

Appendix 4
Quality Education Fund
The Dedicated Funding Programme for Publicly-funded Schools
Part B: Project Proposal

Project Title: Helping struggling primary students learn English using a multi-sensory integration approach with interactive digital touchscreens	Project Number: 2018/0004 (revised)
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Name of School: SKH Kei Wing Primary School

Direct Beneficiaries

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

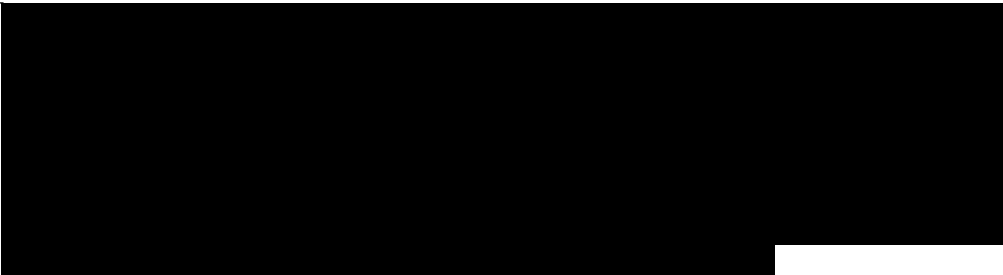
(b) Beneficiaries: (1) Students: 250/year all P. 1 students and P. 2 to P. 4 students in remedial classes; (2) Teachers: 16 English teachers; (3) Parents: N/A;

Project Period: 07/2019 to 12/2020




This template only serves as a reference. Items that are NOT applicable can be deleted as appropriate. A Guide to Applicants about the Dedicated Funding Programme for Publicly-funded Schools is available on the QEF website.

1. Project Needs

1.1	Project Aim(s)	This project is geared to seeking alternative ways to help struggling students in our school to learn English. Traditional ways of teaching with chalks and blackboards have not proven to be effective to them, both due to the failure to engage these students as well as the failure to cater for their individual learning style and learning needs.
1.2	Innovative element(s)	The use of interactive digital touchscreens is the key innovative element in this project, as it allows teachers to adopt a multi-sensory integration approach in their lessons without using a lot of extra tools. Students no longer need to rely on either sight (i.e. visual modality) or hearing (i.e. auditory modality) in their learning. They can make use of touch (i.e. tactile) or movement (i.e. kinetic) to help. Hence, in addition to a motivational boost, the interactive digital touchscreens can suit the diversified learning styles of the struggling students in our school, who can make use of their motor skills to learn English. As compared to [REDACTED] , which are widely used in primary schools nowadays, interactive digital touchscreens do not require a lot of trainings on technical aspects for both teachers and students, ease teachers' worries on potential disciplinary issues such as misusing other applications, as well as provide an easy and efficient channel to give feedback to students. Unlike traditional computer screens, interactive digital touchscreens can allow up to 10 students to come out and use touch-screen, drag-n-drop or trace functions to interact with the digital touchscreens simultaneously, hence allowing various interactive learning activities to be developed.
1.3	Alignment with school-based / students' needs	[REDACTED]

		 <p>Regarding our school's development, one of our school's major area of concern in the 2018-2021 triennium is on enhancing teaching and learning effectiveness in our lessons. Within the English department, e-learning is one of the key strategies that we are planning to focus on in all levels to achieve this goal. Our English teachers are all capable and confident in using e-learning tools in their lessons</p> <p>In light of our school's situation and the needs of our students, using the multi-sensory integration approach with interactive digital touchscreens appears to be the solution to help these students.</p>
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2. Project Feasibility

