy eating decisions more easily with the support from schools (Pitman et al., 2011). Through the concept of health-promoting schools, positive norms and values of health can be constructed among students, in which students are more prepared to adopt a healthy lifestyle such as by eating healthily (Lee, 2009).

Similar to overseas situation, the eating behavior of Hong Kong students were also influenced by similar forces. Despite the urgency of cultivating students' healthy eating habit, most secondary school students find healthy eating dull and unappealing (Chan et al., 2009a). Given the importance of adopting a healthy eating practice since early stage, this project aims at advocating secondary school students to cultivate a healthy eating habit by addressing both internal and external social-environmental factors to which the students are encountering. This project mainly focuses on introducing dietary knowledge as well as inspiring and enabling them to eat healthily with their fellows in an attractive and interactive way.

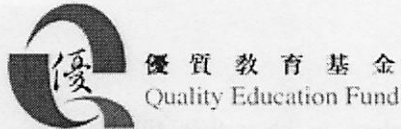
SCHOOL NEEDS ASSESSMENT

There has been a noticeable increase in eating disorders among young people in Asian countries (Chang et al, 2011) and in Hong Kong (Lee, 2000). Studies have shown that eating disorders are affecting an increasing number of high school students in Hong Kong; 3.8% of 4,283 adolescents from 8 high schools in different districts of Hong Kong developed some form of eating disorders (Leung, 1998). About one-third of them believed a slim figure was very important to enhance their self-value (Leung, 1998). Another survey conducted in 2000 to 2001 shows that 6.3% of a random sample of 2,000 students from 33 high schools had a high risk of developing eating disorders (Wu, 2002). A more recent study performed by the Hong Kong Eating Disorders Association on 3,507 high school students revealed that 40% of students were demonstrating dieting behaviour, 44% chose unhealthy methods to reduce weight, and 6.6% were at risk of developing eating disorders (Sing Pao, 2005). Examples of those unhealthy methods include skipping meals, counting calorie of food to limit intake, exercising excessively, using drugs, and self-induced vomiting (Lai, 2000). Further, 2,305 hotline enquiry calls had been received by the Hong Kong Eating Disorders Association, and 1,170 cases of eating disorders were identified from 2000 to 2008. Among those identified cases, more than 50% were bulimic cases; approximately 30% were anorexic cases and almost 10% were eating disorder not otherwise specified cases. Over 50% of these were between 16-25 years of age (Hong Kong Eating Disorders Association Limited, n.d.).

Shape and weight concern is noted as one of the factors that account for adolescents' unhealthy eating behaviour from literature (Darcy et al., 2012). A fear of fatness (Lai, 2000) and body dissatisfaction (Lee & Lee, 1996; Lai, 2000; Lee et al. 2007) are accountable for developing adolescent eating disorders. Studies show that adolescents have a high risk of developing eating disorder (Farrow & Fox, 2011), and consuming fewer meals is the most noticeable strategy used (Quiles-Marcos et al., 2011). Although secondary school students in Hong Kong are reported to be slimmer than those in other Chinese communities, they still desire a lower body mass index (BMI) and are reported with more body dissatisfaction (Lee & Lee, 2000). Adolescents tend to feel fat in their lower BMI body and are cognitively inclined to weigh less even though they are not obese (Lee et al. 1996).

As adolescents start to gain more independence and autonomy, helping them to establish a healthy and balanced eating habit, empowering them with sufficient knowledge to choose healthy food wisely, and allowing them to recognize the correct value on body image are vital. Literature demonstrates that having established a healthy eating habit since young age can have significant influence in sustaining a healthy eating habit till adulthood (Lee et al., 2010), which can help to decrease unhealthy diet-associated morbidity and mortality in the long run. As a result, the project team will collaborate with Buddhist Tai Hung College to help their students in establishing a healthy eating habit.

Buddhist Tai Hung College is a co-educational secondary school in Sham Shui Po, Kowloon. According to the School's data received from the Student Health Service of Department of Health on the health status of its students, having a lower than normal BMI and skipping breakfast are their students' common diet-related problems. As a result, enabling students to build up a healthy lifestyle is one of the key



concerns of the School. The School organized a series of health education activities for its students in the academic years of 2005-2006, 2006-2007, and 2007-2008 under the Yan Chai Hospital Moral and Civic Education Fund. Organizing another series of health education program will be one of the plans for the School in the coming academic year of 2015-2016. Furthermore, enhancing students' learning initiatives is a target development plan of the School from 2013-2016. In view of this, this project is implemented to match with the development needs of the School and its students.

CONCEPTUAL FRAMEWORK

This project adopted an approach of theory triangulation by using Health Belief Model (HBM), Theory of Planned Behavior (TPB) and Social Cognitive Theory (SCT) as the conceptual framework to design the healthy eating promotion program for the participating School.

In terms of HBM, the project promoted healthy eating by addressing perceived barriers, cues to action, and self-efficacy of the target students.

TPB believes that a person's health behavior is mainly originated from an individual. It believes one's belief and attitude, one's belief about how others in his or her social group think about the behavior, one's belief about factors which will make it easy or difficult to perform a behavior, and the amount of power that one believes he or she has can all influence a person's intention to perform a health behavior.

On the other hand, some theories argue that environmental and social factors play a remarkable role in influencing one's health behavior. SCT addresses that the social and physical environment, reinforcement and feedback from others, vicarious and observational learning from others, and the social and environmental cues and responses can also influence a person's health behavior.

ATTAINMENT OF OBJECTIVES

Healthy and balanced eating is particularly essential to adolescents in order to facilitate their growth. However, owing to the internalization of the mass media, peer pressure, as well as the self-image awareness since puberty, secondary school students are at a higher risk to suffer from eating disorders (Lee & Lee, 2000). In school years, it is fundamental for students to learn building up a healthy eating habit and know an intelligent way to choose their food. Developing a basis on maintaining good and healthy eating style in early stage can enable student to achieve a healthy life until adulthood. To assist students establishing a healthy eating habit, the Department of Health has launched the "EatSmart@school.hk" campaign with the support of Education Bureau in 2006-2007. Despite the needs of primary school students being catered, similar campaigns targeted at secondary school students who have a higher incidence to suffer from eating disorders have still been lacking (Farrow & Fox, 2011). In view of this, this one-year project aims at advocating a healthy eating culture among students from one co-educational secondary school by addressing the individual, interpersonal (peers to peers), and environmental (schools and families) factors in an attractive and interactive way. This project is implemented to promote a feasible healthy eating practice to the students, enabling them to sustain a well-disciplined lifestyle as well as to overcome various challenges, says examinations, by developing a positive eating habit.

Objective statements

The project has the following objectives:

1. To understand the eating behaviors and eating cultures of the students in the participating School.
2. To understand the perceptions on healthy eating among the students of the participating School.
3. To examine the factors affecting the choice of healthy and unhealthy food among students of the participating School.
4. To identify the perceived difficulties and barriers encountered by the students of the participating School in adopting a healthy eating habit.
5. To encourage students of the participating School in adopting a healthy eating habit, and to communicate their healthy eating experiences with their peers and their families.
6. To facilitate the building up of a healthy eating culture among the students of the participating School, and to extend this culture to their families.

A logic model is constructed to show the logic of the project. Basic information, such as the stakeholders, resources, participants, activities organized, and outcomes are summarized in Figure 1.

Activities related to the objectives

The activities organized in relation to the above objectives are to be elaborated in the following section. The phase 1 study, involving a self-report food diary and two focus group interviews with students, were adopted to achieve objectives 1, 2, 3, and 4. The phase 2 study, involving the activities of 3 health talks for students, 1 health talk for parents, Healthy Eating PSA design talk and workshop, Healthy Eating PSA competition, healthy cooking workshop, the professional shooting of the winning PSA in the competition, plus the project Facebook page, were implemented to achieve objectives 5 and 6 in an interactive and innovative manner.

Extent of attainment of the objectives

The self-report food diary and the two focus group interviews conducted on sampled students successfully achieved objectives 1, 2, 3, and 4. The findings of these two elements are outlined in the following section. Objectives 5 and 6 were also achieved through the implementation of phase 2 activities, and the activities are to be elaborated further in the following section.



