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Content Knowledge and Pedagogical Content Knowledge Conceptions and Findings



SHAPE Nashville
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A Primer on Content Knowledge and Pedagogical Content Knowledge

Phillip Ward



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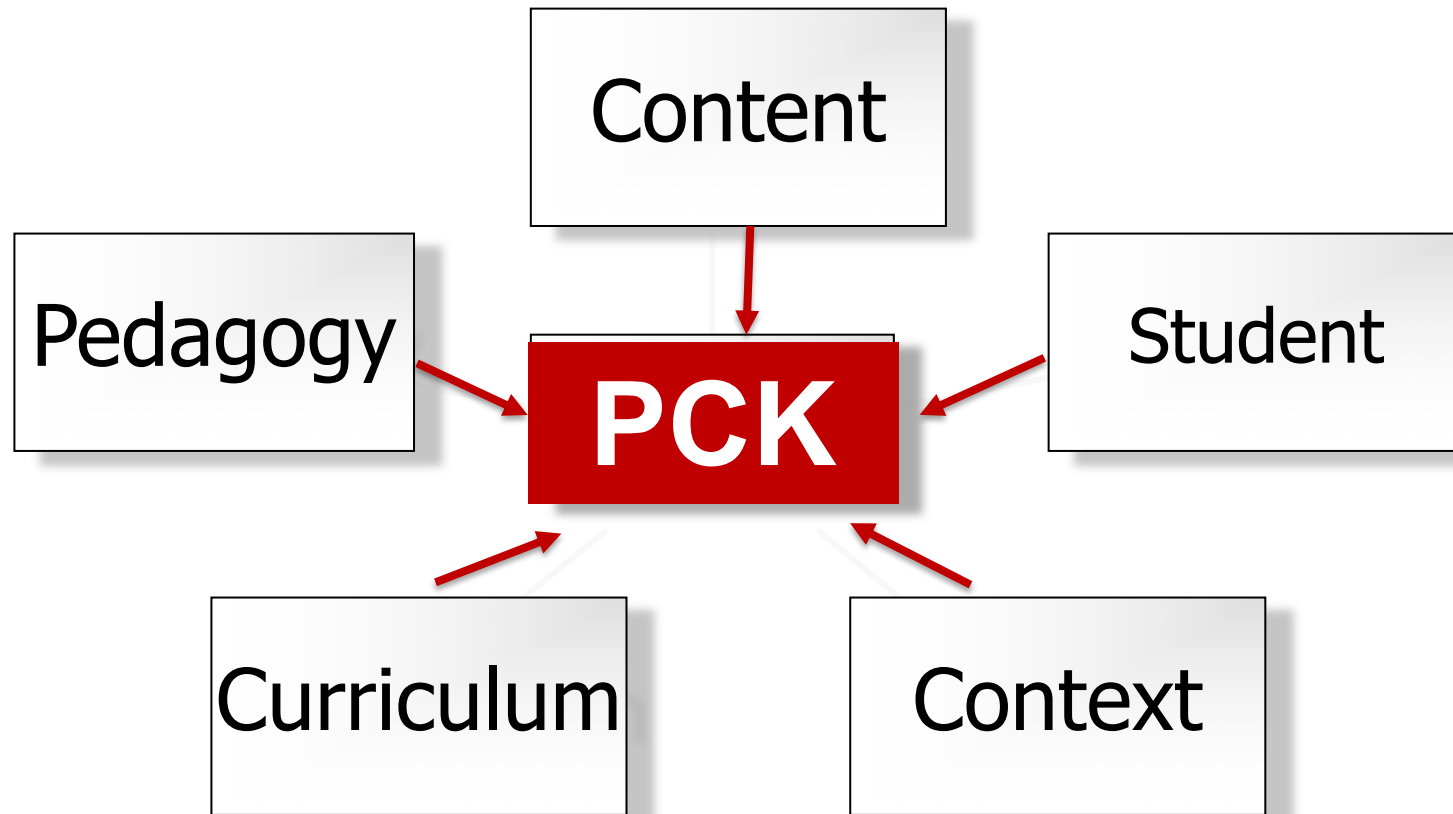
My task:

- Pedagogical Content Knowledge (PCK)
- Common Content Development (CCK)
- Specialized Content Knowledge (SCK)
- To describe the body of research that supports these conceptions.

