

2. Using Time Well

善用時間

1. Active Learning (活躍學習)
2. Teaching Inductively (教學誘導)
3. Teaching Inductively (教學誘導)
4. Using Group Work (團體合作)
5. Developing Positive Classroom Interaction (發展正向的課堂互動)



Using Time Well / 善用時間

Make the most of class time with:

(將大部分的課程時間運用在：)

- [Active Learning](#) (活躍學習)
- [Teaching Inductively](#) (教學誘導)
- [Leading Discussions](#) (領導討論)
- [Using Group Work](#) (團體合作)
- [Developing Positive Classroom Interaction](#) (發展正向的課堂互動)

1. ACTIVE LEARNING

(活躍學習)

Teaching is developmental rather than directive or presentational.



教學是持續發展而不只是命令或展示的

Active learning involves the implementation of “learning experiences in which the students are thinking about the subject matter” (McKeachie, 2002). It is based on the premise that students must do more than just listen to fully comprehend new information. They must read, write, discuss, and problem solve. By employing active learning in your classes, you will increase the effectiveness of your teaching and your students’ learning.



活躍學習包含了「向那些思考主題的學生們學習經驗」之履行(麥克凱奇(McKeachie)2002)。這是基於學生一定不能只靠聆聽就完全吸收新資訊的前提，他們一定要閱讀、寫作、討論，還有解決問題。在你的課程中套用活躍學習將會增加對於你教學和學生學習的效率。)

(1)Reading / 閱讀

One suggestion for encouraging active learning is the use of the Treasure Hunt technique (Magnan, 1990). This strategy is based on the premise that if you’ve assigned a reading, there must be something valuable for the students in it. Choose several pages or sections, and then ask students to find the most important point, idea, or argument and write it down, along with a sentence or two justifying their selection. If you choose assigned passages well, you can increase understanding and participation immediately.



對於刺激活躍學習的一項建議就是使用尋寶技巧(麥南(Magnan),1990)。這項策略是基於你有指派閱讀作業的前提下產生，在閱讀作業中，一定有一些值得學生學習的地方，挑選幾頁或幾個章

節，然後請學生找出重點、想法，或是論點並且寫下這些發現，並附加一兩句可以證明他們選擇的句子。如果你妥善的選擇了指派的段落，你對於理解和參與的技巧將會迅速的提升。

(2)Writing / 寫作

John C. Bean suggests several ways to incorporate writing into a class, including:



約翰 C 賓(John C. Bean)提出了下列關於將寫作納入課程裡的建議：

- Writing at the beginning of class to probe a subject: Ask students to write short answers to a question that reviews previous material or stimulates interest in what's coming.
- (在課程一開始寫作關於要探討的話題：關於複習上次的題材或是激發對未來課程興趣的問題，並要求學生寫下簡短的答案。)
- Writing during class to refocus a lagging discussion or cool off a heated one: When students run out of things to say, or when a discussion gets too hot, ask students to write for a few minutes.
- (在課堂中寫作以使停滯的討論重回焦點，或是讓激烈的討論冷靜下來：當學生覺得已經沒有東西可以討論，或是變的過於激動的時候，要求學生花一點時間來寫作。)
- Writing at the end of class to sum up a lecture or discussion: Give students a few minutes to sum up the day's lecture or discussion and to prepare questions to ask at the start of the next class
- (在課程結束時寫作來總結這堂課的重點或討論內容：給學生一點時間來整理今天的課程或討論餒榮，並且準備在下一堂課開始要問的問題。)

(3)Discussing / 討論

While the most common approach to encouraging active learning in the classroom is the use of discussion, not all discussions are created equal, and

there are other methods in which to achieve the difficult task of drawing students into lectures, discussions, and readings. One suggestion for engaging students in active learning is using the Thumb's Up technique (Ukens, 2000). To implement this technique, ask students to form groups of six to ten people, with each group sitting in a circle. Participants will discuss topics within their groups. To keep everyone involved, each person is to extend his or her fist toward the middle of the circle. Once discussion begins, each member is to share, in any order, one idea or piece of information on the topic. As each person shares, his or her thumb will go up. A person may not share again until all thumbs are up. Then, members can begin again and continue the process. After about five minutes, stop the discussion. If you wish, repeat with new topics.



