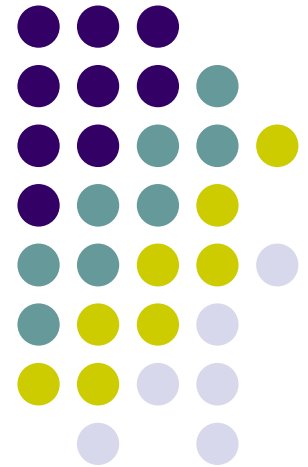
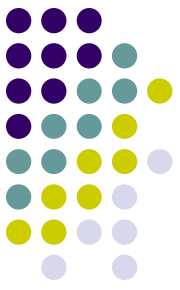


Adapting the PBL Approach from Medical Education to Teacher Education

Presented by
Dr. KONG Siu Cheung





Definitions of Problem-based Learning

- Students were **passive & traditional** medical education emphasized on memorization
- Clinical **reasoning ability & problem solving skills** were inhibited
- Led to the development of **PBL in medical field**
- PBL confronts students with an **ill-structured situation**. They identify the real problem and learn whatever is necessary to arrive at a viable solution through investigation

- Teachers coach learning through **probing, questioning, and challenging** student thinking

(Barrows, 1996; Torp & Sage, 2002)



Medical Education VS Teacher Education

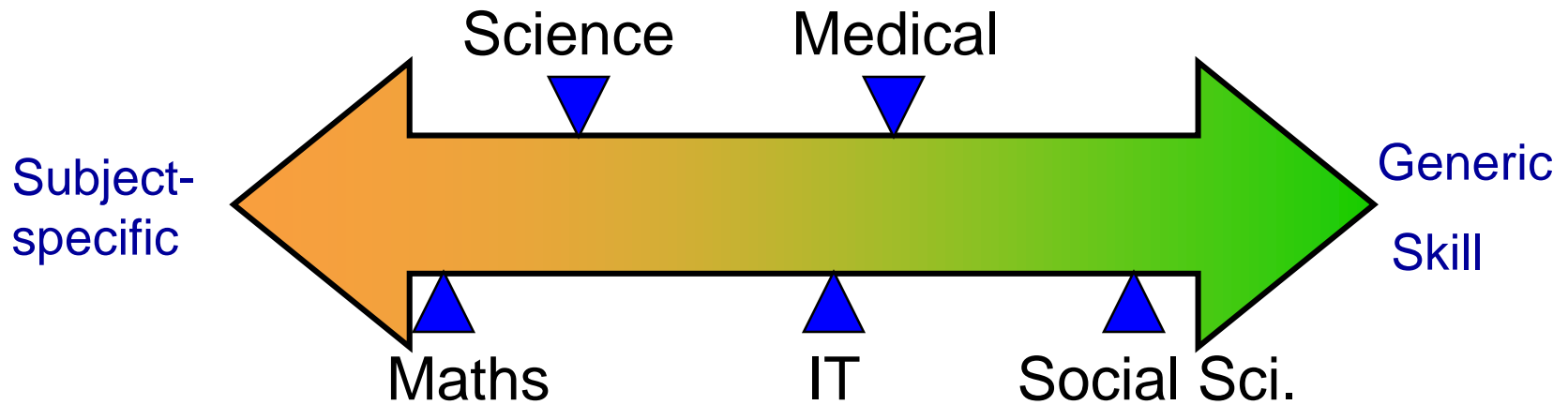
- Learning Objectives
- Problem Scenarios
- Using Resources
- Teachers' Support
- Learning Outcomes