Pedagogical Content Knowledge?



Pedagogical Content Knowledge (PCK) Informed by:



Grossman (1990)

Shulman (1987, p. 8)

Operationalization of PCK:

How content is “**organized, represented, and adapted to the diverse interests and abilities of learners and presented for instruction.**”

A working definition of PCK

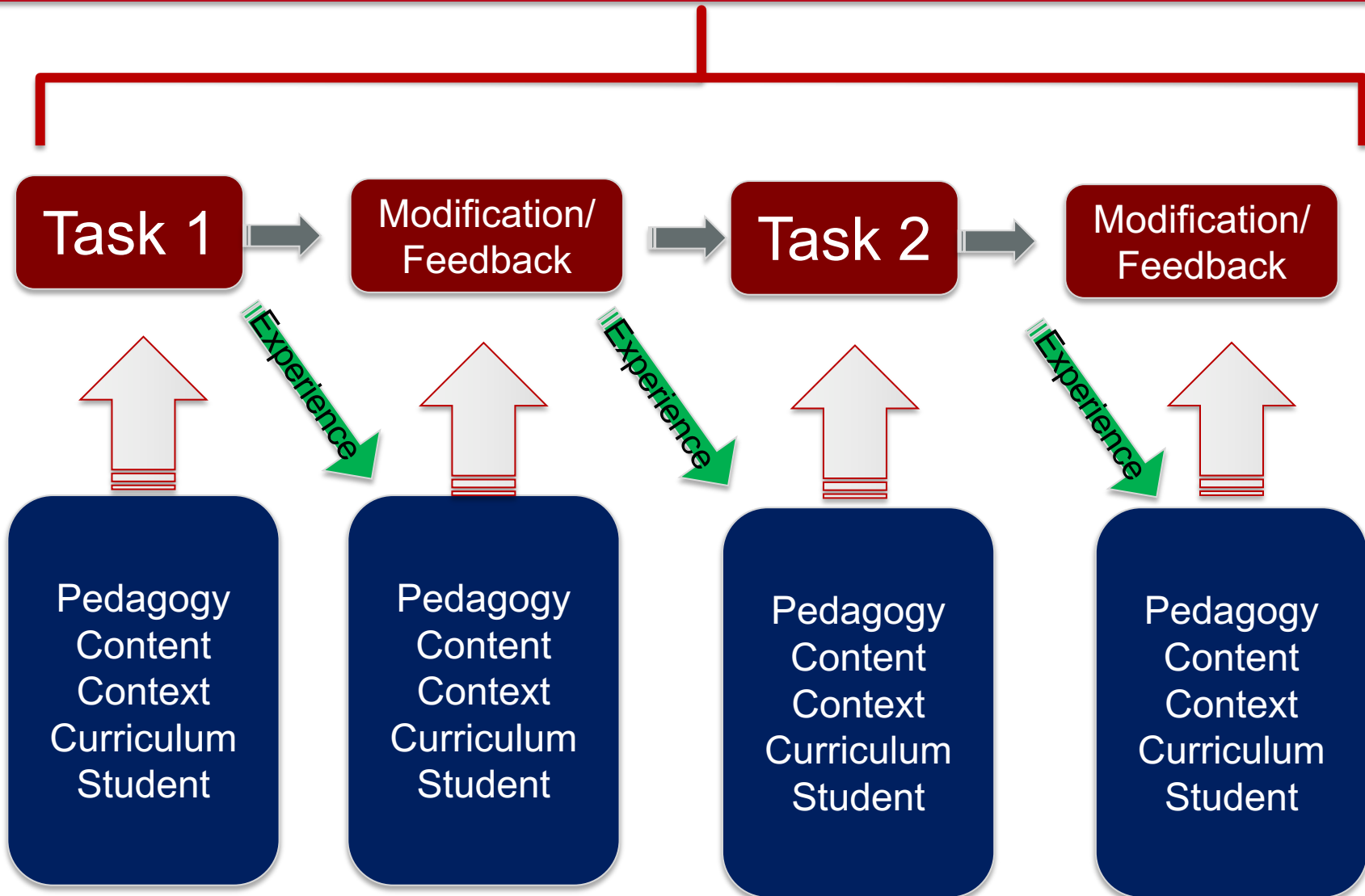
PCK is a focal point, a locus, defined as such as an **event in time** (and therefore specific contextually) where teachers make **decisions in terms of content** based on their understandings of a **number of knowledge bases** (e.g., pedagogy, students, content, curriculum)

