

## AI 智慧入誠園 學習創新桃花源

胡湘玲主任

辭修高中地處三峽，由陳履安院長為紀念其父親 陳誠故副總統辭修先生，於民國 60 年所創設，85 年開辦國中部，目前全校 1550 人，其中有四成學生住校，教師專業經驗豐富，師生互動良好，以打造「學習桃花源」自許。在 106 學年度新北市校務評鑑中獲得好評，尤其在國中及高中教師專業發展與高中輔導 3 個向度，得到榮譽通過，為新北市第一所、也是私立學校唯一一所獲此殊榮。

### 智慧環境建置

辭修高中在 2015 年即建置一間智慧教室，但初期建置時，因缺乏經驗，未能安排適合的教研及培訓規劃，以致教師使用情況不如預期。2016 年李玉美校長到任後，因見智慧教育之趨勢蓄勢待發，認為辭修發展智慧教育刻不容緩；同時希望經由數位科技融入各科教學，即時掌握學生學習狀況，以提升教與學之成效，進而提升升學率。自 2017 年起，申請私校獎補助款、爭取各項競爭型計畫及校內經費挹注，以國一、高一、國二為起點，逐步建置智慧教室，到 2018 年共建置了 27 間智慧教室、擁有 18 套 TBL 系統、9 套 IRS 即時反饋系統、42 台平板電腦及無線網路覆蓋全校。

2018 年 9 月，因與「台灣科技領導與教學科技發展協會」產學合作，讓辭修高中在智慧教室的使用更見智慧。除擬訂短、中、長期目標外，更因應發展校本模型之長程目標，積極推動智慧教研，讓議課更有效率，並留下成長軌跡。

### 智慧社群先驅



為鼓勵各領域教師參加智慧教室種子教師社群，校方不惜砸下重本，發給社群教師每人筆電一台，同時邀請校外有經驗的教師及專家協助社群教師增能，以帶領各領域教師學習各項智慧教室的操作。為了激發教師們的學習動機，種子教師社群及行政同仁共同擬訂了智慧 e 級棒之「藍鵲計畫」，老師學習智慧教室使用的過程就像辭修的吉祥物——藍鵲成長一般：從最初的銜枝築巢、羽翼漸豐、嶄露頭角、或躍在淵，到最後的鸞飛戾天，將使用智慧教室的能力分為五個階段檢核，由簡而繁、由易而難、從初階到進階。各領域教師利用領域時間共同學習、練習，互相協助，於每個階段完成後，申請認證，由其他領域的種子教師及校長帶領的行政團隊進行認證。每個階段通過，即可獲得摸彩券一張，定期於導師會議或教學研究會議時抽出，致贈超商禮券一張。若所有領域教師均通過「鸞飛戾天」最高等級認證，則依領域通過的先後順序，可分別獲得 800 元、500 元及 300 元的下午茶券。利用所學到的技能，結合智慧教室完成公開觀課的老師，還可獲得 iPhone X 的抽獎機會。在辭修，藉由老師們相互的協助及學習，熟悉智慧教室的使用，增進教學技能，又能獲得實質的鼓勵，真是很幸福的教師專業成長。

## Artificial Intelligence Enters Campus Creating a Utopia for Learning

Director Xiang-Ling, Hu

Tsz-Shiou Senior High School is located in Sansia. The school was founded by Mr. Chen, Lu-An to commemorate his father, the deceased Vice President Chen Cheng (aka Mr. Tsz-Shiou) in 1971. In 1996, the school opened its junior high school department. Currently, there are approximately 1,550 students in Tsz-Shiou and around 40 percent of them live in the dorm. The faculty in Tsz-Shiou is well-experienced and has great interaction with the students. The school takes pride in itself as a "utopia for learning" and received recognition in the 2017 New Taipei City School Evaluation. What's worth mentioning is that the professional development of teachers in both departments as well as our senior high school counseling program were all highly praised in the evaluation, making Tsz-Shiou Senior High School the one and only private school in New Taipei City to receive the accolade.