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Learning Objectives



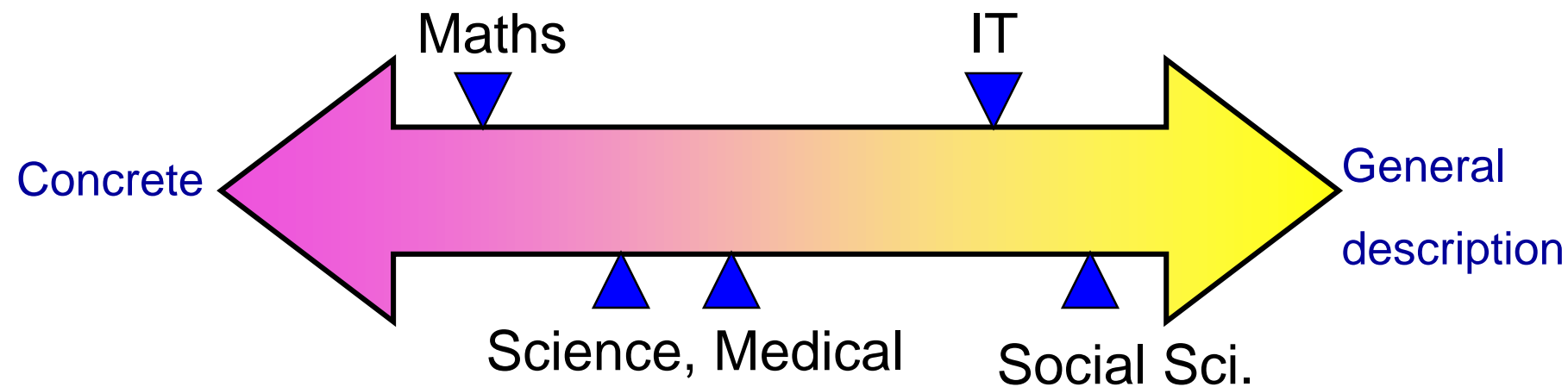


Learning Objectives

- **Social Sciences**
 - critically analyze current issues
- **Medical**
 - diagnose the patient in a logical way
- **IT – programming educational software**
 - design of interactive tools using programming skills and subject knowledge
- **Science**
 - acquire subject knowledge (within a specific domain)
- **Maths**
 - acquire subject knowledge (a particular theorem)



Problem scenarios



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Medical



Sammy Chu is a **45** year old banking executive, **1.78m** tall and weighing **97.5kg**. Though he takes no regular exercise, he perceives his health to be pretty good. His colleague asks Sammy to join him for the charity Maclehos Trail **Trailwalker** which will take place in **5 month's time**.

(Source : Faculty of Medicine, The University of Hong Kong)



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情境一

母親節快到，小詠很想送一張**心形咭**給媽媽表示謝意。

她到文具舖找來一款別緻圖案的紙並詢問店主價目。

店主：「這款紙每平方厘米售價為**1元**。但得知你孝心，可以**1元**的手續費替你剪裁成任何形狀並按該形狀的**面積**計算售價。」

小詠：「很好啊！謝謝你！」

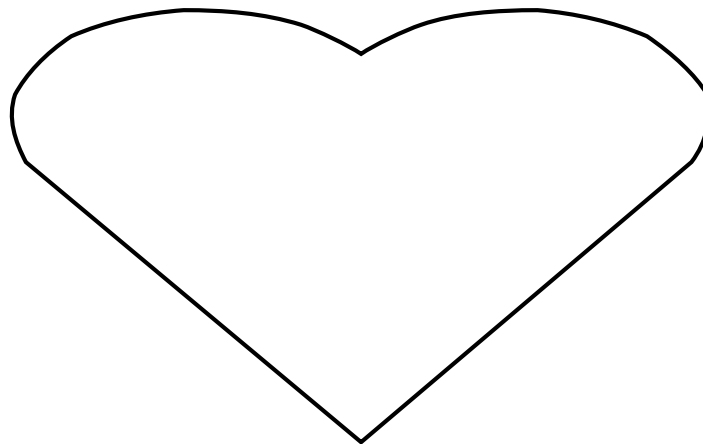
請替小詠列出一些找面積的方案並討論其可行性。





情境二

店主有輕度弱視，他希望小詠自行討算所需付的數目並給他解釋如何得知。下圖顯示小詠已設計的圖案，請替小詠選取適合的方案並作出計算。



Science 1



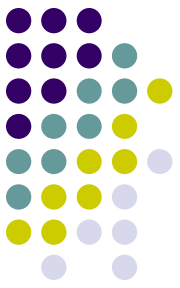
- PBL learning on **nutrition and health**
- Browse the following **video clips** and identify the **learning issues** in them. As a group, **search for information** to answer the issues identified.
 - 健康大道[2007]
http://edvideo.ied.edu.hk//VVM_title.php?callno=b16015733&prog=RTHK&sid=innopac
 - [兒童肥胖與瘦身] 0-7 min



