獲卓越教學獎的教學實践

Teaching practices presented with the Award



獲卓越教學獎的教學實踐

Teaching practices presented with the Award





Beyond students'

wildest dreams



Teacher presented with the Award

Mr WAN Kin-kwok

(Years of teaching: 32 years)

School

TWGHs Kap Yan Directors' College

Subject taught

Design and Technology (S1-3)

Teaching Philosophy

"AIR (Aviation-Innovation-Robotics) is a set of learning experiences designed to foster students' development of technological literacy. AIR provides real-life contexts which give students broader opportunities to develop their capability, understanding and awareness in technology."







How technology can extend our abilities

To fly high up in the sky is the dream of many young kids. But in reality the road to becoming a pilot is not an easy one. At TWGHs Kap Yan Directors' College, students are given the chance to learn about the challenges and excitement of becoming a pilot.

Walking into the design studio of the school, the first thing that strikes you is a flight simulator; here, students can have a taste of simulated flight.

"This is one of the technology learning activities that we have introduced to students. We believe it will help students understand how technology can extend our abilities -- in this case flying high in the sky," says Mr WAN, who has spent two-third of his time focusing on the subject of Design and Technology throughout his 32-year teaching career.

Serving people's needs

Mr WAN has dedicated his career to Technology Education. He believes humans should be at the centre of Technology Education. Thus, he has put forward his vision of "Anthropocentric Technology Education" as the central tenet of his teaching. "In Anthropocentric Technology Education, we hope to cultivate students' capability

and understanding of technology in order to serve people's needs, while at the same time help them develop a sense of how our use of technology has an impact on society, and hence the world," he explains.

Anchored with this principle, Mr WAN aims to give a broader definition to technology, relating it to daily life through various technology learning activities. He states that it is more important that students ask "when" and "why" than "how" to use technology.

"Engaging students to think, developing their interest and bringing in innovative ideas to keep them aware of how technology changes the world -- at the end of the day, students should appreciate how technology evolves from human activities," Mr WAN savs.

Creating an authentic learning context

Emphasising the importance of activities in learning technology, Mr WAN has designed a number of problem solving challenges for students. Students are given a problem with an authentic context and led to further explore the varied possibilities of technology.

In the technology workshop, for example,

students have to make 6-legged robots in small groups. Their challenge is to take part in a retrieval mission on Mars with a time constraint of two minutes. "Students are all excited about their mission," says Mr WAN. Adding an imaginative element to the task also promotes students' creativity.

Mr WAN stresses the importance of practical solutions. He introduces both cultural and commercial elements in his teaching to ensure that what students come up with is all making sense. "I asked students to split into groups where they have to play different roles in a design company, and develop a product with consideration given to cost control and operation management. With such exercises, we put students into a real situation where they learn about practicality, how to care for the needs of clients, and understand the principle of cost effectiveness," he says.

Assessment for learning is another important area Mr WAN focuses on. He claims that it is students' job to look for the answer. The role of a teacher is to give guidelines, hints and support, leaving room for students to discuss and reflect.

Dreaming outside the box

Mr WAN encourages students to think out of the box. "Look at the aviation task we have brought into class. Students get to know this vocation and can consider whether to take subjects in a related discipline so that they can become pilots in the future," explains Mr WAN. "We tell students to dream big. As technology helps advance our living, it also



▲ Students are working collaboratively in moulding the acrylic sheet



▲ Mr WAN encourages students to join technology-related competitions.

gives us inspiration to dream bigger than before."

In fact, some of the graduates of the school have chosen to study disciplines that are related to aviation and are preparing to become commercial pilots. "Of course, becoming pilots is one of the paths students can choose. There are many vocations related to aviation which could be considered, such as air traffic control or aircraft maintenance. As China opens more international airports in the coming years, they will need employees who can speak English. I think Hong Kong students have an advantage in this area." Among his many graduates, there are some influenced by the Design and Technology subject studied and have taken up careers in related disciplines.

Looking ahead

As Mr WAN will retire in several years, he worries about the issue of continuity. "The resources to develop the Design and Technology subject are limited and manpower is also an issue. I only wish that the subject will not be taken away from schools and students will continue to enjoy studying the subject."

Mr WAN will continue to be involved in various organisations, such as the International Conference on Technology Education in the Asia-Pacific Region, as this sort of exposure contributes to his development of technology learning activities to support the learning and teaching of the subject.