Inputs	Outputs		Outcomes – Impact		
	Activities	Participation	Short	Medium	Long
<p>Human resources (3 project team members, 1 registered dietician, 1 healthcare professional, 1 research assistant)</p> <p>Equipment (printing facilities, notebook/ PC for presentation)</p> <p>Materials (kitchen utensils, rice cooker, ingredients, prizes for PSA competition, A4 & A3 papers, CDs & DVDs)</p> <p>Money (transportation cost, remuneration, printing cost)</p> <p>Venues (hall and classroom @ Buddhist Tai Hung College for health talks, workshops and competition)</p> <p>Time</p>	<p>Phase 1 Self-report food diary Focus group interviews</p> <p>Phase 2 3 Health talks for students 1 Health talk for parents Healthy eating public service advertisement (PSA) design competition Healthy cooking workshop Healthy eating project Facebook page Self-report food diary (15 mins for introduction before the PSA competition) Focus group interview for project evaluation (TBC)</p>	<p>Students from Buddhist Tai Hung College (mainly F.1 and F.4) Parents Teachers 67 valid food diaries were collected in phase 1 and 45 in phase 2 Six F.1 student and six F.4 students participated in the focus group interview in phase 1</p>	<p>To understand the eating behaviors and eating cultures of the students in the participating School. To understand the perceptions on healthy eating among the students of the participating School. To examine the factors affecting the choice of healthy and unhealthy food among students of the participating School. To identify the perceived difficulties and barriers encountered by the students of the participating School in adopting a healthy eating habit.</p>	<p>Students of the participating School are encouraged in adopting a healthy eating habit, and to communicate their healthy eating experiences with their peers and their families. To facilitate the building up of a healthy eating culture among the students of the participating School, and to extend this culture to their families.</p>	<p>To facilitate the creation of a healthy eating atmosphere within families and thus a healthy eating habit among adolescents.</p>

Figure 1. Logic model

PROJECT ACTIVITIES

All the activities of the project have been completed as the schedule discussed with the Principal, Vice-Principals, and teachers of the participating School, Buddhist Tai Hung College. A multi-disciplinary approach by combining quantitative, qualitative, with communication strategies through the use of the three conceptual frameworks including Health Belief Model (HBM), Theory of Planned Behavior (TPB) and Social Cognitive Theory (SCT) were adopted as planned. With the support of the preparatory phase 1 data, interactive and interesting target-to-users programs were provided to the students in the major phase 2.

The activities that the programme being implemented are organized in Table 1.

Date	Activities	Participants
Phase 1		
4 - 6 Mar 2015	Self-report food diary	S.1, S.4 students
6 Mar 2015	Focus group interviews	S.4 students
13 Mar 2015		S.1 students
Phase 2		
12 Mar 2015	Health Talk (registered dietician)	S.4 students
25 Mar 2015	Health Talk (registered dietician)	S.1 students
26 Jun 2015	Health Talk (registered dietician)	S.1 – S.5 students, teachers
30 Jun 2015	Healthy Eating PSA Design Talk and workshop	S.1, S.4 students
6 Jul 2015	Healthy Eating PSA Competition	S.1, S.4 students
6 – 8 Jul 2015	Self-report food diary for post-activity evaluation	S.1, S.4 students
11 Jul 2015	Parents' Health Talk (medical practitioner)	Parents and students
11 Jul 2015	Healthy cooking workshop (registered dietician)	Parents and students
21 Nov 2015	PSA Shooting	PSA Competition winner, Campus TV Club, S.4 students
10 Dec 2015	PSA publicizing and circulation in project Facebook	PSA Competition winner, Campus TV Club, S.4 students
Mar – Dec 2015	Healthy Eating Project Facebook page	All students, teachers, parents
6 May 2016	Focus group interview for post-activity evaluation	S.1, S.4 students

Table 1- Programme Implementation Plan

Phase 1 (preparatory phase with 3 months)

This phase containing two components has been completed. Both the general phenomenon and the in-depth perceptions and experiences on eating habits of the students were obtained. Objectives 1, 2, 3, and 4 were achieved. Data collected in phase one has contributed to the design of the Phase 2 activities. Details are as below.

Self-report food diary

To understand the eating behaviors and eating cultures of the students in the participating School, self-report food diary method was adopted. One class of S.1 and one class of S.4 were recruited to participate

in the self-report food diary study. Sampled students were required to record all the food consumption at breakfast, snack, lunch, afternoon tea, dinner and late night food for a consecutive 3-day period, i.e. from 6th to 8th March 2015. Three main questions were set for each meal: a) have you had the specific meal; b) what have you consumed in your meal; c) who did you eat with. The first one was a dichotomous question. The second one was an open-ended question. The third one was a multiple-choice question with 8 options including 1) Alone; 2) Parents; 3) Siblings; 4) Grandparents; 5) Maids; 6) Classmate; 7) Teachers and 8) Others. If the answer of first question was “No”, students needed not to answer the other two questions.

Self-report food diaries were distributed to all students from the sampled classes in Buddhist Tai Hung College on 4th March 2015. For the sake of recruiting the both senior and junior form students more effectively and practically, non-probability purposeful sampling was used with the assistance of the Vice-Principal of the partner School. 67 food diaries were distributed to the students and all diaries were returned. Although the food diary was filled in a self-administrated way, there were briefing sessions chaired by Dr. Judy Y.M. Siu to explain the purpose of this study as well as the method of filling out the diary before distribution. Meanwhile, consent forms were distributed and returned with signature to ensure that all participants agreed to voluntarily take part in the research.

Data collected from hardcopy was processed and analyzed by SPSS and Microsoft Excel. Descriptive analysis and independent t-test were applied by SPSS. The response of second question in food diary was recorded in Microsoft Excel for reference. 33 respondents were F.1 students while 34 of them were F.4 students.

Focus group interviews

Focus group interviews were conducted with sampled students selected from two groups, respectively junior form (S.1) and senior form (S.4) students. The Vice-Principal of the partner School assisted in the sampling of participating students. Therefore, all participants were students who have participated in the food diary study and hence a better follow-up of food diary data. The facilitator of both focus group interviews was Dr. Judy Y.M. Siu.

The focus group interviews were conducted on 6 March 2015 and 13 March 2015 with 6 senior form students and 6 junior form students respectively. Considering students' convenience, the interviews were conducted in the student activity room of the School. Both interview groups consisted of 3 boys and 3 girls. In each group, the participants came from the same class and thus they knew each other. The interviews were audio-taped with participating students' consent. Some photos were taken during the interviews with participating students' consent as well.

The flow of the interview was following an interview question guide designed by the project team based on literature, health status report from Student Health Service of Department of Health on the participating School's students, and the food diary data. There were 12 questions in the interview question guide which were proposed to obtain in-depth primary data about their experiences in their usual eating habits, as well as their perceptions, motivations and difficulties in adopting a healthy eating habit.

Data obtained from focus group interview was transcribed verbatim. Data analysis was an iterative process. Interview transcriptions were segmented into meaning units and thereafter they were collapsed into categories and eventually themes through the process of abstraction and constant comparison. A coding table has been constructed with themes categories, and supporting interview quotes.

Result

As shown in Figure 2, 14 F.1 students had breakfast everyday while 8 of them never had breakfast, from 4th to 6th March. Most students had breakfast alone. Some students had breakfast with their parents, their siblings or classmates. There was a case that junior form students had breakfast with maids. For F.4 students, 12 of them had breakfast everyday while 6 of them never had breakfast, from 4th to 6th March. Among those students eating breakfast, most of them had breakfast alone while some of them eating with their parents, siblings or classmates. Statistically, there was no significant difference in the amount of breakfast having from March 4 to March 6 between Form 1 ($M=1.79$; $SD=1.244$) and Form 4 ($M=1.76$; $SD=1.130$) students, $t(65)=0.80$, $p=0.937>0.05$.