- 雖然達到活躍學習最普遍的方法就是在課堂中進行討論，但並不是所有的討論都是平等建立的，而且其實也有其他的方式可以達成讓吸引學生聽課、討論，和閱讀這些困難任務。在活躍學習中一個吸引學生的建議是使用翹拇指技巧(thumb's up technique)(尤肯(Ukens),2000)，為達成這個技巧，請學生組成六到十人一組的小組，然後每一組圍成一個圈圈，參與者會在組內討論問題，為了使每個人都參與的到，每一個成員在一開始都要面向圓心，一旦討論開始，不管是一個想法或是一些資訊，每個人都可以以任何順序發言；任何人在發言時都要比出大拇指朝上的手勢，直到所有人都比出相同的手勢才可以有人重複發言，如此一來，成員們可以重新開始並且再進行一次同樣的步驟，在進行大約五分鐘後，停止討論，如果你希望的話，可以新的主題重新開始循環。)
- Another method to employ asks the students to frame the discussion, or determine the direction of the discussion. Ask students to identify one question from their readings that they would like to have answered in class. Ask them to share their question with three peers, and then have the group pick one of the three questions to present to the instructor. Allow each group to ask its question.



(另外一個方法是請學生擬定討論主題或是決定討論的方向，要求學生提出一個在閱讀材料中找到並想要在課堂中討論的問題，請他們跟同儕分想這個問題，然後每一組從三個問題中挑出一個呈現給講師。允許每一組問他們自己的問題。)

(4) Problem-Solving / 解決問題

Invite students to use Think-Pair-Share: To help them better understand a lecture, stop for a moment. Ask students to think about a question or problem that relates to the lecture material, turn to a peer, and explain their answer or solution. This is a great way to apply and reinforce key ideas.



邀請學生使用思考-配對-分享：為了幫助他們更了解授課內容，暫停一會兒，要求學生思考關於課程素材的疑慮或問題，向同儕解釋他們的回應或答案，這是一個應用和加強重點很好的方式。

- For more information, also see [First Day of Class](#).



更多資訊請參閱(連結)第一堂課

2. TEACHING INDUCTIVELY

(教學誘導)

Inductive teaching, also known as inquiry or discovery teaching, centers around the idea that knowledge is dependent on an individual's experience and interaction with the material. The instructor provides examples from which students are encouraged to seek patterns and applications, explore and extend the material, and make connections, thus inductively learning the concept that these examples indicate. This is opposite of deductive teaching, in which the concept is defined by the teacher, and the class is then exposed to examples on this previously learned concept.



誘導式教學，也稱為探究式教學(inquiry teaching)或發現式教學(discovery teaching)，中心概念是建立在個人經驗和互動上，講師提供一些關於那些被鼓勵尋求模式和應用的學生的範例，探索並延伸素材，並且建立連結，這些都是誘導式教學的例子。這跟推理式教學是不同的，推理式教學的概念是由教師下定義，然後學生們就只會接觸到這些之前學過的觀念之範例。

Structuring your class such that it requires students to inductively process the course material is outlined in the Teaching for Understanding framework (Wiske, 1998). In this framework of guided inquiry, the role of the teacher is to direct students' attention and analysis through focused and often ongoing assignments. These assignments should attempt to increase the "uncoverage" of a subject, which requires that students receive "lessons that enable them to experience directly the inquiries, arguments, applications, and points of view underneath the facts and opinions they learn if they are to understand them. Students have to do the subject, not just learn its results" (Wiggins & McTighe, 1998). This manner of teaching is beneficial for all instructors whose course goals include the sentence, "I want my students to be able to think like a _____ (scientist, mathematician, writer, etc.)." In this way, Wiske recommends shaping the assignments such that they increase in complexity across the semester, as well as move from group projects to more independent learning tasks. Learning thus occurs through observation and guided performances, and assessment of students' increasingly honed inductive reasoning skills occurs through on-going assignments. However, a "culminating performance" is often used at the end of a course or unit, which requires independent application of inductive thinking, synthesis, and a demonstration of understanding that extends beyond the learning which was attained from group work.