Ward 2009

Teacher as decision maker

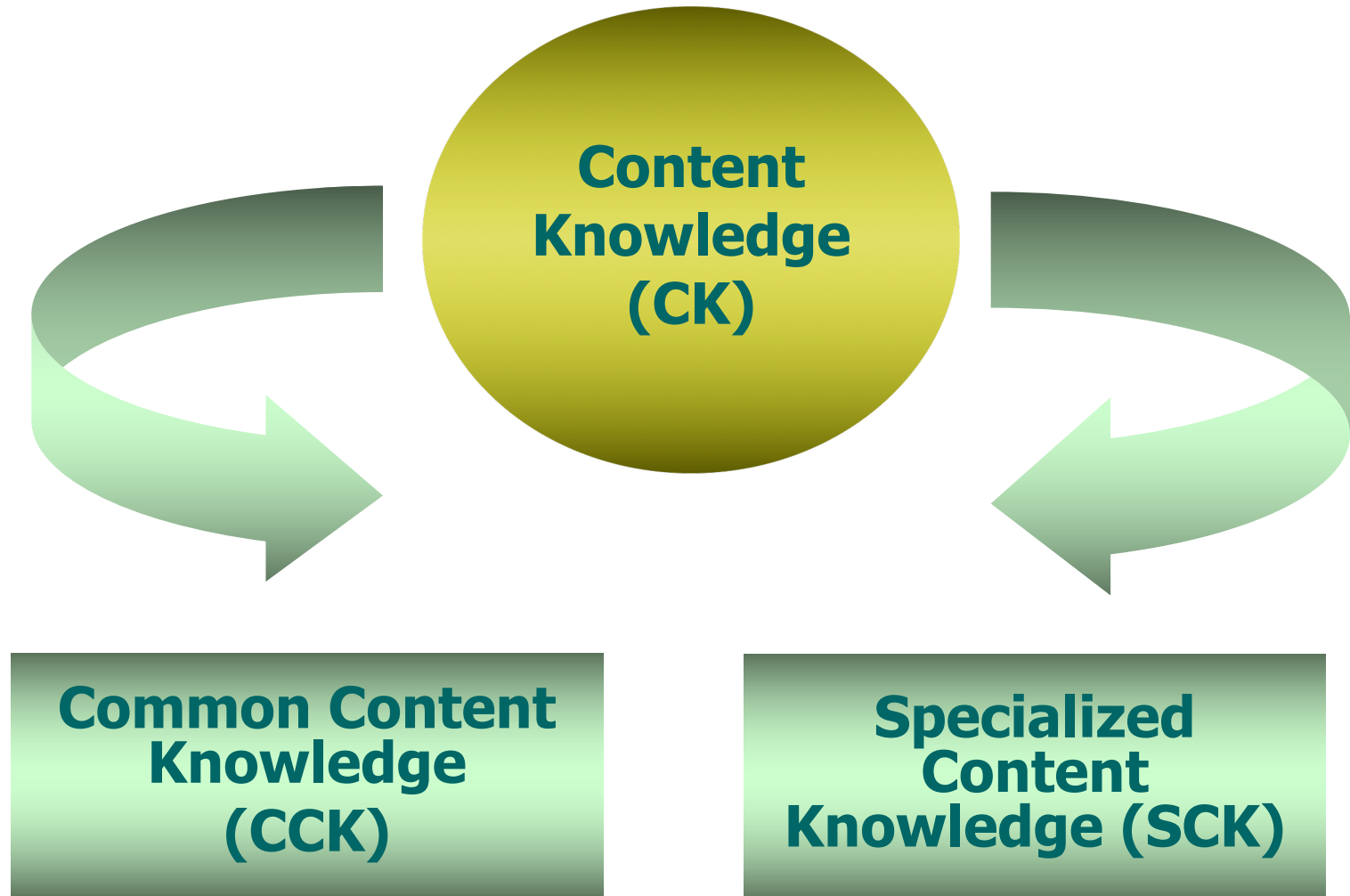


Instructional Decisions - PCK



Content Knowledge

What kinds of knowledge did you just use?



Ball, Thames & Phelps (2008)

Underwater Hockey



1. Need to know rules, safety, and etiquette
2. Technique and tactics to be used in the performance of underwater hockey
3. Teaching progressions
4. Types of errors students may make, and how to correct them (e.g., feedback, and tasks modification)



A task: What are some progressions for teaching the sit up?

Simple



More difficult



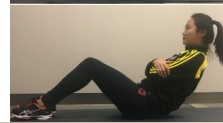
Fitness Exercise Content Knowledge

Common Content Knowledge