2.1	Key concept (s) / rationale(s) of the project	<p>This project incorporates multi-sensory integration approach coupled with e-learning tools, specifically the interactive digital touchscreens, to help our students.</p> <p>The effectiveness of multi-sensory integration approach to help children with learning disabilities is well-documented in academic literature. Numerous empirical studies have proven that students with dyslexia, for example, whose visual decoding skill is impaired, can be benefited from a teaching approach with body movements incorporated (e.g. Hillocks & Kachur, 1979; Pohan & Kelly, 2004). Similar results have been obtained in children with Down Syndrome or brain disorders (e.g. Vacc & Vacc, 1979; Walling, 1978)</p> <p>Likewise, the effectiveness of using e-learning tools in helping children to learn a second language has also received scholarly attention over the past two decades. Lai (2017), for example, claimed that the various benefits of autonomous language learning, such as greater perceived meaningfulness and personal relevance, can be achieved through the use of e-learning tools in language lessons, which would result in sustained engagement as well as foster the development of self-directed learning skills.</p> <p>Blending the two approaches, therefore, should bring about the greatest benefits to our struggling students.</p>
2.2	Applicant's readiness or ability/ experience/ conditions/ facilities for project implementation	<p>Our school has received funding from the EDB to set up Wifi-900 and purchase 80  to implement e-learning. Our teachers have undergone a few trainings on e-learning over the past few years. With respect to the English department, all English teachers have tried out various e-learning tools (e.g. ) with  at least once in 2017-18 under the leadership of the English Panel Chair and the PSMCD. All our English teachers are therefore equipped with the skills to use e-learning tools with ease in their lessons, which are essential to the successful implementation of this project.</p>
2.3	Principal's and teachers' involvement and their roles	<p>The principal is responsible for overseeing the entire project and providing advice at various stages, including but not limited to tendering procedures, overall schedule of the lesson observations, evaluation and dissemination. Together with the PSMCD, the principal will also sit-in co-planning meetings and observe lessons incorporating interactive digital touchscreens in different classes to ensure high quality of delivery by the teachers.</p> <p>The English Panel Chair is responsible for the overall planning and evaluation of the project. Specifically, he will prepare the tender documents for purchasing digital touchscreens and on-site support service, liaise with the consultant to arrange details of onsite support for the teachers, including training workshops and schedules of focused co-planning meetings and lesson observations. He will sit-in all the co-planning meetings to help teachers identify topics and themes that can be developed using the interactive digital touchscreens. He will also coordinate with the TA to support the teachers on developing the e-resources that are compatible with the digital touchscreens. During the evaluation phase, he will design survey and interview</p>

		<p>protocol, and carry out data collection with teachers, students, principal and the consultant. Together with the consultant, he will then analyze the data obtained and write up the interim and final reports, as well as host the internal experience-sharing session and public dissemination seminar upon the completion of the project.</p> <p>Four P. 1 teachers and teachers who teach remedial classes in P. 2 to P. 4 will be responsible for implementing the project. They will try using the digital touchscreens at least once during the trial implementation stage in 2018-19, and at least 4 times during the full-implementation stage in 2019-20. The teachers will join focused co-planning meetings and post-lesson observation meetings, as well as share their successful experiences with internal staff as well as the general public during the experience-sharing session (in school) and dissemination seminar (in universities).</p>
2.4	Parents' involvement / participation (if applicable)	N/A
2.5	Roles of collaborator(s) (if applicable)	<p>A consultant from university / professional institution will be hired to provide training to our teachers on multi-sensory integration approaches, join our teachers' co-planning meetings, observe their lessons, as well as provide feedback on the materials they developed and the quality of the lesson they delivered. The contact hours for the consultant should add up to at least 40, which includes a 2-hour training workshop, planning-observing-evaluating lessons for at least 3 times for each participating class, as well as assisting the EPC in the evaluation process and the organization of the dissemination seminar. The hours for lesson observations will be approximately 27 hours in total, and are illustrated below:</p> <ol style="list-style-type: none"> 1. 4 x P. 1 class x 3 double-lessons (70 minutes) = 13.5 hours 2. 4 x P. 2 to P. 4 remedial class x 6 single lessons (35 minutes) / 3 double lessons (70 minutes) = 13.5 hours

