THE CHINESE UNIVERSITY OF HONG KONG

Courseware Development Grant (2018-19)

<u>Final Report</u>

<u>PART I</u>

Project title: Development of the Mobile App "GE101" for Blended Learning in the GEF Programme

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Department / Unit: Office of University General Education

Project duration: From September 2018 to May 2019

Date report submitted: 5 June 2019

1. Project objectives

The objective of this project is to improve teaching and learning of the General Education Foundation (GEF) Programme by developing the mobile App "GE101" (種菜鳥) which supports experiential learning through farming as a part in courses UGFN1000 "*In Dialogue with Nature*", UGFH1000 "*In Dialogue with Humanity*", and UGEC2916 "*Understanding Urban Agriculture*" in the GEF Programme. Overall, the project is on track and the key objective has been met.

2. Process, outcomes or deliverables

This project has developed a mobile App "GE101" (種菜鳥) which fits the two main mobile operation systems: the iOS system and the Android system. The App contains the introduction of basic knowledge in farming so as to equip students with essential farming knowledge before they attend the experiential learning sessions in the GEF Programme. To flip the classroom of the planting session, nine short videos (3-5 min long) have been developed to demonstrate the basic farming techniques. Students can thus learn the farming skills before participating in the planting sessions. We have developed a comprehensive database of more than 80 entries of common crops suitable for growing in Hong Kong. Each entry consists of a description, a photo and the required conditions for growing of the crop. The videos and the database have been incorporated into the App. The main features of the app are (1) a reminder function on when to water the crop and (2) a platform which facilitate communication among teachers and students on group work in the experimental learning through farming in the GEF Programme. The nature of the deliverables follows the project proposal and has no change.

As mentioned in the project proposal, the entire project of the App development takes 9 months (9/2018-5/2019) and thus it has not been used in any course yet. In general,

the project is on track but there is a little delay in the app development because of the switch to a new App development vendor in the latter period of the project. This causes a slight shift of scheduling stages in the App development. The App has just undergone its final test and the final version will be launched in the next academic year. We are confident that the project will be completed satisfactorily. The App will be used in the following courses in the next semester: UGFN1000 "*In Dialogue with Nature*", UGFH1000 "*In Dialogue with Humanity*", and UGEC2916 "*Understanding Urban Agriculture*".

3. Evaluation Plan

The evaluation plan was set as planned. Students were invited to use the beta-version of the App and give feedback in an interview at the final stage of the App development. Teachers were also invited to provide comments of the App. The overall feedback is positive with some suggestions for refinement in the final stage of production. A more comprehensive survey will be conducted on the usefulness of the App and the extent in which the App has improved on teaching and experiential learning in the GEF courses after it is launched in the first semester of 2019-2020.

4. Dissemination, diffusion and impact

The App provides pre-requisite framing knowledge and skill demonstration which will be useful for experiential learning through farming. This project was presented in a poster entitled "Development of the App 'Growing Edibles 101' for the experiential learning in the GEF Programme" in the Teaching and Learning Innovation Expo in CUHK in December 2018. The app will be promoted in the newsletter *UGE News* published by the Office of University General Education after it is launched in Fall 2019.

The App will be used for blended learning and experiential learning in the GEF Programme. Any course with a component of experiential learning through farming, or of agriculture-related issues, may integrate using the App including UGEB2296 *Experiencing and Rethinking Science and Technology in Agriculture*, and UGEC2916 *Understanding Urban Agriculture*. Moreover, the App is publicly assessable, and teachers and students from other institutions, schools, and the general publics may use the app to support learning about farming and crops growing activities.

PART II
Financial data
Funds available:

Funds awarded from CDG	$	90,000
Funds secured from other sources	$	0
(please specify_____)		
Total:	$	90,000

Item	Budget as per application	Actual Expenditure	Balance
Part-time Research Assistant ($140/hr) for help in content building, video production, evaluation, data analysis, and coordination	$70,000	$68,772.00	$1,228.00
Designer for help in the design of illustrations, graphics, and layout of the App	$5,000	$5,000.00	$0.00
Student helpers ($57.5/hr) for help in content building and video production	$6,000	$4,851.01	$1,148.99
Online libraries for the App contents and videos (e.g. graphics, background music libraries, etc.)	$4,000	$2,322.15	$1,677.85
Software licenses for graphic and video editing (e.g. Adobe CC)	$3,000	$0.00	$3,000
Miscellaneous Farming utensils and samples for farming videos and photos (e.g. farming materials, plant samples, etc.)	$2,000	$5,908.00	(-$3,908)
TOTAL	$90,000	86,853.16	$3,146.84

PART III

Lessons learnt from the project

The mobile App "GE101" (種菜鳥) will be fully launched and used for blending experiential learning in the GEF Programme and other courses in Fall 2019. Feedback from teachers, students, and other users, will be collected. The App will be promoted to teachers in CUHK and other institutes, schools and the general public. The App will be reviewed and updated over time to fix the bugs of the infrastructure and refine/enrich the contents.

