

# 香港教育學院 體藝學系體育部/ 教育局 體育組

**體育教師暑期學校 2008**

校本經驗分享研討會(中學組)

賽馬會體藝中學經驗分享:

利用豐富及多元化體育課程以推展批判性思考能力及創造力

李擴領老師

地點:香港教育學院

日期:二零零八年七月五日

此簡報只供學術及教學參考之用，不能作任何商業用途。

# 分享內容

- 1.批判性思考能力及創造力在體育推展所擔任的角色
- 2.批判性思考能力及創造力的定義
- 3.利用體育課程以推展創造力及批判性思考能力(體藝中學體育課程舉隅)

# 1. 批判性思考能力及創造力在體育推展所擔任的角色

批判性思考能力及創造力應被納入體育課程內？

現時體育的一般推展情況：

- 體育課程多以身體的教育 (**Education of the Physical**) 為取向，以發展身體為首要目標
- 體育課多以身體或體力活動為主
- 「身、心」二元素的錯誤觀念引致體育在發展智育及思考能力沒有多大貢獻
- 體育教學以教師為主導，以直觀及操練為主，故較難發展學生的思考和創造力

## 1.1現時體育的一般推展情況

- 學生在體育情境下參與提問及分析體育議題的機會較少
- 較少著重推展批判性思考能力及創造力
- 批判性思考能力及創造力對眾多的體育老師較為陌生

# 本港之教育改革

## 目標

- ◆ 全人發展
- ◆ 學會學習
- ◆ 共通能力
- ◆ 創造力及批判性思考能力
- ◆ 終身學習

(Education Commission, 1999; 2002).

方向？

## 本港之教育改革 (Con't)

◆抗衡只用「身、心」這兩元素的錯誤觀念→於體育推展批判性思考能力及創造力，應被視為重要範疇

# 本港之教育改革 (Con't)

- 認知思考(Cognitive thinking) , 感受 (Affective)及體力活動(Psychomotor)是體育的伙伴
- 運動及遊戲能為學生提供豐富思維發展及因果推理技巧的機會 (Marlett and Gordon, 2004)



# 本港之教育改革 (Con't)

裝備學生批判性思考能力及創造力

- 使他們能主宰自己的學習
- 使他們成爲具備洞察力的評鑑者
- 應付眾多世界上複雜問題的方法

學生在多方面是獨特的個體-例如具備不同的學習取向，性別，智力，文化，知識，應激，智商及成熟程度皆因人而異。 →協助他們獲取思維技巧是有效照顧他們個別差異的方法  
**(Elder, 2004)**

## 2. 批判性思考能力及創造力的定義： 什麼是批判性思考能力？

- 具理性的思考
- 反思
- 技巧性的思考
- 負責任的「思考」
  - 以促進良好判斷、
  - 定什麼是可相信及可實行、支持具理據
  - 及可辯護的動作決定

(Ennis 1962; Lipman, 1988;McBride, 1992).

# 什麼是批判性思考能力? (Con't)

- 反思能力--能從寬的議題歸納成專門知識(**McBride, 1992**)
- 「操作性技巧」 (DeBono 1983,p.703)
- 對所有宣稱，資料及信念作出「評鑑及客觀分析」(**Beryer 1987**)
- 批判性思考是指檢出資料或主張中所包含的意義，對資料的準確性進行質疑和探究，判斷甚麼可信，甚麼不可信，從而建立自己的觀點或評論他人觀點的正誤。  
(課程發處展議會**2002**)

# 批判性思考能力的理論架構

## A. 批判性思考的四個階段

- 第一階段

組織思維

**(Cognitive organization)**

認清問題的本質

如聆聽老師的講解，觀察老師的示範，  
閱讀工作咭，提問...以激發學生的思考

# 批判性思考的四個階段 (Con't)

- 第二階段

作出思維的行動(Cognitive action)

利用所得的訊息以改良反應，作出判斷  
及建構假設

# 批判性思考的四個階段 (Con't)

- 第三及四階段

展示思維及技能成果(Cognitive and psychomotor outcomes)

測試假設或反應，作出判斷以展示技能，  
測試，提供另類或不同的動作反應

# 批判性思考的四個階段 (Con't)

- 掌握適合的技能，解難，自我主導遊戲及創作活動  
(McBride 1992)



# 批判性思考能力的理論架構 (例子)

- 一班中三學生已完成四個課堂舞蹈課，老師將學生分爲數組，每組獲分派一音樂光碟並鼓勵學生編排一段舞蹈程序。
- 在各組之間，學生互相觀察對方新意念(步法)  
(cognitive organising).
- 隨後學生決定怎樣組合有關舞步成爲一段舞蹈  
(cognitive action).
- 之後同學修飾有關步法和動作及商討有關優劣(cognitive outcome)
- 最後正式展示出來(psychomotor outcome)。
- 最後每組互相交流意見，並再表演一次。