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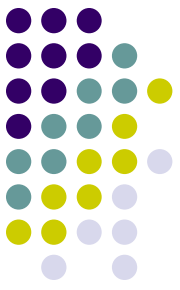
[減肥謬誤] 0-7 min



情境一

阿明是香港教育學院一年級生，他自從搬進大學宿舍生活，沒有了家人的「愛心餐」，基本飲食便出現問題。

他不喜歡吃即食麵及『叮叮』（微波爐）食品，只好每天以麵包度日。「每星期我都到超級市場買麵包食，作為未來一個星期的主要食糧。」阿明的生活離不開麵包。「我每星期有三天的上課時間為早上八時半，之前一晚由於做功課做得太夜，起床已經是八時，只好咬著麵包上課。」此外，他是排球校隊的成員，每星期有兩日練習至晚上十時多，學校飯堂已經關門，附近沒有食肆，而宿舍的小食部只有他不愛吃的即食麵發售，「沒有其他選擇時，我只好吃麵包當晚餐。」有時麵包吃光了，他便會空著肚子睡覺。「肚餓便早點睡，睡醒就不會感到肚餓。」



IT – Programming educational software

- 設計教學軟件
- 要求
 - 促進學生學習
 - 以學生為中心
- 內容
 - 任何學科的單元內容
 - 建議設計圍繞主修科的內容



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Social Sciences

問題敘述句 (Problem, Statement)

鄭宇碩：梁家傑的政制政綱

2007年2月22日

【明報專訊】梁家傑公布政制政綱後，隨即受到親政府陣營「圍剿」，批評他提出數項涉及修改《基本法》的建議，根本是在挑戰中央。政協常委陳永棋更質疑他「連當特首候選人的資格也沒有」。

中央領導層推動建設「和諧社會」，避免兩極分化。香港出現政治分化，甚至兩極化，正是親政府陣營有人動輒採取「扣帽子」、「打棍子」的手段。這種囿顧中央精神的紅衛兵式的行徑，在文革期間被批為「打着紅旗反紅旗」。

《基本法》第159條清楚規定，《基本法》的修改屬於全國人民大會。在這個大前提下，建議修改《基本法》，旨在推動討論而已。任何建議自然要經過民意考驗，怎能提提建議就扣上把香港「視為獨立國家」，「把香港推向危險地帶」呢！

《基本法》要與時俱進，建議修改《基本法》是自然不過的事。即使是中華人民共和國的憲法，自1982年頒布以來，亦經數度修訂。今天國內接近領導層的知識分子也同樣在討論「民主是個好東西」。

特首候選人的資格，由行政長官選舉條例規定，不是一位政協常委可以隨意決定。老實說，港區人大代表經由小圈子選舉產生，港區政協委員由中央委任，他們有多少民意基礎，有沒有資格代表香港市民發言，市民是眼睛雪亮、心中有數的。

仔細審視梁家傑修改《基本法》的建議，特首可在民選立法會議員中，挑選內閣成員，這其實是理順行政、立法關係，確保特首在立法會內有穩定多數支持的可行方案。即使

在親政府陣營政黨的內部討論，也經常有提及。

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理順行政立法關係

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至於取消中央任命主要官員的安排，由特首委任，這其實是走向普選行政長官合理的附

帶安排。行政長官既然由普選產生，中央的委任自然不會再是實質的。主要官員的委任，應該可以遵循國內各省根據《地方各級人民政府組織法》的規定，由特首提名，經立法機關通過。

熟悉國情的朋友都知道，1991、92年間，浙江貴州兩省的人大拒絕通過黨組織提名的省長人選，另行選出較能代表地方利益的人選。中央領導人終考慮後亦只能接受。請注意，這兩省的人大代表不是提建議，而是採取實際政治行動。