建立這種要求學生誘導性地處理課堂素材的方式在<為理解而教學>(Teaching for understanding)(威思科(Wiske),1998)一書的架構中有概略提到，在此架構下的引導式探究(guided inquiry)，老師的角色是導正學生的注意力，並且分析那些專心一致且通常也持續發展的作業，這些作業的目的應該是要增進關於理解一個主題的涵蓋程度，這要求學生習得「可以幫助他們直接體驗探究、辯論、應用，以及—如果他們願意理解的話—在表象之下的觀點和看法，學生必須研究主題，而不只是學結論」(維京和麥克泰(Wiggins & McTighe),1998)這種教學

方法有利於所有教學目標中包含「我要我的學生可以思考的像個____(科學家、數學家、作家等等)」這句話的講師，以此方法，威斯克（Wiske）建議整個學期中的作業可以逐漸增加複雜程度，並可以從小組作業演進到更獨立的學習挑戰。學習自此發生在所有的觀察和指導表現中，並且評估學生們在整個學期的作業中增長的誘導推理技巧；然而，一個「達到最高點的表現」經常被使用在一堂課或是單元的尾聲，這其實是需要誘導式思想的獨立運用、合併和超越從團體合作中得到的延伸論證才能達到。

3. LEADING DISCUSSIONS

(領導討論)

Leading discussions requires us to maintain a balance between using our voices and encouraging students to use theirs. Some ideas for sparking discussions include:

領導討論需要靠我們的發言和同時鼓勵學生這麼做來維持平衡，觸發討論的一些方式如下：

- Frame discussions around students' questions.
- (以學生的問題來制定討論主題。)
- Have students write their answers to a sentence completion exercise, then share their ideas: What most struck me about the reading was... A question I'd like to ask the author is ... The idea I disagree with most strongly is ... The part of the lecture/reading that made the most sense to me was...
- (要求學生寫下詞彙結構(sentence completion exercise)的答案，然後分享他們的想法：在閱讀材料中最讓我震驚的是...有機會的話我想問作者的一個問題是...我最不同意的一個觀點是...整個演講/閱讀材料中我覺得最合理的部分是...)
- Ask students to respond to a contentious opening statement or an illustrative quote.
- (要求學生回答一段的有爭議性的開幕詞或具解釋性的引述。)
- Have students recall an experience in their lives that somehow connects with the topics.

- (要求學生回想一段跟主題有連接性的經驗。)

A suggestion for increasing the number of student responses you get in discussion comes from John Woodcock from the University of Indiana at Bloomington. He suggests breaking up your presentation by giving students two or three minutes to discuss a question with the person sitting next to him or her. Rather than having students report on their own ideas, ask them to report on their discussion partner's good ideas. Woodcock states that when he tried this, "Three times as many hands went up, and the reports had a consistently better energy." This technique can work with any size group, in almost any teaching situation.



在討論中增加學生回應數量的其中一個建議是來自於印第安納大學布朗明頓分校(University of Indiana at Bloomington)的約翰伍德卡克(John Woodcock)，他建議在演講中間暫停，並給學生兩三分鐘的時間來和身旁的人討論問題，而不只是讓學生報告他們自己或是討論成員的想法，「大約多了三倍的學生舉手，而且他們的回應都更加附有能量。」，這個技巧可以運用在任何大小的團體和幾乎任何的教學情況上面。

One strategy that several KU faculty members have found useful is called the fishbowl, a discussion format in which part of the class forms a discussion circle and remaining students form a listening circle around the discussion group. [Click here](#) for a description of how to implement a fishbowl discussion.



一個許多堪薩斯大學(KU, University of Kansas)教職員認為很有用的策略被稱為「魚缸」(fishbowl)，這個策略是讓教室裡一部份的學生形成一個討論圈，而其他的學生在討論組外圍形成一個聆聽圈，(連結)點此以獲得如何執行魚缸討論的敘述。

In a large group discussion, once it is moving along, questions that can keep it going include questions that ask for more evidence or clarification. Ask How? or Why? Pose questions that link or extend the discussion, that address the cause

and effect, and that ask for synthesis or summary of the material. Other ways to encourage discussion are by affirming student comments and being silent when appropriate. In his book *Teaching Tips*, W.J. McKeachie (2002) notes that many lecturers check student understanding by asking if there are any questions, waiting 3-5 seconds, and after receiving no response conclude that everyone understands. But this is often not the case; the students just have not had enough time to process the material. So McKeachie recommends, "If you really want to know, give students a minute to write down a question, then have them compare notes with students sitting near them before asking for questions. You'll get some."