2.6 Implementation timeline

Implementation period (MM/YYYY)	Project activities
7-8/2019 (Preparation)	<ul style="list-style-type: none"> - Begin the tender procedures for purchasing the digital touchscreens - Find the most suitable company and install the digital touchscreens in our school - Find the most suitable university / professional institution for onsite support - Hire extra TA with academic qualifications related to English language education and expertise in using interactive digital touchscreens to handle matters related to the development of the learning and teaching materials of the project, and other technical aspects of the digital touchscreens - Liaise with the consultant on details of support to our school
9-12/2019 (Training and Trial Implementation)	<ul style="list-style-type: none"> - Organized a 2-hour training workshop for all English teachers on multi-sensory integration approaches and interactive digital touchscreens, hosted by a consultant from university / professional institutions (on multi-sensory integration) - Arrange focused co-planning meetings with 4 P. 1 teachers to try developing one lesson using interactive digital touchscreens and the principles of multi-sensory integration - Arrange focused co-planning meetings with 4 remedial teachers to try developing one lesson using interactive digital touchscreens and the principles of multi-sensory integration - Carry out the trial lessons. EPC, PSMCD and the consultant will observe one P. 1 lesson and one small-class lesson. - Arrange post-lesson observation conferences to reflect on the lessons.
1/2020 (Midterm Evaluation)	<ul style="list-style-type: none"> - Arrange post-lesson observation conferences to reflect on the lessons. Reflection of the entire trial implementation. Meetings with P. 1 teachers and the consultant to identify issues that need to be refined and further improved next year. - Write up interim report for QEF
2/2020 – 11/2020 (Full Implementation)	<ul style="list-style-type: none"> - Conduct pre-test with the participating students in September. - Develop at least 2 units per term using features of the interactive digital touchscreens and the principles of multi-sensory integration for the 4 P. 1 classes

	and each of the 4 remedial classes in different levels. For each unit, teachers will follow the cycle of co-planning, development and refinement of teaching materials, followed by lesson observations by EPC and consultant, and post-lesson feedback.
12/2020 (Evaluation and Dissemination)	<ul style="list-style-type: none"> - Collect survey and interview data from teachers, students, principal and the consultant. - Collect lesson observation feedback forms and co-planning meeting minutes - Carry out post-tests with the participating students - Analyze the above data to evaluate the effectiveness of the project - Organize experience-sharing sessions for our staff - Organize dissemination seminars for all primary English teachers in Hong Kong - Write up final report for QEF

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
Learning activities using interactive digital touchscreens	<p>Students will take part in learning activities using interactive digital touchscreens, in the four target areas below.</p> <ol style="list-style-type: none"> 1. Alphabetical System (P. 1 only) This includes the orthography and sound of the original and capitalized alphabets in English. 2. Phonological Awareness This includes knowledge on consonant and vowels, syllables, onset and rimes, consonant blending, rhyming words and other key phonological structure in the textbook / PLPR-W curriculum. 3. Grammar This includes tenses, prepositions and other key grammar items in the textbook / PLPR-W curriculum. 4. Vocabulary Knowledge This includes meaning of sight vocabulary appropriate to the student's level as well as the key vocabulary items in the textbook / PLPR-W curriculum <p>The activities should be designed in accord with the principles of multi-sensory integration, hence involving more than one of the following senses, namely hearing, visual, tactile and kinetic. For example, when learning the orthography of an alphabet, students can practice by using their hands to trace a car on the digital touchscreens which follows the trajectory of an alphabet.</p> <p>The activities should allow at least</p>	15 learning activities will be developed in total for each P. 1 or remedial class (3 per unit x 5 units). The activities can be carried out more than once for consolidation purposes.	English Panel Chair and the external consultant will assist the P. 1 and remedial English teachers in developing learning activities using interactive digital touchscreens. The extra TA will assist teachers in developing the teaching materials using the bundled software from the digital touchscreens.	Students are expected to show sustained engagement in the learning activities and improvements in the post-test on the four target areas, namely Alphabetical System (P. 1 only), Phonological Awareness, Grammar and Vocabulary Knowledge.

	five students to interact with the digital touchscreens simultaneously, under the control of the teacher, either in competitive or collaborative mode.			
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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
Training workshop for English teachers	A training workshop will be organized for English teachers prior to the implementation of the project. The workshop aims to equip English teachers with the skills needed to operate the interactive digital touchscreens and the software that comes with it, as well as the background theoretical knowledge and practical strategies of multi-sensory integration (i.e. requiring students to use more than one sense to complete a task)	1 session, 2 hours	- A consultant from universities / professional institutions who possesses preferably a doctoral degree in English Language Education, who is familiar with the principles of multi-sensory integration, and who has extensive experiences in helping primary students with special needs will provide trainings to teachers on using multi-sensory integration approach to teach English.	Upon the completion of the workshop, teachers will be able to develop interactive activities for students, using the software that come with the digital touchscreens. These activities should utilize the principles of multi-sensory integration, by allowing students to make use of more than one sense to complete the task.

