THE ROAD TO
DIGITAL SCHOOLS

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FOREWORD

Digital technology has revolutionised education by enhancing pedagogy, student engagement, and administrative processes. St. Paul's Co-educational College (SPCC) and St. Paul's Co-educational College Primary School (SPCCPS) are prime examples that have embraced digital technology to create a dynamic and engaging learning environment.

To ensure smooth and successful implementation, digital schools prioritise teacher training and support, assessment and evaluation, accessibility and inclusivity, digital citizenship, information literacy, and cyber ethics. We have had a long history of incorporating technology into our teaching methods and have made significant improvement in digital infrastructure and tools to support our digital learning initiatives. At the same time, we have implemented measures to ensure the security and privacy of our digital systems and data.

We have a robust IT department and e-Learning team that provides technical support for teachers and students and works closely with teachers to design, optimise, and implement digital learning experiences. We use smart TVs, digital tools, and software such as Google Classroom, Microsoft Teams and Moodle, as well as conducting coding and robotics courses to hone students' STEM skills.

Overall, the digital initiatives at SPCC and SPCCPS have transformed the learning experience for students and teachers alike, making them proficient users in digital education in Hong Kong and beyond.
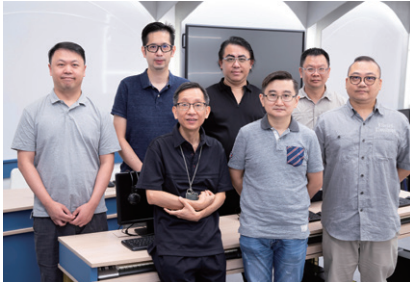
Mr Chan Wai Kuen
IT Director, St. Paul's Co-educational College and Primary School

Scan this QR code to watch a VR tour of our MakerLab, Computer Room and Computer Assisted Learning Room

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INFRASTRUCTURE & HUMAN RESOURCES

We are committed to embracing digital learning and technology to enhance the learning experience of our students. In terms of infrastructure, both SPCC and SPCCPS are equipped with a high-speed 2x1Gb broadband network, along with optical fibre connections in every classroom. Additionally, we provide campus-wide Wi-Fi coverage, ensuring uninterrupted connectivity and access to digital resources across our entire campus. We are also constantly updating classrooms and special rooms to incorporate the latest technology.

To support our digital initiatives, we have teams of IT technicians in both schools who play a key role in maintaining and troubleshooting the digital systems and devices utilised in our classrooms and administrative offices.

The responsibilities of the IT technicians are wide-ranging and diverse, which includes installing, configuring, maintaining hardware and software, managing network infrastructure, and providing technical support to teachers and staff respectively. We also ensure that the security and privacy of digital systems and data, develop and implement digital strategies and policies, and assist teachers and staff on how to effectively use digital tools and resources.

Our team works closely with teachers and staff to ensure digital systems and devices are integrated effectively into the learning environment, and that technical issues are addressed promptly and efficiently. We understand the importance of providing reliable and effective technical support to our colleagues, and we are committed to providing the highest level of support to ensure that our digital initiatives are successful.

At SPCC and SPCCPS, we recognise the key role that our IT technicians play in our digital education initiatives. We have a dedicated team of highly trained and experienced IT professionals who bring unique skills and expertise. Working as a team ensures that our digital infrastructure and tools are operating effectively and efficiently, and that our teachers and staff have the support they need to effectively integrate technology into the learning environment.

NEW TECHNOLOGY AND CODING

We have fully integrated technology into our curriculum to provide students with a comprehensive education that prepares them for success in the digital age. Our students have access to a range of new technologies, including virtual and augmented reality (VR/AR), artificial intelligence (AI), coding through Scratch, Marty Robot, Lego, to list a few.

Our use of VR/AR technology provides students with an immersive and interactive learning experience. By incorporating VR/AR into our curriculum, we give students the opportunity to explore complex subjects in a more engaging and impactful way.

AI-powered tools and platforms are also integrated into our curriculum to help students develop critical thinking, problem-solving, and creativity skills. With AI, our students can properly analyse data, make predictions, and develop innovative solutions to real-world problems.