# 批判性思考能力的理論架構

## B. 思考水平

- 第一層: 列名、數出、形容、配對、背誦、回想、選擇、說出
- 第二層: 分析、比較、分野、分類、分別、解釋、啓示、原因、次序、解決
- 第三層: 原理之應用、預計、推測、假設、判斷、估計、分析類別、推斷、評鑑

**(Adapted from Fogarty and Bellance 1989)**

- 在教與學的過程中，老師可從以上三個層次推展批判性思考

# 批判性思考能力的理論架構

## C. Bloom之智能目標分類

- 知識
- 理解
- 應用
- 分析
- 綜合
- 評鑑

**(Bloom's taxonomy In Anderson and Sosniak1994)**

什麼是創造力？

# 什麼是創造力？

- 思考過程
- 原著及創作意念
- 創造行為是複雜智能技巧/能力，個人特點，應激程度(**motivation**)，策略及超智能技巧 (**CDC, 2002, 頁22**)
- 學生之評鑑判斷
- 具想象力，批判性及有目的思考或表現
- 涉及發展新意念或概念的思考過程

# 什麼是創造力? (Con't)

- 產出原創、新穎、獨特意念或產品的能力
- 解決問題的能力
- 一種思考歷程
- 創造者的特質
- 源自創造者的認知能力和技巧
- 涉及其性格、動機
- 與個體的發展進程不一定有關連

# 如何培養創造力？

- 需要心思和時間，而且沒有特定途徑
- 要求學習者超越已有的訊息
- 給予思考時間
- 肯定他/他們在創造方面所作的努力
- 教導學習者創意思考策略
- 提供有利環境

# 創造力的理論架構

a. 創造力是成果及過程的概念  
(Brockmeyer,1987)

三個階段理論架構提議：

- 準備階段/元素- 感覺/概念
- 籌劃階段- 即興與創作動作
- 核實階段/元素- 組成



## b. 創造力的手段

- 發明、
- 試驗、
- 發掘、
- 原創、
- 依照直覺及
- 檢視

課程-動作探索，自我表達和解難

# 批判性思考能力及創造力是完整 及互補的概念：相同的地方

- 建立假設
- 以多角度思考問題
- 建議可行的解決方案
- 計劃調查→批判性思考內的創作行徑

**(Ennis 1987)**

### 3. 如何能透過體育以培育學生的批判性思考能力及創造力?

#### 3.1 教師觀念的改變→著重批判性思考能力及創造力於體育的培育

- 具創造力的教師及具創意的教學
- 願意及能策劃，組織及評鑑相關的學習經驗
- 老師角色--啓發者而不是資料控制者
- 對學生學習作較少的干預
- 對學生的批判性思考能力及創造力有期望
- 給與學生思考的責任

(Mcbride, 1991; Schwager & Labate, 1993; McBride and Cleland 1998; Park and Heisler, 2001; Zachopoulou et al, 2006).

## 3.2 教學法的轉變

課堂重點:

- 分配較多的學生思考時間及研習機會，
- 由傳統以示範，重復練習，直接教學法轉移至間接教學法
- 採用促進探究的教學形式
- 設計促進批判性思考能力及創造力環境，
- 學習目標，經驗，方法，

策略包括為學生建立

- 透過提問批判性思考能力及創造力的情境
- 比較及分野
- 設計推論情境
- 鼓勵動作創作
- 參與報告以鞏固動作設計
- 根據準則以評鑑解決方案
- 分析動作的質素

(Cleland and Pearse, 1995 ; Cleland 1994)

### 3.3 建立培育批判性思考及創造力的情境及先決條件

- 建立「學生為中心」的學習環境及教學模式
  - 以學生相互教授，協作學習
  - 利用高思維提問以轉移學生對自己學習負上較多的責任
  - 容許學生探索及犯錯
  - 建立較開放的學習環境
  - 能引發及接受另類解決方案，思想開放
  - 對他人的意見及情境具敏感度
  - 能觀整體形勢
  - 能經常處於應激及願意參與
- (Lipman, 1988 ;McBride, 2004; Gossett and Fisher,2005;(McBride, 2004; Park and Helsler 2001;McBride and Cleland 1998)

## 4.透過體育以培育學生的批判性思考能力及創造力經驗分享

- 1.課程簡介
- 2.以從批判性思考四個階段及三個思考水平作講解
- 3.分別以技能課及理論內容作例子

# 賽馬會體藝中學體育科課程簡介



# 中一至中三課程(主修科)

課節/循環週	技能: 5 課節 理論: 2 課節
技能課內容	籃球、足球、排球、手球、乒乓球、網球、羽毛球 田徑，體操，舞蹈、游泳/水上安全及體能訓練
理論課內容	中一級: 認識體育、何謂體適能、 食物與健康、體重控制
	中二級: 影響運動表現的因素、運動創傷、 奧運精神
	中三級: 影響運動表現的生理因素、 藥物與運動、訓練法、體育的價值