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	<p>8 interactive digital touchscreens with the following features will be procured</p> <ul style="list-style-type: none"> - The touch panel of each digital touchscreen should have a diagonal width of about 90'. The touch panel should have adequate brightness and contrast. Specifically, the resolution should be least 1920 x 1080 pixels (display ratio, 16:9), with 10-bit colour display, intelligent temperature control and auto-light adjustment, so that it can be safely displayed to students without damaging their eyes. - The touch panel should also support the plug-and-play / wireless connection function from various input and output sources, such as USB / HDMI / VGA / Bluetooth / [REDACTED], etc. so it can readily establish connections with various mobile devices (e.g. [REDACTED]), notebooks, computers, cameras and other multimedia devices to facilitate the implementation of interactive teaching 	<ul style="list-style-type: none"> - As mentioned in the above sections, the digital touchscreens can allow teachers to carry out lesson activities that incorporate the principles of multi-sensory integration, which are proven to be effective in academic literature to help struggling students in our school to learn English. - During the trial implementation phase, one unit (out of two in the scheme of work) will be developed to include features with interactive digital touchscreens, hence yielding a 50% utilization rate for English lessons. - During the full implementation phase, four units (out of six in the scheme of work) will be developed, hence yielding a 67% utilization rate for English lessons. - After the project completion, the above approach will be gradually promoted to other subjects, such as Chinese and Math. The PSMCD and English Panel Chairs will work with the Math and Chinese Panel to develop plans for implementing interactive digital touchscreens in Chinese and Math lessons. We envisage that 2 years after the project completion, the

	<p>activities.</p> <ul style="list-style-type: none"> - The touchscreen should be equipped with functions to connect to the Internet / access the Wifi in school. - The touchscreen should be equipped with an interactive whiteboard and at least 10 infrared touch sensors, with a response time of less than 10ms, so that up to 10 students / teacher can interact with the touch panel simultaneously - Bundled teaching software should come with the digital touchscreens, and the software should provide a user-friendly interface for teachers to develop interactive activities without programming knowledge. The activities developed should include touch-screen, tracing, drag-n-drop and other functions that allow the students to use their tactile and kinetic senses to interact with the digital touchscreens. - The digital touchscreens should be made of tempered and anti-glare glass materials that are resistant to scratches, water or other minor damages and easy to clean. There should be wall-mount features so a foot stand that occupies extra space is not needed. - When not in use, the interactive digital touchscreens can function either as normal screens for projection as well as digital touchscreens for markers to write on. 	<p>utilization rate will become 80% for all core subjects, which means interactive digital touchscreens will be incorporated in at least 80% of the P. 1 core-subject lessons (i.e. Chinese, English and Math) and 80% of the P. 2 to P. 4 remedial lessons</p>
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2.8 Budget

Total Grant Sought: HK\$821600

Budget Categories*	Breakdown for the budget items		Justifications <i>(Please provide justification for each budget item, including the qualifications and experiences required of the hired personnel.)</i>
	Item	Amount (HK\$)	
a. Staff	<p>Extra full-time TA for developing the e-teaching materials of the digital touchscreens and supporting the teachers in using them \$19000/month x 1.05 (MPF) x 18 months</p>	\$359100	<p>The full-time TA will be hired right after the interactive digital touchscreens are purchased and installed, lasting for a period of 18 months, from 7/2019 to 12/2020 inclusive. He/she should be a university graduate with major preferably in English Language and relevant experience in education. He/she should also be proficient in IT, as he/she will be responsible for developing e-teaching materials using interactive digital touchscreens and the bundled software for teachers. To justify the higher amount of salary paid than a normal TA, he/she will also need to join co-planning meetings with teachers and provide assistance on technical aspects to teachers during</p>

