The Effects of the Clinical Learning Environment on Japanese Nursing Instructors' Support in Facilitating Students' Metacognition:

A Comparison between University and Vocational School Instructors

Yasuko Hosoda, PhD, RN, Professor [1], Yoshiko Doi, MS, RN, Assistant Professor [2], Yukari Katayama, PhD, RN, Associate Professor [3], Mayumi Negishi, MPH, RN, PhD Candidate[4]

[1] Osaka Prefecture University, Japan, [2] Kyoto Koka Women's University, Japan, [3] Doshisha Women's College of Liberal Arts, Japan, [4] Oregon Health & Science University, USA

Aim

To compare university and vocational school instructors regarding the effects of the clinical learning environment (CLE) on Japanese nursing instructors' support in facilitating students' metacognition.

Background

Metacognitive knowledge and activities are valued in clinical learning. The CLE helps determine the quality of the clinical experience of the nursing student. It is necessary to investigate how educational activity can promote students' metacognition in the CLE.

Methods

Participants/Setting:

- 145 university instructors (67.1% response rate) and 110 vocational school instructors (56.4% response rate) from nursing programs in Japan were recruited voluntarily.
- The Clinical Learning Environment Diagnostic Inventory (CLEDI)—which measures the affective, perceptual, symbolic, behavioral, and reflective aspects of the CLE— and a questionnaire regarding support that facilitates students' metacognition—consisting of items to measure metacognitive knowledge and metacognitive activities— were administered.

Data Analysis:

- IBM SPSS® Statistics was used to compare the CLE and the support to facilitate students' metacognition between two groups (university instructors and vocational school instructors).
- Simultaneous analysis of multiple groups was conducted between the two groups using AMOS®.

Outcomes

Table 1. Characteristics of the nursing instructors

Variable	U Instructors Mean (SD)	VS Instructors Mean (SD)
Age (years)	39.3 (7.0)	40.8 (6.5)
Years of experience as a instructor	7.6 (6.2)	5.5 (6.0)
Years of experience as a nurse	7.7 (4.9)	12.0 (5.1)
Years of experience with practicum instruction	8.8 (6.7)	7.6 (6.8)

Note. U=university; VS=vocational school.

Table 2. Comparison of the CLEDI between the groups

Variable	U Instructors Mean (SD)	VS Instructors Mean (SD)	*P* value
Affective CLE	18.28 (3.85)	16.06 (3.98)	<0.001
Perceptual CLE	11.14 (2.02)	10.36 (2.13)	0.003
Symbolic CLE	19.86 (3.40)	18.00 (3.76)	<0.001
Behavioral CLE	16.12 (2.36)	15.40 (2.54)	0.021
Reflective CLE	12.17 (1.51)	11.62 (1.72)	0.008

Note. U=university; VS=vocational school. Unpaired *t* -test

Table 3. Comparison of the support that facilitates students' metacognition between the groups

Variable	U Instructors Mean (SD)	VS Instructors Mean (SD)	*P* value
Promote students to think what, and how much, they want to learn	131.38	123.54	0.350
Prompt students to consider differences in their own thinking and others' thinking	132.50	122.07	0.238
Make students interested in common viewpoints	124.46	132.67	0.349
Encourage students to consider needed knowledge for problem solving	135.78	117.75	0.031
Encourage students to consider more effective learning methods	129.63	125.85	0.664
Direct students to set learning goals and make a plan	132.04	122.68	0.276
Have students confirm whether they were able to understand a problem correctly	128.66	127.13	0.855
Have students self-evaluate learning outcomes	130.23	125.05	0.530

Note. U=university; VS=vocational school. Mann-Whitney *U* -test

Multiple-group structural equation modeling between the two groups was tested with equality constraints placed on each path coefficient.

