Dedicated Funding Programme for Publicly-funded Schools

Project Number:	2022/0527 (Revised)
Name of School:	羅定邦中學 Law Ting Pong Secondary School
Project Title:	以互動電子白板促進主動學習 Active Classroom Learning with Interactive Whiteboard
Beneficiaries:	Secondary
Estimated Number of Direct Beneficiaries:	Student:780 (S.1-S.6) Teacher:70

1. Project Needs

1.1 Project aim(s)

This project aims at promoting active classroom learning with the use of interactive whiteboard, which will:

- enhance students' learning motivation and classroom engagement,
- their effective development of higher-order thinking skills and other 21st century skills, and
- cater for students' diverse learning needs.

1.2 School-based innovative element(s)

This project consists of school-based innovative element.

Teachers have been exploring different e-learning tools in classroom teaching to foster students' active learning. However, the traditional classroom facilities of non-interactive whiteboard and projector cannot fully support this move. Using interactive whiteboards as a replacement can make the following happen, which leads to the achievement of the project aims:

- The ability to write, edit, annotate, and navigate directly on the screen make interactive whiteboard a big draw for students. Also, the smart technology of interactive whiteboards enables teachers to leverage interactive apps for illustrating abstract concepts or engage students in different class activities. During brainstorming sessions, students can gather in front of the board to flesh out ideas with mind maps whereas teachers can highlight salient points for further discussion.
- Interactive whiteboards with screen mirroring enable students to make group presentations and engage other students in their groups and the classroom. It allows real-time collaboration and more efficient classroom discussions. On the big screen, teachers can also give instant feedback on students' answers and respond to students' feedback.
- Teachers can export whiteboard sessions as documents or videos which they can then review post-class or send as notes to all students. This also free students from notetaking, giving them more room to focus on understanding of lesson contents and classroom activities. Students can review the lesson contents according to their own pace after class for self-directed learning.
- Interactive whiteboards can display high-brightness and clear images without reflections on the screen and being unaffected by the ambient lighting. This can resolve the current problem the school is facing in using the projector, which seriously affects the learning process.

With the interactive whiteboards, teachers can implement different active learning strategies to achieve the project aims.

1.3 Meeting with school-based/students' needs

Item: Relevance to the school development plan of this cycle/major concern

One of the major concerns of the school's three-year development plan (2023-2025) is to raise students' academic achievement through strategic curriculum and assessment design as well as effective teaching and learning activities. In line with it, teachers are working to explore effective pedagogical practices to promote students' higher-order thinking skills and other 21st century skills. Through active learning using interactive whiteboards, the effectiveness of classroom learning and thus students' academic achievement can be raised.

2. Project Feasibility

2.1 Key concept (s)/rationale(s) of the project

Item: Reference pedagogical theories/strategies

Active learning is based on fostering students to participate, interact, discuss and think during the classroom rather than being only just listeners for the lectures. It can be defined as an "instructional method that engages students in the learning process… and that requires students to do meaningful learning activities and think about what they are doing" (Prince, 2004, p.223). Research has shown that active learning can help students achieve a far deeper understanding of a topic compared to merely listening to lectures or reading textbooks (Freeman et al, 2014) and "Introducing activity into lectures can significantly improve recall of information while extensive evidence supports the benefits of student engagement" (Prince, 2004, p.226). Furthermore, the use of active learning strategies has a positive impact on developing students' higher-order thinking, and other 21st century skills such as creativity and problem-solving (Romadhoni & Nurlaela, 2018).

Using an interactive whiteboard in the classroom could enhance and facilitate the implementation of active learning strategies by addressing the three domains of learning: cognitive, affective and psychomotor (Gabatshwane Tsayang et al, 2020). They promote interaction among the students, the learning materials and the teacher by providing a large workspace for hands-on work with multimedia resources. Research from the United States, the United Kingdom and Australia indicates that the functionality of the interactive whiteboard and its accompanying software allow for the development of classroom activities that are engaging for students, so they support active learning, encouraging greater focus, participation and interaction, and improving student learning outcomes as a result (Beeland, 2002; Latham, 2002; Lee and Boyle, 2003).

Furthermore, different learning styles and special needs of students can be addressed by incorporating interactive whiteboards into classroom learning. A number of researches point to the range of uses of an interactive whiteboard for a wide variety of learners. Allowing students to physically interact with the board can assist with meeting the needs of tactile learners (Beeland, 2002); the use of text and pictures, animations and videos promotes visual learning that grab students' attention (Cunningham et al., 2003); and the interactivity and visuals of interactive whiteboards are complementary when teaching students with specific learning difficulties or disabilities (Pugh, 2001).

In view of the above information and findings, the school will continue to explore and optimise different active learning strategies. Supplemented with the use of interactive whiteboards, it is believed that students' learning outcomes can be greatly bolstered.