關於取消特首選舉中提名委員會的安排，這應該被視為普選特首的一種模式，各種真正民主的模式自然應該考慮。有關提名委員會的建議，部分來自這些參與「圍剿」的人士，倒實在令人吃驚。他們的建議，基本上是要要求港區人大代表或某一類既得利益者擁有否決權，從而否定普選的民主實質。

這些參與「圍剿」的人士應該好好反省，您的無理批評破壞了社會的和諧，阻礙了理性的討論。您的建議，否定了民主普選的承諾。

「問題為本」學習活動：小組討論

已知資料

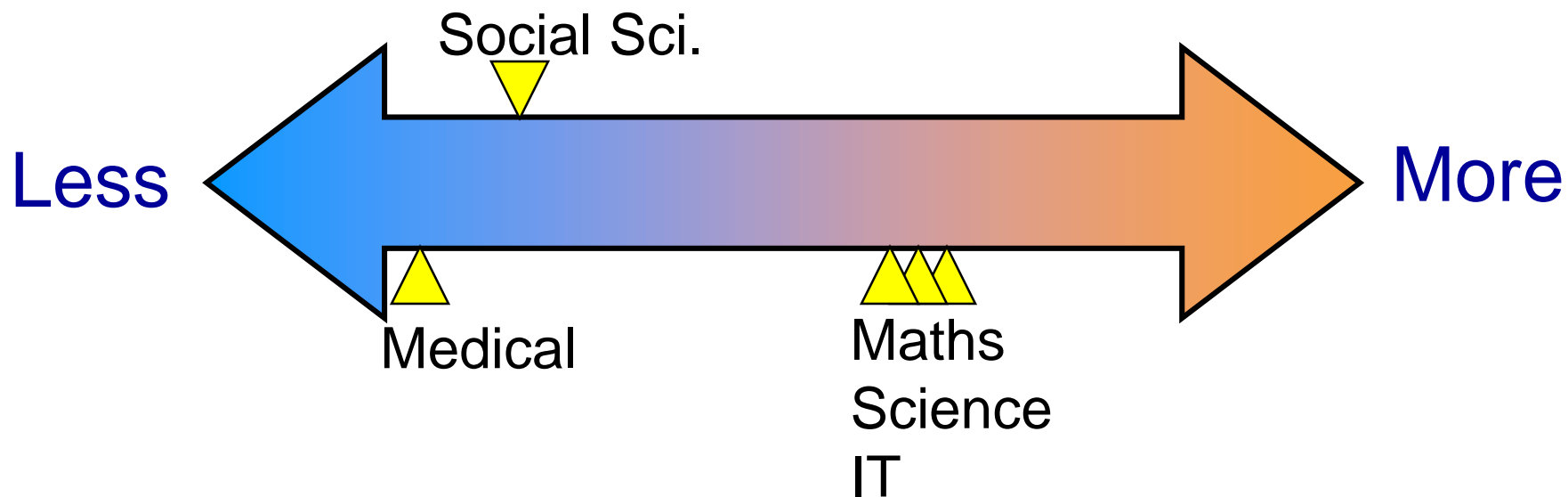
1. 事實性

2. 觀點性

未知資料

值得探究的項目

Using resources



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Using resources



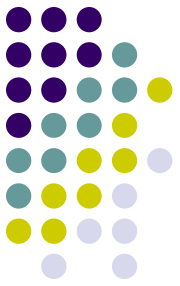
- Medical
 - None
- Social Sciences
 - Table of “Need to know”
- Science
 - Related links
- Maths
 - Geoboard, transparency films, stationary
- IT – programming educational software
 - Related links