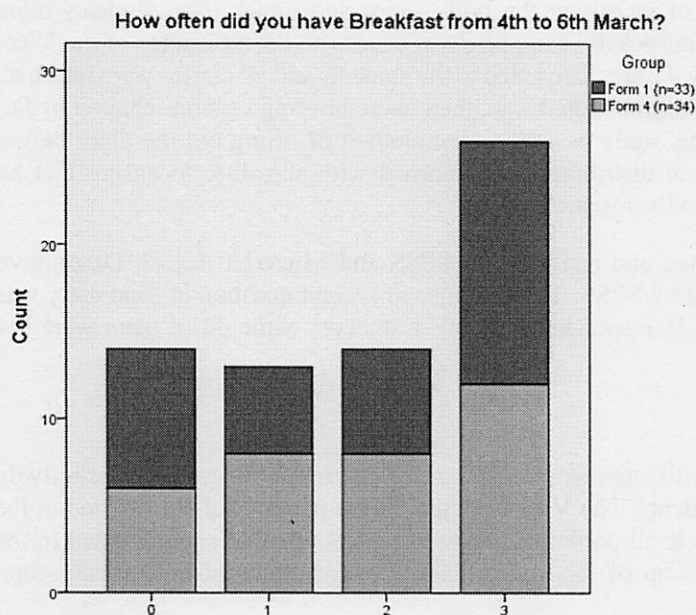


Figure 2. Statistics of student having breakfast from 4th to 6th March

According to below chart, it was not common for having snack among both junior and senior form students. Only 4 out of 32 junior students and 12 out of 33 senior students had at least once snack before lunchtime in the 3-day period. In fact, when interviewing with both senior and junior students, those who skipped breakfast also mentioned that their first meal during school day was lunch. In other words, those students attended to the morning lessons without eating anything.

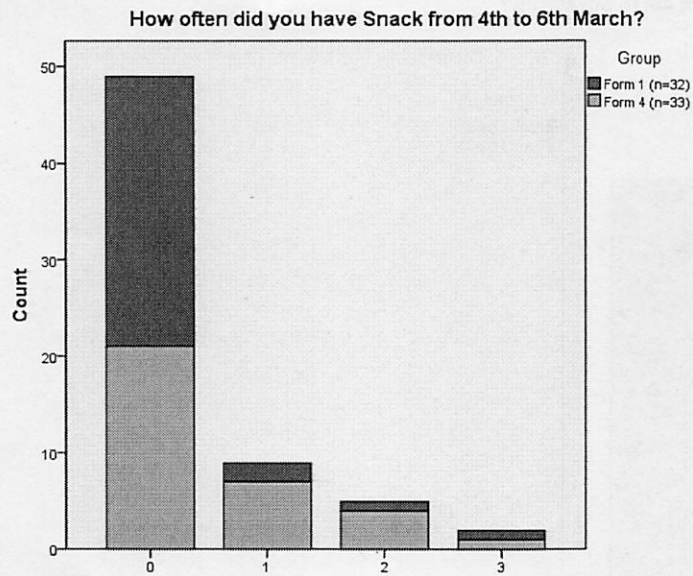


Figure 3. Statistics of student having snack from 4th to 6th March

Chart below showed that there was no students skipped lunch every day during school time. In addition, all F.4 students had lunch in three consecutive days. As students reported in the food diary, almost all junior and senior students enjoyed their lunch with their classmates. It was assumed that most students had lunch outside when having lunch with classmates during school days.

How often did you have Lunch from 4th to 6th March?

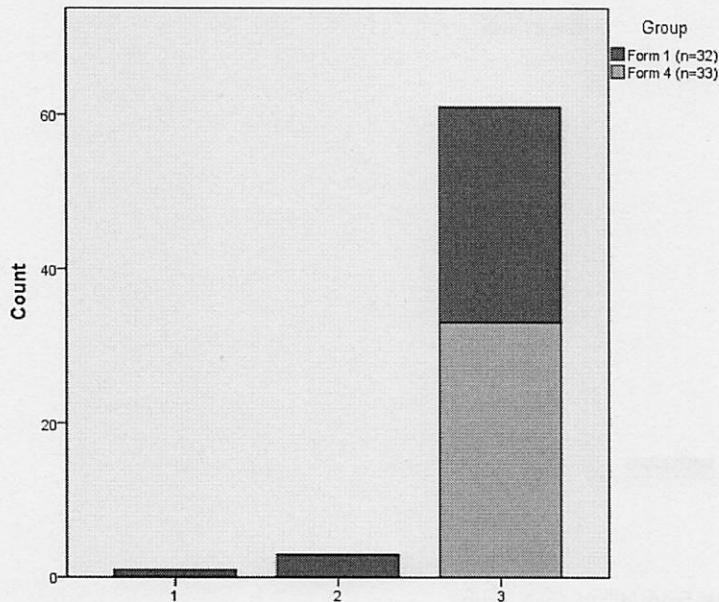


Figure 4. Statistics of student having lunch from 4th to 6th March

Although it is rare for students skipping lunch, it should be aware of the food choice of the students. According to the food diary, both junior and senior students seldom consumed vegetables or food with dietary fibre during lunch. When discussing with the senior students about the difficulties of eating healthily, one student claimed that it was more worth to pay for the meat than vegetables when eating outside. Also, one student mentioned the price of the restaurants labeled as “EatSmart” was usually high. Except for the economic factors, one student complained that there were not many choices for healthy food around the campus. In other words, the students could not afford eating healthily in school days, both financially and environmentally.

Similar to the statistics of having lunch, almost all students had dinner every night in those 3 consecutive days. Only 4 out of 33 junior form students and 4 out of 34 senior form students skipped dinner once. Nonetheless, comparing to lunch, students, both junior and senior form, recorded more vegetables or food with dietary fibre under the column of dinner in the food diary, and they had dinner with their parents most. Indeed, during the focus group interviews, both forms of participants thought they eat healthily as they had lots of vegetables at home or had vegetables every night. It implied that students had a higher chance to eat vegetables or food with dietary fibre during dinner time, because of the accompany of their parents in dinner time.

Vegetables were often mentioned as the food that they hate most during interviews, no matter for junior form and senior form students. Taste is their main concern in choosing food. Price is also commonly mentioned. Whether the food is healthy or not was not a considering factor for them in their food choices.

Social and environmental force is remarkable in students' choice of food. When they ate with parents, they often commented that they were able to achieve a more balanced diet; but when they ate with classmates, the preference of other classmates would be the major considering factor in their food choice. However, a few students also noted that parents can sometimes be a barrier for them to achieve healthy eating, since their parents were also having unhealthy eating habit.

In general, low price with good taste and appearance are significant in the sampled students' food choice. The perceived high price of healthy food as well as the lack of restaurants selling healthy food were named as the most significant barriers for them to achieve healthy eating.

The situation of girls should be noted for their common misconception. In the focus group interviews, the female students often misperceived that carbohydrates and meat should be prohibited for them to achieve a good body shape. Although the female students sampled for the interviews had a within-normal-range BMI according to their records of Student Health Service of the Department of Health, all of them commented that they were fat, because of the comments from their peers and family members.

Phase 2 (Major 8-month phase)

In response to the data obtained from phase 1, the phase 2 study, which is the major component of this project, consists of four sections respectively health talks, healthy cooking workshop, PSA design competition for healthy eating, and the project's Facebook. These activities were designed and implemented with the aims to empower the students to achieve healthy eating, to correct their misconceptions, and to convey the messages of healthy eating by enhancing students' knowledge about the functions of a healthy diet and their capability in knowing how to distinguish and prepare healthy foods. These activities were targeted not only to students, but also to their family members as well in order to enhance the social and environmental influence on the students to achieve healthy eating.

The design of the project activities were based on the students' needs of the participating School in accordance with the health status data by the Student Health Service of Department of Health as well as the phase 1 data as aforementioned. To alter the common impression of healthy eating as dull and non-appealing among adolescents (Chan et al., 2009), this project was proposed to convey a message that healthy eating could be trendy and interesting.

1. Health talks for students and parents

Three health talks were organized for students and one health talk for parents to fill their knowledge gap and correct their misconceptions. Two guest speakers were invited for the talks, respectively

Ms. [redacted] is a registered dietitian and holistic nutritionist. She holds a [redacted] She is experienced in giving health talk in different organizations, such as [redacted] and child care centre. While Dr. [redacted] is a [redacted]

The first health talk was held on 12th March 2015 at the [redacted] Camp. The target was all form 4 students who have finished series of campsite activities in the morning. This health talk was held by Ms. [redacted] with the theme of achieving life goals with a healthy eating habit, with the last 10 minutes the Q&A section for the students. Based on the discovery in the food diary and focus group interviews, Ms. [redacted] debunked the myths of skipping meals by informing the students the mechanisms of nutrient absorption and indicating the consequences of skipping meals, especially breakfast. Also, she addressed the correct nutritional knowledge of maintaining a healthy body such as the concept of balanced diet to the students and the calculation of calorie for daily need. To further dispel students' misconception in eating healthily, there was a Q&A section for student asking questions. 11 questions were raised mostly by girls. Some questions were about the knowledge of food such as the choice between white soup and red soup while some questions were about the practice of achieving healthy body by eating such as the food choice after exercise. Some questions were obviously asked with an intention of losing weight and keeping fit.