### Establishing a smart environment

We establish our first smarter classroom in 2015; however, back then, we lacked the experience to launch appropriate research in teaching and training program and the use rate of the classroom did not meet our expectation. In 2016, Mrs. Li, Mei-Yu entered Tsz-Shiou as the principal; Mrs. Li is of the persuasion that smarter education is an unstoppable force and Tsz-Shiou must speed up its pace to be in sync with the development of it. Meanwhile, it is also her vision that we can incorporate digital technology into teaching to track the learning condition of students to boost both teaching and learning and ultimately increase the college enrollment rate. To fulfill this goal, Tsz-Shiou began applying for incentive subsidies for private school from 2017 and tried to earn the right to mount several contest programs and school investments. We have established smarter classrooms for first graders in both junior and senior school departments and second graders in the junior high school department. By 2018, we already had 27 smarter classrooms. The school also boasts 18 TBL systems, 9 IRS (Interactive Response System), 42 tablets and Wi-Fi that covers the whole campus.

Tsz-Shiou embarked on an industry-academia cooperation with Taiwan Technology Leadership and Instructional Technology Association in September 2018, a measure that helped Tsz-Shiou use its smarter classrooms in an even smarter way. Besides drafting short-, medium-, and long-term goals, we also enthusiastically promote smarter

research in teaching as a response to the long-term goal of the school-orientation model to make lesson discussion more efficient and record the students' growth.

### The pioneer of smart community

To encourage teachers of different subjects to join in the community of seeding teachers in smart classrooms, Tsz-Shiou spares no expense by inviting experienced teachers and experts from the outside to elevate the competence of teachers in the community. Their goal is to lead teachers of different subjects to learn how to operate all functions of the smarter classroom. In a bid to evoke the teacher's motivation, the community of seeding teachers and our Tsz-Shiou's administrative staff joined forces to roll out "Smart and Exceptional: The Blue Magpie Program." The blue magpie is the mascot of Tsz-Shiou, and the five growing processes of a blue magpie represent the process where teachers learn to how to utilize the smart classroom: The nestling, the fledgling, the showcasing, the turning point, and finally the bird takes wing. The teachers' competence to use the smart classroom, according to these growing processes, is divided into five evaluation stages, starting from the simple/easy/basic to complicated/difficult/advanced. Teachers of different subjects will use their time to learn, practice, and help each other out. After they finish each stage, they can apply for a certificate, which will be granted to them after the verification process conducted by an administrative team composed of the seeding teachers of other subjects and the principal. The teacher who completes each stage will be given a sweepstake ticket. The teachers' council or the teaching-research council will draw the ticket periodically and the winner will get a coupon for convenience stores. If teachers of the same subject all pass the highest verification call "the magpie takes wing," then the first three teachers who pass the verification will receive respectively an NTD800, NTD 500, and NTD 300 coupon for afternoon tea. As for teachers who applied their acquired skills to the smart classroom and finish an open class observation, they might even win an iPhone X in a lucky draw. Teachers in Tsz-Shiou are all blessed with the chance to help one another, learn new stuff, get conversant with the use of the smart classroom, improve their teaching skills, and receive physical rewards.



## 推動公開觀課

透過校長每場認證的陪伴、行政設備的支援、各領域社群種子教師的協助，每位教師均順利通過「藍鵲計畫」認證。2018年 8月，以發展社群共備為起點，積極推動公開觀議課，以促進教師專業發展，讓辭修向遠程目標再邁進一步。於開學前的課程共備日，各領域教師進行結合智慧教室的課程共備，並於 9月起進行全校教師公開觀課，除收集課堂五大數據（電子筆記、教學教材、學習歷程、診斷報告及補救影音）外，公開觀課後以蘇格拉底影片進行智慧教研，透過蘇格拉底系統提供的數據，提煉出「以生為本」且具辭修特色的教學模型。

## 初步成果展現

自 9月中開始短短四週，全校已有 22位，超過 1/4的教師利用智慧教室教學收錄電子筆記達 137課次。在前面引領的幾位資深老師們，更深入研究自己每天的蘇格拉底報告，透過報告呈現的數據，調整教學策略，研擬出更具教學成效的教學模型。以鄭健盈老師的語文課為例，不到一個月的時間，即可將科技自然融入家常課中，取得科技運用 91分的高分。以科技為改變的起點，這些老師們透過科技反思教學、透過數據進行決策、透過同步差異化進行因材施教，將以生為本落實在每天的教學當中。

今年更有語文、英文及數學三位教師主動組成「辭修五告讚」的戰隊參加「2018大師盃智慧課堂競賽」，誠如戰隊隊長——鄭健盈老師所說：「利用智慧教室融入教學，讓我反思我的教學，從以往的以師為主的角度，透過即時反饋系統，了解學生的不足及需求，刺激學生思考，進行以生為本的教學設計。」而學生在課堂的積極參與及成長，更增進教師教學的動力。