# 中四至中五級會考課程

課節/循環週	技能: 3 課節 理論: 4課節/ 5課節
技能課內容	籃球、足球、排球、乒乓球、羽毛球 田徑，體操、游泳
理論課內容	中四級: 影響運動表現的生理因素、 運動創傷的預防、體適能與健康、 體育運動的社會價值
	中五級: 訓練法、體育的角色、體育及運動 的推廣
	中四級及中五級: 技能課理論

# 中六及中七級(特備課程)

課節/循環週	技能: 3 課節 理論: 1 課節
技能課內容	拯溺、急救、運動攀登、高爾夫球、保齡、彈網、網球、曲棍球、太極、溜冰
體育營(4天)	露營、遠足、獨木舟、滑浪風帆及烹飪比賽
理論課內容	中六: 運動及康樂管理、運動心理學 體適能及健康推廣
	中七: 運動社會學, 體育行政

# 經驗分享:

如何能透過體育課以培育學生的批判性思考能力及創造力?

# 透過理論課推展學生的批判性思考能力(例子一)

## 中三級理論課

課題：影響運動表現的生理因素

1. 認識人體 (細胞-器官-系統名稱及層次)(L1)

例:各組肌肉名稱和骨骼關節名稱(L1)

2. 比較不同肌肉的種類 (紅肌及白肌纖維的分別)(L2)

例:疲勞的原因(L2)

3. 影響男女性運動員的生理因素(L2)

4. 工作紙之運用

# 透過理論課推展學生的批判性思考能力 (例子二)

## 中七理論課(運動社會學)

課題：探討影響體育運動發展的社會因素

- 分組討論及指出不同層面有關影響體育運動發展的因素(學校、社區和國家)
- 分組匯報有關意見及評論 (L3)

# 經驗分享: 如何能透過體育課以培育學生的批判性思考能力及創造力? (例子三)

## 中三理論課

課題：體育課在教育過程擔任的角色  
(Roles of PE in Education)

1. 學生找出遊戲、運動和體育的定義和關係  
(L1-2)列出、比較和分類 (WS)
2. 理想中的體育課程 (分析不同學校背景、目標、資源和制度對體育課安排的影響(L3) 搜集資料(校本和友校)
3. 體育課的三個主要學習領域(認知、情感及身體活動)

### 3. 經驗分享: 如何能透過體育課以培育學生的批判性思考能力及創造力? (例子四) 中三級理論課

#### 訓練法

1. 配對運動訓練的主要元素
2. 體能、技能、智能、心理訓練和道德培養的理論
3. 訓練原則的應用(設計間歇式訓計劃及於田徑課時應用)

# 經驗分享: 如何能透過體育課以培育學生的 批判性思考能力及創造力? (例子一)

## 中四級田徑課

### 技能課(跨欄)

1. 通過欣賞不同水平的比賽片段(學界至奧運比賽)
2. 鼓勵學生提問各項技術問題
3. 實習/互相討論/比較
4. 分組完成工作紙及彙報



# 透過技能課推展學生的批判性思考能力 (例子二)

## 中三級：水上安全章

### 1. 目標

- 評核不諳游泳及沒有救生經驗的同學，能否採用水上安全守則，以簡單方法拯救水上遇事者。
- 學生能列出水上安全守則及評估拯救方法。



## 中三級：水上安全章(推展批判性思考能力)(Con't)

- 學生能用竹竿、木棍、衣物或毛巾施以手援。
- 學生能用拋出無負重之繩索、水泡及其他浮物以拯救離岸六公尺之遇溺者。

## 中三級：水上安全章(推展批判性思考能力)(Con't)

- 安放一名昏迷之溺者  
(復原臥式)

# 透過技能課推展學生的批判性思考能力 (例子三)

## 中六級體適能評估測試

目標: 通過分組進行各項體能測試，評估及提供資料作為運動處方的設定。

1. 測試內容:
  - 3分鐘台階測試
  - 手握力測試
  - 1分鐘仰臥起坐

# 中六級體適能評估測試 (推展批判性思考能力(Con't))

- 坐地體前伸
- 引體上升(曲臂懸垂)
- 身體成份
- 一哩跑
- 血壓

## 2. 完成工作紙

- 根據測試結果資料，分組討論及解答有關問題

# 透過技能課推展學生的批判性思考能力 (例子四) 急救學



# 透過技能及理論課推展學生的創造力 (例子一)

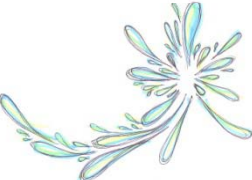
## 中六級體適能訓練

- 學生按已有知識(體適能要素)
- 設計一循環訓練計劃(作品)
- 並於體能訓課試行。
- 完成後作出評估及檢討

## Circuit Training

### Content

- Introduction...P.2
- Warm Up Advice...P.3
- Squat Jump...P.4
- Press Up...P.5
- Bench Step Up...P.6
- Back Arching...P.7
- Chinning...P.8
- Flexed-Arm Hand...P.9
- Skipping...P.10
- Bent-Knee sit up...P.11
- Bench Lifting...P.12
- Squat Thrust...P.13
- Dumbbell Lateral Raise...P.14
- Floor Plan... P.15



## Introduction:

Sports training are physical, technical, intellectual, psychological and moral preparation of an athlete by various means with emphasis of fitness, skills and spirit. Fitness is the foundation to the success of good performance in sports. Besides, fitness can always be improved by following effective training methods.

