Quality Education Fund

The Dedicated Funding Programme for Publicly-funded Schools

Part B: Project Proposal

Project Title: "Students as constructors of knowledge"- enhance student engagement in Personal, Social and Humanities Education (PSHE) subjects by a web-based VR presentation tool	**Project Number:** 2018/0107 (Revised)

Name of School:

Direct Beneficiaries

(a) Sector: ☐ Kindergarten   ☐ Primary   ☑ Secondary   ☐ Special School (*Please put a tick in the appropriate box(es).*)

(b) Beneficiaries: (1) Students: __380__   __Junior Form__; (2) Teachers: _60_; (3) Parents: _Nil_;
　　　　　　　　(4) Others: __Nil__

Project Period: 5/2019 to 4/2020

1. Project Needs

1.1	Project Aim(s)	**1)** to promote holistic understanding of community through cross-curricular approach, **2)** to develop students' enquiry and analytical skills, **3)** to enhance student engagement by applying e-learning
1.2	Innovative element(s)	In order to facilitate the implementation of the project, we would like to include THREE innovative elements in it: "starting from community", "technology as learning tool" and "project-based learning experience" in a cross-curricular approach. For "technology as a learning tool", we are exploring a web-based VR presentation editor for students. Students can make create, collaborate, and share VR environments where they visited in the fieldtrips without requiring programming skills (code-free). At the same time, they can embed video/360 video, photo/360 photo, GIF, sound & text. Here are the features of a web-based VR presentation editor: A. VR Visual Editor Mode which includes: 1. Easy 3D Objects Creation and Transformation (position, rotation, scaling) 2. Basic Animation and Sequences for 3D Objects 3. Embed 2D GIF, 2D and 3D Photos and Videos 4. Generates sharable links for presenter and audiences B. VR Presentation Mode which includes: 1. VR presentations to be viewed in browser or VR headset 2. Synchronised presentation, presenter controls sequences of presentation slides In short, we hope to provide chances to allow students to demonstrate their learning outcomes in a more self-directed and creative way by creating their own learning experience. By using VR presentation, they can also share what they have learnt with teachers and schoolmates. Thus, they can be called the "constructors of the knowledge".
1.3	Alignment with school-based / students' needs	The convergence of knowledge and interdisciplinary approaches are explained by the need of our students to understand the complexity of the society. By conducting community-based and cross-curricular learning experiences, students will develop a more holistic understanding of our community with the knowledge of various

subjects. Also, project-based learning (through fieldwork experience) together with the element of self-directed investigation can help strengthening students' enquiry and analytical skills. Moreover, the use of technology as an educational tool can cultivate new levels of student engagement e.g. through Virtual Reality (VR). For example, VR can be used to engage students in topics related to geography and history by offering an immersive sense of place and time. This type of experience is much more enriching than just memorizing about historical facts. Lastly, it is necessary to allow students opportunities to create, construct and demonstrate what they learnt, "learning outcomes", in order to develop a growth mindset and take ownership over learning.

Regarding our school-based curriculum, the Personal, Social and Humanities Education (PSHE) in our school has been tapping into the power of IT to enhance the effectiveness of learning and teaching PSHE subjects in recent years. We are exploring the possibility of incorporating students' self-directed learning experience/outcomes e.g. fieldwork with IT skills to enhance students' learning and boost their motivation. Undoubtedly, fieldwork/fieldtrip forms a significant element of Geography and History learning. Recently, compulsory fieldwork-based question will be incorporated in 2019 HKDSE Geography curriculum. DSE History had also included local History as part of the Syllabus. Therefore, we have been training students with different fieldworks skills since junior level through providing them invaluable experiential learning opportunities throughout the academic years, such as, Geography or History local and oversea field trips for both junior and senior form students are organized every year. We have been to countries like Mainland China, Taiwan and Japan etc. We need a more creative way to help present students' good fieldwork experience and enhance their learning efficiency. In addition, with VR's ability to transport and transform, we believe that, it's not only the learning experience enjoyed by students engaged in the fieldtrips, but more schoolmates will be able to participate in more immersive environment constructed by the students who create and demonstrate what they learnt. It creates interactive learning environment in school.

