Japanese Physical Education Majors' Specialized Content Knowledge

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SCK Needs to be Taught

K-12 physical education
Extra-curricular activities

SCK

Critical for teaching effectiveness

(Kim et al., 2018; Ward & Ayvazo, 2016)

SCK needs to be specifically taught.

(Ward et al., 2017; Tsuda et al., 2018)

Need of Studies in Japan

- Given that each country has its unique teacher education system and a unique cultural history with extra curricula activities, the levels of SCK that pre-service have would be different.
- The similar results were found in other countries, such as Belgium, China, Korea, and Turkey.
- Up until now, we know little about the levels of SCK among pre-service teachers in Japan.

Physical Education and Extracurricular Activities in Japan

- Physical Education is mandatory from elementary to high school (MEXT, 2018).
  - Elementary (1-6th grades) = 90-105 hours/year
  - Middle (7-9th grades) = 105 hours/year
  - High (9-12th grades) = 7-8 credit hours/year

- The majority of students participate in extracurricular activities in sports (MEXT, 2018).
  - Middle = 70.6%
  - High = 52.7%

Teacher Licensure Programs in Japan

- Only secondary physical education teachers are subject specific.
- At present, 268 universities have teacher licensure programs.
  - Students take 67 credit hours to acquire the physical education teacher license (lecture-based) (MEXT, 2009).
  - Student teaching – 3-5 weeks.

- Teachers need to update a license every 10 years (MEXT, 2018).

- Combining all subject areas, only 50-60% of people who acquired licensure will actually be a teacher (MEXT, 2018).

Purpose

To examine the levels of SCK among pre-service teachers in Japan.

- RQ1. What are the impact of K-12 physical education and extracurricular activities on pre-service teachers?
- RQ2. What are the association among pre-service teachers' demographic background and SCK?

Methods

Design & Participants

Research design:

Cross-sectional design

Participants:

689 pre-service teachers (male *n* = 431, female *n* = 258) from 8 universities.

- Freshman *n* = 27; Sophomore *n* = 399; Junior *n* = 174; Senior *n* = 70

Variables & Instruments

Variable:

- SCK of volleyball and basketball
- Demographic background – Playing and teaching/coaching experiences in volleyball and basketball.

Instruments:

- A content map (Ward, Lehwald, & Lee, 2015)
  - Analyzed by content development categories (Rink, 1983) and an index score was calculated (Ward et al., 2016).
- A demographic questionnaire

Procedures & Analyses

Procedures:

- Data were collected at the beginning of the school year.
- Data collectors distributed a packet to pre-service teachers in a classroom.

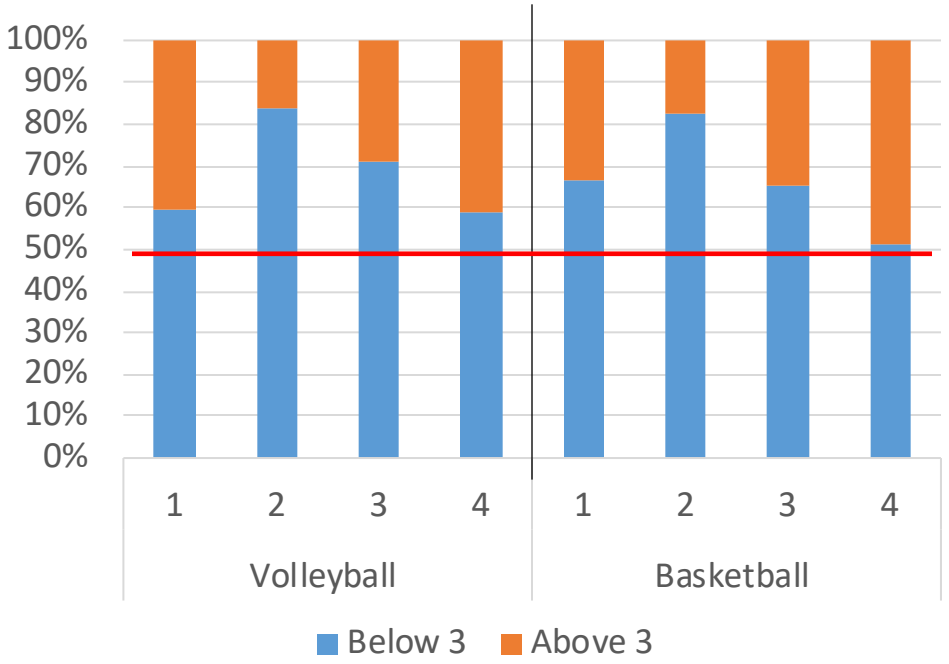
Data analyses:

- Descriptive, Kruskal-Wallis, and Mann-Whitney U analyses.
  - SPSS was used to analyze the data.