在大型討論會中，一旦開始，那些能夠使討論持續活躍的是偏向於尋求更多證據和澄清的問題，如何?或為什麼?詢問那些能夠延伸討論、有關連性、提到因果關係、綜合或總結素材的問題。其他能夠促進討論的方式為肯定學生的評論並且在適當的時機沉默。在他的書<教學妙計>中，W. J.麥克凱奇(2002)指出很多的講師都藉由詢問學生是否有疑問來判斷他們了解的程度，通常等個三到五秒鐘，然後在沒有回應的結果下認定所有人都理解授課內容，但是事實往往不是這樣，學生們只是沒有足夠的時間來消化這些素材，所以麥克凱奇建議：「如果你真的想要知道，給學生一點時間來寫下問題，然後在問問題前讓他們跟鄰近的人先互相比較。這樣你一定會得到一些問題。」

If discussions are not going well because no one is talking, consider the following questions:

(如果討論的不熱絡是因為沒有人願意發表意見，考慮下面幾個問題：)

- Did students complete preparatory assignments?
- (學生們有完成預習作業嗎?)
- Have you modeled public critique of your ideas?
- (你的想法是否受大眾評論所制約?)
- Is the discussion focused on an open-ended question of sufficient complexity and ambiguity?

- (此討論是否專注在一個有點過於複雜又模糊的開放式問題上面?)
- Have you ensured that you've avoided answering the question you've posed, either implicitly or explicitly?
- (不論暗示或明示，你是否曾經迴避回答自己提出過的問題?)
- Have you linked the topic to a critical event in students' previous experiences?
- (你是否曾將話題導向學生曾經歷的批判性事件?)
- Is my talking preventing students from contributing, or is discussion faltering because I don't speak enough?
- (我說過的話是否讓學生懼於發表自己的意見，或者討論的衰弱是因為我講得不夠多?)
- What am I doing to build continuity and a sense of collaborative engagement?
- (我做了什麼來維護持續性和參與的合作性(collaborative engagement)?)

When it comes time to conclude a discussion, end with a summary so that students know what important points were covered. A summative statement also allows the instructor the opportunity to fill in points that weren't covered and praise the class for the quality of their responses.



結束討論的時候，以總結做為結尾，好讓學生了解今天談論到了哪些重點，一個概括性的陳述也可以幫助你提出一些沒有被談及的重點，並且不要忘了讚揚他們回應的品質。

4. USING GROUP WORK

(團體合作)

Dan Spencer, of the KU School of Business, provides some recommendations regarding the use of groups:

(堪薩斯大學內處理事務的丹史賓瑟(Dan Spencer)提供了一些關於小組使用的建議：)

- Create groups (5-7 people each) that are diverse in terms of gender, style of learning, interpersonal abilities, class grades, nationality, outside work experience, and the type of degree they are pursuing. Also, combine people in groups who do not have previous knowledge of each other, and who have complementary schedules for meeting outside of class.
- (依性別、學習方式、交際能力、年級、國籍、外務經驗，以及追求的學位程度來將學生分成每組五到七人的小組，另外，結合那些對彼此沒有任何了解，和那些在課後有互補時間的學生們。)
- Select group work that requires team members to collaborate and that allows as much time for group interaction as possible in order to encourage valuable interactions.
- (選擇需要小組成員們通力合作完程的主題，並且讓成員們盡可能有小組互動的時間以促進他們間良好的互動。)
- Allow the groups to determine individuals' roles and the goals of their teamwork. Have the roles of the individuals in the group rotate throughout the project.
- (讓小組自己決定每個人在團隊合作中扮演的角色，讓每個人在不同的專案中輪替不同的角色。)
- Establish classroom behaviors that encourage group interactions, such as the sharing of information between teams and student cooperation during the learning process.
- (建立一些會促進小組互動的行為，比如說組跟組織間的資訊交流或學習過程上的學生合作。)
- Include evaluations that measure teamwork, such as tardiness, preparation for classes, and grades on group work.
- (包括對於團體合作的評估，像遲交、課前準備和團體合作的分數。)

- Before assigning complex projects, engage the class in icebreaker and bonding exercises, as well as assigning projects that increase in complexity.
- (在指派困難的方案時，用相關的活動和打可以破僵局的事物來吸引學生，然後在接下來的作業裡慢慢的提升難度。)