References:

1. Beeland Jr., W.D. (2002). Student Engagement, Visual Learning and Technology: Can Interactive

Whiteboards Help?
2. Cunningham, M., Kerr, K., McEune, R., Smith, P., & Harris, S. (2003). Laptops for Teachers: An Evaluation of the First of the Initiative.
3. Freeman, S., Eddy, S.L., McDonough, M., Smith, M.K., Okoroafor, N., Jordt, H., Wenderoth, M.P. (2014). Active learning increases student performance in science, engineering, and mathematics. Proceedings of the National Academy of Sciences U.S.A., 111, 8410-8415.
4. Gabatshwane Tsayang, Tshepo Batane & Aaron Majuta (2020). The impact of interactive smart boards on students' learning in secondary schools in Botswana: A students' perspective. International Journal of Education and Development using Information and Communication Technology (IJEDICT), 2020, Vol. 16, Issue 2, pp. 22-39.
5. Latham, P. (2002). Teaching and Learning Primary Mathematics: The Impact of Interactive Whiteboards.
6. Lee, M., & Boyle, M. (2003). The Educational Effects and Implications of the Interactive Whiteboard Strategy of Richardson Primary School: A Brief Review.
7. Prince, M. (2004). Does Active Learning Work? A Review of the Research. Journal of Engineering Education, 93(3), 223-231.
8. Pugh, M.D. (2001). Using an Interactive Whiteboard with SLD Students.
9. Romadhoni, I., & Nurlaela, L. (2018, July). Higher Order Thinking Skills to Enhance Millennial Students Through Active Learning Strategies. In International Conference on Indonesian Technical Vocational Education and Association (APTEKINDO 2018) (pp. 91–94). Atlantis Press.

2.2 School's readiness

Item: Relevant training received/qualifications and experience acquired by teaching staff

Our classrooms are equipped with a robust wireless network, computers and Apple TV, which can accommodate active classroom learning through interactive whiteboards. There is also a collection of 120 iPads available for teachers and students to use.

Students and teachers in general can harness the use of electronic tools and are regularly employing different e-learning platforms including Google Classroom and Moodle for in-class and out-class learning and teaching. In alignment with the school's focus, teachers have been exploring effective e-learning tools to engage students in meaningful activities and maximize learning effectiveness.

This school year, our school has launched a multidisciplinary STEAM project on Climate Change in junior forms, in which students apply their STEAM knowledge and skills learnt in different subjects to solve a real-life problem. Availing the use of interactive whiteboard in such lessons, which comprised a wide range of e-learning resources and group activities, could have made the learning process more engaging and productive. In the coming year, efforts and resources will be scaled up to implement STEAM education including the STEAM project, which necessitates an extensive use of e-learning tools and interactive whiteboard should be an essential item in the classroom.

2.3 Principal and teachers' involvement

School Staff: Principal **Duties:** Monitor and supervise, Process funding
School Staff: Vice principal **Duties:** Formulate plans, Coordinate / collaborate, Process funding, Monitor and supervise, Conduct / participate in activities
School Staff: Subject panel head **Duties:** Formulate plans, Coordinate / collaborate, Plan curriculum / activities, Conduct / participate in activities, Consolidate learning and teaching materials
School Staff: Subject teachers **Duties:** Plan curriculum / activities, Conduct / participate in activities, Coordinate / collaborate, Consolidate learning and teaching materials

2.4 Project period

Project Start Date and End Date: from 12/2024 to 02/2026
The project lasts for 1 year(s) and 3 month(s).

2.5 Details of project activities

a. Project implementation measures

Activity 1: 中國語文

Implementation Period:

2/2025 - 02/2026

Key learning stages and key learning areas/subjects/learning elements	Content	Number of sessions
• 中國語文 (中一至中五級)	• 教師在學期初建立電子學習平台，上載單元影片、參考資料，發放訊息提示學生完成單元任務，學生亦可以透過平台發問或討論。 • 在上課期間，教師利用互動電子白板教授，方便對學生說明、補充及解決疑難。教師亦展示學生課業、討論成果，加強回饋效果。學生們可以觀摩別人的意見，甚至同時補充個人論點，促進同學之間的協作學習。 • 例如中四級教授《岳陽樓記》，教師預先在電子學習平台上載有關作者生平、寫作背景等影片。上課時，教師利用出版社的電子書，對應相關課文內容，說明不同層次的	• 每星期 5 節，每節 50 分鐘

	課文知識，表面意思如字詞理解，深層意義如作者價值觀。教師利用互動電子白板展示、回饋學生的學習表現。 • 教師運用提問及搶答應用軟件製作問答遊戲，讓學生愉快學習。教師從中收集相關數據，檢視學生能力。 • 例如中一級教授《賣油翁》，教授課文內容後，教師利用提問及搶答應用軟件進行問答遊戲，提問字詞解釋、賣油翁與陳康肅的人物性格、「熟能生巧」的立意、借事說理寫作手法等課文知識。這加強課堂的趣味性，教師又能得知學生的學習難點。	

Number of school personnel and/or appointed project staff involved and respective duties:

- 中一至中五級中國語文科老師

Expected outcomes:

- 學生能更容易跟從老師指示，加強教學能。
- 利用互動電子白板進行協作學習，學生能分享個人觀點，並即時參考同學意見，以致課堂的互動性增强，學生的看法更加全面。
- 學生能愉快學習，並能增加相關知識的印象。

Activity 2: English Language

Implementation Period:

2/2025 - 02/2026

Key learning stages and key learning areas/subjects/learning elements	Content	Number of sessions
• S.1-S.6 English Language	• S1 Novel Study Unit: Kensuke's Kingdom • Students can develop skills involved in reading aloud through reading aloud the novel projected on the interactive whiteboard line by line. • Students can develop their presentation skills through showing their storyboard projected on the	• S1: 6 weeks, 5 periods/week, 50 min/period • S2: 6 weeks, 5 periods/week, 50 min/period • S3: 8 weeks, 5 periods/week, 50 min/period

	interactive whiteboard with the use of the touch-screen function. • S2 Novel Study Unit: Cirque du Freak • Students can enhance skills involved in reading aloud through reading aloud the novel projected on the interactive whiteboard line by line. • Students can enhance their presentation skills through showing their storyboard projected on the interactive whiteboard with the use of the touch-screen function. • S3 Wider Reading Unit • Students can enhance skills involved in reading aloud through reading aloud the novel projected on the interactive whiteboard line by line. • Students can develop their presentation skills through showing their storyboard projected on the interactive whiteboard with the use of the touch-screen function. • S4 Short Stories • Students can enhance their reading skills through learning how to annotate texts while reading. • S5 SBA & Film Appreciation • Students can enhance their speaking skills through reviewing their performance in the SBA practice (Part A – Group Interaction) recorded by the interactive whiteboard. • S6 Understanding DSE & SBA • Students can enhance their speaking skills through reviewing their performance in the SBA practice (Part B – Individual Presentation) recorded by the interactive whiteboard.	• S4: 8 weeks, 5 periods/week, 50 min/period • S5: 8 weeks, 5 periods/week, 50 min/period • S6: 7 weeks, 5 periods/ week, 50 min/ period

<u>Number of school personnel and/or appointed project staff involved and respective duties:</u>

- S.1-S.6 English Language Teachers

Expected outcomes:

- At least 70% of teachers in each form will agree that students have made improvement in their reading aloud and presentation skills (4 or above on a scale of 6).

Activity 3: Mathematics

Implementation Period:

2/2025 - 02/2026

Key learning stages and key learning areas/subjects/learning elements	Content	Number of sessions
• S.1-S.6 Mathematics	• Visualize abstract ideas by the interactive whiteboard and online resources to cater for learning diversity. • Examples of topics include: • S1: Algebraic expressions • S2: Congruence and Similarity • S3: Centres in a triangle • S4: Equations of straight lines • S5: Applications of trigonometry in 3D figures • Provide instant feedback to students during the lesson, which encourages students' continuous self-assessment and create a sense of accomplishment in them. • Provide a platform for peer evaluation to enhance interaction between students and teacher and to motivate students' participation in lesson activities. • Display students' works on the interactive whiteboard and comment on their works to develop higher-order thinking. • Develop students' self-directed learning with the aid of different functions of interactive whiteboard including sharing of lessons and notes saved.	• 5 periods/week, 50 min/period

Number of school personnel and/or appointed project staff involved and respective duties:

- S.1-S.6 Mathematics Teachers

Expected outcomes:

- Students participate more actively in learning activities.
- More students can understand abstract ideas in Mathematics.
- Students are more capable of tackling harder questions.
- Low achievers can regain their interest in Mathematics.
- Students can develop their self-learning habit.

Activity 4: Science

Implementation Period:

2/2025 - 02/2026

Key learning stages and key learning areas/subjects/learning elements	Content	Number of sessions
• S.1-S.3 Science	• Students can annotate different diagrams of laboratory apparatus & instrument, experimental set-ups and biological structures on the interactive whiteboard when studying topics such as: • S1 Unit 1: laboratory apparatus and microscope • S1 Unit 2: set-ups of filtration and distillation • S1 Unit 4: different parts of reproductive system • S2 Unit 7: different parts of respiratory system • S2 Unit 8: different components in electric circuit • S3 Unit 12: different parts of digestive system • Apps can be used with the interactive whiteboard to illustrate abstract science concepts, such as: • S1 Unit 6: particle theory • S1 Unit 4: atomic structure • S2 Unit 7: the flow of air during breathing • S2 Unit 8: flow of electricity in different materials • S3 Unit 14: refraction and total internal reflection • The screen mirroring of the interactive whiteboard can be used	• S1-2: 4 periods/week, 50 min/period • S3: 5 periods/week, 50 min/period

	to facilitate classroom discussion in teaching some topics, such as: • S1 Unit 2: examples leading to reduction in biodiversity • S1 Unit 2: conservation to protect wildlife • S2 Unit 7: greenhouse effect & global warming • S2 Unit 8: ways to protect our eyes and ears • S3 Unit 10: effects of unbalanced diet • S3 Unit 11: environmental problems associated with the use of metals	

Number of school personnel and/or appointed project staff involved and respective duties:

- S.1-S.3 Science Teachers

Expected outcomes:

- Students are engaged in an active learning environment.
- Classroom interactions among teacher and students can be enhanced.
- Instant feedback can be given to students.