Results

The levels of SCK

	Volleyball	Basketball
1	2.00 (0-5)	1.67 (0-5)
2	.00 (0-15)	.00 (0-10)
3	1.67 (0-7)	2.00 (0-12)
4	2.10 (0-5)	2.33 (0-5)
Total	**1.25 (0-15)**	**1.51 (0-12)**



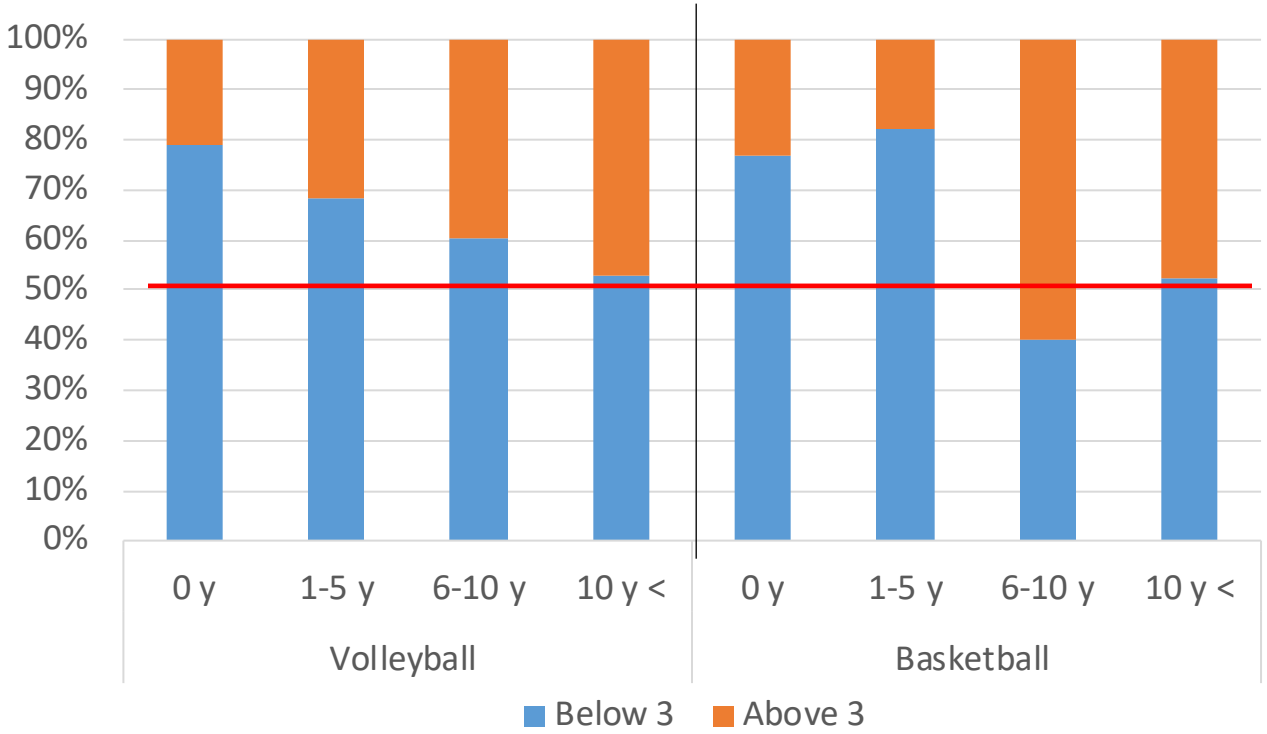
Significant differences among groups:

- Volleyball χ^2 (3) = 104.804, $p < .001$
- Basketball χ^2 (3) = 103.044, $p < .001$

By senior year, still more than half of pre-service teachers cannot score above "3."