Specialized Content Knowledge

Pedagogical Content Knowledge

Lie on your back on the floor, bend your knees 90 degrees, and plant your feet flat. Tuck your chin slightly toward your chest.....



Basketball Content Knowledge

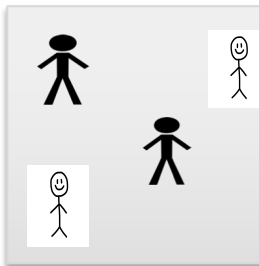
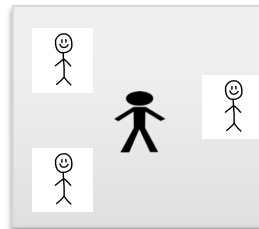
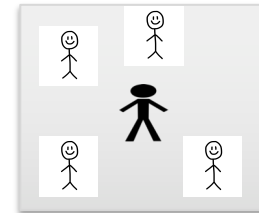
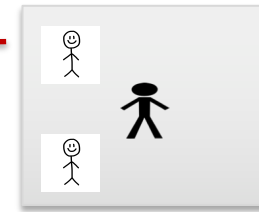
Common Content Knowledge

Specialized Content Knowledge

Pedagogical Content Knowledge

- Off the ball players: **move away from the defender**
- On the ball players: **Pass to the open player**

Defense walks no interceptions
Defense jogs no interceptions
Defense runs and intercepts