Activity 5: 中國歷史

Implementation Period:

2/2025 - 02/2026

Key learning stages and key learning areas/subjects/learning elements	Content	Number of sessions
• 中一至中三級中國歷史	• 學習內容 • 中一級： • 西周封建、春秋戰國、魏晉漢化及士族、隋文帝建設、安史之亂、宋商業（清明上河圖） • 中二級： • 北宋商業、北宋滅亡、南宋商業、元統一及民族政策、明北京及長城、清四大戰爭（鴉片、英法、甲午、八國之通商口岸、入侵地方等） • 中三級： • 袁世凱、軍閥、五四運動、國共分合、抗日戰爭、內戰、改革開放	• 每星期 2 節，每節 50 分鐘

	• 課堂推行模式 • 1. 重溫已有知識及歷史背景。 • 2. 講解課題，並進行延伸討論。 • 3. 完成工作紙，鞏固學習。 • 課堂策略 • 運用互動電子白板，教師可即時顯示地圖，通過觸控放大縮小，讓學生更清晰瞭解相關建議、封國、事件地點。 • 可設計教學活動，例如小組討論，互動問題遊戲，利用互動電子白板增强活動的互動性、緊湊性及趣味性。 • 可運用互動電子白板軟體內的錄影功能，保存課堂上的筆記、討論重點及回饋，讓同學作課後温習。 • 通過多媒體效果（如動畫、聲音、圖像等），以及讓學生使用觸控筆在互動電子白板上回答問題、貼圖等，令學生有效掌握歷史發展的重要特徵。	

Number of school personnel and/or appointed project staff involved and respective duties:

- 中一至中三級中史科老師

Expected outcomes:

- 學生能有效地認識相關重要封國、建設、口岸、重要事件發生地點，並對相關課題有更深入的認識。
- 學生能愉快學習並獲得即時回饋。
- 課堂活動更富趣味和互動性，以照顧學習多樣性。

Activity 6: Geography

Implementation Period:

2/2025 - 02/2026

Key learning stages and key learning areas/subjects/learning elements	Content	Number of sessions
• S.1-S.3 Geography	• Topics: • Urban land use (S1) • Climate change (S1-S2) • Water problems (S2) • Natural hazards (S3)	• 1 term, 3 periods/week, 50 min/period

	• Food problems (S3) • Map reading (S1-S3) • When teaching students to draw climatic graphs and cross-sections of landforms, the teacher can draw the graphs step-by-step on the interactive whiteboard, and students can follow the steps to draw the graphs on their worksheets. The lessons can be recorded for less able students to revise and practise after class. Moreover, students' work is presented on the interactive whiteboard, and they are asked to figure out some common mistakes in their drawings to avoid repeating the same mistakes. • When having group discussions about impacts of different hazards, problems and measures to reduce damage and loss, students can share their ideas and suggestions with pictures on Padlet. They can give comments to other groups and evaluate the effectiveness of measures proposed by other groups on Padlet. They are also invited to give presentations in front of the class and they can explain their thoughts with annotations on interactive whiteboards. The teacher can show the Padlet on the interactive whiteboard, highlight salient points for further discussion, and also export the discussion outcomes for students to study after class. • When doing map reading, the teacher can enlarge maps on the interactive whiteboard for students to better follow instructions to find out the direction and distance between two features.	

Number of school personnel and/or appointed project staff involved and respective duties:

- S.1-S.3 Geography Teachers

Expected outcomes:

- Students are more motivated and engaged in learning activities with more interactions with the teacher and classmates.
- Students can develop higher-order thinking skills and generic skills.
- Students' diverse learning needs can be catered for.

Activity 7: History

Implementation Period:

2/2025 - 02/2026

Key learning stages and key learning areas/subjects/learning elements	Content	Number of sessions
• S.2-S.3 History	• S2 topic: Renaissance • Matching activities: Students can match the art works of different Renaissance artists and identify the architectural features of Renaissance buildings with the help of interactive whiteboards. • S3 topics: World War I (WWI) & World War II (WWII) • The interactive whiteboard can show the world map and help students to locate different countries in the world. It can also be used to highlight the participating countries in WWI & WWII. • Students can present using the interactive whiteboard to demonstrate that they can identify the locations of different incidents that happened during the two World Wars.	• 4-6 periods per topic, 50 min/period

Number of school personnel and/or appointed project staff involved and respective duties:

- S.2-S.3 History Teachers

Expected outcomes:

- Students can develop their IT skills to cope with the advancement of technology while building up their history knowledge.
- Students become more interested in learning history-related topics.

- Teachers can record and feedback on students' learning timely, which paves the way for students' effective learning reflections.

Activity 8: Citizenship, Economics and Society

Implementation Period:

2/2025 - 02/2026

Key learning stages and key learning areas/subjects/learning elements	Content	Number of sessions
• S.1 & S.3 Citizenship, Economics and Society	• S1 topic: Module 22 Hong Kong Government and I • Identify different districts in Hong Kong and match different District Council logos accordingly. • Through lesson activities using the interactive whiteboard, students can identify the 18 districts in HK and their District Council logos on the HK map. • S3 topic: Module 13 Economic Performance of HK • Teachers can introduce the four pillar industries in the HK economy through the support of multi-media function of the interactive whiteboard. Students can be guided to analyse different trends through looking at various graphs and data about the economic performance of Hong Kong in an interactive and effective way.	• 4-6 periods per topic, 50 min/period

Number of school personnel and/or appointed project staff involved and respective duties:

- S.1 & S.3 Citizenship, Economics and Society Teachers

Expected outcomes:

- Students can develop their IT skills to cope with the advancement of technology while building up their Citizenship, Economics and Society knowledge.
- Students' interest in learning economic-related topics can be aroused.