			lessons. .
b. Service	<p>Onsite support service from a consultant in universities / professional institutions (40 contact hours throughout the whole project period)</p> <p>Consultant fee \$1000/hr x 40 contact hours = \$40000</p> <p>Travelling subsidy for the consultant = \$2000</p>	\$42000	<p>As our teachers are unfamiliar with the strategies on using multi-sensory integration approach in teaching English, the project requires the support of a consultant from university or professional institutions who possess the expertise in this area to support our teachers in planning and evaluating the teaching materials developed, as well as reflecting on the quality of the lessons through lesson observations. The consultant is expected to organize training workshops for teachers, join their co-planning meetings and observe their lessons, provide feedback to them, and assist in the process of evaluation and dissemination of this project. The remuneration, which is paid directly to the university / institution to which the consultant belongs, should cover the staff recovery cost of supporting our school for 40 contact hours (with at least 3 lesson observations for each class with digital touchscreen installed) and the travelling subsidy for the consultant.</p>
c. Equipment	<p>\$50000/digital touchscreen x 8 classrooms = \$400000</p> <p>Suggested breakdown for each touchscreen</p> <p>Touch panel = \$35000</p> <p>Interactive whiteboard and writing pens = \$5000</p> <p>Software package = \$5000</p> <p>Transportation and Installation Service = \$5000</p>	\$400000	<p>Interactive digital touchscreens with a diagonal width of about 90' will be ordered and installed in the four P. 1 classrooms, as well as the four remedial classrooms designed specifically for our struggling students in P. 2 to P. 4. The cost should also cover the transportation and installation cost of the digital touchscreens (e.g. dismantling old blackboards and installing wall-mount features), supporting toolkits such as interactive whiteboard and writing pens, as well as any bundled teaching software and user guides that come with the digital touchscreens. For detailed specifications of the touchscreens, please refer to Section 2.7c above.</p>
d. Works			
e. General expenses	General printing, photocopying and other administrative cost (e.g. mailing / advertising) to carry out the project	\$2000	This includes the administrative cost incurred during the preparation phase, such as printing, photocopying and sending tender documents, as well as in the evaluation phase, such as preparing surveys and interview protocols for teachers and students.
	Auditing fee \$5000	\$5000	The QEF requires that an auditor be hired for any projects over \$100,000. The maximum allowance is \$5000
f. Contingency	3% of the total cost excluding staff cost	\$13470	As the project lasts for more than one year, a 3% contingency fee is budgeted according to the QEF guideline, to

			allow for unforeseeable issues that may result in a slight increase in expenditure in any of the above areas.
Total Grant Sought (HK\$):		\$821570	
			\$821,600 (round up to nearest hundred)

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- (i) Applicants should refer to the QEF Pricing Standards 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.
- (ii) For applications involving school improvement works, a contingency provision of not more than 10% for carrying out works is considered acceptable.
- (iii) For projects lasting for more than one year, a contingency provision of not more than 3% of the total budget exclusive of staff cost and works expenditure (including the related contingency provision), if any, is considered acceptable.

3. Expected Project Outcomes

3.1	Deliverables / outcomes	<input checked="" type="checkbox"/> Learning and teaching materials <input type="checkbox"/> Resource package <input checked="" type="checkbox"/> e-deliverables*(<i>please specify</i>) __This includes the interactive activities that the teachers design using the teaching software that come with the interactive digital touchscreens. For each unit, there will be at least 1 such activity. During the trial and full implementation phase, a total of 5 units will be developed for P. 1, and 5 units will be developed for each of the remedial classes in P. 2 to P. 4, hence resulting in a total of 20 interactive activities. <input type="checkbox"/> Others (<i>please specify</i>) _____
		<i>*For e-deliverables to be hosted on HKEdCity, please liaise with HKEdCity at 2624 1000.</i>
3.2	Positive impact on quality education/ the school's development	This project is a pioneer effort in seeking innovative approaches to help struggling students learn English, through the integration of the principles of multi-sensory integration, as well as a recently developed e-learning tool known as interactive whiteboard. Successful implementation of this project would mean that we are one step closer towards achieving the ultimate goal of inclusive education, which the government has been advocating over the past few decades.

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*)

Both quantitative and qualitative data will be collected to evaluate if the aims of the project are successfully achieved. For quantitative data, a pre-test will be designed and administered to the participating P. 1 and remedial students at the beginning of the Full Implementation phase. A post-test will be designed and administered to the same students at the end of the phase. The test will cover areas related to the four target areas that the teachers will focus on (refer to section 2.7a of this document for details). The pre- and post-test scores will be subjected to a paired-sample t-test to see if any significant inferential statistic with $p < .05$ can be obtained. The principal, PSMCD, English Panel Chair and all English teachers will be administered survey to tap their beliefs on the feasibility and effectiveness of the project. Participating students will also be administered simple survey to tap their perceptions on using the interactive digital touchscreens to learn English. Descriptive statistics such as mean, median and standard deviations will be reported. For qualitative data, focus group interview will be carried out with the participating English teachers to solicit their views on different aspects of the project, such as students' performance in the four target areas, training workshops, on-site support service from external consultant, the support from TA, the quality of the lessons, student reactions as well as other concerns that they raised. Excerpts of the interview data will be transcribed and included in the final report submitted to the QEF. Lesson observation data will also be gathered, by collecting observation forms from various observers, such as principal, PSMCD, EPC, external consultant and other teachers. Minutes from the post-lesson observation meetings will also be used as additional evidence to validate if the lessons were carried out smoothly, students were engaged and learning objectives were achieved.