Beginners



Higher competence



Two teachers with different SCK

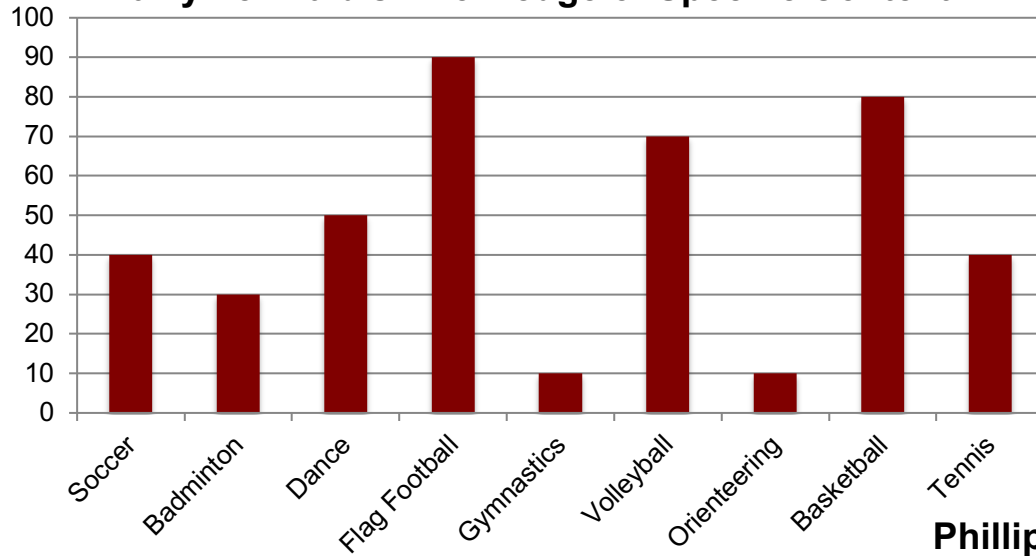


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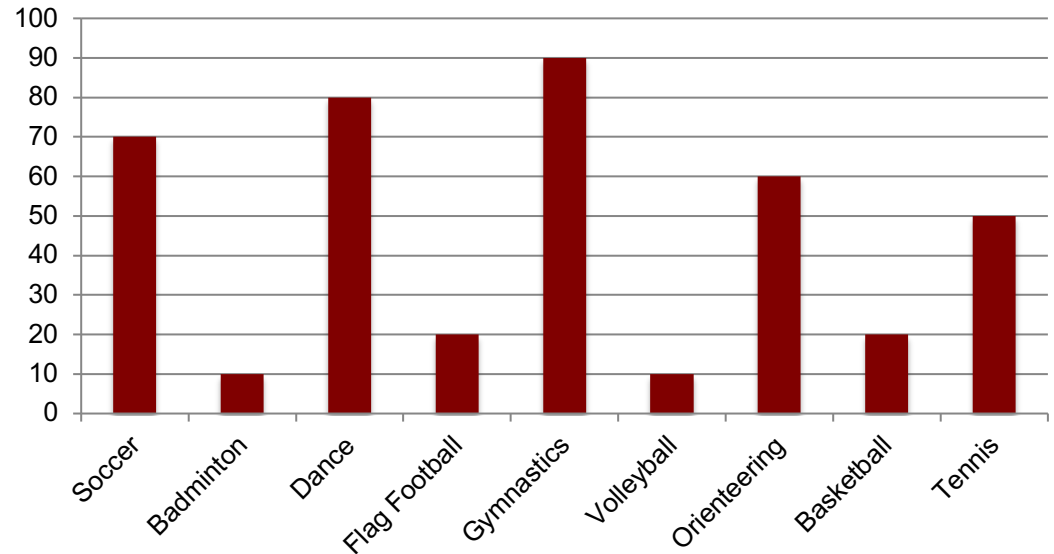
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Profiles of Content Knowledge

Harry Lehwald's Knowledge of Specific Content



Phillip Ward's Knowledge of Specific Content



The body of research supporting our understanding of content knowledge in physical education



Conceptual and Review Papers

Ward (2013). The role of content knowledge in conceptions of teaching effectiveness in physical education.



Ward, P. (2011). The future direction of physical education teacher education: It's all in the details.



Ward, (2010). Knowing content well enough to teach it: Re-conceptualizing physical activity content knowledge for physical education.



Ward, (2009) Content matters: Knowledge that alters teaching.



Ward, P. (2006). What we teach is as important as how we teach it.



Ward (2005). Preparing preservice teachers to teach sports: What critical skills and knowledge do they need to be successful.