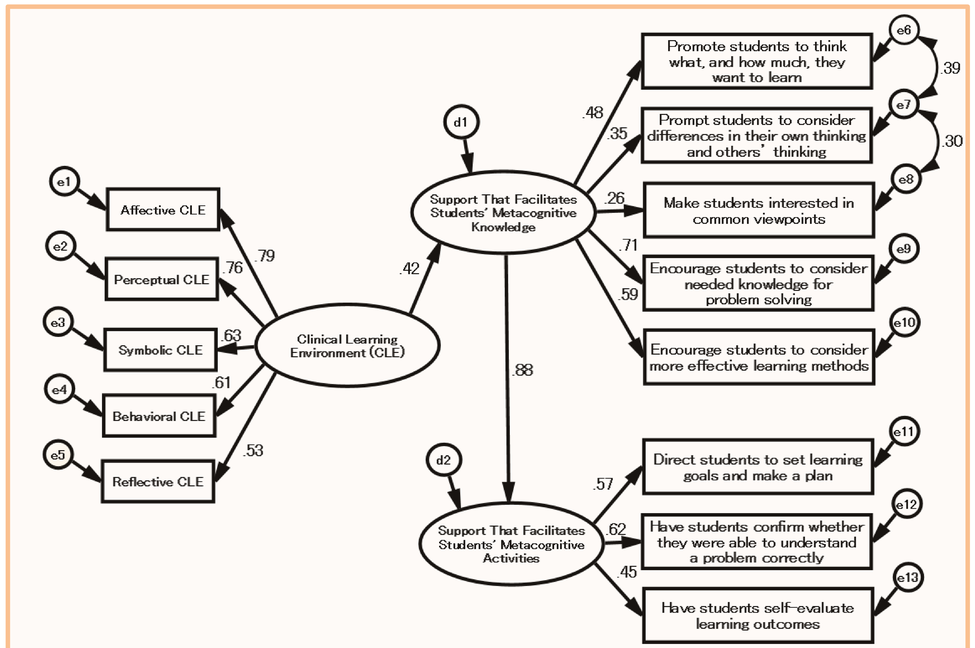

Figure 1. Paths coefficients for the university instructors

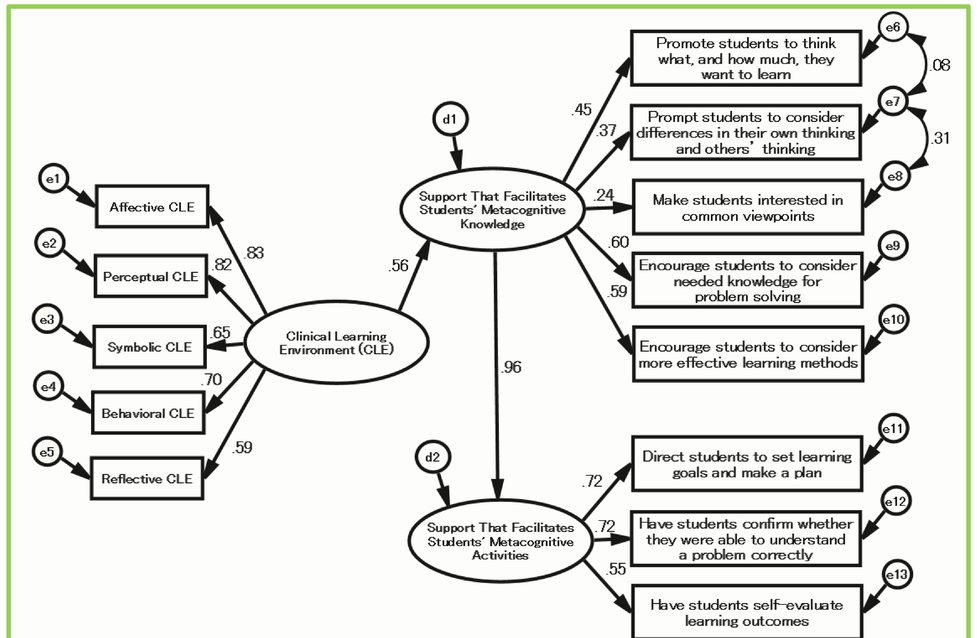

Figure 2. Paths coefficients for the vocational school instructors

The fit indices for the model were GFI (goodness-of-fit index)= .904, AGFI (adjusted goodness-of-fit index)= .867, and RMSEA (root mean square error of approximation)= .037. The critical ratio for the difference between the parameters for the two groups was not significantly different for "CLE" to "Support That Facilitates Students' Metacognitive Knowledge" and was significantly different ($P < 0.05$) for "Support That Facilitates Students' Metacognitive Knowledge" to "Support That Facilitates Students' Metacognitive Activities."

Implications

Results revealed that the "clinical learning environment" affected the instructors' "support that facilitates students' metacognitive knowledge, "which in turn affected the "support that facilitates students' metacognitive activities." These effects were seen in both university instructors and vocational school instructors. In particular, the vocational school instructors seemed to have a more consistent effect on the CLE regarding their support to facilitate students' metacognition. It is assumed that enhancing the CLE will lead to the instructors' support facilitating students' metacognition.

Reference

Hosoda, Y. (2006) Development and testing of a Clinical Learning Environment Diagnostic Inventory for baccalaureate nursing students. *Journal of Advanced Nursing*, 56, 480-490.

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