One of the key success factors is the close collaboration of experts in farming and agriculture. The signature of the app is the significant input by the experienced farmers on the practical tips in farming and to validate information collected from books and websites. Another key success factor is the collaboration of experts in the development of the App infrastructure. The close collaboration with colleagues from CLEAR has solved obstacles encountered in infrastructure development and other issues. In this project, the performance of the first App development vendor was unsatisfactory and the colleagues from CLEAR helped finding another vendor efficiently.

Moreover, we have recruited skillful students to help filming, post-editing, and photo-shooting on the content production. Furthermore, feedback from colleagues from various departments have been very helpful for the preparation of contents and layout of the App.

<u>PART IV</u>
<u>Information for public access</u>

1. Keywords

(Most relevant)   Keyword 1: Experiential Learning

Keyword 2: Blended Learning

Keyword 3: Growing Edibles 101

Keyword 4: Farming

(Least relevant)   Keyword 5: General Education

2. Summary statistics

Table 1: Publicly accessible online resources (if any)
(a) **Project website:**   *If a publicly accessible project website has been constructed, please provide the URL*
(b) **Webpage(s):**   *If information of your project is summarized in a webpage (say a page in the department's or faculty's website), please provide the URL(s) in here*
(c) **Others (please specify):**

Table 2: Resource accessible to a target group of students (if any)			
If resources (e.g. software) have been developed for a target group of students (e.g. in a course, in a department) to gain access through specific platforms (e.g. CU Learning Management System (Blackboard), facebook), please specify.			
Course Code/ Target Students	**Term & Year of offering**	**Approximate No. of students**	**Platform**
UGFN1000	Year 1 & 2 Students	1800	mobile app
UGFH1000	Year 1 & 2 Students	1800	mobile app
UGEB2296	Year 1 to 4 Students	20	mobile app

UGEC2916	Year 1 Students	50	mobile app

Table 3: Presentation (if any)	
Please classify each of the (oral/poster) presentations into one and only one of the following categories	**Number**
(a) In workshop/retreat within your unit (e.g. department, faculty)	0
(b) In workshop/retreat organized for CUHK teachers (e.g. CLEAR workshop, workshop organized by other CUHK units)	0
(c) In CUHK ExPo jointly organized by CLEAR and ITSC	1
(d) In any other event held in HK (e.g. UGC symposium, talks delivered to units of other institutions)	0
(e) In international conference	0
(f) Others (please specify)	0

Table 4: Publication (if any)	
Please classify each piece of publications into one and only one of the following categories	**Number**
(a) Project CD/DVD	0
(b) Project leaflet	0
(c) Project booklet	0
(d) A section/chapter in a booklet/book distributed to a limited group of audience	0
(e) Conference proceeding	0
(f) A chapter in a book accessible internationally	0
(g) A paper in refereed journal	0
(h) Others (please specify)	0

3. A one-page brief write up

The General Education Foundation (GEF) Programme is designed with the vision of shaping students into better global citizens by cultivating their knowledge, attitudes, and values regarding nature, science, and humanity through the reading of classics. To engage students in critical reflection on the classics through direct experience and consideration of real-life situations, farming sessions have been introduced as experiential learning in the GEF Programme. Students are offered a chance to do a bit of farming, followed by interactive discussions on related classics with the teacher and with fellow students in each session. From our experience, students' general lack of understanding of the relation between nature and farming and lack of the necessary farming techniques presented an obstacle to their learning. A considerable amount of time had to be spent on explaining basic knowledge and techniques in each practice session. Meanwhile, inadequate attention or mere forgetfulness on the part of the students could lead to poor growth of the crops, resulting in a disappointing learning experience.

In view of this, we have developed the mobile App "Growing Edibles 101" (GE101) to support the farming practices in the GEF courses as experiential learning. The objective of which is to improve the teaching and learning of the GEF courses. With the help of the App, we are able to flip the experiential learning sessions and strengthen the blended learning in the GEF Programme. Interactive learning materials are developed for student access and use prior to the practical farming sessions. Some of the functions of the App include:
- Connecting the knowledge, attitudes, and values taught in the GEF Programme with farming practices by asking reflective questions and displaying inspiring famous quotes;
- Equipping students with essential knowledge and basic farming skills by notes, illustrations, and tailor-made demonstration videos;
- Facilitating the selection and planting of crops based on the selection criteria input;
- Issuing reminders and confirmations of daily farming tasks for student groups;
- Serving as a platform for communication among students in groups and between teachers and students.

The combination of the App technology with farming experience in the classics-reading GEF courses will synergize the students' learning experience, and foster deeper reflection and a better appreciation of the classics concerned through direct experience and considerations of real-life situations. The project also equips students with the fundamental farming knowledge and practical skills which allow them to grow and taste their own crops, and will increase their engagement in studying the GEF Programme. The App can be extended for use in other courses. Any course with a component of experiential learning through farming, or of agriculture-related topics, can be benefited. Teachers and students from other institutes, schools, and the general publics are welcome to use this app to support their farming and planting.