One method is the circuit training. The characteristics of circuit training are:

- 1) it consists of a series of exercises done in rotation
- 2) various components of fitness such as strength, endurance and agility can be developed at the same time in a limited time and space for a large number of athletes
- 3) a circuit usually consistsof 6-15 different exercises with balanced loading on different body parts
- 4) one may start at any station

Besides, warm up exercise is needed before training so as to prevent sports injuries such as sprain, strain, overstretch etc. Also, cool down exercise is done after training.

## Warm Up Advice

A warm-up helps your body prepare its muscles and mind for both mental and physically exertions and reduces the chance of injury. The aim is to increase circulation, blood flow around the muscles of the body, in a gradual manner. During the warm-up any injury or illness you have can often be recognized, and further injury prevented.

Extra un-restrictive clothing (tracksuits - hats) can be worn, to help increase the body temperature, which in turn will speed up the warming up process of your muscles.

The warm-up can be a combination of rhythmic exercise, such as those shown in aerobic videos, or a slower version of the aerobic activity to come. For example, you might want to walk before you jog, do the hoovering and mopping of the floor, prior to doing a light home circuit.

What is important is that you warm up and do some static stretching. The body will take time to warm up properly; i.e. shut done areas such as the digestive system, in order to supply the muscles with more blood.

Aim for a minimum of 5 minutes for a warm-up and the same for stretching. When working out, take into consideration that it may take a good 30 minutes for your body to be working at its best.

During cold weather, and certainly if you're going to do an activity which requires sudden bursts, make sure you spend more time warming up.

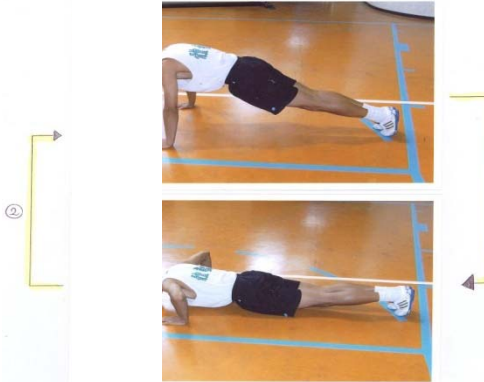


### Squat Jump

The squat is a lower body exercise used in strength training. It is also a competitive lift in powerlifting and an essential movement in the sport of weight lifting. The exercise's main emphasis is on the quadriceps and the glutes, but it also involves the hamstrings, the calves, and the lower back. The squat is often called "the king of exercises" by those who believe it capable of inducing more and faster muscle growth than any other exercise.

The squat is performed by bending the legs at the knees and hips, lowering the torso between the legs, and then reversing direction to stand up straight again. The torso remains relatively upright throughout the movement. It acts as a supporting structure, unlike its role in the deadlift. Proper technique is critical, otherwise very serious injuries or gradual injury over a period of time can occur. The back must maintain its natural curvature and not "round out" (excessive lumbar or thoracic kyphosis), otherwise excess strain can be placed on the spine and cause serious injury. Lifting belts can be used to help support the lower back.

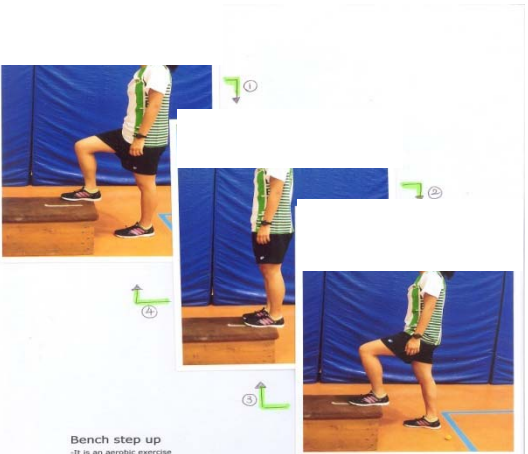
	Boys	Girls
Senior	25	20
Junior	20	15



### Press up

is a common strength training exercise performed in a prone position, lying horizontal and face down, raising and lowering the body using the arms. They develop the pectoral muscles and triceps, with ancillary benefits to the deltoids, serratus anterior, coracobrachialis and the midsection as a whole. Press ups are a basic exercise used in civilian athletic training or physical education and, especially, in military physical training. A press-up can also be performed in a standing position against a wall.