"I will continue to promote and share with other teachers my three core tenets in Technology Education: precise teaching goals, sensible incorporation of technologies and learning technology through activities," Mr WAN concludes.









Anthropocentric Vision for Technology Education

Technology Education (TE) concerns the future and changes. Changes are generated by the rapid technological advancement which affects all aspects of our life. Hence, I have constructed the vision of "Anthropocentric Technology Education", which advocates that "humans" should be at the centre of TE. It denotes the intentions and practices that aim at developing students' capabilities to serve human needs through the utilisation of resources and conceptual understandings while promoting awareness of human impact on nature and the manmade world.

Views on learning in Technology Education with an Anthropocentric Vision

Learning in anthropocentric TE has its roots in the sociocultural tradition. It holds that students construct their knowledge through interactions with others and practices provided. Technology Learning Activities (TLAs) are recommended in the curriculum framework of Technology Education Key Learning Area to develop technological literacy. By means of the "design-and-making" learning in TLAs, anthropocentric TE provides an integrated environment for students to interact with resources, concepts and understandings to develop their creativity. Through these technological endeavours, students become more acquainted with the technological phenomena that we have created, and as a result, become aware of the consequences of our use of technology.

Apart from development in conceptual and value aspects, the learning outcomes in anthropocentric TE are discerned by the changes in the man-made world that are brought about by the products and systems students designed.



▲ Mr WAN demonstrated the technique in cutting and shaping the acrylic sheet.

Pedagogical Content Knowledge and Assessment for Learning practices to enhance students' learning

Under the technological endeavours in TLAs, students have to undertake complex technological learning tasks. In supporting such complex learning, TE teachers are required to have sound Pedagogical Content Knowledge (PCK). In the "6-legged robot" TLA stated below, for example, a spectrum of technological knowledge was input to facilitate students' learning. The arrangement of the "migration" of the theme from "6-legged robot" to "Martian Rescue Robot" maintained the coherence of the objectives and continuity of activities across several lessons.

Assessment for Learning (AfL) means more than marking and tests to include learning facilitation. Teachers with effective PCK can undertake AfL practices to reflect on students' learning and provide relevant and specific feedback to inform how well they have done and what they might do next. The "Daily Record Sheet" is a commonly used AfL strategy in which students are required to reflect on learning after the lesson. With Design and Technology (D&T) specific PCK and the data obtained, teachers can intervene with precise feedback or framed questions to facilitate students in their learning and look for ways to move on towards better quality.

"AIR in action" learning experiences

The anthropocentric TE learning experiences which are offered to students through D&T in the school can be summarised as "AIR in action", which stand for "Aviation", "Innovation" and "Robotics"

A selection of the TLAs offered to students is presented below.

Design acrylic products with press-moulding technique

This TLA demonstrates how to enhance the learning outcome of a craft-based task with D&Tspecific PCK. All teams were required to produce household products by press-moulding acrylic. In addition to learning the processing of plastic material, students were assigned to different duties (Chief Designer, Production Manager, Project Controller and Accountants) in the "design companies".

Under the lead of the "Chief Designer", they had to identify the needs and cultural background of the users and exercised value-judgement in designing and transforming the acrylic sheets into appealing products. As a result they became acquainted with the notion of value-adding by design.

Furthermore, the "Production Manager", the "Project Controller" and the "Accountant" of each team were required to plan the project, keep track of progress, and keep the cost low respectively. This arrangement integrated students' learning in several subjects, which helped them to understand that technology involves a multitude of inputs. In keeping track of progress, students were involved in the practices of AfL to reflect on their performance with enhancement of the quality of their work as a result. Through this project, the collaborative and communicative abilities of the students were developed.



▲ Students' press-moulding products

6-Legged Robot and Martian Rescue Robot

S3 students worked in groups to build robots to compete in a splinting race, incoporating previous robotics knowledge learnt in S2. This provided opportunities for them to compare and contrast current experiences with previous ones. Meanwhile, it helped students further develop their competence and concepts in robotics.