Activity 9: Biology

Implementation Period:

2/2025 - 02/2026

Key learning stages and key learning areas/subjects/learning elements	Content	Number of sessions
• S.4-S.6 Biology	• Students can annotate different biological structures on the interactive whiteboard, such as: • S4 Ch6 – Digestive system • S4 Ch7 – Respiratory system • S4 Ch8 – Structures of the heart • S4 Ch9 – Structures of the leaf • S4 Ch13 – Reproductive system • S5 Ch15 – Structures of the eyes and ears • S5 Ch16 – Structures of the brain and spinal cord • S5 Ch25 – Structure of DNA • S6 E1 – Structures of the nephron • Apps can be used with the interactive whiteboard to illustrate abstract biological concepts, such as: • S4 Ch3 – Diffusion and osmosis • S4 Ch6 – Absorption of nutrients • S4 Ch8 – Blood flow • S4 Ch10 – Transpiration pull • S4 Ch11 – Mitotic and meiotic cell division • S5 Ch20 – Energy flow along the trophic levels • S5 Ch25 – Gene expression • S5 Ch27 – Natural selection • S6 E1 – Hormonal regulation of the menstrual cycle • S6 E4 – recombinant DNA technology • S6 E4 – polymerase chain reaction • The screen mirroring of the interactive whiteboard can be used to facilitate classroom discussion, such as: • S4 Ch11 – compare and contrast mitotic and meiotic cell division • S4 Ch13 – effectiveness and possible side effects of various birth control	• S1 & 6: 4 periods/week, 50 min/period • S5: 5 periods/week, 50 min/period

	methods; in vitro fertilisation and termination of pregnancy • S5 Ch18 – Construct a flow chart to illustrate the feedback mechanism • S5 Ch20 – Construct and interpret food chains, food webs, and pyramids of numbers and biomass • S5 Ch26 – Contribution of Human Genome Project • S6 E4 – Ethical issues related to GMO and gene therapy	

Number of school personnel and/or appointed project staff involved and respective duties:

- Biology Teachers

Expected outcomes:

- Students are engaged in an active learning environment.
- Classroom interactions among teacher and students can be enhanced.
- Instant feedback can be given to students.

Activity 10: Physics

Implementation Period:

2/2025 - 02/2026

Key learning stages and key learning areas/subjects/learning elements	Content	Number of sessions
• S.4-S.6 Physics	• Students can annotate different diagrams on the interactive whiteboard, such as: • S4 Heat & Gases – heat transfer processes • S4 Force & Motion – addition and resolution of forces • S5 Force & Motion – projectile motion • S5 Wave Motion – ray diagrams of lenses • S5 Electricity and Magnetism – electric circuits • S5 Electricity and Magnetism – electric and magnetic field lines • Apps can be used with the interactive whiteboard to illustrate abstract physics concepts, such as: • S4 Heat & Gases – heat and internal energy	• S4 & 6: 4 periods/week, 50 min/period • S5: 5 periods/week, 50 min/period

	• S4 Force & Motion – Newton's laws of motion • S4 Force & Motion – work and energy • S5 Force & Motion – projectile motion • S5 Force & Motion – circular motion • S5 Wave Motion – wave propagation • S5 Wave Motion – diffraction and interference • S5 Electricity and Magnetism – Lenz's law • S6 Atomic World – Bohr's model and hydrogen spectrum • The screen mirroring of the interactive whiteboard can be used to facilitate classroom discussion, such as: • S4 Heat & Gases – debates on the gradual rise in global temperature due to human activities, the associated potential global hazards due to the melting of the polar ice caps and the effects on the world's agricultural production • S4 Force & Motion – the use of principles in mechanics in traffic accident investigations • S4 Force & Motion – evaluating the technological design of modern transport • S5 Wave Motion – controversial issues about the effects of microwave radiation on the health of the general public through the use of mobile phones • S6 Atomic World – the influence of nanotechnology on our health and lives • S6 Energy – the environmental implications and recent developments of electric vehicles as an alternative to traditional fossil-fuel vehicles, and the role of the government in such issues	

<u>Number of school personnel and/or appointed project staff involved and respective duties:</u>

- Physics Teachers

Expected outcomes:

- Students are engaged in an active learning environment.
- Classroom interactions among teacher and students can be enhanced.
- Instant feedback can be given to students.

