

Breaking Boundaries of Online Lessons with Virtual Labs

Online teaching has gone mainstream due to the pandemic. However, students who need to use labs for their studies face many difficulties. In order to free students from the constraints of physical labs, CPCE has deployed Azure Lab Services (ALS) introduced by Microsoft since the start of this academic year, becoming the first educational institution in the Asia Pacific region to use this service. Students only need an Internet-connected computer to work in virtual labs anytime and anywhere.

Dr Jason Chan, JP, Head of Information Technology of CPCE, said, "Before using the ALS, we had to estimate each student's usage including their in-class and out-of-class practice time. We have established about 20 virtual labs so far. In this academic year, more than 2,000 students have used the ALS in 19 subjects such as information technology, programming, engineering, design, and language. We are also the first institution in the Asia Pacific region to help over 5,000 students complete the Diagnostic English Language Tracking Assessment (DELTA) online by using the ALS."

Dr Pat Chan, Lecturer of the Division of Science, Engineering and Health Studies, said that after the lecturer sets up assignments on ALS, students can learn and complete the tasks on the same platform in and out of class. This unified platform ensures a consistent teaching pace and enables students to learn step-by-step together, which in turn enhances efficiency.

Saving High-end Computer Costs

Thanks to its large storage capacity, the ALS allows students to use software that occupies much storage space such as software for 3D drawing or that needs a large amount of data storage in their computers easily and smoothly without the need to buy a high-end computer.

Patrick Lo, a year-two student of HKCC's Associate in Information Technology, shared, "I can practise comfortably at home with Oracle database software, which is usually only available on campus or in business organisations. It's really convenient." He added, "Sometimes the College's computer labs are full or closed. With the ALS, such inconvenience can be easily avoided." Also, the ALS can still operate well with updated software without upgrading or replacing hardware.

Jason reminded all users to log out from the ALS after work to avoid wasting usage. Closing the window or powering off the computer does not mean disconnection of the ALS. He added, "Considering cost-effectiveness, each lecturer will explain clearly to students relevant guidelines and manage their expectations. Hardworking students may exceed the usage limit; lecturers can reassign the limit themselves or ask the Information Technology Unit to adjust it."

Exploring Hybrid Learning Possibilities

Looking ahead, CPCE plans to evaluate the possibility of complementing physical classes with online ones in hybrid mode supported by the ALS to allow for greater flexibility in learning experiences. "This is a good example of turning a crisis into an opportunity, allowing our students to continue lab classes under the new normal," told Jason.

虛擬實驗室突破網課界限

受到疫情影響，網上教學成為主流。然而，需要使用實驗室學習的學生卻面對重重困難。為讓學生不受實體實驗室限制，CPCE 於本學年引入了微軟 Azure Lab Services (ALS) 雲端電腦實驗室服務，成為亞太區首間院校使用該服務。學生只需利用電腦連接互聯網，便可隨時隨地進入虛擬實驗室上課及進行實驗。

CPCE 資訊科技總監陳繼宇博士太平紳士 (Jason) 說：「使用 ALS 之前，我們為每名學生預計使用量，包括課堂實習和課餘練習時間。學院現時建立了約 20 個虛擬實驗室，在本學年，2,000 多名學生在多達 19 個學科中使用過 ALS，包括資訊科技、程式編寫、工程、設計及語文等，非常普及。我們更是亞太區首間院校使用 ALS，協助超過 5,000 名學生完成網上 DELTA 英語能力評估。」

科技、工程及健康學部講師陳碧華博士表示，講師在 ALS 建設課業後，學生在課堂內外均可在同一平台上學習及完成習作，統一的電腦系統令教學進度一致，學生也容易一起按部就班學習，有助提升效率。

學生無需購置高階電腦

由於 ALS 的雲端容量極大，即使佔用儲存空間較多的軟件，例如繪製 3D 圖像或需要儲存大量數據的軟件，學生也可以使用效能一般的家用桌面或手提電腦，輕鬆及暢順地操作這些軟件，不用購置高階電腦。

HKCC 資訊科技副學士二年級學生盧穎麟說：「自從有了 ALS，就算安在家中也能應用平時在校園內或只有商業機構才會安裝的 Oracle 數據庫軟件，非常方便。」他又稱：「有時校內電腦室座無虛席或沒有開放，偶爾為學習帶來不便。現在使用 ALS 便能解決這些問題。」另外，ALS 無須定期升級或更換硬件，也足夠應付軟件更新版本的需求。

Jason 提醒，使用 ALS 後緊記完成登出步驟，否則會繼續計入使用時間，就算將視窗刪除或關閉電腦也不代表 ALS 的連線已被中斷。Jason 補充：「每位講師為符合成本效益，在使用 ALS 前也會向同學解釋清楚相關指引，好好管理他們的期望。較勤力的同學有機會超出使用限額，講師可因應實際需要自行調配，或請資訊科技處協助調整用量。」

研究實踐混合學習模式

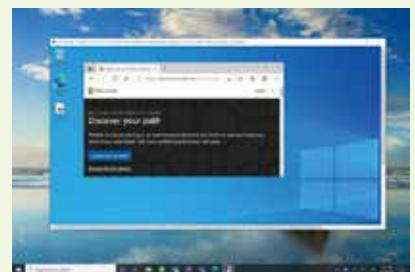
展望未來，學院計劃評估提供混合教學模式的可能性，利用 ALS 結合實體及虛擬課堂，提供更具彈性的學習體驗。Jason 說：「這次是個轉危為機的好例子，讓我們的學生在新常態下繼續參與實驗室課堂。」



Dr Jason Chan, JP, says the ALS provides more flexibility in classes and allows lecturers to engage better with students.



Dr Pat Chan assures that the ALS can enhance teaching efficiency.



Students can log in to a pre-configured virtual desktop powered by the ALS.

陳繼宇博士太平紳士認為 ALS 為課堂提供更大的彈性，並促進講師與學生之間的互動。

學生可利用 ALS 在其裝置上使用預設虛擬桌面。