Coding is a crucial skill for students to develop, and that is why we teach coding in Computer Literacy class from Form 1 to Form 3. Our students learn to code and develop a thorough understanding of robotics, while also gaining problem-solving and critical thinking skills.

Lego is another tool we utilise to enhance our students' learning experience. By building complex structures and experimenting with different designs, our students develop spatial reasoning, problem-solving, and creativity skills.

In addition to the aforementioned technologies, we also provide our students with access to coding resources, including tablets, laptops, and more. By equipping our students with coding skills and access to cutting-edge technology, we prepare them for success in the digital age.

In conclusion, we have fully embraced technology in our approach to education. Our integration of VR/AR, AI, coding through Scratch, Marty Robot, Lego, and other resources sets our students up for success in the digital age and prepares them for a future where technology is at the forefront of innovation and progress.

E-LEARNING

We have fully embraced e-Learning through the use of various technologies. We have implemented a comprehensive whole-school approach to ensure that all our students have access to cutting-edge technology and resources.

To facilitate e-Learning, we use Microsoft Teams and Google Classroom as our primary e-Learning platforms. These platforms enable our teachers to deliver course materials, assignments, and assessments to students, as well as facilitate interactive learning experiences such as online discussions and collaborative projects. We have also installed Smart TVs, replacing projectors across all classrooms to enhance multimedia content delivery and provide students with a more engaging learning experience.

To ensure full control over our e-Learning resources, we use a self-hosted server to host our eClass platforms and other resources. This approach gives us greater flexibility and control over our technology resources, enabling us to customise and adapt our platforms to meet the specific needs of our students and teachers.

Our whole-school approach to e-Learning is further enhanced by requiring students to acquire state-of-the-art technology and equipment, including tablets and laptops. This ensures that all our students have access to the necessary tools and resources for effective e-Learning, regardless of their socio-economic background. In addition, we provide mobile devices for students who require financial assistance.

We recognise that ensuring equitable access to technology and resources is critical to the success of e-Learning. To address this challenge, we have implemented several strategies, including providing access to technology resources during school hours and establishing policies to ensure equitable access to technology outside of school.

In conclusion, we have fully embraced e-Learning using various technologies, including Microsoft Teams, Google Classroom, Smart TVs, and some self-hosted servers. Our whole-school approach to e-Learning, combined with the provision of state-of-the-art technology and resources, ensures that all our students have access to the tools necessary for effective e-Learning. It is our dominant goal to offer our students a high-quality education that prepares them for success in the digital age.

CYBER ETHICS AND INFORMATION LITERACY

SPCC has a team of Cyber Ambassadors dedicated to promoting cyber ethics and information literacy. Around 60 students have joined the team this year under the theme "How to Prepare Yourself for the Future".

We are also delighted to report that we have successfully applied for the "IT Innovation Lab in Schools" grant from OGCIO. As a part of our two-year proposal, we will conduct workshops and coaching courses to equip students with knowledge on IT for the new digital era and explore the ethical issues and limitations emerging with the advent of new technology.

To achieve this, we have designed a 90-minute workshop for all Form One to Form Three students. This workshop will introduce students to the upcoming technology in the new era and the corresponding ethical issues and its limitations, including AI & Machine learning, Big Data, Robotics, and AR & VR.

We will also offer four advanced courses for interested students to further develop their skills and mindset in different areas. These courses include Exploring AI and Machine Learning, Introduction to Python and Big Data visualisation, Applications of Virtual Reality and Augmented Reality, and Introduction to Robotics in Python. Students who join these courses will become student leaders in the coming years, helping to promote IT to the entire student body.

Half of the grant will be used to purchase hardware equipment for the courses, such as Oculus Quest 2 and 360-camera for designing applications on VR, Marty Robot for learning robotics, and more. These devices will be stationed in the newly renovated computer room on the 6th floor.

We are committed to ensuring the sustainability of these courses by having student leaders of the Cyber Ambassadors Team holding similar courses in the coming years and promoting new technology to our students. We are excited about this initiative and seeing some positive results.