Activity 11: Music

Implementation Period:

2/2025 - 02/2026

Key learning stages and key learning areas/subjects/learning elements	Content	Number of sessions
● S.1-S.4 Music	● Singing practices in different styles: ● Students can enhance their singing abilities through reading aloud the lyrics on the interactive whiteboard line by line. This would be a very useful and effective tool for students to read aloud the lyrics in different languages. ● While teaching the students about the process of inhaling and exhaling the air and getting ready to sing effectively with accurate pitch and rhythm, the interactive whiteboards can enable teachers to teach the abstract concepts or engage students in different group singing activities. ● Learning the features of musicals and giving a presentation or a musical sharing: ● Students can give the presentation or sharing through showing their PowerPoint or Google Slides projected on the interactive whiteboard with the use of the touch-screen function. ● When students are giving the presentation, they can use interactive whiteboards to write, edit, annotate, and navigate directly on the screen, which make	● 1 period/week, 50 min/period

	interactive whiteboard a big draw for their classmates. ● Analyze the pop song structure: ● Students can strengthen their music listening skills through analyzing the pop song structure (intro, verse, pre-chorus, chorus, bridge, outro). They can analyze different sections of the song on the interactive whiteboard with the use of the touch-screen function. ● Western Operas: ● While teaching the unit of western operas, the teachers can export whiteboard sessions as documents or videos which they can then review post-class or send as notes to all students. This also frees students from notetaking, giving them more room to focus on understanding lesson contents and classroom activities. Students can review the lesson contents according to their own pace after class for self-directed learning.	

Number of school personnel and/or appointed project staff involved and respective duties:

- S.1-S.4 Music Teachers

Expected outcomes:

- Students can pick up musical skills more quickly.
- Students' engagement in class is enhanced.
- Individual differences in musical ability can be catered for more effectively.

Activity 12: Spanish Language

Implementation Period:

2/2025 - 02/2026

Key learning stages and key learning areas/subjects/learning elements	Content	Number of sessions
● S.1-S.5 Spanish Language	● S1 My school life unit: ● Students can develop skills involved in reading aloud through reading	● S1: 6 weeks, 1 period/week, 50 min/period

	aloud the novel projected on the interactive whiteboard line by line. ● Students can develop their presentation skills through showing their school life projected on the interactive whiteboard with the use of the touch-screen function. ● S2 My free time Unit: ● Students can enhance skills involved in reading aloud through reading aloud the example emails projected on the interactive whiteboard line by line. ● Students can enhance their presentation skills through showing their free time activities projected on the interactive whiteboard with the use of the touch-screen function. ● S3 The food Unit: ● Students can enhance skills involved in reading aloud through reading aloud the conversations in restaurants projected on the interactive whiteboard line by line. ● Students can develop their presentation skills through showing their favorite food and restaurants projected on the interactive whiteboard with the use of the touch-screen function. ● S4 Environmental issues: ● Students can enhance their reading skills through learning how to annotate texts while reading. ● S5 Understanding DSE & DELE past papers: ● Students can enhance their speaking skills through reviewing their performance in the DELE past papers practice (Individual presentation) recorded by the interactive whiteboard.	● S2: 2 weeks, 2 periods/week, 50 min/period ● S3: 2 weeks, 2 periods/week, 50 min/period ● S4: 4 weeks, 4 periods/week, 50 min/period ● S5: 5 weeks, 5 periods/week, 50 min/period

<u>Number of school personnel and/or appointed project staff involved and respective duties:</u>

- S.1-S.5 Spanish Language Teachers

Expected outcomes:

- Students can make improvement in their reading aloud and presentation skills (4 or above on a scale of 6).

Activity 13: Visual Arts

Implementation Period:

2/2025 - 02/2026

Key learning stages and key learning areas/subjects/learning elements	Content	Number of sessions
• S.1-S.6 Visual Arts	• Introduce the concept of interactive whiteboards to students, highlighting their benefits and potential applications in Visual Arts. • Demonstrate the basic functionalities of the interactive whiteboards, such as touch-based interactions, digital pen tools, and multimedia capabilities. • Provide hands-on practice for students to explore and familiarize themselves with the interactive whiteboards, allowing them to experiment with various features and tools. • Engage students in collaborative activities, encouraging them to work together to solve creative challenges using the interactive whiteboards. • Introduce digital drawing and painting techniques using the interactive whiteboards, including different brushes, colors, and layering options. • Conduct interactive demonstrations of digital drawing and painting processes, showcasing various artistic styles and techniques. • Assign individual or group projects where students can create their own digital artworks using the interactive whiteboards, incorporating the techniques learned. • Provide guidance and support to students as they experiment with different tools and explore their creativity in the digital medium. • Teach students how to create visually appealing and interactive presentations using the interactive whiteboards, including	• S1: 6 weeks, 1 period/week, 50 min/period • S2: 6 weeks, 1 period/week, 50 min/period • S3: 6 weeks, 1 period/week, 50 min/period • S4: 8 weeks, 4 periods/week, 50 min/period • S5: 8 weeks, 5 periods/week, 50 min/period • S6: 8 weeks, 4 periods/ week, 50 min/ period

	multimedia elements, animations, and transitions. • Guide students in preparing presentations showcasing their artworks, including discussing their artistic choices, inspirations, and creative processes. • Organize interactive critique sessions, where students can present their artworks and receive constructive feedback from both peers and the instructor. • Encourage students to use the interactive whiteboards to annotate and discuss artworks during the critique sessions, fostering collaborative and critical thinking skills. • Assign collaborative projects that require students to work together using the interactive whiteboards, such as creating a mural or visual storytelling project. • Facilitate group discussions and brainstorming sessions to help students plan and execute their collaborative projects effectively. • Provide technical assistance and guidance as students work on their collaborative projects, ensuring they utilize the interactive whiteboards to their full potential. • Organize an exhibition or showcase where students can present their collaborative projects, inviting peers, parents, and the school community to appreciate and celebrate their artwork.	