The second talk was held on 25th March 2015 in the school hall at Buddhist Tai Hung College. All form 1 students were required to participate in this talk including 5 minutes Q&A section held by Ms. [redacted]. To address more understandable nutrition information and clear-cut health eating message to the junior form students, Ms. [redacted] has adjusted the content based on the first health talk, as well as the data of the phase 1 study for the junior form students. Same as before, the theme of the health talk was achieving life goals with a healthy eating habit. However, since the junior students, especially girls, showed their concern about their body image during the focus group interview, Ms. [redacted] added a section regarding the concept of BMI to debunk their misconceptions about body weight. Comparing to the senior students, junior students were more active and willing to interact with Ms. [redacted] during the health talk. 7 questions with regard to the dietary and nutrition knowledge were asked.

The third talk was held on 26th June 2015, which is 3 months after the last talk, in the Hall of Buddhist Tai Hung College. All S.1 to S.5 students as well as the teachers attended. Same as previous talk, this talk was held by Ms. [redacted]. As suggested in the proposal, this talk was designed with a theme of "learning to read the nutrition labels" in order to assist the students in choosing healthy food and avoiding harmful food. Knowledge about the typical elements of a nutrition label was explained to the students. Besides knowledge, to teach the students interpreting the nutrition facts in a more practical and interesting way, Ms. [redacted] had prepared and distributed a number of nutrition labels to the students and taught them to calculate the calorie of the food as well as reading the ingredient list. No Q&A section was included in this health talk.

The fourth talk was parent-oriented. Therefore the talk was held on Saturday, i.e. 11th July 2015, from 10:00 to 11:30 am at student activity room at Buddhist Tai Hung College. This 90-minute talk, entitled Adolescents' Nutrition and Problematic Eating Behavior, was chaired by Dr. [redacted]. To ensure the attending number of the parents, the school had issued the notice with reply slip and more than 20 parents had stated their intention of attending. However, eventually, less than half of them attended to the talk and thus walk-in participation was allowed. Starting with introducing some general concepts of balanced and healthy diet, Dr. [redacted] listed out the symptoms of different types of eating disorders which were common among adolescents. In addition, Dr. [redacted] informed the parents the techniques in identifying children's problematic eating behaviours, the possible physical and psychological damages caused by unhealthy eating practice and the possible strategies in dealing with adolescents' unhealthy eating behaviours. In order to subvert the traditional but incorrect norms and values about health embedded in the mindset of elder generation, Dr. [redacted] provided and explained the medical facts with lots of metaphor, analogy and daily examples. Besides these, data obtained from phase 1 study was presented to the parents for understanding the current situation of their children. Indeed, as most of the participating parents' children had problematic eating practices, Dr. [redacted] encouraged the parents shared their cases and asked questions in spite of

interrupting his presentation. Consequently, the responses from the parents were enthusiastic and the health talk was constructively interactive.

All health talks were video-taped and edited, and were uploaded to the project Facebook page.

2. Healthy cooking workshop

In the phase 1 focus group interview study, many students had the misconception that healthy food should be expensive with a lack of varieties. Therefore, to further debunk these misconceptions and to empower both the parents and the students in pursuing a feasible healthy eating practice, a healthy cooking workshop was organized on 11th July 2015 from 14:00 to 18:30 in the geography room at Buddhist Tai Hung College. 8 parents (mothers), 3 students and the Principal took part in the cooking workshop. The healthy cooking workshop was chaired by registered dietitian Ms. [redacted] who is experienced in designing healthy recipes and holding healthy cooking workshop. Due to the absence of cooking appliance, Ms. [redacted] designed four flameless cooking recipes including drink, appetizer, main dish and dessert. All ingredients were prepared 2 days before the workshop while perishable foods were stored in the refrigerator at the participating school.

The healthy cooking workshop began with a 25-minute cooking lecture in which Ms. [redacted] distributed the recipe sheets to the parents and introduced the nutrient knowledge of the ingredients as well as the directions and the healthy serving suggestions of each recipe. Later, all parents and students followed the instructions from Ms. [redacted] to prepare the dishes one by one. During the preparation of the dishes, Ms. [redacted] shared some additional nutrient knowledge and different healthy cooking methods to the parents. Participants enjoyed the meals together in the remaining time of the cooking workshop. Parents were allowed to take away the dishes and shared with their friends and families to substantially promote the culture of healthy eating. Through this healthy cooking workshop, the participants were empowered to understand that healthy eating is actually easy to achieve with a low price and with lots of varieties.

The healthy cooking workshop was video-taped and edited, and was uploaded to the project Facebook page.

3. Healthy eating public service announcement (PSA) design workshop and competition

Students were invited to form in groups to produce an idea for a 30-second television PSA about healthy eating. To enhance students' interest and involvement, the PSA design activity was in a format of competition with different prizes.

Before the competition, a healthy eating PSA design talk and workshop was held on 30th June 2015 at Buddhist Tai Hung College to introduce both junior and senior students the format of PSA as well as the process of designing, constructing and presenting PSA. The 90-minute lecture was given to the junior and senior students separately. All participants came from the classes chosen for taking part in the food diary study. The lecturer was a member of the project team, [redacted] who is currently [redacted]

[redacted]. After [redacted] addressing the basic concept of PSA design and production in the first 50 minutes, the remaining time were used for students forming a group of 4 to 6 for the competition and starting their PSA designs. [redacted] helped the students brainstorming and effectively organizing their ideas of PSA designs by providing insightful guidance. 21 junior form students and 34 senior form students had attended the talk and each of them received a certificate of participation after the competition.

As only students who had attended the talk were eligible to participate in the competition, there were 4 groups in junior form while 6 groups in senior form.

The Healthy Eating Public Service Announcement Design Competition was held on 6th July 2015 in the student activity room. 3 awards were established in the competition, namely, The Most Creative Award, The Most Effective Message Delivery Award and The Best Presentation Team Award. The prizes of the former two awards were one delicate certificate with gold border while the latter one was a trophy for each member of the winner team. The Best Presentation Team Award was presented to the team obtaining the highest score.

There were three judges in the competition including two professional judges and one guest judge. were invited as the professional judges.

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In the competition, assisted with the storyboard, each team finished presenting their idea for a 30-second television PSA about healthy eating in six minutes. Students were reminded twice, first in the last 1 minute and second in the last 30 seconds. The judges scored their performances in terms of defining target and identify behavioral change, story idea, storyboard presentation, and presentation skills and time management. The first half of the competition was the presentation of the junior form while the senior form presented in the second half. Between the first half and second half of the competition, a 5-minute break was provided. Before the sessions of judge comments and the prize presentation ceremony, there was a photo session.

Eventually, The Best Presentation Team Award was presented to a team of senior form. Their winning PSA design was adapted from a classic folk tale “Cinderella”. In the story, Cinderella met the Prince who loved eating hamburger. As per the request of the Prince, she ate with the Prince during the whole ball. However, after the ball, when the Prince was looking for the one who fit the little glass slippers, Cinderella who had indulged in the thought of the Prince’s love and hence kept eating hamburgers got too fat to fit the slippers. Finally, the Prince turned away from fat Cinderella and they could not live happily ever. This PSA design caught the adolescents’ desire of romantic relationship and emphasized the consequence of eating unhealthy in order to stopped adolescents from eating irregularly. This winning work was produced into a 1-minute PSA with the help of a professional shooting team

The process of the competition was video-taped.

4. Healthy eating public service announcement (PSA) professional shooting

The winning PSA of the Best Presentation Team Award was produced into 1-minute PSA with professional shooting. The storyboard of this winning PSA was presented to the professional shooting team, who were t

The idea of the winning PSA was revised and modified further with the recommendation of the professional team, with the agreement of the student creators of this PSA. The project team had constant discussion with the professional shooting team and the student creators about the PSA preparation.

The professional shooting was carried out on 21 November 2015, running from 10 am to 10 pm, with the assistance of the teachers as well as the students of Campus TV Club of the partner School. Before the professional shooting, two sessions of audition were conducted by the professional shooting team to brief the students involving in the shooting. Training of professional shooting and drama performance to students was provided during the audition sessions and on-site by the shooting team. Students involving in the shooting assistance showed remarkable enthusiasm on the shooting day.