FUNDING

We understand the significance of integrating technology into our curriculum to enhance the learning experience of our students. We believe in a whole-school approach that ensures all students have access to the necessary resources and technology, and we have developed our own comprehensive plan to achieve this.

Our College Council also recognises the importance of technology in education and has made it a top priority to provide us with the necessary resources to implement our whole-school approach. They have allocated significant funding to upgrade our IT infrastructure and provide state-of-the-art technology and equipment for the benefit of our students. In addition, as a direct-subsidy school, we will make good use of government grants.

While the IT Composite Grant (ITCG) of the Education Bureau (EDB) provides financial support for schools to enhance their IT infrastructure and promote the use of technology in education, we have supplemented this grant with our own funding to ensure that we have the necessary resources to implement our IT plan. We aim to go beyond simply integrating technology into specific programs and instead aim for a seamless integration of technology into every aspect of our daily operations.

Similarly, while the Quality Education Fund (QEF) provides funding to schools to implement innovative education programs, including the integration of technology into their curriculums, our approach is more comprehensive. We recognise the need for more specialised technology and resources to maintain our high standards, and have invested in state-of-the-art technology and equipment to provide our students with a cutting-edge learning experience. More details can be found in "e-Learning".

While initiatives such as the "IT Innovation Lab in Schools" by the Office of the Government Chief Information Officer (OGCIO) provide resources and training to support the integration of technology in education, we have taken it upon ourselves to invest in the most advanced technology and resources to provide our students with the best possible learning experience. More details can be found in "Cyber Ethics and Information Literacy".

In conclusion, we recognise the importance of technology in education and have implemented a comprehensive whole-school approach to ensure that all our students have access to the necessary resources and technology.

學校使用高新技術的例子
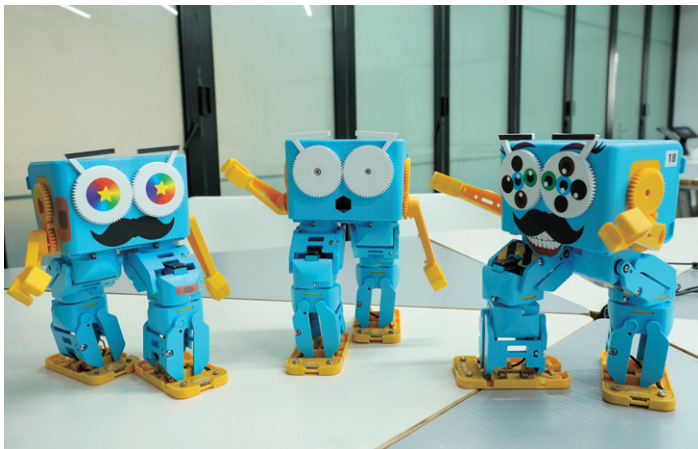
先進技術在教育中日益重要，不僅提供了新的學習方式，還讓學生們能夠更加全面地發展他們的技能和能力。

我們學校參與各類型機械人比賽和活動，包括《創建機械人集體編程世界紀錄》、Robofest機械人大賽等，讓學生們能夠設計自己的機械人，並為其編寫程式，培養他們的創造力和解難能力。激發他們對科學和技術的興趣，幫助他們在STEM領域發展。此外，通過團隊合作，促使學生學習協作和發揮活動領導能力。透過以上活動和比賽，讓學生體驗到科學技術的應用和創造的樂趣，還培養了他們在STEM領域的興趣。

除此之外，我們最近還利用直播技術結合Moodle平台，將打字比賽推向新的高度！全校超過350名高小同學同時使用課室裡的「一人一機」Chromebook參加打字比賽，大家能在同一個平台上競爭，這不僅提高了比賽的規模和節奏，也讓學生們能夠互相觀摩和學習，促進了他們在打字方面的進步。

融合先進技術到課程帶來許多好處，例如增強學生對知識的理解和記憶，提高他們的創造力和解難能力，以及培養他們的科技素養。然而，這也帶來了潛在的挑戰，如技術更新的速度、教師對新技術的適應能力等。學校將不斷提供教師培訓，例如模擬飛行及人工智能課程等，以確保他們能夠掌握和運用這些先進技術到日常教學中。