For applications with grant sought exceeding \$200,000, please complete Parts 3.4 and 3.5.

3.4 Sustainability of the project

The materials developed in this project, including lesson plans, lesson observation records and other teaching materials generated from the software that bundled with the digital touchscreens, will all be retained and reused in subsequent

cohorts of P. 1 students and other struggling students in P. 2 to P. 4, with further refinements if deemed necessary. More units will be developed in due course. As the digital touchscreens are installed in all P.1 classrooms and remedial classrooms, we are aware that this project should also be promoted to non-English teachers who teach in these classrooms. Therefore, an internal experience sharing session will be organized by our English teachers for all staff. During the sharing session, our English teachers who take part in the programme will share the successful experiences in using interactive digital touchscreens in their lessons. The English Panel Chair and PSMCD will also assist the Chinese and Math Panel Chair in developing a systematic plan for using interactive digital touchscreens in P. 1 as well as remedial teaching in other levels, from Year 2020-2021 onwards.

The extra TA hired in this project will transfer the knowledge of developing teaching materials and maintaining digital touchscreens and developing software packages to the regular teachers and TAs in our school, so that the later can continue to follow up any technical issues of the digital touchscreens after the project.

The school will bear the recurrent expenditure incurred upon the installation of the digital touchscreens, including maintenance costs, daily operating costs, etc. and the possible consequences that may arise.

3.5 Dissemination

Please provide a dissemination plan for sharing the good value of the project with the school sector.

(Examples: dissemination seminar, learning circle)

Upon completion of this project, our school will organize a 2-hour dissemination seminar for all primary English teachers in Hong Kong with the help of the university consultant. The seminar will be available for registration under the EDB Training Calendar System. During the seminar, our English teachers will share their successful experiences in adopting multi-sensory integration approach together with interactive digital touchscreens and answer their queries on implementation.

The e-deliverables developed in the current project, including lesson plans and other teaching materials, will be uploaded to our school's server and a link will be made in the HKEDCITY server so that interested primary teachers can access and download them for free.

The school will also participate in the annual QEF exhibition and further present our project. Our full proposal and reports will also be uploaded to the QEF's QCRC website for the public to access.

3.6 Report Submission Schedule

My school commits to submit proper reports in strict accordance with the following schedule :

Project Management		Financial Management	
Type of Report and covering period	Report due day	Type of Report and covering period	Report due day
Progress Report 01/07/2019 –31/12/2019	31/01/2020	Interim Financial Report 01/07/2019 –31/12/2019	31/01/2020
Progress Report 01/01/2020 - 30/06/2020	31/07/2020	Interim Financial Report 01/01/2020 - 30/06/2020	31/07/2020
Final Report 01/07/2019 - 31/12/2020	31/03/2021	Final Financial Report 01/07/2020 - 31/12/2020	31/03/2021

3.7 Asset Usage Plan

Item / Description	No. of Units	Total Cost	Proposed Plan for Deployment (e.g. for use by school)	Justification(s) (e.g. sustain the project impact)
\$50000/digital touchscreen x 8	8	\$400000	for use by school	To sustain the project impact

Annex 1

This annex serves to provide additional details to justify the project needs.

1. Reasons for purchasing digital touchscreens instead of tablets

Constraints of Our School in Implementing E-learning

Our students belong to the digital generation of the 21st century. In order to stimulate pedagogical practices in English learning that can meaningfully engage these students, the school administration is looking to equip the classrooms with technology. We have constantly been searching for different means to achieve this goal. Purchasing 80 ■■■ using school funding has been a successful attempt. These devices are used in English lessons in different classes almost daily. However, the ■■■ are not available for use in every classroom for every English lesson, every day. They can only be used in two classes at a time. Adding to the problem is that our school does not have lifts, hence ■■■ trolleys cannot be bought to transport ■■■ in our school. Teachers and IT staff often have to waste time transporting many ■■■ to and from the classrooms with bare hands. This has resulted in additional workload and sometimes loss of precious lesson time. Adopting BYOD isn't a feasible solution either, due to concerns about our parents' affordability and the constraints in our school (e.g. the absence of lockers). The school is equipped with only one small computer room. However, with 24 classes needing Computer Study lessons, it appears unlikely that this room can be consistently vacant for teaching and learning English. Classrooms are equipped with projectors and screens, and blackboards. However, such equipment leans towards teacher-dominated classrooms.