In the MRR TLA, students had to re-design their 6-legged robots to rescue the Beagle 2 Space Probe that had been sent to Mars in 2003. The context was set to arouse students' interest in aerospace technologies. The re-designing process involved the selection of appropriate mechanical design to attain enough strength for the robots. The MRRs were required to pass a series of checkpoints. Students had to exercise decision-making abilities to determine the best mission route in considering the competence of their robots, their controlling skills and the difficulties of the checkpoints. The MRR also had to carry a cup of marbles representing water and to give signals to attract the attention of the Beagle 2. The intention here was to incorporate fun and challenge in learning as well as the concepts in robotics motion and motion transmission.

"Pilot in the cockpit" - Flight Simulation

The purpose of this TLA is to encourage students to understand how technology can extend our ability to perform certain tasks, e.g. fly up in the sky. Students were introduced to the physical

principles related to the motion of the aeroplane before having the hands-on experience of flight simulation.

Students also learnt about the entry requirements and opportunities in aviation careers. This helped in developing their career aspirations for aviation.



▲ Flight Simulation

Conclusion

Students' development in D&T with an anthropocentric vision is discerned by their capabilities in tackling open-ended design problems. They utilise conceptual understandings and the resources available, exercise their intelligence and value judgements to produce the solution, resulting in value-addedness in the product and a positive change in the man-made world.





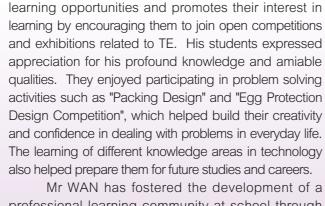
Through diversified technology learning activities, students are inspired to serve human needs by applying technological knowledge and skills.

Assessment Summary

Mr WAN is a strong supporter of "Anthropocentric Technology Education", which advocates that "human" should be at the centre of Technology Education (TE). He has developed a coherent and systematic school-based Design and Technology (D&T) curriculum. It comprises the tripartite of Aviation, Innovation and Robotics (AIR in action) and emphasises offering technology learning activities (TLAs) that aim at inspiring students of different backgrounds and abilities, motivating them to learn and developing their technological literacy to serve human needs through the application of technological knowledge and skills. Mr WAN also provides multifarious scenarios to foster students' integrated learning through the design of TLAs that require them to apply learning elements acquired in different subjects to solve complicated issues relating to technology.

Mr WAN's lessons are well planned. He uses effective teaching strategies and activities to develop students' technological capability, enhance their collaborative and self-management skills, as well as cultivate their creativity. For example, he asked students to form "design companies" of 4 members each to design client-oriented acrylic products with press-moulding techniques. Mr WAN uses classroom language skillfully; he provides clear instructions to students and asks good focal and probing questions to stimulate their thinking

and facilitate exploratory learning. Goal-directed, descriptive feedback and appropriate intervention is given to students to promote their active learning and make sure they achieve expected outcomes. There is a very good teacher-student rapport.



Mr WAN provides students with diverse interactive

professional learning community at school through promoting a sharing and collaborative culture among colleagues. He proved himself a reflective practitioner and demonstrated his passion for TE through presenting his views and research findings in education journals on issues related to the subject. He also served as a member of the CDC Committee on TE and a seconded teacher in EDB, making significant contribution to the development of the TE curriculum framework. Mr WAN's professionalism and contributions to the teaching community were commendable.



▲ Mr WAN enables students to learn in an orderly environment and to acquire safe and healthy work habits.

Way of Obtaining Information of the Teaching Practice

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站在最前線

探索商業教育新趨勢

卓越教學獎教師

周敏儀老師 (教學年資:30年)

所屬學校 東華三院邱金元中學

教學對象

中一至中三 (基本商業科)

「透過連貫的初中基本商業科校本課程,培養學生對 商業活動的敏鋭觸覺,認識個人及企業的社會責任。 安排課堂活動及課後營商實踐,從而探究及展示所學 的知識及技能,讓學生掌握與時並進的商業知識和共 通能力,建立正面及積極的態度,面對具競爭及挑戰 的商業環境。







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周敏儀老師執教三十載,從東華三院 邱金元中學創校以來,一直任教至今已 二十八年,對學校建立了深厚的感情,亦 見證着商科學與教的種種改變。透過不斷 「轉型」,令教學內容與時並進,緊扣瞬 息萬變的商業社會。