展望未來，我們看到更多的先進技術將加入到學校的教學中，虛擬現實和人工智能的應用將為學生提供更加豐富和互動的學習體驗。我們期待著這些未來的趨勢，努力建立數碼校園Digital School，為學生提供一個更加創新和全面發展的學習環境。

掃描以下二維碼觀看小學STEM Room、創新科技室及禮堂的VR展示

spccps.edu.hk/spccps360

政府奇趣IT識多啲資助的AI工作坊

得到政府資訊科技總監辦公室《奇趣IT識多啲》計劃的支持，我們舉行了一系列關於人工智能的課程和講座。這些課程旨在協助學校提高學生在人工智能方面的資訊素養。

通過這些課程，學生學習到人工智能的基本知識、原理和應用，課程刺激他們思考如何運用人工智能去解決問題。這將為他們在未來AI時代中成長為社會上的領袖，打下堅實的基礎。

其次，這些課程還提供學生實踐應用人工智能的機會。學生在AI課程中，嘗試了創建簡單的AI模型、設計AI應用程式等等，讓他們從「動手做」的活動中更深入的了解人工智能的運作方式。

我們衷心感謝政府資訊科技總監辦公室《奇趣IT識多啲》計劃對學校的支持，以及舉辦課程的機構在課程和時間表上的配合，協助我們教導學生在人工智能領域方面的基礎知識。我們期待未來能夠繼續參與政府的計劃，為學生提供更多的學習機會和教育資源。

IT特工和資訊素養的推廣

我校一直致力於推廣學生的資訊素養，其中一個特別的服務團隊——IT特工——在推廣資訊素養方面扮演著一個特別的角色，香港電腦學會舉辦的《資訊科技挑戰獎勵計劃》獲得金章肯定。

互動顯示屏和電子學習

在 Digital School 中，互動顯示屏是一種重要的教學工具，它的優勢和應用方式將為學生和教師帶來許多好處。互動顯示屏不僅取代了傳統的黑板和白板，還提供了更多創新和互動的教學方式。

我校在過去兩年，透過優質教育基金和校董會的支持，為全校33個標準課室，和大部分的特別學習室安裝互動顯示屏。教師可以利用互動顯示屏上的圖像、視頻和動畫來生動地展示知識點，吸引學生的注意力。通過這種多媒體教學，學生們可以更深入地理解和記憶所學的內容。

其次，互動顯示屏還提供了更多的互動性。教師和學生可以利用觸控和手寫功能，直接在互動顯示屏上進行操作和標註，增強學習的互動性。學生們可以通過互動顯示屏上的活動和練習，積極參與課堂學習，提高他們的學習效果和成績。
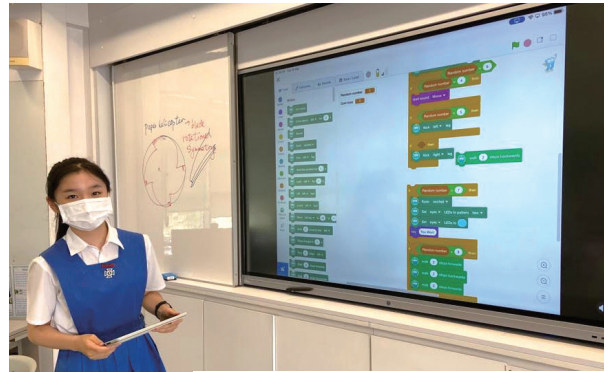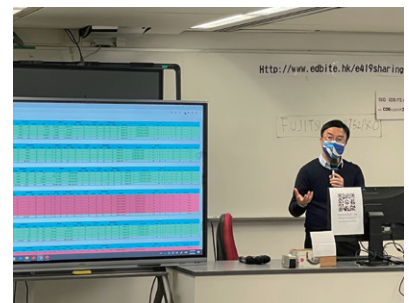