## 未來展望期許

「成功就像一條彎路，剛開始看不見終點，只要前進之後，會發現目標就在不遠處」。在邁向智慧校園的過程中，辭修高中已成功的踏出第一步，未來希望藉由軟體資源及硬體設備導入的同時，發展「以生為本」的教學模式與策略，厚植學生學力，以達成下列目標：

**社群共學** 透過領域教師的彼此協助學習，促進教師專業發展，提升教學品質。

**課程共備** 透過共同備課、觀課及議課的推動，調整教學策略及模式，以提升學生學習成效。

**資源共享** 各領域教師所設計的教案及教材內容，由同科教師共享使用，各課堂的電子筆記及課程內容，可提供學生回家自學或補救教學使用。

藉由上述的努力，提升學生的學習自信，讓教師教學有成就感，營造優質的生活及學習的環境，擦亮「學習桃花源」的金字招牌，成為新北市第一的智慧高中——第一所、第一名、第一優！

## Promote open class observation

With the presence of the principal in every class observation, the support of administrative equipment, and the assistance from the community of seeding teachers of all subjects, all teachers in Tsz-Shiou have passed the verification of “the Blue Magpie Program.” Starting from the concept of developing collective lesson preparation with the community, we are eager to promote open class observation project to prompt teachers to develop their professional skills and help Tsz-Shiou take another step to bring it closer to its long-term goal. In the collective lesson preparation day before the school started, teachers of different subjects began preparing their lessons together by combining them with the smart classroom. We planned to hold class observation sessions that are open to all faculty. During the open class observation, we collected five major data, including electronic notes, teaching materials, learning process, diagnostic report, and videos of remedial teaching. After the open class observation, we proceeded to play Sokrates videos to conduct a smart research in teaching. With the data produced by the Sokrates system, we are able to abstract a “student-oriented” teaching model that contains Tsz-Shiou’s characteristics.

## Preliminary results

Starting from the middle of September, the past four weeks have seen 22 teachers, which translated to a quarter of the school’s whole teachers, using smart classrooms to collect electronic notes for 137 classes. These trailblazers are some of the senior teachers of the schools who thoroughly probe into their Sokrates reports and adjust their teaching strategies according to the statistics shown on the reports. They have all managed to roll out more efficient teaching models. For example, Zheng, Jian-Ying, a teacher of language arts, is able to incorporate science and technology into home economics education in less than one month and score 91 in technology utilization. With technologies as the foundation of changes, these teachers reflect on their teaching through technologies, make decisions based on statistics, teach each student accordingly via synchronized discrepancies, and develop teaching models that help them teach more efficiently.

This year, three teachers from language arts, English, and mathematics take the initiative to form a team called “Tsz-Shiou Rocks” and participated in the “2018 Master’s Cup of Smart Classes Competition.” As the team’s leading teacher, Zheng, Jian-Ying, puts it, “Fusing the smart

classroom with my teaching makes me reflect on my teaching and changes my teacher-oriented perspective. Now, I begin to use the real-time response system to realize my students’ shortages and needs and stimulate their thinking. I am designing my teaching based on the students.” The proactive participation and growth of students are surely a drive for teachers to improve their teaching.

## Future prospects and visions

“The road to success is never a straight one, and you may not see your destination from the outset. Your destination will gradually exhibit itself so long as you take the first step.” During our effort to become a smart school, Tsz-Shiou has successfully taken its first step. It is our hope that the introduction of software (resources) and hardware (equipment) can take place in tandem with the development of teaching models and strategies that are “student-oriented.” By cultivating the students, we wish to achieve the following goals:

### Learning with the community:

Through mutual learning and assistance among teachers of different subjects, we hope to boost teachers’ professional knowledge and enhance their teaching quality.

### Collective lesson preparation:

By promoting collective lesson preparation, class observation, and lesson discussion, teachers will be able to adjust their teaching strategies and models to enhance students’ learning outcome.

### Resource sharing:

The lesson plans and teaching materials designed by teachers of different subjects can be shared to and used by teachers of the same subject. The electric notes and curricular content are provided to students for homeschooling or remedial teaching.

All of our efforts are dedicated to elevating students’ confidence in learning, giving teachers a sense of pride, building a quality living and learning environment, and making the public know that Tsz-Shiou is indeed the “utopia for learning.” Our goal is to become the first one and the number one smart senior high school in New Taipei City.