Conceptual

Kim, Ward, Sinelnikov, Ko, Iserbyt, Li, & Curtner-Smith. (in press). The influence of content knowledge on pedagogical content knowledge: An evidence-based practice for physical education. [meta-analysis]



Ward, & Ayzazo. (2016). Pedagogical content knowledge: Conceptions and findings in physical education. [review]

Reviews

Published Research Studies

Dervent, Ward, Devrilmez, & Tsuda, (in press). Transfer of content development across pacticia in PETE **USA**

Ward, He, Wang, & Li. (in press). Chinese secondary PE teacher's depth of SCK in soccer. **China**

Sazama (2017). The impact of content knowledge, SCK, peer analysis and self-analysis on pre-service PE teachers' error detection abilities **USA**

He, Ward, P. & Wang. (in press) Validation of a CCK test for soccer. **China**

Parrott (2016). Elementary PE Teachers CK and PCK of overhand throwing **USA**

Ward, Tsuda, Dervent, & Devrilmez, (in press). Differences in the content knowledge of those taught to teach and those taught to play. **USA**

Kim, & Ko. (2017). Measuring pre-service teachers' knowledge of instructional tasks for teaching elementary content. **USA**

Kim, I., & Ko, B. (2016). Developing elementary CK in physical education teacher education **USA**

Kim, Lee, Ward, & Li (2015). A critical examination of CK courses in PETE programs **USA**.

Ward, Li, Kim, & Lee. (2012). Content knowledge courses in physical education programs in South Korea & Ohio. **USA**

Ayvazo, S., & Ward, P. (2011). PCK of experienced teachers in physical education: Functional analysis of adaptations **USA**

Tsuda (2017). Examining the impact of a CK professional development workshop using a knowledge packet on a teacher's PCK & student learning in an upper elementary tennis unit. **USA**

Iserbyt, Ward, & Li. (2017). Effects of improved content knowledge on PCK and student performance in physical education. **Belgium**

Iserbyt, Theys, Ward, & Charlier, (2017). The effect of a SCK workshop on teaching and learning BLS in elementary school: a cluster randomized controlled trial **Belgium**

Devrilmez (2016) Impact of a badminton course designed for CCK and SCK of prospective teachers **Turkey**

Sinelnikov, Kim, Ward, Curtner-Smith, & Li. (2016). Changing beginning teachers' content knowledge and its effect on student learning **USA**

Iserbyt, Ward, & Martens. (2016). The influence of CK on teaching & learning in traditional and sport education contexts: An exploratory study. **USA**

Kim, I. (2015). Exploring changes to a teachers teaching practices & student learning through a volleyball CK workshop. **USA**

Ward, Kim, Ko, & Li (2015). Effects of improving teachers' CK on teaching and student learning in physical education. **USA**



In Progress Research Studies

Stefanou (2018). Examining the contribution of a PD program to generalist teachers' CK and student achievement: The case of basketball. **Cyprus**

Iserbyt, Ward & Martens (in progress). A test of CCK for front crawl. **Belgium**

Vanluyten, Ward, Martens, & Iserbyt (in progress). Preservice teachers' performance, common and SCK in swimming. **Belgium**

Iserbyt, Coolkens, Martens & Ward (in progress). Content knowledge for teaching and learning front crawl in secondary schools. **Belgium**

Tsuda Ward et al, A test of CCK for Volleyball. **Japan**

Wang, He, Ward. Cross-sectional studies of inservice teachers knowledge **China**

Iserbyt, Coolkens, Martens, Loockx, Vanluyten & Ward (in progress). Functional adaptations as a function of content knowledge in elementary swimming classes. **Belgium**

Tsuda Ward et al, A test of CCK for Basketball. **Japan**

Wang, He, Ward -Cross-sectional studies of teachers - **China**
Tsuda, Ward et al. Cross-sectional studies of freshman & graduates in PETE programs- **Japan**

Iserbyt, Ward, Dewulf, Nieuwborg, & Madou (in progress). Teaching & learning BLS as a function of content knowledge in secondary school: a cluster randomized trial. **Belgium**