東華三院邱金元中學前身是一所職業先修學校, 對比其他文法中學,這所學校的商業教育元素較多, 像特別室這樣的硬件配套亦相對完善。隨着連串教育 改革,商科教育亦不斷發展。所謂「十年人事幾番 新」,在過去二十年,商科教育與時並進,從昔日的 職業導向,走向今日知識型全方位學習。周老師任教 商科三十年來,參與編訂校本課程,走過漫長的道 致。

課題緊貼時代脈搏

不妨猜猜初中基本商業科的課程涵蓋哪些課題? 「營商環境」、「產品推廣」、「公司架構」、「個人理 財」等固然是基本元素,但令人意想不到的是,周老 師也把「網上營商」、「公平貿易」和「社會企業」 這些近年才冒起的熱門議題編進課程。周老師說: 「這些課題在坊間很難找到參考教材,所以唯有自己 多下些苦功,選取不同類型的素材引導學生學習。例如:加入新聞資料、企業考察、工作坊等。」

翻開周老師編寫的課程進度表,發現每個學期的教學內容豐富。九月份開學時,周老師特意加插了心理測驗,助學生反思自己的消費行為,藉此提高他們的學習興趣。及至下學期,學生會走出校園,參觀企業運作,接觸商業世界最真實的一面。以「公平貿易」課題為例,學生能親身踏足各類型的社企,包括大埔「欣悦天地」、葵芳「LMC Love Multi-Culture」、社會企業總會等。除了外出考察,周老師又邀請專家到校舉辦專題講座、工作坊等,令學生對課題有全面的了解。



▲鼓勵學生參加模擬投資活動,從比賽中學習。

難忘調皮學生

周老師精心編寫教材,加入多元化活動,務求令學生樂在其中。雖然她花盡心思,但也曾遇上學生「不領情」的時候,令她印象難忘。周老師憶述:「記得某一年,中三級學生的個性特別活潑調皮,於是我因應這群學生的特質調節教學模式,令課堂更生動有趣。剛開始的幾課不算太成功,學生表現並不投入。這驅使

我在課餘時間反覆思量,並試驗新的教學方式,幾經 努力才能跟他們打成一片。」

學期結束後,師生的關係大躍進。「當時有幾個學生告訴我,他們已選修高中企業、會計與財務概論科,更表明:『Miss Chow,我們往後都要上你的課!』」學生答謝的説話和他們在課堂的積極表現,深深打動了周老師,也轉化為她不斷向前的推動力。

年青人做生意 夠創意

談到周老師的「代表作」,不得不提「邱金 墟」。「邱金墟」是中三級的專題研習活動,其運作 模式跟年宵市場相若。在持續數天的「墟期」,校園 操場變身為一個鬧哄哄的市集。中三級的學生搭建十 多個攤位,銷售各式各樣的產品及食品,當中不乏學 生「自家製」的創意精品。

周老師説:「『邱金墟』動員全體師生和工友合力參與,才能圓滿舉行。這個大型的專題研習活動, 不但歡迎師生和家長蒞臨,亦開放予小學及鄰近社區 人士參加。其實由中三學生籌備攤位,過程一點也不

東華三院邱金元中學企業、會計與財務概論

▲學生每年都會走出香港,到神州大地進行企業考察。



■學生非常投入周老師的課堂,精心 製作專題報告、店鋪設計模型等。

▼「邱金墟」營銷活動由中三級學生 在校內設攤位銷售貨品



容易。他們既要應用營商知識,又要面對許多意想不到、考驗他們解難能力的難題。」

學生沒有營商經驗,但勝在創意十足。有的巧妙 地運用校名,將攤位命名為「邱之良品」;有的把砵 仔糕攤檔定名為「糕朋滿座」;有的在飲品店招牌寫 上「得閒飲茶」;有的以「峰迴路轉」來命名迴轉壽 司店。學生的無限創意,為周老師送上無窮驚喜。

大型的「邱金墟」在目前並非年度活動,但每當學校宣佈籌備活動時,全校學生無不雀躍萬分。即使沒有「邱金墟」的日子,周老師也不會閒下來。她設計的「中三級公平貿易」和「社會企業網上營銷活動」,可算是網上版的「邱金墟」。學生轉戰網上銷售平台,活用商品推廣技巧,向大眾説明公平貿易及社會企業的概念和意義。