	Boys	Girls
Senior	20	15
Junior	15	10



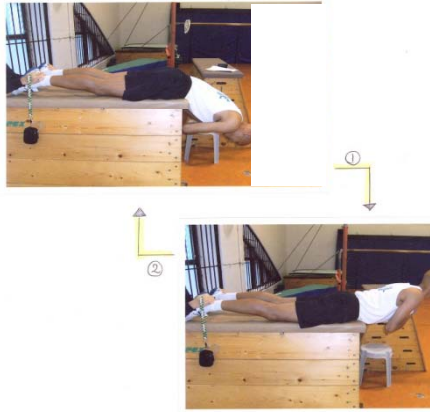
### Bench step up

is an aerobic exercise

- Step up with one foot and then the other. Step down with one foot followed by the other foot. Try to maintain a steady four beat cycle. It's easy to maintain if you say "up, up, down, down"
- The whole foot should step on the surface of the bench.
- Looking at the bench when doing the exercise.

	Boys	Girls
Senior	30	25
Junior	25	20

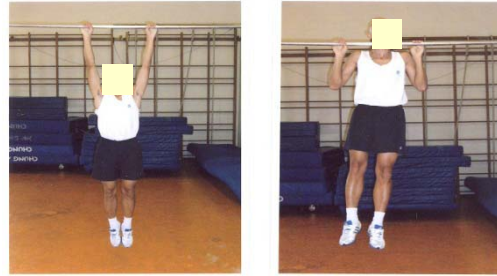




**Back arching**

- Both hands should place near the neck
- The best moving angle is 30 degree no matter upwards or downwards
- This exercise can train the abdominals muscles both at the back and front

	Boys	Girls
Senior	20	18
Junior	17	15



**Chinning**

Purpose : This test measures upper body and endurance.

Description / procedure : Grasp the overhead bar using either an overhand grip (palms facing away from body) or underhand grip (palms facing toward body) ,with the arms fully extended .The subject then raises the body until the chin clears the top of the bar ,then lowers again to position with the arms fully extended .The pull-ups should be done in smooth motion .Jerky motion ,swinging the body ,and kicking or bending the legs is not permitted .As many full pull-up possible are performed .

Advantages : The equipment readily available, and test is easy and quick to perform.

Disadvantages : Due to variations in technique and whether the arms are extended or the chin reaches the bar ,the scoring can be subjective, therefore it is difficult to standardize the results. For those with poor upper body strength, no pull up may be achieved. For such groups, an alternative test of upper body strength may be appropriate. The flexed arm hang may be used. The body weight of the subject has a great effect on the results of this test. A better test of upper body strength in which body weight is not as important is the push up test.

	Boys
Senior	5
Junior	3



**Flexed-Arm Hang**

Purpose : This test measures upper body and endurance.

Equipment required: Stopwatch, Horizontal overhead bar at an adequate height.

Description / Procedure: Grasp the overhead bar using either an overhand grip (palms facing away from body) or underhand grip (palms facing toward body). Position the body with the arms flexed and the chin clearing the bar. The chest should be held close to bar with legs hanging straight. The subjects should be assisted to this position. The subject holds this position for as long as possible.

Advantages: the equipment is readily available, and the test is easy and quick to perform.

Disadvantages: The body weight of the subject has a great effect on the results of this test. A better test of upper body strength in which body weight is not as important is the push up test.

	Girls
Senior	15
Junior	10



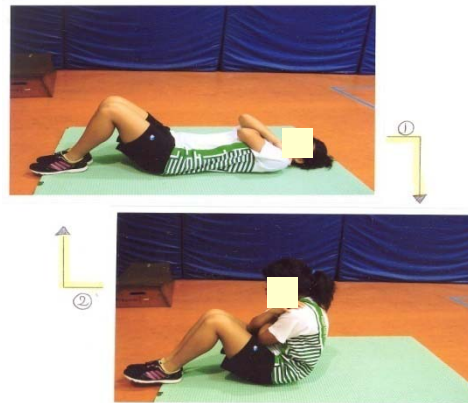
	Boys	Girls
Senior	70	65
Junior	60	55

**Skipping**

This is an excellent form of exercise that requires minimal equipment, i.e. a skipping rope. To help prevent injury, you should aim to skip in trainers, ideally on a sprung studio floor.

When skipping aim to keep your elbows tucked into your sides, with the rope turning around smoothly in your wrists. A common mistake is to lean forward, or skip too slowly. Both of these result in the rope being court by your feet.

Keep your back straight, and for beginners jump two footed only a few inches from the floor. Repetition:60



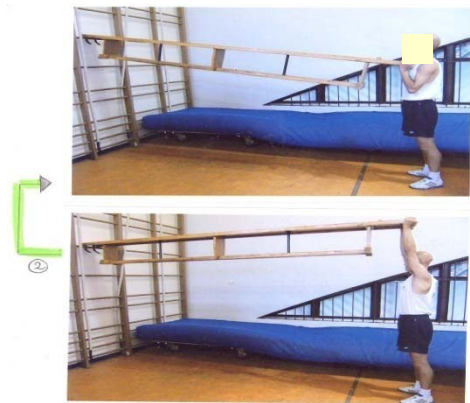
**Sit-up:**

The sit-up is a strength training exercise commonly performed with the aim of strengthening the abdominal muscles and hip flexors.