A suggestion for initiating group work in the classroom that does not involve an extended group project is the creation of Listening Teams. First, divide the class into four teams, then give the team members different role assignments:



關於在課堂上使小組開始作業，又不用延長小組規畫時間的一個建議是創立個聆聽小組。首先，將整個班及分成四組，然後給每個小組不同的角色任務。

- *Questioners*—This group will ask at least two questions about the material covered.
- (發問者—這一組至少要問兩個素材有涵蓋到的問題。)
- *Agreers*—This group will tell which points they agreed with, or found helpful, and explain why.
- (同意者—這一組要提出他們同意或覺得很有幫助的部分，並解釋為什麼。)
- *Nay-sayers*—This group will comment on what points they disagreed with, or did not find helpful, and explain why.
- (反對者—這一組要提出他們不同意或覺得沒有用的地方，並且解釋為什麼。)
- *Example-givers*—This group will give specific examples or applications of the material. Present your material.
- (提供範例者—這一組要提出明確的例子或是對於素材的應用方案，並呈現你的素材。)

After you are done, give the teams a few minutes to complete their assignments.



結束之後，給每一組一些時間來完成他們的作業。

One reason that listening teams are successful is because they create an environment in which each student feels as though their contribution to the group and their individual contributions are important and rewarded. Structuring group work with this in mind will increase the quality of student participation and the effectiveness of the group exercise.



聆聽小組會成功的原因之一是因為他們創造了一個每位學生都可以坐做出一點貢獻，並且可以感覺到他們每一個人的貢獻都是很重要並且受到獎勵的環境，在這種心態下建立的小組作業會增進學生的參與度和團體工作的效率。

Ruth Federman Stein and Sandra Hurd outline several justifications for the use of student teams and group work in *Using Student Teams in the Classroom* (2000). Besides increasing learning and preparing students for the environment of teamwork in industry and other organizations, teamwork and peer discussions help students more easily construct a knowledge structure that is scaffolded upon their previous experiences (Fosnot, 1996). Group discussions also help students use and become familiar with the language of a profession or discipline. Evaluations of student understandings are usually structured to assess their ability to comprehend questions and provide convincing responses. These skills are more likely to develop if students are allowed to discuss these topics themselves, as opposed to only receiving passive exposure to this new language. Teamwork is also more useful than lectures when teaching practical knowledge or material that is evaluated based on social context. Finally, Stein and Hurd argue that group work helps students absorb the behaviors and way of thinking needed for success in the classroom.



羅斯費德南(Ruth Federman 和 珊卓荷(Sandra Hurd)在<教室>(Classroom, 2000)一書中的「使用學生小組」中提到關於使用學生小組和團體合作的好理由，除了增加學習和讓學生準備好在會出現在不論是產業還是組織中的團體合作，團隊合作和同儕討論可以幫助學生更容易的建立起那些在之前經驗中失敗的知識結構。(佛斯娜 Fosnot,1996))小組討論也同時幫助學生對於專業用語或是準則的熟悉度。評估學生的理解程度通常都建立在評斷他們對問題的理解程度和答案的說服力，這些技巧只有在學生被允許由他們自己來討論主題的時候才能持續發展，而不是在只有被動的學習新東西的時候使用。團隊合作在教導那些受社會評論的實踐性知識或素材時絕對比演講授課來的有用，最後，史丹(Stein)和荷論辯團體合作幫助學生理解在教室中他們達到成功所需要的行為和思考模式。

5. DEVELOPING POSITIVE CLASSROOM INTERACTION

(發展正向的課程互動)

Wilbert McKeachie offers several suggestions for ways to encourage students to be active in classroom interactions. Create an expectation of participation early in the semester, by defining the various facets of the course and explaining why participation is valuable. Understand that boredom, lack of knowledge, passivity, cultural norms, and above all, fear of being embarrassed, may contribute to keeping a student from not talking in class. To reduce a fear of embarrassment, use small groups and help students get to know each other. Ask questions that have no wrong answers to help students get used to participating. Call students by name (see suggestions for learning students' names under [First Day](#)). Ask students to take a couple minutes to write out answers to questions. A shy person will be more likely to respond to being asked, "What did you write?" Get to know those students who don't participate in class interactions so you'll find any special knowledge they may have; ask them to contribute it at appropriate times.