Given all the aforementioned constraints, it appears then that purchasing digital touchscreens in classrooms is the only viable solution for our school, in order to carry out engaging e-learning activities in classrooms, especially in lower-primary level. Digital touchscreens have now superseded interactive whiteboards and are known to bring enhanced learning experiences to technologically savvy students. The school would like to fully exploit the digital skills the students are comfortable with and therefore better engage students in learning English, no matter what their level of ability is. The various functions of digital touchscreens in teaching and learning, as compared to traditional teaching or ■■■, are delineated in the following section.

Unique Functions of Digital Touchscreens

- Touchscreens can help teachers move beyond a focus on mere content delivery and further towards collaborative lessons to encourage whole class participations.
- Touchscreens are known to be easy to operate, allowing students to easily navigate applications, edit digital content, make annotations, brainstorm, give presentations, manipulate text and images, play interactive educational games and trigger multi-media content. Multi-touch capacity screens allow multiple students to operate the screen at one time, interacting with multi-sensory digital content and cooperating with each other at the same time. Teachers serve as the mediators between the touchscreen and the class, encouraging whole-class or small-group collaborations and decentralizing the role of the teachers as facilitators. These kinds of co-learning experiences are hard to achieve with ■■■, where students work on their own device only.
- When applied to small group teaching, teachers can engage reluctant writers. If students can move text around to organise a piece of writing, they are more likely to participate in the writing process. Also, as these students come out to interact with the digital touchscreens, teachers can monitor the learning progress of these students more easily, as compared to ■■■ or traditional paper-and-pencil mode of writing.
- Digital touchscreens are brighter, crisper, more efficient and more engaging alternatives to blackboards, whiteboards, projector screens or tablets. The screens also produce bright, colour-rich images. The anti-glare panels ensure students can clearly see the content in any lighting conditions no matter where they are seated.
- Digital touchscreens make it easier for a teacher to stay organized during the lesson. Teachers usually have to write notes or lesson content on the blackboard before the lesson starts, then constantly erases and rewrites as the lesson progresses. Regular disruptions can cause students to lose interest. With touchscreens, teachers can plan presentations and exercises in advance, use them for multiple student

groups, screenshot and keep digital pages annotated by students during a lesson for further consolidation and revision, and share lesson content with other teachers. These functions are not available on tablets to date.

2. Using Digital Touchscreens to Promote Meaningful Communications in Authentic Contexts

- To learn alphabets, phonology, grammar and vocabulary skills in context, students can engage in collaborative digital role-playing or storytelling using the touchscreens. The bundled software should allow the development of different graphic-rich scenarios with animated characters in it. These scenarios should mimic various daily life contexts (e.g. shopping / eating in restaurants, etc). Students in small groups can make the characters talk by recording their voices and drag them to different places on the touchscreens, while they are practicing certain sounds / grammar structure / vocabulary. This can be very engaging and fun to students.
- Other than digital storytelling, touchscreens also enable students to engage in presentations, interactive games, video content and other group activities all in one session and in a contextualized way. Young children have short attention span. Breaking up a lesson into shorter, varied segments can help students remain focused. Touchscreens can make it easier to do this by flipping from one segment to another. Each element of the lesson can be pre-planned.

3. Assessment Criteria:

The effectiveness of the project can be measured in the following aspects:

- Student engagement and student sustained motivations in learning English: This is measured qualitatively through making anecdotal records in systematic lesson observations by teaching staff, such as English Panel Chair, PSMCD and level coordinators. It can also be measured quantitatively by asking participating teachers and students to complete simple questionnaires (in the form of smileys for lower-primary students) before, during and after the implementation of the project to see if students are more motivated in English lessons, as well as more confident in completing English tasks or using English in daily-life contexts.
- Student performance in tasks: As stated in the original proposal, a pre-test and a post-test will be administered to students on the four key areas, to see if there are significant improvements for the students in treatment group (i.e. with digital touchscreens), as compared to their same-age control cohorts without using digital touchscreens in alphabetical knowledge, phonics, grammar and vocabulary. The pre-test will be conducted in April, 2019 while the post-test will be carried out in June, 2019.