Therefore, a web-based VR presentation editor will be what we are going to explore and create for the above mentioned purposes.

2. Project Feasibility

2.1	Key concept (s) / rationale(s) of the project	The project is situated within the context of an innovation in the Personal, Social and Humanities Education (PSHE) key learning area in junior form. The main rationales are 1) to promote holistic understanding of our community through cross-curricular approach and project-based learning, 2) to develop students' enquiry and analytical skills through self-investigation, 3) to enhance student engagement in learning with the use of technology; 4) to develop positive values, including empathy, through engaging in relevant learning experiences. Students learn to develop their abilities to identify the values embedded in different issues they may encounter.
2.2	Applicant's readiness or ability/ experience/ conditions/ facilities for project implementation	has been practicing e-learning since 2012, students are using　　 to learn in the classroom under teachers' guidance and supervision At the same time, teachers started to design relevant teaching materials and create interactive classrooms. In 2015, the BYOD (self-carrying device) programme was launched. By 2019, all students from 24 classes can bring their　　 back to school according to their parents' wishes.
		In 2018, teachers and students have some experience in teaching and learning using technology, especially in interactive teaching design and implementation. Therefore, students and teachers in TLMSHK are in a relatively high level of readiness for applying E-learning and willing to change to a more students-directed learning approach in recent years.

2.3	Principal's and teachers' involvement and their roles	Principal of our school approved and supported the implementation of this project. PSHE's inter-disciplinary team including panel members of History, Chinese History and Geography will be formed to design the teaching materials and learning activities. PSHE team will be the pilot team to implement this project.
2.4	Parents' involvement / participation (if applicable)	Not applicable
2.5	Roles of collaborator(s) (if applicable)	The project is also supported and funded by As one of the participating school in , we will be connected to cross-sector experts, networks and resources which will support our innovative project.

2.6 Implementation timeline

Implementation period	Project activities
10/2018-1/2019 (preparation)	-Invite tenders and quotation for software development of the web-based VR presentation editor and procurements of relevant equipment and materials in an open, fair and competitive basis with measures taken to avoid conflict of interest in the procurement process -Software developer will work on the web-based presentation tool and operate testing procedures to ensure its functionality and correctness
3-4/2019 (preparation)	-Introduction of problem / project based learning (PBL) to Secondary 1 (S.1) students -Organize field-work for S1 students on Life-Wide Learning day (12/4/2019) in cross-curricular PSHE (Geography, History, and Chinese History) approach - Students will be divided into three groups (Chinese History, History and Geography) exploring another side of Hong Kong e.g. History group: Tai O (old indigenous fishing village); Geography group: Lai Chi Wo (traditional Farming Village Landscape) & Chinese History group: Tai Hang (neighboring district full of historical and cultural significance) -PSHE teachers will cooperate with some experienced local conservation group or tour provider to provide students more up-to-date knowledge and invaluable exposure. -Students in group will be given chance to design a learning objective or start an investigation on the problem they found out relating to the place they will go. They will take 360 photo or video, conduct oral history or collect field data to achieve their learning goals accordingly.
5/2019	- S1 Students and relevant teachers involved will be trained and equipped to use the software through the training sessions separately offered by the software engineer and developer from the software company.
5-6/2019	-S1 Students create and demonstrate their learning outcome collaboratively with the new web-based VR presentation editor in various in-school occasions e.g. project presentation session and post-exam activities - VR presentations can be viewed in VR headset exhibited at school library as students' "learning outcome" demonstration
7-8/2019	- PSHE panels and the teachers involved will evaluate the effectiveness of the project and refine the learning and teaching activities. They will also discuss how to further develop the project and relevant learning activities in the coming school year. -Teachers involved will share in Staff Development Day and meetings for enhancing professional developments inside school