走出校園 主動尋找機會

雖然教學工作繁忙,但是周老師絕對不會以忙碌 為藉口,反而把握每個機會吸收新知識。周老師強

調:「商業社會變化萬千,作為商科的教育工作者,更加不容許自己跟時代脱節。為了吸收最新的科技資訊,我會積極參與相關的進修課程,亦第一時間引入所知、所學,並經常跟教學團隊商討如何改善及增進現有課程的內容。」

周老師深信,教師多走一步,學生就會得益更多。憑藉這個信念,周老師常常帶領學生走出課室,鼓勵他們參加營商比賽,又組織多元化的校外考察活動,為學生帶來豐盛的學習經歷。



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學習源於生活,生活激發學 習。配合香港知識型經濟發展的趨 勢,科技教育應透過與生活息息相 關的課題和小組協作活動,更有效 地讓學生從實踐和互動中培養他們 對商業活動的敏鋭觸覺和興趣,以 及關心社會事務的態度。

隨着時代的進步及急速經濟轉型,在教改大前提 下,商業教育的使命是讓學生掌握與時並進的商業知 識和共通能力,建立正確價值觀及積極的態度,以面 對富挑戰性的商業環境,提升香港競爭力。以下是概 括教學實踐的四個重點:

- ◆ 利用與生活息息相關的課題作切入點
- ▶ 讓學生更投入課堂,使教學收事半功倍的效果
- ◆ 安排有目的及創新的學習活動
 - → 讓學生在活動中發掘自己的創意和獨立性。
- ◆ 身體力行
- ▶ 讓學生享受學習過程,投入學習,達至學習 目標
- ◆ 利用熱門的議題作反思
 - ▶ 培養學生對商業活動的敏鋭觸覺,以及關心社 會事務的態度

有效課程設計 互動課堂模式

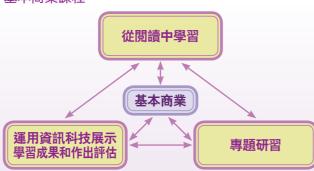
課程主要由四個基本要素作支柱,配合常規課堂 模式——預習、學習、反思, 並採用學生主導的互 動課堂模式,適切地設計小組協作活動,包括角色扮 演、小組討論與匯報,幫助學生建構知識。



▲小組協作學習令教學事半功倍

課程設計的四個基本要素

基本商業課程



本着「想學、會學、能學」的理念及以學生為本 的精神,編訂校本基本商業課程,按學生在不同階 段的興趣和智能發展,採用具連貫性的螺旋式課程 架構,以「認知」、「探索」、「探究」、「體驗」和 「實踐」為不同年級的課程設計重點,並透過有系統 和多元化的教學活動,讓學生綜合運用所學的知識和 技能,循序漸進地建構知識和鞏固所學。

三年初中基本商業課程內容已涵蓋新高中企業、 會計與財務概論科必修課題的基本知識,而且課題每 年都會因應學校的關注事項有所調適。下表概括了相 關元素:

	級別	課題	基本要素	螺旋式課程 設計重點
	中一	個人理財	從閱讀中學習	認知
		電子交易	運用資訊科技促進學習	體驗
		新產品推廣	運用資訊科技促進學習	探索
	中二	香港貿易金融新里程	專題研習	探索
		中國整體經濟發展狀況	專題研習	探索
		溝通技巧	從閱讀中學習	體驗
	中三	消費者與我	專題研習	探究
		世界貿易	從閱讀中學習	探究
		公平貿易/邱金墟	專題研習	實踐
		社會企業	專題研習	實踐
		財務報表	運用資訊科技促進學習	體驗

從閱讀中學習→預習

在「認知」階段,有目的地安 排閱讀資料讓學生預習,透過新聞 剪報、文章分析、短片欣賞及網上 資料搜集,幫助學生建立從閱讀中學 習的習慣,掌握閱讀策略,讓他們具 備理解、分析等研習能力;並以課堂 評估如分組問答遊戲,了解學生預習 的情況。

專題研習→學習

利用與生活息息相關的主題作切入點,讓學生 透過專題研習,如「消費文化考察報告」、「邱金墟 營商活動」、「社會企業網上推廣」、「公平貿易格仔 鋪」等,「探索」、「探究」、「體驗」和「實踐」學 習過的商業元素。

