

「誘餌效應」追女神 「黃金比例」增魅力 浸大製愛情微電影教數學公式

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【明報專訊】提到數學，不少學生馬上要手擰頭，覺得複雜困難，硬記公式只為應付考試。香港浸會大學數學系講師設計有趣教材「數毒求戀期」，包括以愛情為題材拍微電影，製作教學網頁，如用公式計算潛在男或女朋友數目、計算身體與面部的黃金比例等，讓中學生也可更易理解數學。團隊希望改變學生對數學的負面印象，提高學習興趣；教材亦免費開放予全港學校使用。

「數毒求戀期」包括微電影《數毒求戀事件簿》，講述一名數學系單身「宅男」追求同系女神時，同學教他用不同的數學理論及公式，計算成功率及策略，如利用「誘餌效應」(Decoy effect)在女神面前突出自己等。另外，項目亦有其他短片、教學網頁及社交網站，團隊更製作教學用具，如「黃金比例尺」、「德雷克巴科斯基戀愛計數機」等，讓學生有更深體驗。



稱港慣操作式 忽略理論趣味

項目主任、浸大數學系導師王靖喬表示，留意到不少學生都怕數學，覺得「好複雜、好難」，「不知學來做什麼」，一提數學便擔憂。在「考試主導」下，學校只不斷訓練學生運用算式，學生忽略背後理論的趣味，亦沒空間思考。王靖喬參考外國書籍，構思將愛情與數學聯繫。她說，提到愛情「點都關自己事、點都會聽一聽」，希望用此輕鬆方式，減低學生對數學的擔憂，改變負面觀念。她又稱，數學是訓練思考、邏輯，「點解一樣嘢要咁做」，技巧可應用於生活事或工作。

項目副主任、數學系講師劉碩鈞認為，年輕人都應學會「計數」這基本技巧，不應害怕。數學的重要在現時社會被看低，但如STEM、AI等，皆以數學為基礎，希望大眾留意背後數學理論。

「數毒求戀期」項目副主任、浸大數學系講師劉碩鈞(左)及項目主任、數學系導師王靖喬(右)將愛情與數學聯繫，增加趣味，盼可改變學生對數學的負面感覺。(陳嘉詠攝)

赴迎新營中學推廣 反應熱烈

團隊於2017年構思項目，去年正式推出，花費約50萬，當中20萬由數學系系主任吳國寶從研究經費撥款、30萬由浸大撥款。除數學系外，亦有廣告、計算機科學系等師生共同參與。團隊早前曾到大學迎新營及中學推廣項目。王靖喬稱，學生反應熱烈，團體將再到訪4間中學，亦會繼續推出新短片。若有教師感興趣，可自行用為教材，更希望項目有「帶頭作用」，其他人推出更多有關數學的活動，改善大眾對數學的負面觀感。

微電影《數毒求戀事件簿》部分劇情

德雷克—巴科斯基戀愛計數機：

計算全港有多少人是你心目中的理想對象
• 運用了德雷克公式 (Drake Equation)，算用上費米估算 (Fermi Estimate) 的方法
• 於全球人口數目，每加一個條件，便會乘以符合該條件的比率，推算結果。要求愈多，心儀對象的數字相應愈細



找出潛在男或女朋友數目

例子

片中男主角，要求對象基本條件：
女，合適年齡、同等教育程度、讀浸大、住九龍

G = N x fH x fW x fA x fU x fB x fK
潛女朋友數目 全球人口 本港人口比率 本港女性比率 合適年齡比率 同等教育程度的女性 讀浸大的女性 住九龍的女性

「德雷克—巴科斯基戀愛計數機」：<http://mathromance.net/lovecalculator>

增加自己魅力



黃金比例 (Golden Ratio)

• 黃金比例是一個長度的比例，是否等於美麗屬爭議討論

長的部分 (a) : 短的部分 (b)
= 長短部分的總和 (a+b) : 長的部分 (a)
= 1.618 : 1

例子

片中男主角要大變身，衣著按照人體身高黃金比例，頭至腰的距離：腰至腳的距離是 1 : 1.618，即他也要找一套突顯腰位的衣服



誘餌效應 (Decoy effect)

• 市場有A及B兩款貨品可選時，若想推銷A，就需推出另一款比A差的誘餌，增加消費者購買A的可能

例子

片中女神要找拍檔練波，眼前有較「型」的同學A及「文青型」的男主角兩人，後來較差的「文青型」同學B出現，對比之下，女主角最終選擇男主角為拍檔

資料來源：「數毒求戀期」網頁及短片

Maths lecturers show all you need is love

EDUCATION

MATHS LECTURERS SHOW ALL YOU NEED IS LOVE



Mark Lau and Silian Wong offer some pointers. Photo: Dickson Lee

Colleagues at Baptist University devise a formula they hope will revive interest in the subject by equating it to real situations – such as romance

Rachel Leung
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Baptist University lecturers claim they can capture students' interest by combining two subjects many find equally complex and confounding – love and mathematics.

"People often associate maths with geeks or nerds, but we're here to tell you that with the right formula, you too can become popular," Silian Wong Jing-kiu said, referring to how she teaches maths theories by using dating examples in real life.

Wong and colleague Mark Lau Shek-kwan from Baptist University's department of mathematics run a project called Maths Romance that adds a little spice to a subject some may consider dull.

"For a lot of young students, their first thought when it comes to maths is that 'it's boring' or 'when am I ever going to use this in real life?' But we want to prove to them that maths does not have to be dreadful.

"It can be fun, and relating it to romance is the best way to catch everyone's attention," Wong said.

Citing how she teaches the Drake Equation, a formula astronomer Dr Frank Drake used to calculate the possible number

of advanced civilisations in our galaxy who can make contact with humans, Wong said it could be compared to theorising how many probable suitors one would find in the city.

"Applying the equation, you'd multiply the population of Earth by the city's population, times the fraction of women or men, with age percentages, education factors and other parameters.



We want to prove to them that maths does not have to be dreadful

SILIAN WONG, MATHS LECTURER

"The results will give you the number of potential partners that are living in Hong Kong and fit your preference."

The educators took this approach in all maths theories they taught, working with students and other computer science, communication and advertising majors at the university.

The group of 15 brainstormed

how to correlate maths into everyday life, with a focus on dating and interpersonal communications.

Since last year, they have posted more than eight videos and blogs on their website, hoping to trigger young people's interest in the subject and showing that solving equations can be fun.

According to the Hong Kong Examinations and Assessment Authority, the number of students who took up extended maths, which is an elective under the Diploma of Secondary Education exams, has plunged since the university entrance tests were launched in 2012.

The authority's data showed 16,155 students signed up for the algebra, calculus and statistics tests in 2012, but that dipped to 8,171 in 2017. The figure hit a new low last year, with only 7,531 students sitting for the subject.

Lau said the falling interest was often portrayed as the more glamorous cousin of the field.

"Society understates the idea of maths. People love the digital world, and often times we highlight STEM (science, technology, engineering and mathematics), AI or big data to better package products but forget the fundamentals, which is a knowledge of maths," Lau said.

"It's a basic skill, like learning a language. The fast pace of technological innovation reminds us that we also need to keep up in the way we educate the younger generation about maths."