	- Some sharing seminars will be organized to share the project experience and project outcomes with the other secondary school teachers
9/2019 - 4/2020	-PSHE team will continue to carry out the project in the coming two years -Junior form students will be gradually using this software and students (especially whose studying PSHE electives) are also advised to use it for facilitating their learning -Other subject teachers are encouraged to use the software for enhancing teaching and learning effectiveness

2.7 Details of project activities *(Item (a)-(f) not applicable to this application can be deleted.)*
a.   Student activity, if applicable

Activity name	Content *(Including the topics, implementation strategies/modes, target beneficiaries, selection criteria, etc.)*	Number of sessions and duration	Teachers' involvement and/or hired personnel *(Including the roles, qualifications and experiences required of the speaker(s)/ instructor(s), etc.)*	Expected learning outcomes
Apply innovative teaching elements in PSHE subjects lessons	Teachers design innovative lessons in Junior form e.g. VR exploration in geography and History lessons; joining workshops relating to oral history and heritage preservation; and build up students' knowledge in various PSHE subjects about Hong Kong in the theme of "understanding our community"	Throughout the academic year 2018-2019	PSHE teachers	-Students become more motivated to learn and thus enhance engagement -Students enhance holistic understanding of their community
Fieldworks on Life-Wide Learning Day on 12th April, 2019	Life-Wide Learning Day is one of our whole- school annual activities. Different forms will be assigned to different places to explore and study outside classroom. This year, all Secondary One students will be divided into three groups (Chinese History, History and Geography) according to their own interests and will go to explore another side of Hong Kong: -History group: Tai O (old indigenous fishing village) -Geography group: Lai Chi Wo (traditional Farming Village Landscape) -Chinese History group: Tai Hang (neighboring district full of historical and cultural significance) Students will be given the chance to design a learning objective or start an investigation on the problem they found out. -Teachers and experienced tour guides will conduct the outdoor fieldtrips according to the "Guidelines on Outdoor Activities"	One whole day in April, 2019	PSHE teachers and relevant tour guides	-Students find knowledge more relevant to their life and are able to conduct self-investigation through different skills they learnt. -Students become "the owner and constructor of knowledge" as they will explore the way how to demonstrate what they have learnt -students can further consolidate their knowledge by creating their "learning outcome" - Students develop positive values and empathy through experiential learning.

| Presentation of learning outcome by students in post-exam period | -S1 Students will create and demonstrate their learning or investigation outcome from the fieldwork collaboratively with the new web-based VR presentation editor in various in-school occasions e.g. Project presentation session in morning assembly in May and post-exam activities in June.
-VR presentations can be viewed in VR headset exhibited at school library as students' "learning outcome" demonstration | April-June, 2019 | PSHE teachers | -Students become "the owner and constructor of knowledge".

-Students share their learning outcomes with other schoolmates and teachers |

b. Teacher training, if applicable

Activity name	Content *(Including the topics, implementation strategies/modes, target beneficiaries, selection criteria, etc.)*	Number of sessions and duration	Hired personnel *(Including the roles, qualifications and experiences required of the speaker(s)/ instructor(s), etc.)*	Expected learning outcomes
Teachers training programme	Conducting training session (by software development company) for teachers (PSHE teachers, ICT teachers and IT technicians etc.)in order to equip them with relevant knowledge and skills to handle the software e.g. embed video/360 video, photo/360 photo, GIF, sound & text etc.	1-2 session (2 hours) in April/May, 2019	Software developer and engineer from the software development company	Teachers can equip themselves with relevant skills to handle the software and be trained to create self teaching materials via this platform in long run.

c. Equipment (including installation of new fixtures or facilities), if applicable

	Details of equipment to be procured	Contribution to fulfilment of the project aim(s) and if applicable, the expected utilization rate
1	360 camera	For learning and teaching activities
2	VR headsets	For learning and teaching activities

d. Construction works, if applicable

	Details of the construction works proposed	Contribution to fulfilment of the project aim(s) and if applicable, the expected utilization rate
	Not applicable	

e. Features of the school-based curriculum to be developed, if applicable

Not applicable

f. Other activities, if applicable (Please specify how they contribute to fulfilment of the project aim(s).)