The professional shot PSA runs for 1 minute, which is 30 second longer than originally proposed. With constant discussion with the partner School, both the project team and the partner School agreed to adopt the long version of the PSA in order to demonstrate the full flow of the story and the effort of the student creators.

The professional shot PSA was uploaded to the project Facebook page. This PSA was considered as the biggest achievement of this project, with 52 likes, 35 shares, and 19,000 views.

5. Healthy eating project Facebook page

To ensure creating a sustainable healthy eating atmosphere within Buddhist Tai Hung College, a Facebook page entitled “BTHC 青少年健康飲食推廣計劃 - 由優質教育基金贊助” was created (<https://www.facebook.com/bthc.healthyeat>). The Principal, Vice-Principal, teachers, students and parents were invited to “like” and follow the project’s Facebook page in order to get the updates and information about the project.

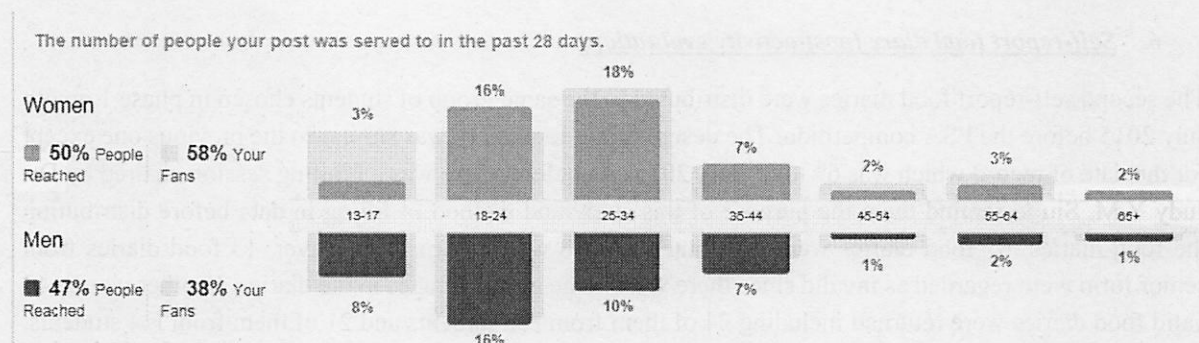


Figure 5. Demographic statistics of Facebook page

The above figure showed the demographic statistics of the project Facebook page. 58% of page fans were female while 38% of them were male. For the people reached the posts, 50% of them were women while 47% of them were men. Besides gender, the statistics also showed that people “like” the page were mainly in age group 13-17, 18-24 and 25-34. This implied that most fans of the page were students and young teachers. However, unexpectedly, only 11% of people in the age group of 13-17 reached our posts. Most people reached the posts were in the age group of 25-34 followed by those in the age group of 18-24.

The Facebook page was updated regularly at least twice a week. More than hundred posts were posted on the Timeline including nutrition information provided by registered dietitians, as well as the photos and edited video clips of the phase 2 activities. All the posts in the Facebook page were screened to make sure that the sources of knowledge were from reliable sources. Also, posts from Facebook page were shared to maintain the connection of the parents and students with the registered dietitian to obtain more information regarding healthy eating.

In general, the average reach of the video post was 117 while that of the link post was 82. In addition, the average post click of video was 18 and that of the links was 2. Also, each video post received 5 likes, shares or comments while each link post received 3 likes, shares or comments in average.

The highest read of the post is the dissemination of the PSA with professional shooting, with 19,000 views. Such high read of this post implied that this final product of the project – the PSA – had gained a significant success with a wide dissemination not only within the community of the partner School, but also circulation outside the partner School to a certain extent as well. Therefore, even though there was a lack of wide circulation of the Facebook page with 90 likes at the end of the project period, the high reads of the PSA could still be an indicator that a healthy eating atmosphere was to be nurtured in the partner School.

The low number of likes of this Facebook page indicates the messages and information regarding healthy eating and the project activities may not reach a wide student and parent population of the partner School, which affects the mutual interaction as we have assumed. The low number of likes is speculated to be due to the mobile phone policy imposed on students of the partner School. Students were not allowed to use and switch on mobile phones while they were at School, thus, not many students bring their mobile phones to School while the project activities were carried out. Therefore, even though the project team had been reminding students to like the Facebook page every time of project activities at home, the outcome was not effective at all.

Prior consent from students and parents had been obtained before all materials uploaded to the Facebook page. No inappropriate content and messages appeared on the Timeline since the launching of the project Facebook page.

6. Self-report food diary (post-activity evaluation)

The second self-report food diaries were distributed to the same group of students chosen in phase 1 on 6th July 2015 before the PSA competition. The design of the food diary was similar to the previous one except for the date of record which was 6th to 8th July 2015. As before, there was a briefing session chaired by [redacted] to remind them the purpose of this study and method of filling in data before distributing the food diaries. 67 food diaries were distributed and 58 were returned. However, 13 food diaries from senior form were regarded as invalid since there were some missing pages in the diaries. In other words, 45 valid food diaries were returned including 24 of them from F.1 students and 21 of them from F.4 students. The method of data analysis of food diaries was the same as what had been conducted in phase 1.

Table 2: The comparison of descriptive statistics of having meals before and after the interventions

Meals	Form 1						Form 4					
	Phase 1			Phase 2			Phase 1			Phase 2		
	n	M	SD	n	M	SD	n	M	SD	n	M	SD
Breakfast	33	1.79	1.244	24	1.42	1.248	34	1.76	1.13	21	1.38	1.071
Snack	32	0.22	0.659	22	0.18	0.395	33	0.55	0.833	21	0.43	0.676
Lunch	32	2.84	0.448	24	2.79	0.658	33	3.00	0.00	21	2.81	0.602
Afternoon Tea	29	0.34	0.721	24	0.21	0.415	32	0.94	0.948	20	0.25	0.550
Dinner	33	2.88	0.331	24	2.50	0.780	34	2.88	0.327	21	2.76	0.625
Late Night Food	31	0.32	0.791	24	0.17	0.381	30	0.40	0.814	20	0.20	0.523

As shown in Table 2, comparing to data collected in phase 1, either Form 1 or Form 4 students, the mean of every meal they had in phase 2 decreased. In this sense, the general situation of students skipping meals tended to be more serious than before. However, the decrease in sample size in phase 2 study can contribute to the overall drop of the mean. Indeed, either Form 1 or Form 4 students, the statistical analysis explained that there was no significant difference between the meals having in phase 1 and phase 2, except for 2 cases which were the amount of dinner having in Form 1 group and the amount of afternoon tea having in Form 4 group in the 3 consecutive days.

For Form 1 students, they had significantly less dinner in Phase 2 ($M=2.50$, $SD=0.780$) than they had eaten in Phase 1 ($M=2.88$, $SD=0.331$), $t(29.074) = 2.236$, $p=0.033 < 0.05$.

For Form 4 students, they had significantly less afternoon tea in Phase 2 ($M=0.25$, $SD=0.550$) than they had eaten in Phase 1 ($M=0.94$, $SD=0.948$), $t(49.810) = 3.307$, $p=0.002 < 0.05$.

7. Focus group interview (post-activity evaluation)

One focus group interview was conducted on 6 May 2016 to evaluate the experiences of the participating students in this project, as well as evaluating their eating habits after the project had been finished. Students from S.1 and S.4 who had been participating in the project were recruited for this focus group interview.

The project demonstrates significant success from the following indicators:

1. Participating students showed remarkable enhancement in their knowledge of achieving healthy eating. They were aware of the importance of having breakfast, and were aware of the importance of achieving a healthy eating by consuming more vegetables and avoiding high fat, high salt, and high sugar food from the health talks. Students also reported that they have achieved a healthier eating habit after participating in the project.
2. The use of self-report food diary also enabled participating students to have reflexivity in their eating habits in the past, since the input of the food consumed in the food diary allowed the students to aware that the food that they had consumed before were unhealthy.
3. The PSA activity was the most welcome activity for the participating students, since almost all of them found the PSA design and competition as the most interesting component of the project.
4. The PSA activity also served as a good opportunity for the participating students to apply the knowledge of healthy eating that they had learned from health talks. Also, the design of the PSA also allowed the students to have a higher sense of involvement, which helped to empower them to achieve healthy eating.