4. Utilization Rate of the Digital Touchscreens

- Project Duration:
 - Trial Implementation: 2019 Apr – 2019 June (about 8 teaching weeks)
 - Full Implementation: 2019 Sept – 2020 June (about 32 teaching weeks)
- Number of lessons per week: When installed in classrooms, the digital touchscreens can be used in ALL English lessons. Hence, there are 10 x 35 minute formal English lessons per week per class except dictations and homework tutoring sessions, leading to about 4-5 hour usage per week. In each lesson, the unique functions of digital touchscreens can be used in at least HALF of the entire lesson, where students can come out to carry out various interactive e-learning activities with the teacher. At other times, the touchscreens can function just like projector screens and use for content delivery.
- After the implementation in English lessons, English teachers will serve as knowledge-transfer agents and share their successful experiences with other teachers. The interactive functions of digital touchscreens is therefore expected to be implemented in Chinese and Math lessons as well in Year 2020-2021 onwards.

Annex 2

Further elaboration to justify the need of purchasing digital touchscreens instead of tablets are provided as below:

Benefits to student learning

- **Save time for dealing with login procedures or other technical problems:** If tablets are used, students often need to go through some login procedures (e.g. typing username, password, or special codes) before they can access the content that teachers have prepared for them. As KS1 students or SEN students are generally slow in typing, controlling different apps or browsing different websites, a lot of precious lesson time would have been wasted on the preparation part. Digital touchscreens can solve this problem as students can just come out and interact with the lesson content directly while teachers can take care of all the technical aspects.
- **Encourage collaborative learning:** If students operate their own tablets, they can only work independently (interacting with their own device), hence giving less chance for them to learn from each other. However, the new digital touchscreens allow up to 10 students to come out and interact at the same time, which foster collaborations among peers. Weaker students can also benefit from their better-able peers. For younger or at-risk students, the classroom atmosphere is generally better when students can work together with their peers to learn English.
- **Encourage more classroom dialogues:** If students operate their own tablets, they will barely need to speak in English, as they only control their own device with their hands. However, when students come out to interact with the touchscreens, they are actually “performing” in front of the whole class, other students, who act as audience, will usually provide feedback to the performers, hence resulting in more S-S and T-S interactions and fostering the development of students’ speaking skills.

Teacher readiness

- **Disciplinary control:** Even though there are apps for monitoring or remote controlling tablets, our English teachers are generally not familiar with their exact functions. Even if they are trained to operate it, it would be hard to monitor more than 30 tablets at the same time (our class size for P. 1 is 33-35). This echoes the first point that if any technical problem arises or some students misbehave (e.g. using other apps not intended by the teachers), a lot of precious lesson time would be wasted in solving those problems.
- **Monitoring student learning progress:** If tablets are used, in most cases teachers are only able to check their results after they have submitted their answers. They can give feedback on whether their answers are correct, but can hardly monitor their learning progress (i.e. how they can find the answers). If digital touchscreens are used, students come out to interact with the lesson content, hence the entire learning process can be clearly shown to teachers. For example, if students do a matching task in tablets, teachers can only see the “end results”, but if students do the task on a touchscreen, teachers can track their thinking process as they are matching each item and provide guidance accordingly. For beginners of the English language, knowing their thinking process is sometimes more important than knowing the end results.

Tablets and digital touchscreens serve different purposes

- One last thing we would like to emphasize is our school is not trying to **REPLACE** tablets with digital touchscreens. In fact, they serve different purposes. Our school has used [REDACTED] on KS1 or SEN students before, but we found that tablets are mainly suitable for the following purposes only.

- Reading e-books independently (with choices)
- Watching short video clips independently (with choices)
- Answering MC questions prepared by teachers

The above tasks are rather independent in nature, and require minimal technical knowledge in operating the device, hence these students are generally able to accomplish them. However, for tasks that require multiple steps, interactions or collaborations between peers, or involve speaking, as argued above, it would be best accomplished by digital touchscreens.