Lee, Ko Kim Ward (in progress). A test of CCK for gymnastics. **Korea**

Lee, Ko Kim Ward-Cross-sectional studies of freshman & graduates in PETE programs **Korea**

Kim, & Ko. (in review). Content knowledge, enacted PCK, and student learning between teachers with different levels of teaching experiences. **USA**

Lee, Ko Kim Ward (in progress). A test of CCK for gymnastics. **Korea**

Ince, Dervent, & Devrilmez Ward Cross-sectional studies of freshman & graduates in PETE Programs- **Turkey**

Iserbyt, Ward. Cross-sectional studies of freshman graduates & Teachers in PETE- **Belgium**

Chang, S. Ward, P., & Goodway, J. (in review) Effects of a content knowledge workshop on a teacher PCK and student performance **USA**.

Tsuda, Ward, Li, Higginson, Cho, He & S (in review) Relationships Among Performance, CCK and SCK in Physical Education Teacher Education **USA**

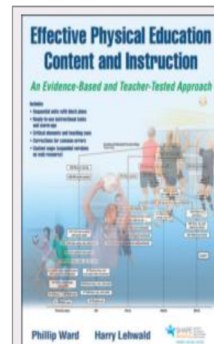
Instrument Development

Teacher Education Descriptive & Experimental Studies

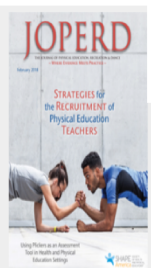
School Intervention Studies

Practical / Translational Work

Tsuda, Ward, & Goodway,. (in press).
Defining Tennis Content in Upper
Elementary Physical Education



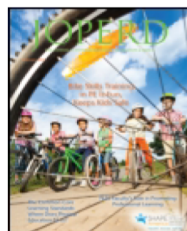
New Effective Physical Education Content and Instruction eBook With Web Resource
An Evidence-Based and Teacher-Tested Approach



Journal of Physical Education, Recreation & Dance
Publication details, including instructions for authors and subscription information:

**UNPACKING
GAMES
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*What Do Teachers
Need to Know?*

PHILLIP WARD
WINSY FELTZ
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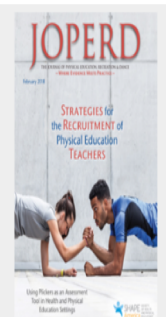


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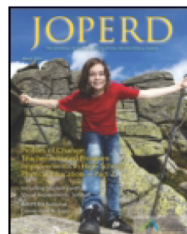
Content Maps: A Teaching and Assessment Tool for Content Knowledge

Phillip Ward^a, Harry Lehwald^a & Yun Soo Lee^b
^a The Ohio State University in Columbus, OH
^b Dankook University in Yongin, South Korea
Published online: 24 Apr 2015.



**Teaching Badminton through Play
Practice in Physical Education**

Insook Kim
Pages 7-14 | Published online: 06 Oct 2017



Journal of Physical Education, Recreation & Dance

Publication details, including instructions for authors and subscription information:
<http://www.tandfonline.com/loi/ujrd20>

Using Knowledge Packets in Teacher Education to Develop Pedagogical Content Knowledge

Phillip Ward^a, Shiri Ayvazo^b & Harry Lehwald^a
^a The Ohio State University in Columbus, OH
^b David Yellin College in Jerusalem, Israel
Published online: 06 Aug 2014.



Journal of Physical Education, Recreation & Dance

Publication details, including instructions for authors and subscription information:
<http://www.tandfonline.com/loi/ujrd20>

Teaching and Assessing Content Knowledge in Preservice Physical Education

Shiri Ayvazo^a, Phillip Ward^b & Paul T. Stuhr^c
^a Department of Sports Education Leadership, University of Nevada#Las Vegas, Las Vegas, NV 89154
^b School of Physical Activity and Educational Services, Ohio State University, Columbus, OH 43210

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The learning to teach physical education research program