Play Experiences and SCK

Year	Volley	BB
0	602	555
1-5	35	60
6-10	33	46
10<	19	28

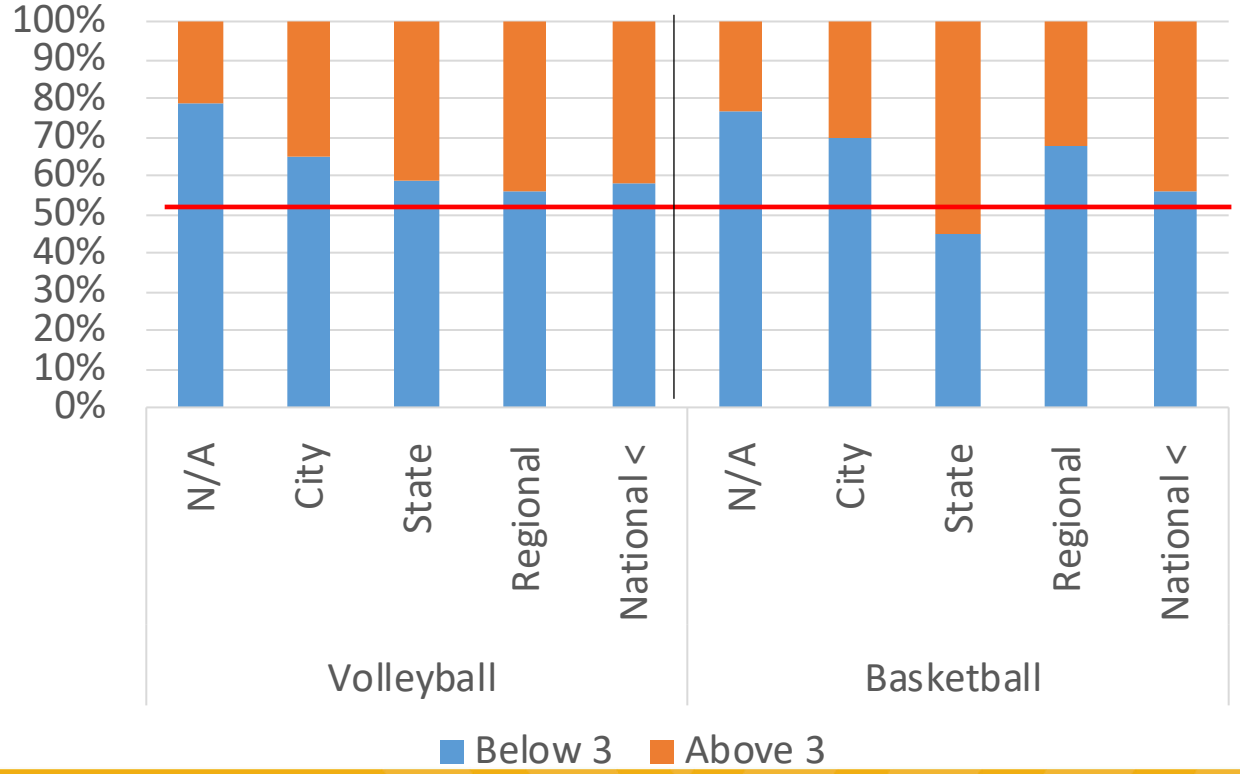


χ^2 (3) = 11.499, p = .009

χ^2 (3) = 31.00, p < .001

Play Levels and SCK

Year	Volley	BB
NA	608	574
City	17	33
State	29	40
Reginal	16	25
National<	19	16

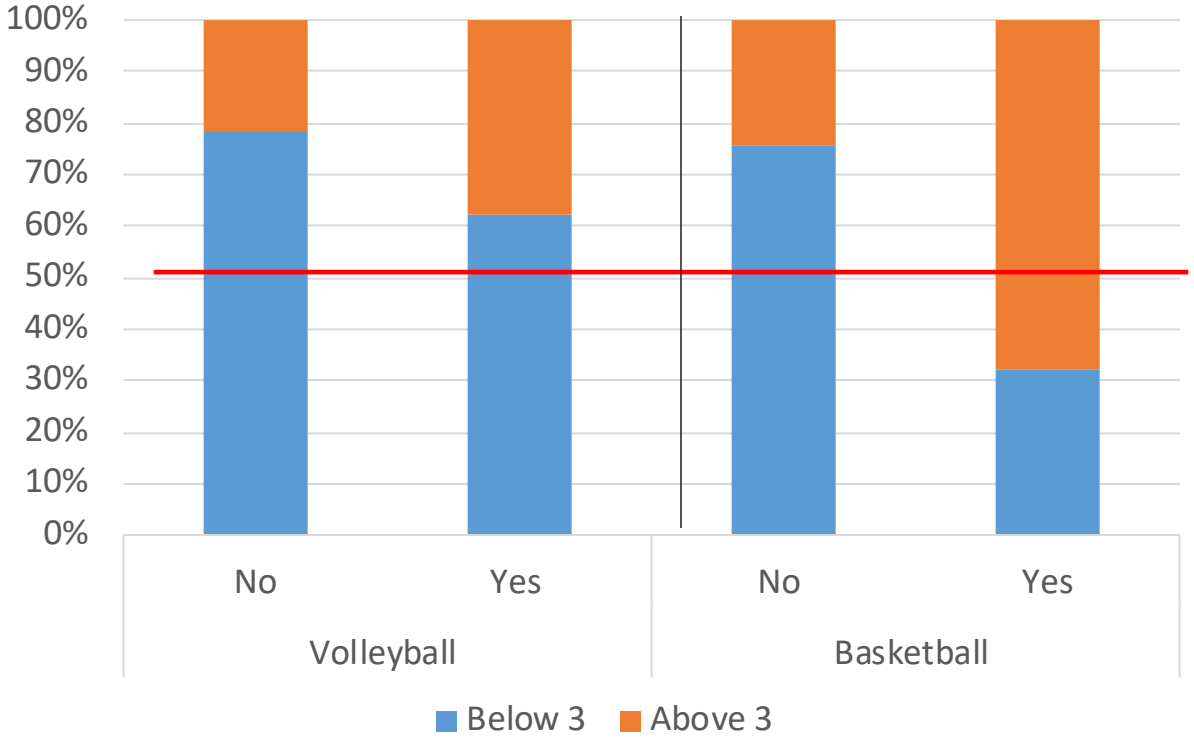


$\chi 2$ (3) = 11.574, p = .021

$\chi 2$ (3) = 16.72, p = .002

Teach Experiences and SCK

	Volley	BB
No	668	660
Yes	18	27



$U = 13144.00, p < .001$

$U = 4956.00, p < .001$

Discussion

Japanese Pre-service Teachers have the Low Level of SCK

- Japanese pre-service teachers slightly improve SCK from freshman to senior years. However, even in the senior year, more than half of pre-service teachers cannot score above the cut-point “3.”

- K-12 physical education and extracurricular activities have little to do with developing pre-service teachers’ SCK (Ward, Tsuda, Dervent, & Devrilmez, 2018; Tsuda, Ward, Li, et al., 2019).
- PETE programs need to teach SCK.

Associations between Playing Experiences and SCK

Longer the play experiences, more pre-service teachers demonstrated above the SCK index score 3.

➡ A potential association between CCK and SCK.

- ✓ In previous study in the US, no consistent associations were found between CCK and SCK among four sports (volleyball, basketball, tennis, and badminton) (Tsuda et al., in press).
- ✓ Further investigation is essential to understand the relationship.

Non-Linear Association between Skill Levels and SCK

Among five different play levels (i.e., city, state, regional, national and international), more pre-service teachers who were playing at the state level demonstrated above the SCK index score 3.

A potential association between skill levels and SCK but it is not linear.

Teaching Experiences are Important to Acquire SCK

More pre-service teachers with teaching/coaching experiences demonstrated above the SCK index score 3.

Added another evidence that SCK is essential knowledge to teach (Ward, 2009; Ward & Ayvazo, 2016).

Conclusions

Although there are the positive impacts of playing and teaching/coaching experiences of the sports on SCK, no definite demographic background would promise developing pre-service teachers' SCK to above the index score 3.

Teacher training programs need to be intentional to teach SCK.

Implications

Regardless of the countries:

(a) SCK cannot be developed through physical education or extracurricular activity in K-12 schooling

(b) teacher education programs are not developing SCK sufficiently.

- There is evidence in the US that when SCK is adequately taught, pre-service teachers can develop SCK (Tsuda et al., 2019; Ward et al., 2018).
- Thus, the teaching strategies/approaches used in those programs need to be defined and applied by other programs in Japan.

Thank you!

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