PROJECT IMPACT ON LEARNING EFFECTIVENESS, PROFESSIONAL DEVELOPMENT, AND SCHOOL DEVELOPMENT

In this project, six objectives as shown above can be categorized into objectives for analysis and objectives for intervention. Generally, the first four objectives aim at studying the healthy eating among adolescents while the latter two aim at influencing the belief, attitude and eventually behaviour regarding healthy eating

among the targeted students through different interventions. Indeed, these two categories of objectives are interrelated during the implementation of the project.

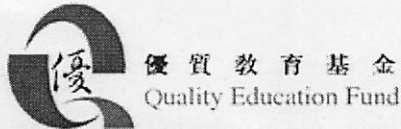
For the part of analysis, the eating pattern and the food choice of the students were studied by reading students' self-report food diary. The statistic is shown in above section. Also, through the focus group interview, we investigated the perceptions of students from both senior and junior forms on healthy eating, examining the factors affecting their food choice, as well as identifying their perceived difficulties and barriers in adopting a healthy eating diet.

For the intervention part, by comparing the two sets of food diaries collected in phase 1 and phase 2, there was no statistically significant difference between the amount of meals students having before and after the interventions. In other words, the activities of the project did not change the eating behaviour of students such as skipping breakfast. However, it doesn't mean that there is no impact on the belief and attitude of the students in achieving healthy eating. As stated in the previous section, the project demonstrates significant success in changing students' eating habit, from an unhealthy one to a healthier habit with a higher awareness of having breakfast, consuming more vegetables, and consuming less high fat, high salt, and high sugar food. The use of a self-report food diary approach can also allow students to have reflexivity in their current eating habits, making them to have a higher motivation to adopt a healthier eating manner. The use of the PSA activity in this project further strengthens the knowledge of healthy eating among participating students obtained from the health talks, as well as allowing them to have a higher sense of involvement, empowering them to adopt a healthy eating habit.

After all, according to the Theory of Planned Behaviour (Ajzen, 2012), behavioural change involves a long process and is a long-term outcome influenced by attitudes and self-efficacy as well as by social norms. In our project, students' intentions and changing attitudes to adopt a healthier eating style were observed. As the power of implementation intentions inducing performance of an intended behavior was reaffirmed in a research conducted by Ajzen et al (2009), therefore, the students with an improved knowledge level regarding healthy eating can motivate their implementation intention, and empower them to adopt behavioral change in eating healthily one day.

Not only did the students communicate their knowledge of healthy diet with their peers, but also their parents got a chance to share their healthy eating experience with the families. In the healthy cooking workshop, the participants were allowed to take away the dishes for dinner. The colourful and palatable dishes could subvert the original impression of healthy eating as dull and unpleasant taste, so as to extend a positive healthy eating culture to their families and motivate them to practice healthy diet. Also, the affordable and easy-to-purchase ingredients used in the healthy cooking workshop also subvert the original impression of healthy food as expensive and unaffordable. The establishment of the Facebook page as a platform of sharing healthy eating knowledge and experiences could also facilitate the building up of a healthy eating style among the students, the teachers, and the parents in the participating school.

The project also benefits the professional development of the Principal, Vice-Principal, and the teachers of the partner School. The Principal [redacted] and the Vice-Principal [redacted] had been the key supporters and coordinators of this project. [redacted] and [redacted] had been involving closely in the implementation of this project. Under their leadership, the teachers also showed significant involvement and coordination to make this project possible. The teachers had gained fruitful nutritional knowledge as well as how to spot students' problematic eating behaviors from the health talks. Also, the project's innovative and interactive activities can empower the teachers in organizing similar events that



can arouse students' learning motivation and interests. The partner School participated intensely in all the project activities, and gave a lot of useful advice in making the implementation of this project useful for the students' development. With their intense participation of this project, the partner School will be empowered to apply the skills of this project to implement similar student educational activities in future.

PROJECT VARIATION

The implementation of the whole project was basically following the plan in the proposal. All activities were implemented as scheduled in the proposal. No activity was cancelled, postponed or added. Also, there was no change in the project team composition. Moreover, as stated in the proposal, a full-time project assistant who has obtained a Bachelor's degree in the field of Social Sciences was hired for project management, administration, and logistics.

COST EFFECTIVENESS

Despite no variation in the schedule of the programme activities and the composition of the project team including staff, there was budget item reallocation. Since [redacted] treated his health talk for parents as volunteer work in health promotion and education, he rejected the remuneration (\$780 x 2 hours). Instead of the remuneration, he received a crystal souvenir [redacted] which cost \$250, on the self-expense of the project team. In addition, to encourage the student participation in the PSA competition, tangible prizes including trophies and certificates were distributed to the participants of the competition. The trophies cost \$480 and the certificates cost \$295. The expenditure for above items, i.e. crystal souvenir and prizes, were allocated to the Miscellaneous under General Expenses in the budget plan.

Besides budget item reallocation, the event durations of the student health talks were regulated according to the time schedule for students arranged by the participating school. In addition of the venue limitation, the first two student talks were respectively organized merely for students from S.1 and S.4 but not for those from S.2 and S.3 who were originally targeted in the proposal. Details of the activities can be found in above section. Moreover, in light of the absence of the cooking appliances and the safety of the participants, recipes of the healthy cooking workshop were designed as flameless cook. Only electronic rice cooker was used during the workshop. This arrangement did not affect the promotion of healthy diet and the enjoyment of the participants.

DELIVERABLES AND MODES OF DISSEMINATION

Videos and photos of the health talks were edited and uploaded to the project Facebook page (<https://www.facebook.com/bthc.healthyeat>) regularly so that students, parents, teachers of the participating school and other people interested can access and have easy reference. Also, video clips of the healthy cooking workshop chaired by the registered dietician as well as the recipes were uploaded to the Facebook page to promote healthy eating diet in a more practical way. In addition, guidelines for designing

PSA and the teaching materials have been left to the partner School for future use in order to facilitate the future implementation of similar educational program and thus the promotion of a healthy eating culture in a sustainable manner. All video clips and photos have been burned into DVDs for record.

The winning PSA of the healthy eating PSA design competition received professional shooting, and were filmed into a 1-minute PSA. The PSA has been publicized in social media including the project Facebook page and YouTube starting from 10 December 2015. Up to 24 May 2016, the PSA received 52 likes, 35 shares, and 19,000 views. The DVD of the professionally edited PSA is retained by the partner School for future use.

Part of the findings and achievement of this project were orally presented in the International Behavioral Health Conference organized by the JC School of Public Health and Primary Care of The Chinese University of Hong Kong, from 15 – 17 January 2016, to inform the local and international practice of using an innovative and interactive approach to enhance students' motivation in engaging healthy eating habit. The project was well received in the conference, and some overseas researchers who are working on adolescent nutrition showed deep interest in the implementation of this project.

Two articles, entitled “what are the difficulties in achieving healthy eating among secondary school students in Hong Kong” and “the effectiveness of using self-report food diary and public service announcement to enhance adolescents' motivation in adopting healthy eating in a school setting”, are in the progress of writing. These two articles will be submitted to international peer-reviewed journals to inform local and international practice.

DIFFICULTIES ENCOUNTERED AND SOLUTIONS ADOPTED

With the remarkable support, coordination, and collaboration of the partner School, the implementation of this project went smoothly without encountering much difficulty. The main hurdle, however, was about tackling the low number of likes of the project Facebook page. The low number of likes of this Facebook page indicates the messages and information regarding healthy eating and the project activities may not reach a wide student and parent population of the partner School, which affects the mutual interaction as we have assumed. The low number of likes is speculated to be due to the mobile phone policy imposed on students of the partner School. Students were not allowed to use and switch on mobile phones while they were at School, thus, not many students bring their mobile phones to School while the project activities were carried out. Therefore, even though the project team had been reminding students to like the Facebook page every time of project activities at home, the outcome was not effective at all.

To tackle the low number of likes, the project team had been working closely with the partner School to discuss every possibility. For example, the partner School approved the students to switch on their mobile phones during a set time of project activities for the students to like the Facebook page. Also, the project team made use of the release of the PSA to further publicize the Facebook page, and asked the users to like and share the PSA in order to promote the Facebook page. This strategy gained success to a certain extent, with 52 likes, 35 shares, and 19,000 views of the PSA, and the number of likes of this Facebook page increased significantly in this period.