The sit-up begins with lying with the back on the floor, typically with the knees bent in an attempt to reduce stress on the back, and then elevating both the upper and lower spine from the floor until everything superior to the buttocks is not touching the ground

**Bent knee sit-ups:**  
feet anchored by partner or apparatus, knees bent 90°, hands clasped behind neck, elbows travel beyond or make contact with knees, back of shoulders must return to floor.

	Boys	Girls
Senior	25	20
Junior	20	15



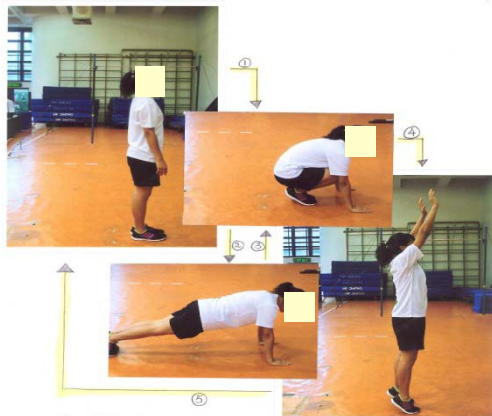
**Bench Lifting**

Start by standing with the feet shoulder width apart and the torso in an upright position, with the bench in the hand.

Keeping your arm relatively straight, raise your right arm in front of you until the bench is directly in front of your shoulder.

Pause and slowly lower to the starting position.

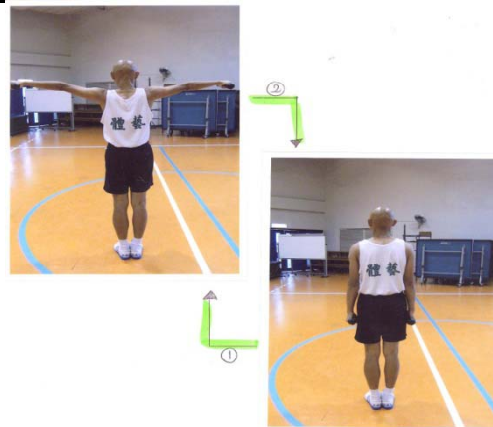
	Boys	Girls
Senior	12	10
Junior	9	7



**Squat Thrust:**  
 Stand with your arms held at your sides, and then squat down, placing both hands in front of you on the floor. With arms straight and your weight resting on both hands, quickly extend both legs backward (hop backward), ending in a front-support position. Return legs forward (hop forward), ending in a low-squat position with hands on the floor. Finally, jump into the air and return to as

	Boys	Girls
Senior	20	15
Junior	15	10

13

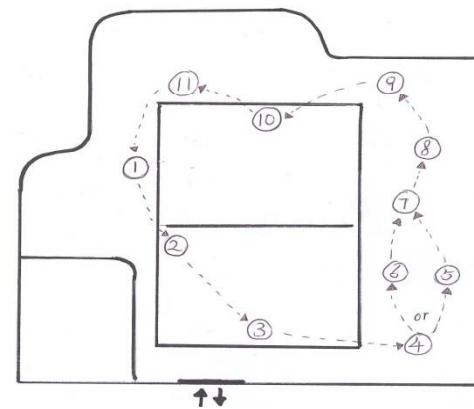


**Dumbbell lateral raise:**  
 Stand with feet hip-width apart, abs in and torso straight. Slowly bend knees into a squat, keeping knees behind toes. At the same time, raise arms up to shoulder level. Lower arms and stand up. Repeat for 30-60 seconds.

	Boys	Girl
Senior	12	10
Junior	9	7

14

## FLOOR PLAN



# 透過技能及理論課推展學生的創造力(例子二)

## 中三級理論課- 另類球類遊戲設計

- 1. 學生自行分組設計一項另類球類遊戲
- 2. 組員負責不同崗位，設計、拍攝、介紹和示範
- 3. 課堂展示作品

# 透過技能及理論課推展學生的 創造力(例子三)

## 中二級：體操課

- 1.同學觀察老師示範 不同動作
- 2. 分組練習個別動作及將有關自選動作  
編成一循環
- 3. 各組派代表示範自選的串連動作

## 透過技能及理論課推展學生的創造力(例子三)(續)

- 各組互相觀察及給予意見及建議
- 討論過後，同學再次將循環動作示範一次
- 老師給予意見及改善方法
- 老師選出最具創意及技巧最好示範一次

# 推展批判性思考能力及創造力 (例子四)

## 中六級：體育營

課程內容：

1. 四日三夜露營
2. 兩天滑浪風帆訓練
3. 一天獨木舟訓練
4. 遠足訓練
5. 烹飪比賽
6. 課程報告





# 遠足訓練：行程編定

- 按指定座標定出計劃路線
- 填寫行程計劃書
- 商討裝備清單
- 地圖閱讀及指南針運用





# 遠足訓練：行進間的思考訓練

1. 行程進行間老師設定不同處境，學生需提供解決方法。
  - 有隊員受傷/不適
  - 迷路
  - 天氣情況突轉壞
  - 行山路段封閉
  - 隊員忘記帶食物