Not applicable

2.8 Budget

Total Grant Sought: HK$ 163,000

Budget Categories*	Breakdown for the budget items		Justifications
	Item	**Amount (HK$)**	
a. Staff	Not applicable		
b. Service	Software : User Interface Design and Development	$80,000	For software development

	Software : Onsite support Set up & conduct teacher and students training workshops	$8,000	Conducting training for teachers in order to equip them with relevant knowledge and skills to handle the software
c. Equipment	15 sets of 360 camera	$45,000	For learning and teaching activities
	10 sets of VR Headset	$25,000	For learning and teaching activities
d. Works	Not applicable		
e. General expenses	Audit fee	$5000	
f. Contingency	Not applicable		
Total Grant Sought (HK$):		163,000	

*

(i) Applicants should refer to the <u>QEF Pricing Standards</u> in completing the above table. All staff recruitment and procurement of goods and services should be carried out on an open, fair and competitive basis. Budget categories not applicable to this application can be deleted.

The procurement of IT equipment and services will be made on an open, fair and competitive basis with measures taken to avoid conflict of interest in the procurement process.

3. **Expected Project Outcomes**

3.1	Deliverables / outcomes	☑ Learning and teaching materials ☐ Resource package ☐ e-deliverables**(please specify)* _____ ☑ Others *(please specify)* <u>Students' learning experience will be well-stored in the software.</u> **For e-deliverables to be hosted on HKEdCity, please liaise with HKEdCity at 2624 1000.*
3.2	Positive impact on quality education/ the school's development	For students, they become more motivated to learn and thus enhance engagement to construct their own knowledge. They will find knowledge more relevant to their life and are able to conduct self-investigation through different skills they learnt. They become "the owner and constructor of knowledge". Lastly, students develop positive values and empathy through experiential learning. For teachers, they will develop a culture of collaboration through more cross-subjects based teaching experience and cooperation. Also, they will be encouraged to learn to apply innovative teaching in their own subjects to motivate students inside and outside classroom learning activities.

3.3 Evaluation
Please state the methodologies of evaluating project effectiveness and provide the success criteria.
(Examples: lesson observation, questionnaire survey, focus group interview, pre-test/post-test)

To measure the effectiveness of the plan, it can be conducted in the following ways.

In student's level, teachers can observe the changes of students' learning engagement and attitude after a year-based experiential learning activities. In order to motivate students to engage in this project, the project can be set as their yearly-learning assessment. Students will be encouraged to share and demonstrate their learning outcome through the web-based platform inside school e.g. Project Presentation Day in May and as one of social science week programmes etc. and, even at some special occasions e.g. School Open Day. Students will also write their reflection after this learning experience to share their feeling. In addition, the success criteria will also be the results collected from the questionnaires and focus group interviews by students and teachers revealing that more than **70%** of the participating students can improve their interests in PSHE subjects learning, self-initiative, positive values, and related abilities (e.g. enquiry and analytical skills)

In teacher level, the success criteria will be the results collected from the questionnaires and focus group interviews by teachers revealing that more than **70%** of the participating teachers can apply innovative teaching in their own subjects to motivate students and increase their confidence and capacity in managing cross-curricular teaching.

Assets Usage Plan

Category	Item / Description	No. of Units	Total Cost	Proposed Plan for Deployment
audio and video equipment	VR Headsets	10 sets	$25,000	For use by school
	360 camera	15 sets	$45,000	For use by school

Report Submission Schedule

I/My organisation commit(s) to submit proper reports in strict accordance with the following schedule:

Project Management		Financial Management	
Type of Report and covering period	Report due date	Type of Report and covering period	Report due date
Final Report 1/5/2019 – 30/4/2020	31/7/2020	Final Financial Report 1/5/2019 – 30/4/2020	31/7/2020