# 專題講座

## KEYNOTE SPEECH I

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# Physical Literacy Assessment: A Monism Perspective

# 從一元論角度看體育素養的評估問題

主 持 人
Moderator

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## 學　歷

國立臺灣師範大學體育學系學士
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## 經　歷

臺灣身體文化學會理事長
臺灣運動教育學會理事
中華民國體育學會理事
《學校體育雙月刊》主編、總編輯

## 專長領域

運動教育、運動場館經營管理、體育活動規劃

## 專案計畫

| | | | |
|---|---|---|---|
| 102-103 年 | 學校體育志工實施計畫 | 教育部 | 計劃主持人 |
| 103 年度 | 103 年度社會領域體育志工及巡迴運動指導員推動計劃 | 教育部 | 計劃主持人 |
| 103 年度 | 103 年度學校運動安全管理手冊編印計劃 | 教育部 | 計劃主持人 |
| 104 年 | 樂活運動站暨更衣淋浴間評選與輔導計劃 | 教育部 | 計劃主持人 |
| 104 年 | 高級中等以下學校體育班課程發展中心 104 年度工作計劃 | 教育部 | 計劃主持人 |
| 104-105 年 | 學校體育志工實施計畫 | 教育部 | 共同主持人 |
| 105 年 | 補助學校設置樂活運動站評選與輔導計劃 | 教育部 | 計劃主持人 |
| 105 年 | 企業進用績優運動學生媒合評臺資訊系統建置計畫案 | 教育部 | 共同主持人 |

| | | | |
|---|---|---|---|
| 105-106 年 | 學校體育志工實施計畫 | 教育部 | 共同主持人 |
| 105-106 年 | 高級中等以下學校體育班課程發展中心 105 年至 106 年執行計畫 | 教育部 | 共同主持人 |
| 106 年 | 優化企業求才暨績優運動學生求職媒合計劃案 | 教育部 | 共同主持人 |
| 106 年 | 補助學校設置樂活運動站計劃 | 教育部 | 計劃主持人 |
| 106-107 年 | 補助學校體育教學基本設備與器材計劃 | 教育部 | 計劃主持人 |

## 著 作 發 表

✧ 期刊論文

李坤培 (2012) 。學校體育班發展歷程與策略。學校體育，22:6=133，79-86。

李坤培、胡林煥、余育蘋、陳志一、曾郁嫻 (2012) 。國立臺灣大學學生體育課程目標認知與學生學習滿意度之研究。臺大體育學報，23，55-63。

陳志一，李坤培 (2016) 。高中體育班專業課程教師專業能力需求分析研究。身體文化學報，23，55-57。

陳志一，李坤培 (2017) 。媒合企業與運動員之計劃執行。國民體育季刊。46：1=189，20-24。

✧ 期刊論文

李坤培 (2016) 。The Athletic Class of Senior High School in Taiwan. Sport Science Goes Beyond the Horizon.

李坤培 (2017) 。A Summary of School Safety Management in Taiwan. Promoting Integrity and Safety in Sporty.

※ 以上資料摘自 http://www.sllhm.ntnu.edu.tw/people/bio.php?PID=9

主講人
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## 學　歷

1982 B. Ed. Nanjing Teachers University, China.

1988 M.Ed. Shanghai Institute of Physical Education, China

1993 Ph.D. University of Maryland - College Park

## 經　歷

✧ LEADERSHIP ROLE IN ACADEMICS AND PROFESSION

2003-05 *Program Chair,* Special Interest Group – Research on Instruction and Learning in Physical Education, American Educational Research Association

2004-07 *Chair-Elect, Chair, Past-Chair*, Curriculum and Instruction Academy, National Association for Sport and Physical Education, American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD)

2006-09 *Chair-Elect*, Chair, Past-Chair, Special Interest Group – Research on Instruction and Learning in Physical Education, American Educational Research Association

2010 Member, Ad hoc AAHPERD Vision Committee

2010 Co-Chair, Abstract review panel for 2011 RC program

2010-11 Chair, Research Consortium Program Review Panel (Pedagogy Section)

2010-13 *President-Elect, President, Past-President*, Research Consortium, AAHPERD

2011-12 *Chair*, Ethics Committee, Research Consortium, AAHPERD

## 專長領域

Physical activity motivation, learning in physical education, physical activity and skill assessment, physical activity program evaluation

## 專 案 計 畫

✧ Research Reports in NIH Funded Projects

Ennis, C. D., & **Chen, A.** (2016). *Report to NIH on the Science of Healthful Living Project*. Report submitted to NIH and presented at 2016 PI Conference, Grant # R25OD011063-02, Bethesda, MD. **Role:** Conducted data analysis, wrote the Results section and designed tables and figures in the report, and assisted revising the final report.