在教學過程中，互動顯示屏還能夠讓老師善用更多的教學資源和輔助工具。教師可以通過利用互聯網上的各種資源，例如教學視頻、教學專用平台和遊戲化學習。這些資源可以幫助教師更好地展開教學，激發學生的學習興趣。

通過互動顯示屏的應用，學生可以更加積極地參與課堂，教師和學生置身於一個更加互動和創新的學習環境，使學習過程更加有趣和有效。

在我們的 Digital School 中，我們致力於提供最先進的教學技術和創新的教學方式。互動顯示屏是其中的重要組成部分，它將繼續為教師和學生帶來更多的學習機會和成就感。我們鼓勵教師和學生充分利用互動顯示屏的優勢，創造出更加豐富和有趣的學習體驗。
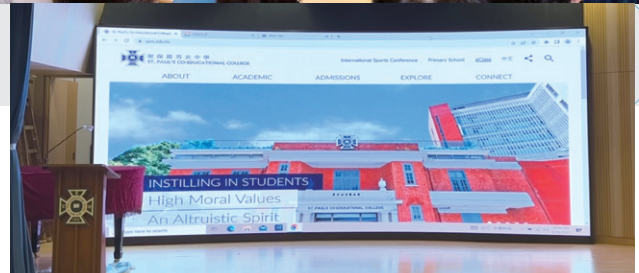

IT特工團隊成立已久，團員主要由學校選拔並培訓，午息期間協助同學們在 InnoTech Room 使用電腦，提高同學的資訊素養水平。他們會向同學們介紹一些適合小學生的有益網站、提醒同學要愛惜學校的電腦設備等。

資訊素養是學校重點關注的事項，我們特別關心學生在應用新興和先進資訊科技時所衍生的道德問題，老師除了在資訊科技科重點講授外，也會配合德育組的活動、成長課，其他科目也滲透資訊素養於日常教學中，全方位提供相關資訊及實踐機會。

未來我們會為IT特工團隊提供不同類型的培訓和課程，讓他們學習更多有關科技的知識和技能，提升他們對資訊素養的認識，承擔數碼公民的責任。

FUTURE DEVELOPMENT

When we look at the future development of digital schools, we recognise that the education landscape is undergoing a paradigm shift. This paradigm shift is being driven by several key trends and factors, including advances in technology, changes in pedagogy, and shifting societal expectations. Here are some potential developments that could shape the future of digital schools at SPCC, as we embrace this paradigm shift:

We anticipate an increased use of artificial intelligence (AI) and machine learning, as these technologies can personalise learning experiences, provide real-time feedback, and assist with administrative tasks. This shift towards personalised learning experiences represents a significant change in our understanding of education, as we move away from a one-size-fits-all approach and towards a more personalised approach that meets the needs of every individual student.

The expansion of virtual and augmented reality (VR/AR) technologies also represents a significant paradigm shift in education. These technologies provide immersive learning experiences that are not possible with traditional teaching methods and allow students to explore and interact with digital content in new and exciting ways.

We are also moving away from traditional lecture-based teaching methods and towards more student-centered approaches such as project-based and inquiry-based learning. This represents a paradigm shift in the way we approach education, as we place greater emphasis on hands-on, collaborative learning experiences that are well-suited to digital environments.

As we embrace this paradigm shift in education, we also recognise the importance of cybersecurity, digital citizenship, and accessibility. By focusing on these areas and embracing new technologies and pedagogical approaches, we aim to provide engaging, effective, and inclusive learning experiences that prepare our students for the challenges of the future.

In conclusion, we embrace this paradigm shift in education and recognise the importance of staying at the forefront of technological innovation and pedagogical best practices. Our goal is to provide our students with a comprehensive education that prepares them for success in the 21st century.

We would like to express our sincere gratitude and appreciation to all those who played a key role in developing and implementing information technology in our schools. We are grateful for the leadership and support of the College Council. We would also like to thank Principal Mr Poon, Headmistress Ms Cheung, all IT Team members, and the IT Office. Their unwavering dedication and valuable contributions have contributed to the creation of an environment for learning and innovation.