<u>Number of school personnel and/or appointed project staff involved and respective duties:</u>

- S.1-S.6 Visual Arts Teachers

<u>Expected outcomes:</u>

- At least 70% of teachers in each form will agree that students have made improvement in their art appreciation and visual presentation skills (4 or above on a scale of 6).

Activity 14: Strategic, progressive implementation

Implementation Period:

2/2025 - 02/2026

Key learning stages and key learning areas/subjects/learning elements	Content	Number of sessions
• N/A	• Departments of Chinese, English and Spanish Languages, Mathematics, Science, Humanities and cultural subjects involved will work collaboratively in piloting effective use of the interactive whiteboard to promote active classroom learning. They will share their successful experiences in a staff development programme. Thereafter, other subject departments will formulate their concrete plans on use of the interactive whiteboard and put them into action. Ongoing evaluations will be made to ensure a thorough and effective use of the interactive whiteboard.	• N/A

Number of school personnel and/or appointed project staff involved and respective duties:

- Vice Principal and Subject Department Heads

Expected outcomes:

- By the middle of the implementation period, subjects other than the pioneering ones should have started using the interactive whiteboard for teaching across different forms.

b. Teacher training

Activity 1: Hands-on teacher training workshop on use of interactive whiteboards

Implementation Period:

01/2025 - 01/2025

Content:

- Target: All teachers
- Contents:
- 1. Introduction of features and basic functions of interactive whiteboards
- 2. Demonstration of practical ideas for the classroom

- 3. Hands-on practice

Number of sessions:

- One 2-hour session

Teacher training conducted by school personnel/external instructor(s):

- Conducted by trainer from service provider (free of charge) and school staff

Expected outcomes:

Teachers will be able to:

- develop an understanding of interactive whiteboard technology and its applications in the classroom.
- apply the skills of using different whiteboard tools in their teaching.

Activity 2: Talk on implementation of active learning teaching methodologies using interactive whiteboards and experience sharing

Implementation Period:

03/2025 - 03/2025

Content:

- Target: All teachers
- Contents:
- 1. Methodologies for utilizing interactive whiteboards to enhance active classroom learning
- 2. Sharing of good practices tried out by pioneering subject departments

Number of sessions:

- One 2-hour session

Teacher training conducted by school personnel/external instructor(s):

- Conducted by a hired speaker for a 1-hour talk and school staff for a 1-hour sharing of good practices

Expected outcomes:

- Teachers will be able to:
- develop a greater understanding of how to integrate interactive whiteboards in meaningful ways to promote classroom active learning.
- explore and improve active learning strategies using interactive whiteboards.

Activity 3: Sharing of good practices in using interactive whiteboards for active classroom learning

Implementation Period:

08/2025 - 08/2025

Content:

- Target: All teachers
- Contents:

- 1. Sharing of good exemplars by different KLAs
- 2. Discussion and reflection on students' classroom performance with the use of interactive whiteboards

Number of sessions:

- One 1.5-hour session

Teacher training conducted by school personnel/external instructor(s):

- Conducted by school staff

Expected outcomes:

- Teachers will be able to:
- learn from the exemplars and apply good practices in their lessons
- develop a greater conviction of the effectiveness of using interactive whiteboards and continue to explore more in their teaching.

c. Other measures and activities (if applicable)

- One of the focuses of annual lesson observations during the project implementation period will be set on the use of interactive whiteboard to promote active classroom learning.

2.6 Budget

a. Service cost

Item	Service details	Unit cost	Quantity	Unit	Amount($)	Justification
Speaker (for Activity 2 of Teacher Training)	To deliver a 1-hour talk on implementation of active learning teaching methodologies using interactive whiteboard	820	1	Hour	820	Speaker invited to be a professional in technology enhanced active learning
				Sub-total on service cost :		**820**

b. Equipment cost

Item	Specifications	Unit cost	Quantity	Amount($)	Justification
Interactive whiteboards	Interactive whiteboards 86" Interactive TV	23,300	35	815,500	29 classrooms plus 6 special rooms (Science Lab, Biology Lab, Physics Lab, Music Room, Spanish Room & Visual Arts Room), one set each
Computer	Computer (OPS) integrated with the Interactive TV	7,800	35	273,000	29 classrooms plus 6 special rooms, one set each
Sliding blackboard	Sliding blackboards 1280mm (H) x 6000mm (W)	8,580	35	300,300	29 classrooms plus 6 special rooms, one set each
			Sub-total on equipment cost :		**1,388,800**

c. Works cost

Item	Works details	Amount($)	Justification
Installation work	Install interactive whiteboards and blackboards, including power supply and signal cabling	231,000	29 classrooms plus 6 special rooms, $6,600 each
Disposal of old furniture	Dispose of old whiteboards	6,000	
	Sub-total on works cost :		**237,000**

d. General expenses

Item	Amount($)	Justification
Supplies for items including stuff for board making and publication of booklets		For organising the project dissemination activity
i. Stuff for board making	831	
ii. Publication of booklets	1,200	
Sub-total on general expenses :		**2,031**

e. Contingency

Item	Amount($) (Round down to the nearest integer)
Works contingency	23,700
General contingency	41,749
Sub-total on contingency :	**65,449**

f. Audit fee

	Amount($)
Audit fee	15,000
Sub-total on audit fee :	**15,000**
Total amount of funding sought :	**1,709,100**