韋伯麥克凱奇提供了幾個可以鼓勵學生在教室裡活躍互動的建議。在學期初的時候，就以明確闡述課程的多元面向並解釋為什麼參加這堂課是有價值的來建立學生對參與的期待，你必須了解無聊、缺乏知識、被動、文化規範，和最重要的一害怕出糗，都可能會導致課堂上的學生喋喋不休，為減低害怕出糗的心態，讓學生形成小組並讓他們認識彼此，問一些沒有錯誤答案的問題讓學生習慣課堂參與，以學生的名字來點人（參閱（連結）第一天中關於學習學生姓名的建議）要求學生花個幾分鐘寫下這些問題的答案，一個害羞的人對於被問到：「你寫了什麼？」的時候會比較樂意回答，試著了解那些不參與課程互動的學生，這可以找出一些他們可能擁有的特別知識，但不要忘了要在適當的時機發問。

In some scenarios, students may assume some negative roles. If we deal successfully with these situations, we can preserve a positive classroom environment. If the student assumes the Prisoner role, be clear about the benefits of the course. Ask the whole class to brainstorm 12 reasons why they shouldn't be there. Review this list with the class, and tell them that you can see why they may not want to be there. Then, promise you'll do your best to make the course worthwhile, and ask students to meet you halfway. Sometimes asking the student to help (e.g. passing out handouts) to show that you trust them, or engaging in a one-on-one talk, will bring the student around.



在某些情況下，學生可能會呈現一些負面的角色，如果我們可以成功的處理這些狀況的話，我們就可以維持一個正面的課堂環境；如果學生表現的像囚犯，一定要清楚解釋這堂課會帶來的好處，要求全班學生想出十二個他們不應該來上這堂課的理由，在他們面前檢視這些清單，並告訴他們你能了解為什麼他們可能不想待在這裡，然後，保證你會盡一切努力來讓這堂課值回票價，也請他們先遷就於你，有些時候也請學生幫忙（例如：發講義）以顯示你對他們的信任，或是安排一些一對一的談話，這樣可以使學生改變主意。

If the student assumes the role of the Introvert, use small group projects or employ group-generated questioning. This will give shy students a chance to

succeed, and may make them more willing to participate in a large group in the future. This can also be achieved by asking for written responses to a question or problem. Most importantly, allow students to participate at their own comfort level; forcing an introverted student into an uncomfortable situation will probably cause him or her to retreat even further.



如果學生表現的很內向，使用小組方案或小組提問，這會給害羞的學生一個成功的機會，並且讓他們在將來更願意參與大型小組討論，要求學生寫回應或是回答問題也可以達到同樣的成效，最重要的是，同意學生只需要參與到他們覺得舒適的程度就可以了，強迫內向的學生進入一個不舒服的帳太可能只會將他們越推越遠...

Finally, if the student assumes the Domineering role, make sure that you establish ground rules that discourage domination. Use small groups and don't give the floor to a domineering person; while in these small groups, rotate group membership and leadership. And be proactive about the situation; if you can tell early on that someone will be a monopolizer, speak privately with him or her. Say you've noticed that others aren't participating much and ask for help drawing them out. This gives the student a positive role to play, rather than a negative one.



最後，如果學生表現出盛氣凌人的樣子，確保你有建立起勸阻支配的基本原則，建立小組並且不要將發言權給跋扈的學生，在這些小組中，不斷輪替成員和領導人，並且採取先發制人的策略，如果你很早就能看出來誰會成為一個壟斷者，私底下找他談談，告訴他你注意到其他人參與的不夠多並且希望你能夠幫忙鼓勵他們發言，比起給學生一個負面的角色，這是一個比較正面的作法。

If a few of your students still refuse to participate in classroom interactions, after you have made numerous efforts to engage them, keep in mind that the

majority of your students are engaged. “If some students opt out, don’t let it bother you—it’s their loss, not yours” (Felder & Brent, 2003). Focus on the fact that most of the students are engaged, and move forward.



如果有些學生依然不願意參與課堂互動，在你為他們做了無數努力後，不要忘記你還是引起了課堂上大部分的學生的興趣，「如果有些學生選擇退出，不要讓他們成為一個阻礙—這是他們的損失，不是你的」（費德和布蘭特（Felder & Brent, ）2003），重點是大部份的學生都積極參與並且不斷進步。）