# 遠足訓練：行程間的思考訓練

# 水上活動訓練(滑浪風帆及獨木舟訓練)

# 水上活動訓練(滑浪風帆及獨木舟訓練)

活動及學習過程提供機會予解難、商討、發問及思考

- 裝備的預備
- 觀察天氣情況
- 器材的組合及應用
- 技巧分析

# 烹飪比賽

## 營前會議

- 各組自定菜單
- 設計菜式要合符要求

--營養價值

--味道

--創意

--份量

--時間

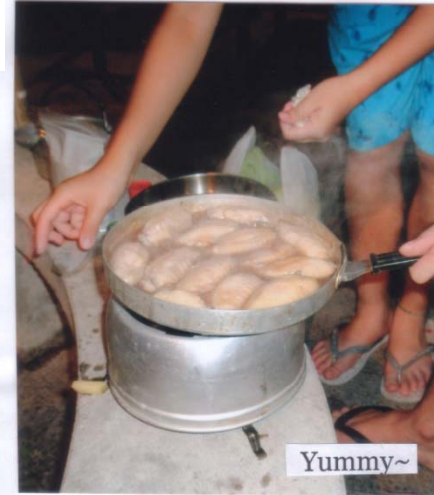
--合作



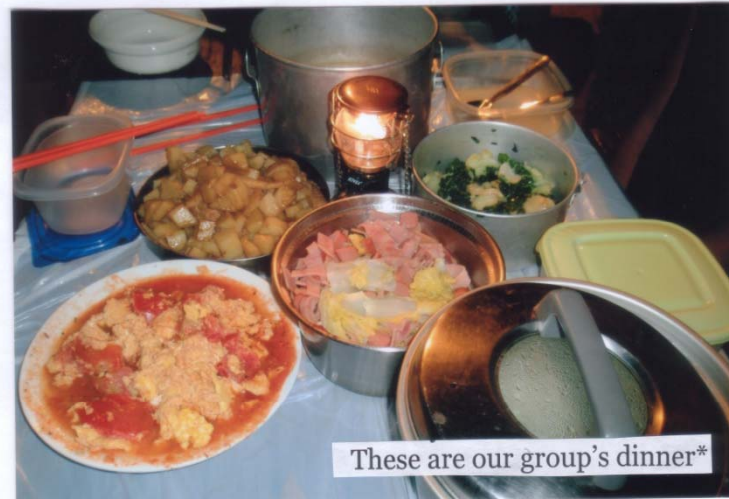
Day 1



Our Chef!



Yummy~



These are our group's dinner\*

# 其他建議參考之活動及推展方法

## (一) 食物營養資料閣

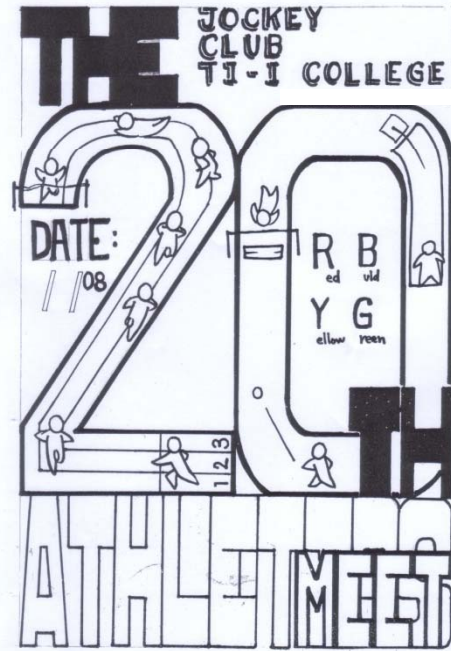
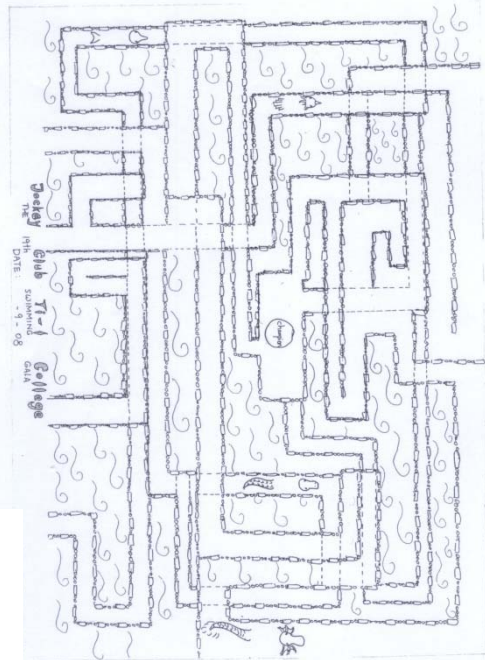