Engaging parents to actively participate in this project was another hurdle that our team had to overcome. Two activities – health talk and healthy cooking workshop – were organized for parents with an attempt to

create a sustainable healthy eating environment for the students. Although the two activities were organized on the same Saturday to suit the busy schedule of parents, the sign-up rate was disappointing. As there was another parent activity organizing in the partner School at the same time, therefore, immediate enrollment of parents was allowed, and the project team went to this parent activity to introduce both the health talk as well as the healthy cooking workshop in an attempt to enhance the parent participation rate.

Finally, closer monitoring on ensuring the students to finish the self-report food diary will be needed if this project is to be implemented in future. Although the phase 1 self-report food diary went smoothly, the evaluation stage of self-report food diary was returned with invalid diaries. Closer monitoring on the students' self-administration may warrant higher validity.

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
Objective 1	Self-report food diary, focus group interviews	Fully achieved	Data saturation	NA
Objective 2	Self-report food diary, focus group interviews	Fully achieved	Data saturation	NA
Objective 3	Self-report food diary, focus group interviews	Fully achieved	Data saturation	NA
Objective 4	Self-report food diary, focus group interviews	Fully achieved	Data saturation	NA
Objective 5	Health talks, healthy cooking workshop, PSA, project Facebook	80% attained	1. Participating students showed remarkable enhancement in their knowledge of achieving healthy eating. They were aware of the importance of having breakfast, and were aware of the importance of achieving a healthy eating by consuming more	Students commented that it is quite difficult for them to follow the health eating habit fully. Although they have gained the knowledge, they find difficulty in pursuing this fully.



			<p>vegetables and avoiding high fat, high salt, and high sugar food from the health talks.</p> <p>Students also reported that they have achieved a healthier eating habit after participating in the project.</p> <p>2. The use of self-report food diary also enabled participating students to have reflexivity in their eating habits in the past, since the input of the food consumed in the food diary allowed the students to aware that the food that they had consumed before were unhealthy.</p> <p>3. The PSA activity was the most welcome activity for the participating students, since almost all of them found the PSA design and competition as the most interesting component of the project.</p> <p>4. The PSA activity also served as a good opportunity for the</p>	
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			participating students to apply the knowledge of healthy eating that they had learned from health talks. Also, the design of the PSA also allowed the students to have a higher sense of involvement, which helped to empower them to achieve healthy eating.	
Objective 6	Health talks, healthy cooking workshop, PSA, project Facebook	80% attained	<p>1. Participating students showed remarkable enhancement in their knowledge of achieving healthy eating. They were aware of the importance of having breakfast, and were aware of the importance of achieving a healthy eating by consuming more vegetables and avoiding high fat, high salt, and high sugar food from the health talks.</p> <p>Students also reported that they have achieved a healthier eating habit after participating in the project.</p> <p>2. The use of self-report food</p>	Students commented that it is quite difficult for them to follow the health eating habit fully. Although they have gained the knowledge, they find difficulty in pursuing this fully.



			<p>diary also enabled participating students to have reflexivity in their eating habits in the past, since the input of the food consumed in the food diary allowed the students to aware that the food that they had consumed before were unhealthy.</p> <p>3. The PSA activity was the most welcome activity for the participating students, since almost all of them found the PSA design and competition as the most interesting component of the project.</p> <p>4. The PSA activity also served as a good opportunity for the participating students to apply the knowledge of healthy eating that they had learned from health talks. Also, the design of the PSA also allowed the students to have a higher sense of involvement, which helped to empower them to</p>	
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			achieve healthy eating.	
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Table 2: Budget Checklist

Budget Items <i>(Based on Schedule II of Agreement)</i>	Approved Budget (a)	Actual Expense (b)	Change [(b)-(a)]/(a) +/- %
Staff Cost	\$138,600	\$138,537.01	-4.5447
Services	\$20,920	\$20,570	-0.0167
General expenses	\$35,280	\$33,045	-0.0634

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.
Manuel of PSA design	High benefit for the partner School to design similar educational activities	To be retained by the partner School and participating students for future use.	Yes. Distributing to interested schools.
DVDs of video-clips and photos of all the project activities	The partner School can use them on the School's website	To be retained by the partner School and participating students for future use. Circulated in the project Facebook.	No.
DVD of the PSA	The partner School can use it on the School's website	To be retained by the partner School and participating students for future use. Circulated in the project Facebook.	Yes. Demonstration in QEF functions.

Oral presentation in the International Behavioral Health Conference, 15 – 17 January 2016	Well received in the conference. Some overseas researchers who are working on adolescent nutrition showed deep interest in the implementation of this project.	Oral presentation. Well received in the conference. Some overseas researchers who are working on adolescent nutrition showed deep interest in the implementation of this project.	Yes. Distributing to interested schools.
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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)	
Self-report food diary	4 - 6 Mar 2015	/	2	67	/	Please refer to the report
Focus group interviews	6 Mar 2015, 13 Mar 2015	/	2	12	/	Please refer to the report
Health talk 1	12 Mar 2015	/	5	All S.4 students	/	Passive learning
Health talk 2	25 Mar 2015	/	5	All S.1 students	/	Passive learning
Health talk 3	26 Jun 2015	/	22	All S.1 – S.5 students	/	Passive learning
Health talk 4	11 Jul 2015	/	2	1	10 parents	Interaction among participating parents and the guest speaker
Healthy cooking workshop	11 Jul 2015	/	1	1	9 parents	Enthusiastic involvement of participating parents
PSA design workshop	30 Jun 2015	/	2	55	/	Interesting, high sense of involvement
PSA design competition	6 Jul 2015	/	2	55	/	Interesting, high sense of involvement
PSA professional shooting	21 Nov 2015	/	2	40	/	Interesting, high sense of involvement
Facebook page	Mar – Dec 2015	/	All teachers	All students	/	Not much interaction for the posts except for the PSA publicizing

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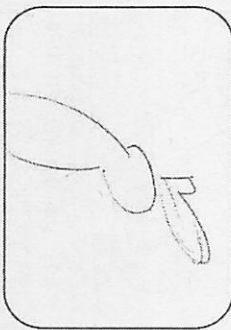
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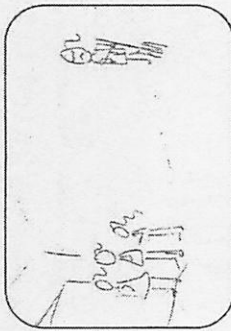
APPENDIX 1

Company/Product name: FY 第6集
Duration: second
Name of commercial:

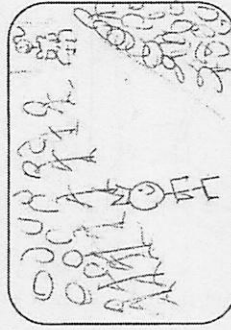
Page 1 of 2 pages



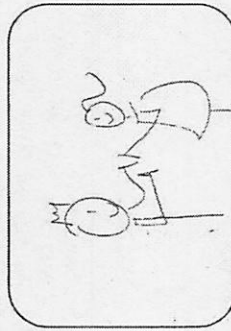
1. OPEN ON C.C. CINDERELLA'S FAT LEGS CAN'T WEAR INTO THE SLIPPER CHAIRS.
CINDERELLA: 點解會咁架? 冇得穿! 我真係好煩! (Why is it like this? Can't wear! I'm so annoyed!)



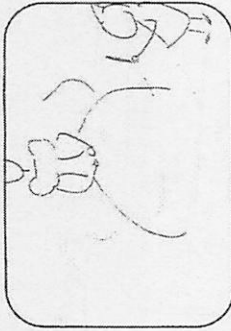
2. C.C. C.C. TO US THINK CINDERELLA SUFFERING THE FLOOR AND LOOK WORSE, HER THREE SISTERS PREPARED TO JOIN THE FAIRY.
SISTERS: 唔好! 唔好! 唔好! (Don't! Don't! Don't!)



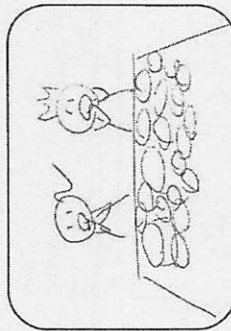
4. C.C. TO CINDERELLA DID PRINCE FIRST MEET IN THE DOLL.
SFX: TAKE OUT THE COVERED DOLL.



5. C.C. TO HAS PRINCE INSULTING THE CINDERELLA.
PRINCE: 你個骨骨骨骨骨推一世漢理咩? (You're a bone-bone-bone-bone-bone pushing a lifetime of Han Li what?)
CINDERELLA: 係! (Yes!)