Notes on Visual BASIC Programming

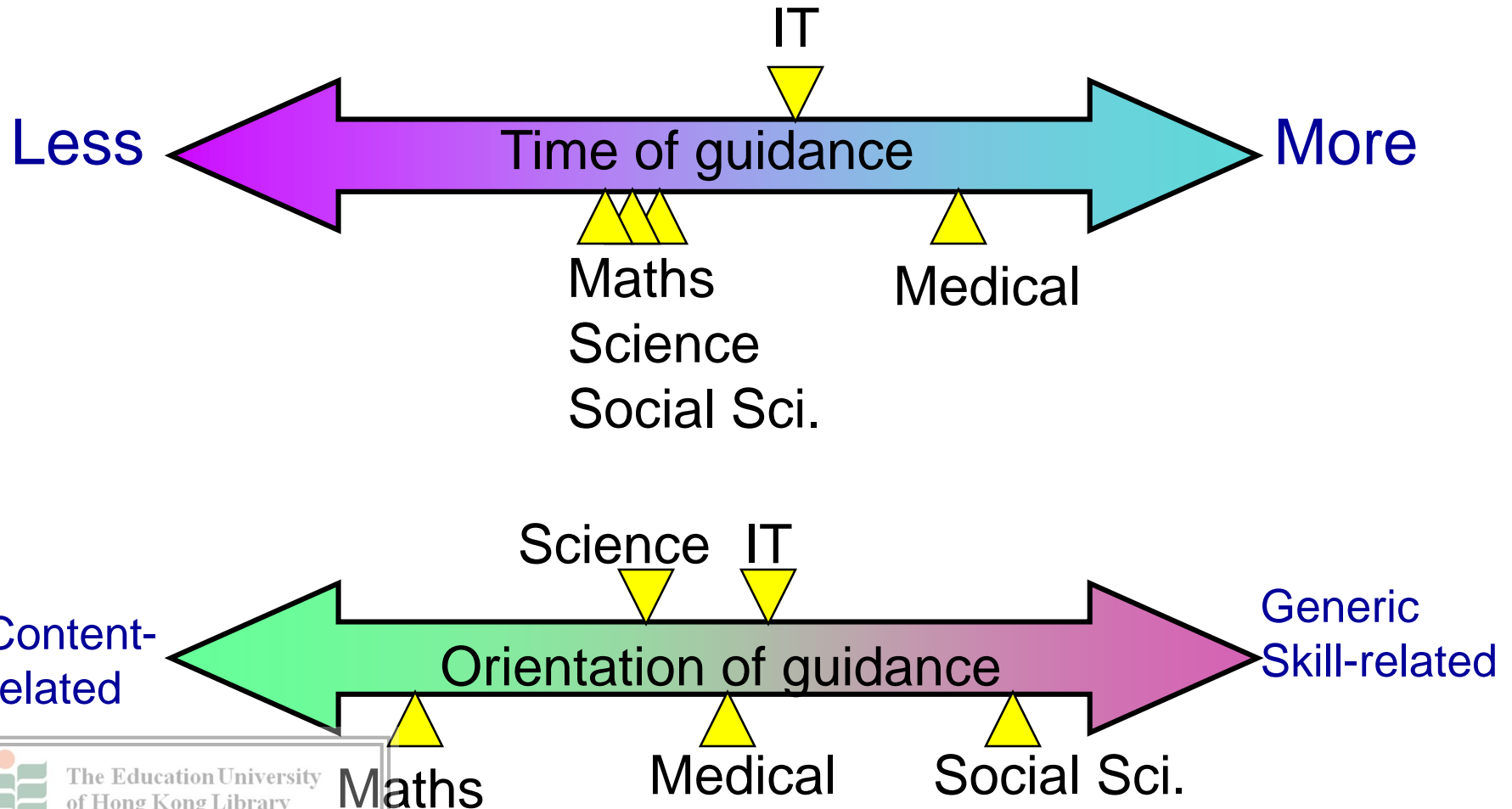


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Teacher's Support



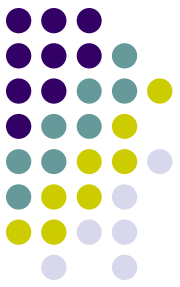
Teacher's support Time of guidance



- **Medical**
 - Each group is facilitated by a tutor in tutorial session
- **IT – programming educational software**
 - Groups are facilitated by teacher other than lesson time
- **Social Sciences, Science, Maths**
 - Groups are facilitated by teacher during lesson time