**Chen, A.**, & Ennis, C. D. (2017). *Report to NIH on the Science of Healthful Living Project* (No-cost extension year). Report submitted to NIH and presented at 2017 PI Conference, Grant # R25OD011063-02, Bethesda, MD. **Role:** Conducted data analysis, wrote the Report and designed tables and figures in the report.

**Chen, A.** (2017). *The Final Report to NIH on the Science of Healthful Living Project*. A Closeout report submitted to NIH for Grant # R25OD011063-02, Bethesda, MD. **Role:** Compiled multiple-year data, conducted data analysis, wrote the Report and submitted the Report.

## 國家級科研課題主持人

Ennis, C.D. (PI), & **Chen, A.** (Co-PI) (2011-2016). *The Science of Healthful Living*. NIH. direct cost $1,342,858. Funding Period: 5/1/11-4/30/16.

**Chen, A.** (PI). *The Science of Essential Balance.* NIH. Direct cost $1,340,862. Funding Period: 9/14/2018-7/31/2023.

## 著 作 發 表 （* peer refereed, # data-based, + invited, G grad advisee ）

✧ Chapters in Books

*+ **Chen, A.** (2017). Preface: Achievement motivation in physical education. In C. D. Ennis (Ed.). *Routledge Handbook of Physical Education* (pp. 565-566).London: Routledge.

*+ **Chen, A.** (2017). Motivation research in physical education: Learn to become motivated. In C. D. Ennis (Ed.). *Routledge Handbook of Physical Education* (pp. 567-580). London: Routledge.

*+ Ennis, C. D., & **Chen, A.** (2017). Learning motor skills in physical education. In R. Mayer & P. Alexander (Eds.), *Handbook of Research on Learning and Instruction* (2nd ed) (pp. 154-174). New York: Routledge.

✧ Articles in Referred Journals

*# Zhang[G], T., **Chen, A.**, Yli-Piipari, S., Loflin, J., WellsG, S., Schweighhardt, R., Moennich, K., Hong, D., & Ennis, C. D. (2016). Prior knowledge determines interest in learning in physical education: A structural growth model perspective. *Learning and Individual Differences, 51*, 132-140.

*# **Chen, A.**, & Wang[G], Y. (2017). The role of interest in physical education: A review of research evidence. *Journal of Teaching in Physical Education, 36*, 313-322.

*# **Chen, A.**, Zhang[G], T., Wells[G], S., Schweighardt, R., & Ennis, C. D. (2017). Impact of teacher value orientations on student learning in physical education. *Journal of Teaching in Physical Education, 36*, 152-161.

*# Zhang[G], T., & **Chen, A.** (2017). Developing a psychometric instrument to measure physical education teachers ' job demands and resources. *Measurement in Physical Education and Exercise Science, 21*, 142-153.

*+ **Chen,A.**, Shen, B., & Zhu, X. (2018). Curriculum intervention research as a source of knowledge of most worth. Kinesiology Review, 7, 240-250.

*+ Castelli, D. M., & **Chen, A.** (2018). Large-scale physical education intervention: Past, present, and future. Kinesiology Review, 7, 259-265.

*# Zhang[G], T., **Chen, A.**, & Ennis, C. D. (in press). Elementary school students ' naïve conceptions and misconceptions in physical education context. *Sport, Education, and Society*.

*# Wang[G], Y., **Chen A.**, Schweighardt[G], R., Zhang[G], T., Wells[G], S., & Ennis, C. D. (in press). The nature of learning tasks and knowledge achievement: The role of cognitive engagement in physical education. *European Physical Education Review*.