3. C.C. TO US FAIRY HELP TO PRESS UP CINDERELLA WITH HERBIC. CINDERELLA BECOME VERY AND BEAUTIFUL.
SFX: Magic Sound



6. C.C. TO MUCH CINDERELLA AND PRINCE EATING THE HAMBURGERS FALL ON THE TABLE.
SFX: BUCKLE UP, EXCITING EATING SOUND

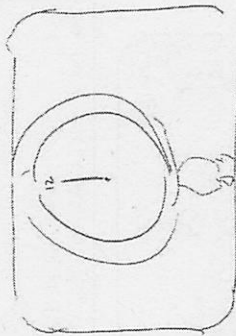


Client name / Product name:

Duration:

Comment name:

Page 2 of 2 pages



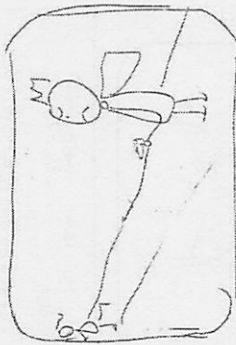
7. OUT TO ON THE CLOCK TIME IS
0:00

SFX: BELL RING



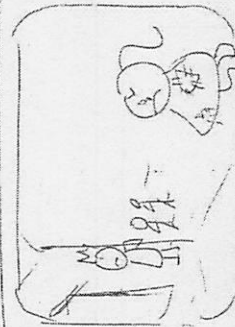
10. OUT TO ON CINDERELLA TRY TO
USE HER FITT LEG FIT INTO THE
GLASS SHOE

CINDERELLA: 點解冇咁高?



8. OUT TO LS CINDERELLA RUNNING
DOWN BUT LEFT ONE GLASS SHOE
ON ROAD AND PRINCE PICK UP THE SHOE.

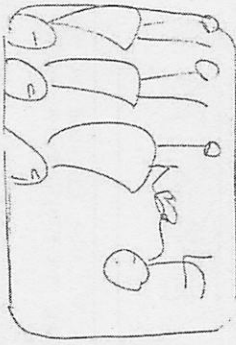
SFX: SHOE MUSIC



11. OUT TO LS PRINCE LYING THE
HORSE. CINDERELLA BURSTS OUT TEARS.

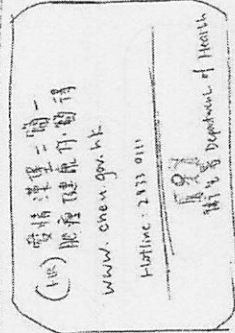
CINDERELLA: 係你話能一七漢學(七年)
竟能到咁電我吓!

SFX: SHOE MUSIC



9. OUT TO MS CINDERELLA THREE SISTERS
TRYING TO FIT INTO THOSE CLASS
SHOE

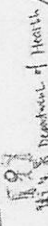
SISTERS: 差啲啲.....



(四) 愛情漢堡 = 第一
肥瘦健康既冇. 嚟得

WWW.CHEM.GOV.HK

Hotline: 2373 0111



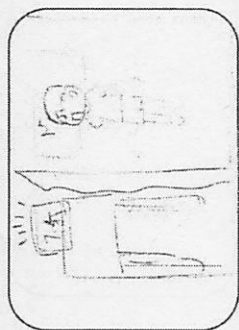
12. OUT TO US TITLE

ANNCR(VO): 愛情漢堡 = 第一, 肥瘦健康
吓嚟得

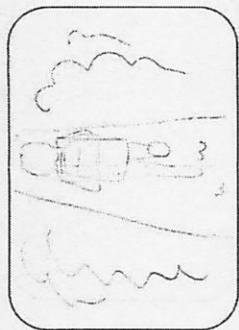


Company/Product name: _____
 Duration: _____ second
 Name of commercial: _____

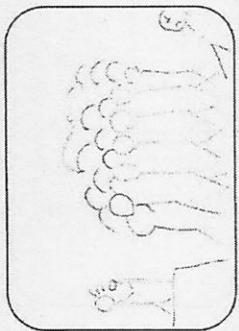
Page 1 of 2 pages



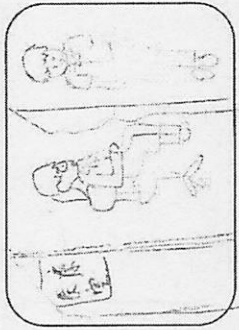
1. LS 男孩驚醒及鬧鐘在7:45
分不起。



2. LS 男孩跑着學校



3. LS 早會時男孩暈倒了。



4. LS 男孩被送到醫院。
老師問：你係咪無食早餐嘢？



5. BC U 男孩係今日太遲起身，
而且無帶午餐。
無食早餐。

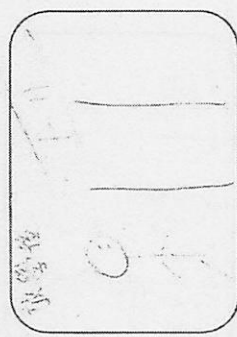


6. MS 老師：咁樣唔得嘍！一定食早餐。
明啫！你救學既時候，要聽朝做早餐，咁樣可以。

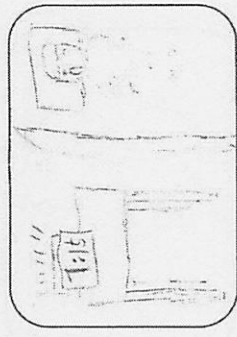


Company/Product name: _____
 Duration: _____ second
 Name of commercial: _____

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7. 15 男孩步行到學校
 男孩聽了老師的話，準備
 聽朝飯的早餐。



8. 15 男孩聽完及開鐘聲
 男孩早了班身，目的就係
 為了食早餐



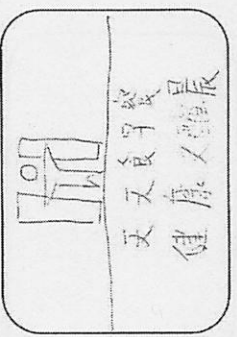
9. 15 男孩 7:30 及男孩食早餐



10. 15 老師和男孩
 老師 = 你今日好精神，
 係咪食咗早餐呢？



11. 15 男孩
 男孩 = 係呀！食咗早餐，人
 都精神咗，我以後日
 日都會食早餐！



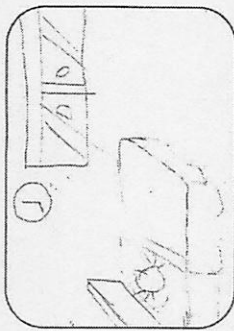
12. 15



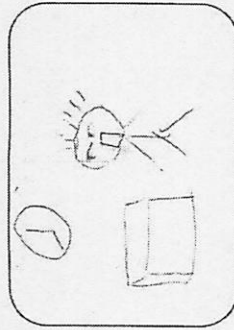
F-1 (4)

Company/Product name: Breakfast
Duration: 50 second
Name of commercial: _____

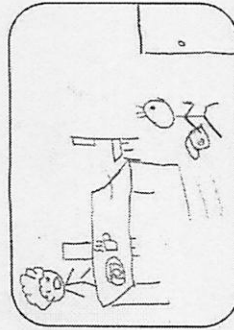
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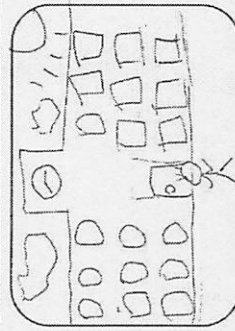
Cut to 1/5 of A Boy is sleeping.



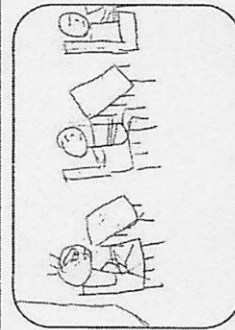
Cut to 1/5 of 'Every find the clock over seven o'clock'



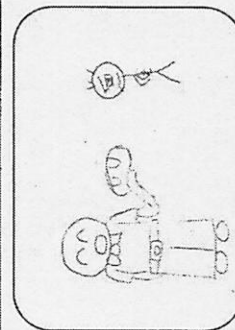
Cut to 1/5 of 'Every find the clock over seven o'clock'



Cut to 1/5 of 'Every find the clock over seven o'clock'



Cut to 1/5 of 'Every find the clock over seven o'clock'



Cut to 1/5 of 'Every find the clock over seven o'clock'