消費文化考察報告是分組專題研習活動,研習的 議題須配合學校每年的關注事項。例如:本年學校關 注校園健康生活,學生探究的專題是「第一城市民對 有機食品的認知」,研究結果除了作校外參賽之用, 更可供學校的持份者作參考資料。透過邱金墟營商活 動、社會企業或公平貿易展銷會,學生更能體驗企業 家創業精神,以及運用營銷組合的技巧達至身體力行 實踐營商,體會箇中意義。

運用資訊科技展示學習成果和作出評估→反思

讓學生透過運用資訊科技如上網搜尋資料,以 及用簡報等形式匯報學習成果。教師則會以簡 報、短片和學生過往的課業作多媒體教材, 帶領學生循序漸進地探討課題。

教師亦會檢視學生的電腦作品,如 店鋪標誌設計(教師讓參觀者選出最喜 愛的設計,而結果亦作評估之用)、公 平貿易產品海報設計(上載於學校內聯 網供營銷之用)、網上銷售設計、最佳店 鋪選舉等,評量學生的學習過程及成效, 並給予具體鼓勵和回饋,讓學生反思學習過 程。他們完成每項研習後,亦會以電腦 圖像和文字展示學習反思。



教師角色的轉變和演繹



商業教育是培養學生適應轉變中的香港 社會,以及配合中國的發展前景,這正是我 設計課程、運用課堂策略及為學生提供活動 體驗,期望達至的教學目標。

總結多年的教學工作經驗,我認為教師 有不同角色,需不斷轉變和演繹,以學生為 本位,設計多樣化、適時而富挑戰性的課 程,並持續反思和作更新,才能推動學生學 習,讓他們獲得持續的學習果效和最大的裨

益,繼而回饋社會。





2 0 1 2 / 2 0 1 3 行 政 長 官 卓 越 教 學 獎 蓇 萃

Compendium of the Chief Executive's Award for Teaching Excellence



透過與生活息息相關的課題和小組協作活動, 有效讓學生從實踐和互動 中培養他們對商業活動的 敏鋭觸覺,以及關心社會 事務的態度。

周老師憑藉豐富的教學經驗,根據學生在不同階段的興趣和智能發展,採用螺旋式課程架構,以「認知」、「探索」、「探究」、「體驗」和「實踐」為不同年級的課程設計重點,編寫校本初中基本商業課程,有效引起學生學習興趣,讓他們循序漸進地建構知識和鞏固所學,以及掌握與時並進的商業知識和共通能力。

校本課程配合多元化的教學活動,利用與生活息息相關的課題作切入點,透過專題研習和營商活動,如「年宵攤檔」和「格仔鋪」,讓學生體驗營商的實況,實踐所學,以及提升高階思維和共通能力。周老師重視學生的操守,於課程內加入「網上營商」、「公平貿易」、「社會企業」等熱門社會議題,培養學生對日常生活中的商業活動的敏鋭觸覺,以及關心社會事務的態度。

周老師的課堂技巧純熟流暢,講解清晰。她以多 元化的課堂學習活動為常規手段,讓學生於課前透 過閱讀進行預習,並善用課堂評估了解學生預習的情 況。周老師採用學生主導的互動課堂模式,利用分層 課業和適切的小組協作活動,包括角色扮演、個案分析、小組討論、匯報等,照顧學習多樣性,為能力較 高的學生提供挑戰,並帶動未能踴躍學習的學生投入 課堂。周老師在協作活動的過程中以靈活的提問激活 學生思維,有效讓學生透過討論和協作,由淺入深地 探討課題,掌握學習重點;進而引導他們反思、總結 課堂重點;最後讓他們透過適切安排的課後延伸活動 鞏固和深化所學。學生在課堂上表現投入,敏慧地應 用已有知識和熟練地運用溝通、協作等能力,有效率 地完成個人和小組協作的學習任務,學習氣氛積極 活潑。

周老師致力提升校內同工的專業發展,她透過定期的校內科務會議,啟發同工協力改善學與教,逐步落實教學範式轉移,擺脱由教師主導的模式,把課堂還給學生,齊心協力推動科技教育。她亦獲邀出席教育局的分享會,不遺餘力地向業界推廣其教學理念和成功經驗,貢獻良多。



▲在小組協作學習活動中,周老師與學生討論議題,並給予回饋。

索取有關教學實踐 資料的途徑

學校網址: http://www.twyky.edu.hk

聯絡方法

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