## Physical Literacy Assessment: A Monism Perspective
## 从一元论角度看体育素养的评估问题

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## Physical Literacy Defined
## 体育素养定义

- "As appropriate to each individual's endowment, physical literacy can be described as the motivation, confidence, physical competence, knowledge and understanding to maintain physical activity throughout the life course". 体育素养是基于每个人天赋基础上，以维持终身身体活动能力的动机，自信心，身体活动能力，知识和价值认识的总和。Whitehead (2010, P.11-12)

## Monism: The Foundation for PL
## 一元论：体育素养的基石

- **Monism:** A view that a person is "first and foremost one entity"
  一元论：用人是一不可分割的整体观点看待人体和人体运动
- Any effort of "isolating specific characteristics of human beings…, putting the separate parts together" is unacceptable in principle. 任何把人看成是由不同部分叠加组合为一体的观点都是不能接受的。(Whitehead, 2010, p. 22)

## Movement as Embodiment
## 人体是运动的融合体

- Movements can be fragmented experiences for human beings 人可以分别体验各种运动
- But these experiences are not "free-standing" they are parts of the person as an "intricately integrated entity." 但这些貌似无相关的运动绝不是互相隔离的。它们都是运动和人体是一个整体的体现。

## Movement as Embodiment
## 人体是运动的融合体

- Thus, the experiences must be valued as such. 所以，运动体验的价值必须反映这一融合。
- The "lived embodiment" as ONE experience should be accepted in the process of becoming physically literate. "运动和人是一体" 是人体的本源体验。是一个人变为有体育素养的人的必经之路。

## Who Define Physical Literacy?
## 谁能给体育素养下定义？
Existentialism 存在主义 + Phenomenology 概念现象学

- In reality, the movers define PL for themselves 根据一元论和其哲学基础和方法论，只有运动的个体才可以定义体育素养
- PL is defined in the process of "finding self and the meaning of life through free will, choice, and personal responsibility." 运动者通过自由意志，自由选择和自我责任来发现和定义体育素养的。

## The Four Pillars of PL
## 体育素养的四大支柱

- Pilar 1: Motivation and confidence
  动机和自信心
- Pilar 2: Physical competence
  身体活动能力
- Pilar 3: Knowledge of physical activity
  体力活动的知识
- Pilar 4: Dispositions to value PA for life
  对体力活动和生命的价值认识

## Monism as Embodied Movement
## 一元论:体育素养是人和运动融合的体现

- Monism is displayed in "tacit knowledge" applications such as riding a bike. 一元论体育素养体现在从事运动时对运动知识技能体能等的隐形或下意识的运用，如骑单车时。
- One can display the knowledge and movement seamlessly without being able to verbalize it for every occasion.这种知识技能娴熟的运动表现有时无法用语言表述。
- This is a complete embodiment. 这就是完整的人和运动融合，也就是具有体育素养的体现。

## Implications to Assessment
## 对体育素养评估的启示

- Monism acknowledges multi-dimensionality of human capacities. 一元论接受人是多元功能体的观点。
- But, "these capacities are inter-dependent and, essentially, function in close collaboration… are built from and mutually enrich each other." 但是，"这多种功能是相互依赖，相互配合，相互支持的整体运动。" (Whitehead, 2010, p. 48)

## Implications to Assessment
## 对体育素养评估的启示

- Thus, every individual is on a unique path to PL, which is a journey charted, through an individual scaffold. 所以，体育素养是每一个个体在一个独特的道路上向她/他的目的地前进的，渐进充实的，旅程。

## Implications to Assessment
## 对体育素养评估的启示

- Thus, the monism perspective about unique embodiment "makes assessment of physical literacy challenging in that it requires judgments of achievement to be made against individual progress and potential" rather than against standards and norms. 这种人和运动融合的一元论对评估体育素养的挑战就在于"它要求针对每个人在前进道路上的潜力和进步进行评判；而不是依据某一标准或常模来评判"。(Whitehead, 2010, p. 48)

## The Challenge Translated
## 在测量学上理解这一挑战

- On measurement terms:
  用测量学术语说：
- The challenge is a validity issue that we at the moment cannot overcome. 这一挑战在测量学上是一个无法解决的测量效度问题。

## An Example from Literature
## 来看文献中的一个挑战例子

- PL is often operationalized as movement skills. 体育素养通常用运动技能来下操作定义
- This is a narrow view of PL. But: 虽然这是一个狭隘的定义，但问题是：
- Within movement assessment: gross or fine motor skills? Or basic or sport-specific ones? 在运动技能评估时，是评整体技能还是精细技能？是评基本技能还是竞技运动技能？
- Other pillars? 技能仅仅是四大支柱之一。如何评判其他支柱呢？(Corbin, 2016, Lundvall, 2015)