3. Expected Project Outcomes

3.1 Deliverables/positive impact on the school's development

Item: Resource package • Lesson exemplars incorporating use of the interactive whiteboard including teaching plans and video-clips will be stored in the school's learning and teaching resources folder for teachers' access.
Item: Enhanced learning atmosphere and skills • Through the enhancement of active classroom learning using interactive whiteboards, students' learning motivation and engagement will be greatly boosted, which renders improvement in learning and teaching effectiveness. • Students will be better equipped with IT skills, higher-order thinking skills and other 21st century skills to embrace future challenges.
Item: Strengthened teachers' capabilities in curriculum design and teaching Teachers' capabilities in technology enhanced teaching and the school's learning community culture will also be boosted through this collaborative project experience.

3.2 Evaluation

Evaluation Method: Lesson observation **Success criteria:** • A positive correlation between the use of interactive whiteboards and students' involvement, attention and interest is found from lesson observations.
Evaluation Method: Questionnaire **Success criteria:** • More than 70% of students express enjoyment and engagement with the use of the interactive whiteboard. • More than 70% of teachers express that using the interactive whiteboard has a positive effect on students' performance in class, with more at-task behaviours and greater enjoyment.
Evaluation Method: Gauging students' performance **Success criteria:** • A positive impact on students' assessment results is indicated with the use of the interactive whiteboard in class as compared to their previous assessment results without using the interactive whiteboard.

3.3 Sustainability of the project (only applicable to applications with total funding sought exceeding $200,000)

• After the completion of the project, the school will continue to maintain and utilize the interactive whiteboard, with teachers trying out any new whiteboarding software and enhancing their related teaching repertoire. • In addition to interactive whiteboards, other IT tools will also be explored to foster active classroom learning and students' self-directed learning. • Deliberate efforts will be made to keep the school's momentum towards technology enhanced learning and teaching, and a learning community culture.

3.4 Dissemination

Item: Sharing session

The school will conduct a year-end event on celebration of learning and teaching where teachers and students will share their experiences and showcase the outcomes achieved in using the interactive whiteboards and other school initiatives. Our parents and guests from other schools will be invited to join the event. The highlights of this event will be published on the school website and school magazines for promoting technology-enhanced active classroom learning.

When writing this proposal, did the school refer to the sample proposal/project(s) approved with funding support at the Quality Education Fund (QEF) website?

Yes
Relevant sample proposal number:
Approved project number: 2020/0549

4. Declaration

a. Our school will make sure that the teachers involved will master not only the use of the interactive whiteboards, but also the pedagogy and lesson design to conduct relevant student activities.
b. Our school will ensure that interactive whiteboards are properly installed, regularly inspected, maintained and repaired. We will pay attention to the structural load-bearing capacity of the installation of relevant equipment and seek advice from an authorized person, if necessary.
c. Our school will ensure that all procurement of goods and services is conducted on an open, fair and competitive basis with measures taken to avoid conflict of interests in the procurement process.
d. Our school confirms that the copyrights of the deliverables/materials should be vested with the QEF. Any reproduction, adaptation, distribution, dissemination or making available of the deliverables to the public by the service provider(s) for commercial purposes is strictly prohibited.
e. Our school understands that the expenditure items funded by the QEF is one-off. We will bear the recurrent expenditure incurred, including maintenance costs, daily operating costs, etc. and the possible consequences that may arise.
f. Our school will ensure that the learning and teaching materials to be developed meet students' learning needs, levels, age and abilities. The content and information should be correct, complete, objective and impartial.

5. Asset Usage Plan

Category	Item/ Description	Unit cost($) x Unit	Total Cost	Proposed Plan for Deployment
Computer hardware	Interactive whiteboard	$23,300 x 35	$815,500	-To support and conduct similar learning and teaching activities
	Computer	$7,800 x 35	$273,000	
Others	Sliding blackboard	$8,580 x 35	$300,300	

6. Report Submission Schedule

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

Project Management (Should be submitted via the "Electronic Project Management System" (EPMS))		**Financial Management** (Hard copy together with supporting documents should be submitted to the QEF Secretariat by mail or in person)	
Type of report and reporting period	**Report due on**	**Type of report and reporting period**	**Report due on**
Progress Report 01/12/2024 - 30/11/2025	31/12/2025	Interim Financial Report 01/12/2024 - 30/11/2025	31/12/2025
Final Report 01/12/2024 - 28/02/2026	31/05/2026	Final Financial Report 01/12/2025 - 28/02/2026	31/05/2026