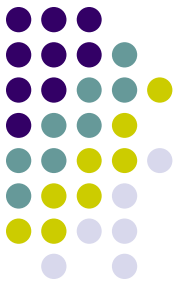
Teacher's support Orientation of guidance



- **Social Sciences**
 - Students investigate their interested areas and discuss with teacher
 - Teacher uses prompting and questioning to enhance students' general thinking skills
- **IT – programming educational software**
 - Teacher helps students to integrate subject knowledge with programming skills
 - Advice of feasibilities are given according to the draft of students
- **Medical**
 - Teacher uses prompting and questioning to enhance the discussion of learning issues
 - After presentation, tutor will not provide any missing information. Students are required to find it by themselves



Teacher's support Orientation of guidance



Learning issues from tutor's guide (Sample from medical) :

- What is the **key information** here?
- Is there any relationship between **lifestyle and body weight**? Do you think **Sammy is overweight**? How is obesity or overweight defined?
- Can you predict **how much energy** he will expend if he decides to go walking on the Trailwalker?



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Teacher's support

Orientation of guidance



- Science

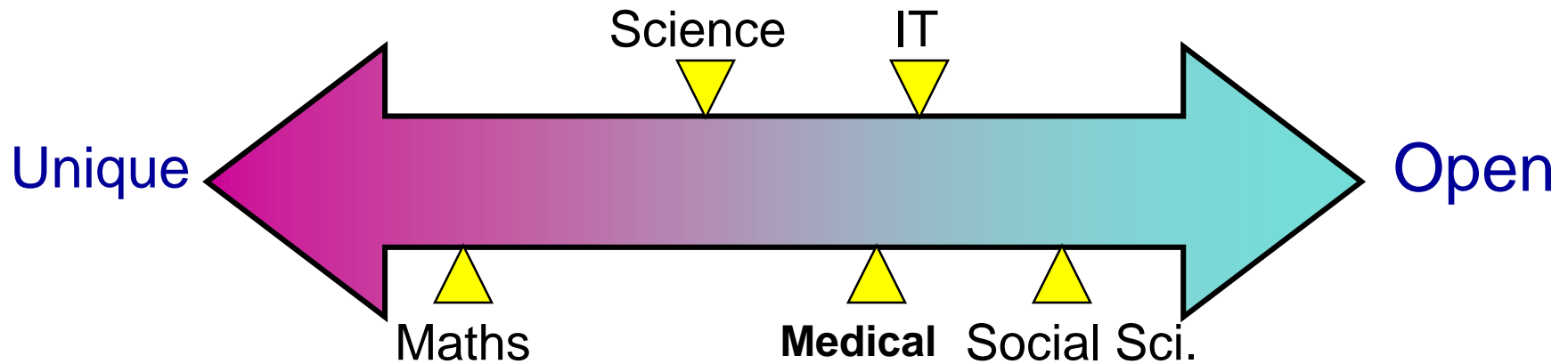
- Teacher uses **prompting and questioning** to enhance the discussion of learning issues
- After presentation, **missing information is provided**

- Maths

- Teacher sticks to the **problem scenarios** to provide guidance to help students achieve the learning objectives

After presentation, **missing information** is provided

Learning Outcomes



Learning Outcomes



- **Maths**

- Find 畢加公式 (Or weaker theorem) & apply the theorem

- **Science**

- Identify the learning issues and find the solutions (related to learning objectives)

- **Medical**

- To diagnose the patient



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Learning Outcomes



- IT – programming educational software
 - Consider their knowledge of major and use programming skills to design a software for teaching and learning
- Social Sciences
 - Investigate their interested areas within a specific topic
 - e.g. Topic: Using PBL in learning the controversial issue of Chief Executive Election. Interested areas: “the criteria of being the Chief Executive” and “aims of the election debate”



How to adapt the PBL approach to other disciplines?



- Learning Objectives
- Problem Scenarios
- Using Resources
- Teachers' Support
- Learning Outcomes



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Adapting the PBL Approach from Medical Education to Teacher Education

Thank you!

Presented by
Dr. KONG Siu Cheung