## Fundamental Assumptions in Measurement
## 测量学的基本前提

- "an integration is an organization of elements in a definite pattern… an act of skill or a conception represents such an organization." 整体是将同类的要素组织起来，这些要素是代表同类技能和概念的行为。
- "measurement… discovers the presence or absence of necessary elements and thereby contributes to the later improvement of integration." 测量是为发现这些要素并运用这些要素来提高整体做贡献。(Breed, 1937, p.120)
- 要点解读：测量要素来代表整体，但整体无法测量。

## Major Tenets of Measurement
## 测量学的基本原理

Additional Assumptions 其他前提

- Constructs can/should be broken down to simplest components (principle of precision – content validity issue) 被测现象必须被解析为最小成分 – 准确性原则（内容效度问题）
- One component is not overlapping with others (principle of independence – construct validity issue) 测量成分不可相互重叠（结构效度问题）
- Aggregation is possible in kind – integration is possible through aggregation. 测量叠加只能在同类成分之间进行。

## The Issues in Measuring PL
## 测量体育素养的测量学障碍

- The conflict between Monism (an inseparable whole) and measurement theory (piece-meal approach to establishing a whole) 一元论（整体不可分原理）和测量学理论（用最小单位叠加成整体）的矛盾
- Content validity and construct validity内容和结构效度验证问题
- Should we measure the four pillars as a holistic whole? Or an aggregated construct? 应该将四大支柱作为一个整体测量还是一一测量然后再整合？

## Content Validation Conflict
## （与内容效度的矛盾）

- Content validation relies on the techniques of establishing "domain specificity." 确定内容效度依靠运用建立"专业特征"的技术过程
- But when the domain specificity is established, the "monism" is lost because a concept is broken down to pieces for measurement precision. 但是，当用测量学方法确定专业特征后，一元论特征将消失，因为人和运动融合体会被破析为可精确测量的碎片

## Content Validation Conflict
## （与内容效度的矛盾）

- In complex education context, the issue of domain specificity and learner appropriateness defy the measurement assumptions (Delandshere & Petrosky, 1998)

已有学者指出，在复杂的教育环境中"专业特征"和"学生合适度"和测量学原理的矛盾日显突出

## Content Validation
## （内容效度）

- Method used in measurement development: Examine domain specificity 确定内容效度方法：检验专业特征
- Knowledge/skill/affect domains must stand by itself to be measured in precision as a clean measure 所测知识技能等必须被分解到最小的独立单位，以便精确测量，取得净测量值

## Content Validation
## （内容效度）

- Implication: a concept can only be measured in its smallest unit, this is inconsistent with the idea of MONISM
  要点解读：确定内容效度的含义就是将所要测量的实体分解为最小单位来确定所测量的是否是该实体的代表。这一概念和方法和一元论完全不一致。
- 就一元论的观点看，这样所测得的结果就没有代表一元论的效度了。

## The Essence of PL Validity
## 体育素养的本质

- The assessment of PL must allow us to uphold "the broad and inclusive definition of physical literacy which is characterized by *individual* potential and *being* in the world." (Ludvall, 2015)
  体育素养的评估必须能让我们保持它确切的定义："体育素养的特征就是一个人存在于世来实现她/他的个人潜在能力"。

## The Essence of PL Validity
## 体育素养效度的本质

- Any assessments that separate people and performance will be invalid for PL.
  如何将人和技能知识分离的体育素养评估方法都不具有效度。

## Construct Validity Conflict
## 结构效度矛盾

- Construct validity: A component in a multi-dimensional construct needs to be measured as a clean entity with minimal contamination from other component in the same construct.
- 结构效度：在一个整体中的成分必须能被独立的作为一个净实体来测量。它的测量分值必须不受其他成分的影响。（多成分独立性原则）

## Construct Validity Conflict
## 结构效度矛盾

- Construct Validity: Knowledge, skill, motivation must be measured independently.
  结构效度：知识，技能，动机等必须分别测量，然后叠加整合。
- All pieces can be put back as a whole integration. 这些成分可以最终整合成整体。
- Implication: The four pillars of PL must be independent from each other. But, it is against the MONISM idea, too.
- 要点解读：体育素养的四大支柱是相互独立的，可叠加整合的。但这是违背一元论原理的。