# 其他建議參考之活動及推展方法(二)

## 水陸運會場刊設計









其他建議參考之活動  
及推展方法(三)  
自製運動器材

# 總結及提問

# 反思和總結

## ■ 趨勢

中學體育科課程發展趨勢以身體活動、情感表達及智能和思考能力的推展為主要範疇。

## ■ 位置

校本體育科課程以理論課及技能課令學生在三個範疇都可以平衡發展，亦希望提供機會予學生培養批判性思考能力和創造力，從而提升體育科的地位。

體育科堂數比一般學校多，可以利用較多不同的課題推展學生的批判性思考能力和創造力。

- 作為學校的學科科目，要配合學校目標及公開考試的要求，體育科的角色已改變(理論課的要求)
- 老師協助學生發展批判性思考能力及創造力可採的行動：
  - 具完備的知識基礎，支援學生深入探討有關內容
  - 接受學生的提問

- 收集及聆聽學生意見，以學生的經歷及經驗作為出發點
- 鼓勵學生發問，質疑現有的信念、結構和做法
- 給予學生時間和空間
- 以學生為中心

多謝

## References

- Anderson, L.W. and Sosniak, L..A. (1994). *Bloom's taxonomy : a forty-year retrospective*. Chicago : NSSE : University of Chicago Press.
- Beyer, B. (1987). *Practical strategies for the teaching of thinking*. Boston: Allyn and Bacon.
- Brockmeruer, G.A. (1987). Creativity in movement. *Journal of Teaching in Physical Education*. 6,310-319
- Cleland, F. and Pearse, C. (1995). Critical thinking in elementary physical education: Reflection on a yearlong study. *Journal of Physical Education, Recreation & Dance*. 66 (6), 31-42. (Pedagogical implications for cultivating critical thinking in PE)
- Curriculum Development Council (2002b) *Physical Education. Key Learning Area Curriculum Guide. (Primary 1 – Secondary 3)*. Hong Kong: Government Printer.
- Curriculum Development Council (2002). *Basic education curriculum guide-Building on strengths. (4 Effective learning and teaching- Acting to achieve)*. Hong Kong: Printing Department.
- Curriculum Development Council and The Hong Kong Examinations and Assessment Authority. (2007). *Physical education curriculum and assessment guide (Secondary 4-6)*. Hong Kong: Government Logistic Department.



- De Bono, E. (1983). The direct teaching of thinking as a skill. *Phi Delta Kappan*, 64, 703-708.
- Donnelly, F.C., Helion, J. and Fry, F. (1999). Modifying teacher behaviours to promote critical thinking in K-12 physical education. *Journal of Teaching in Physical Education*, 18, 199-215. (research project using McBrides' model for studying fostering critical thinkng through PE)
- Education Commission.(1999). *Review of Education system: Framework for education reform. Learning for life*. Hong Kong: Printing Department.
- Education and Manpower Bureau (2005). *New academic structure for senior secondary education and higher education- Action plan for investing in the future of Hong Kong*. Hong Kong: Government Logistic Department.
- Ennis, R. (1962). A concept of critical thinking. *Harvard Educational review*, 32, 81-111.
- Ennis, R. (1987). A taxonomy of critical thinking dispositions and abilities. In J. Baron & R. Sternberg (Eds.), *Teaching thinking skills: Theory and practice*. New York: W.H. Freeman. 9-26.
- Fogarty,R. and Bellance, J. (1989). *The tree story intellect model: Patterns for thinking*. Palatine, IL: Illinois Renewal Institute.

- Lipman, M. (1988). Critical thinking – What can it be? *Education Leadership*, 46(1), 38-43.
- McBride, R.E. (1989). Teaching critical thinking skills in the psychomotor environment-A possibility or passing phase? *The Physical Educator*, 46, 170-173.
- McBride, R.E. (1991). Critical thinking- An overview with implications for physical Education. *Journal of Teaching in Physical Education*. 11, 112-125.
- McBride, R.E. (1992). Critical thinking- An overview with implications for physical Education. *Journal of Teaching in Physical Education*. 11,(2), 112-125. (Phases / model of critical thinking)
- McBride, R.E. & Cleland, F. (1998). Critical thinking in physical education. Putting the theory where it belongs: In the gymnasium. *Journal of Physical Education, Recreation and Dance*. 68(7).42. (Practical idea for promoting critical thinking for different grades through role model and learning environment in PE)
- *Journal of Physical Education, recreation & Dance*, 71, 9, 20-26.

- McBride, R.E. (2004). If you structure it, they will learn... Critical thinking in physical education classes. *The Clearing House*. Jan/Feb, 77, 33-6. (dispositions –PE learning contexts that facilitate critical thinking)
- Park, R.J. and Heisler, B.A. (2001). School programmes can foster creativity through physical education. *Education*, 95 (3). 225-228. (five phase model, movement exploration and discovery method for fostering creativity)
- Schwager, S. and Lubate, C. (1993). Teaching for critical thinking in physical education. *Journal of Physical Education, recreation & Dance*, 64, 5, 24-26.
- Zachopoulou, E, Trevlas, E. and, Konstadinidou, E. (2006). The design and implementation of a physical education programme to promote children's creativity in the early years. *International Journal of Early Years Education*. 14 (30), 279-294.
- Website on Sports Media's Digest <http://www.sports-media.org/newpedimension4.htm> Retrieved on 19 June 2008