## Assessing PL as a Journey
## 评估体育素养旅程

- The core of the PL concept is physical activity. 体育素养旅程的核心是身体运动。
- The journey of traveling on the road of physical activity requires a holistic view to experience and assess. 该旅程的体验和评估都必须是一元整体的过程。
- The four pillars must be an integral whole to experience and assess. 四大支柱也必须是整体体验和评估。

## A Metaphoric PL Curriculum as a Science Course of Study
## 一个想象中的体育素养课程

- A physical education curriculum to simulate an active life, from birth to death. 用模仿由出生到老死的生命过程中的身体运动
- The curriculum should be based on scientific evidence. 必须建立在科研证据上
- The curriculum should provide student-centered tasks. 必须用学生为主体的个体体验性学习任务

## A Metaphoric PL Curriculum as a Science Course of Study
## 一个想象中的体育素养课程

- The assessment needs to center on solving problems associated with the 4 pillars using a monist/holistic approach.
  评估必须建立在用四大支柱一元的原则解决实际运动问题上(Existentialism 存在主义 + Phenomenology 概念现象学原理)

## A Conceptual Framework
## 课程概念框架

- Borrowing from Corbin (2016), I propose a two-dimension framework for developing a PL curriculum: a life-span aspect (enduring aspect) and a situational (transient aspect).
  依据Corbin (2016)的想法，可以试用一个两维互交框架来设计课程：一个生命旅程(长程)维度，一个情景(过渡)维度。

## Two Dimension, One Entity (Monism)
## 两个维度，一个实体(一元论)

- Life-span aspect: skills, knowledge, and values are enduring elements in life
  生命维度：包括一生都需要的运动技能，知识，价值
- Situational aspect: confidence, motivation are transient elements in life
  情景维度：包括生命不同阶段中不同的动机，信心，等
- 两维度在课程任务中交互融合

## Two Dimension, One Entity (Monism)
## 两个维度，一个实体(一元论)

- The curriculum allows experiencing and appreciating mile-stone movement from birth to death to "travel" through PL
  该课程应给学生机会体验人生从生到死每个发展里程碑时的体育素养发展特征，让学生体验，尊重，并欣赏这些特征。

## Integration the Life-Span and Situational Aspects
## 生命维度和情景维度的融合

- The curriculum will build on the changing patterns of physical movement throughout human life 该课程建立在一生中身体运动变化阶段模式上
- The transient aspects will be woven through the movement patterns to address skill, knowledge, and value needs at the milestones through this journey. 情景维度内容穿插在阶段模式中来组合每个生命里程碑时所需的知识，技能，和价值

## Milestone 1: Early Movement
## 里程碑一：人生早期运动

- For Kindergarten - 2 grade students
  适合幼儿园至二年级学生学习
  Content Characteristics 课程特征
- Life-span to study: from birth to 5 years
  生命维度：从出生到五岁
- Movement experience: involuntary, adaptative
  运动经历特征：被动运动，适应性运动

## Milestone 1: Early Movement
## 里程碑一：人生早期运动

- Situational aspects (transient): none, emerging, bio-needs driven, intuitive, unstable
  情景维度内容：无或极少，有萌芽状自主动机，本能性，生物需要所致动机，不稳定
- Learning experience/tasks: ?
  学习任务应该怎样设计？

## Milestone 2: Purposeful Movement
## 里程碑二：目的性运动

- For 3-5 grade students
  适合三至五年级学生学习
  Content Characteristics 课程特征
- Life-Span to study: from 5 - 12 years
  生命维度：人生五到十二岁阶段
- Movement experience: purposeful, voluntary and involuntary combined
  运动经历特征：主动被动相结合的，有目的性的运动

## Milestone 2: Purposeful Movement
## 里程碑二：目的性运动

- Situational aspects (transient): state-based, situational, unstable, developing
  情景维度内容：基于情景下的心理状态，情景为诱因的自主动机，动机在发展，不稳定
- Learning experience/tasks: ?
  学习任务应该怎样设计？

## Milestone 3: Intentional Movement
## 里程碑三：有意识运动

- For 6-12 grade students
  适合六至十二年级学生学习
  Content Characteristics 课程特征
- Life-span to study: 12-22 years
  生命维度：从十二岁到二十二岁
- Movement experience: multiple purposes, voluntary movement, in different social/physical contexts
  运动经历特征：多重目的，主动性运动，有意识在各种社会和物质环境里运动