

# **Teachers' and Student Teachers' Perceptions on the Importance of Courses and Competencies in Physical Education Teacher Education Program**

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## **I. Introduction**

Three decades ago some researchers in sport pedagogy stressed that learning experiences in teacher education programs must develop the competencies needed to solve the problems teachers are confronted in performing their professional duties (Conant, 1963; Engleman, 1963). Roundy (1967) indicated that it was necessary to identify those competencies to meet the demands of time.

Throughout the past three decades physical education has undergone a dramatic expansion of knowledge. Accordingly, more specific fields such as biomechanics, sport psychology, exercises physiology, motor control, measurement and evaluation, anatomy, curriculum and instruction, administration, and sociology of sport have emerged within the profession. Teaching incorporates all components of the profession. However, prospective teachers have tended to be generalists. As the fields of physical education have become more specified, teacher education programs for prospective teachers may also need to be more elaborate.

When considering the potentiality for curricular modification, there arises the need for re-evaluation and selection of coursework required of prospective teachers. However, before any change is made, three important questions need to be investigated. First, what are the fields of emphasis in today's teacher education programs? Second, which fields in physical education do teacher educators believe most important for prospective teachers to study? Third, do current curricular

offerings reflect the relative importance of the identified area?

Southard (1983) indicated that there had been a lack of effort to assess the validity of course offerings in teacher education programs in conjunction with competencies important for teachers to attain. He identified three factors which accounted for 41% of total variance in the importance attributed to competencies. The three factors were science of movement, pedagogy, and coaching. Still, several scholars in sport pedagogy have documented a need to reassess objectives for professional preparation programs by recognizing the transient nature of important objectives across time (Annarino, 1979; Henschen, 1972; Southard, 1983).

The purposes of this investigation were twofold: (a) to categorize selected coursework in the curricula of teacher education programs according to the importance attributed to corresponding competencies that teachers should attain and (b) to determine the degree of perception placed upon the importance of the course and identified competencies for the program in physical education teacher education.

## **II. Methods**

### *Subjects*

The subject of this study were 160 full-time teacher educators in physical education in colleges and universities, 260 physical education teachers at junior and senior high schools, and 200 senior physical education major students (student teachers) who had completed 4 weeks of student teaching experience.

### *Instrument construction*

The instrument constructed for this study was a Competency Questionnaire. The Competency Questionnaire emerged from three sources: discussions with teacher educators regarding the importance of courses in physical education curricula; a recent copy of each institution's listing of physical education courses; and a review of literature (AAHPER, 1974; Bird-Arizmandi, 1983; Southard, 1983).

### *Scoring of data*

Respondents were asked to respond to the questionnaire concerning the importance of 22 selected courses and competencies for future teachers to attain. They rated each of the 22 competencies on a 7-point semantic differential scale. A rating of 1 indicated no importance, and a rating of 7 indicated very important for a physical education teacher to attain. The courses and competencies were placed in random order and no association was made among courses and related competencies.

### *Data collection*

Competency questionnaires were mailed to the subjects of this study. Usable questionnaires were returned by 620 (82%) of the respondents (160 faculties; 260 teachers; and 200 student teachers).

The reliability of the questionnaire was determined by half-split method. The use of the half-split method produced the reliability coefficient of .92 for the questionnaire of this study.

## **III. Results**

For the statistical analysis, a principal component factor analysis with varimax rotation was conducted on responses to the 620 competency questionnaires. The research design also included: a 3-way ANOVA with gender, school, and teaching experience for physical education teachers; a 2-way ANOVA with major and age for teaching faculties in universities or colleges; and a one-way ANOVA with gender for physical education major students. The data analysis were processed by the SPSS program of Vax 11 in the Computing Center at Seoul National University.

Table 1 presents the varimax rotated factor matrix. The analysis identified five factors, which had eigenvalues greater than 1. These factors accounted for 44.2% of total variance. Factor I, the science of movement, explained 63.3% of the common variance. The variables with higher loadings on this factor were competencies related to biomechanics, exercise physiology, anatomy, test and measurement in physical

education, psychology of sport, and readings in physical education.

Factor II has been identified as the Humanities and Social Science, and explained 16.7% of the common variance. The variables with higher loadings on this factor were competencies related to Sociology of Sport, Research Methods in Physical Education, Philosophy of Physical education, Administration of Physical Education, and History of Physical Education.

Factor III was designated as the Pedagogy area, and explained 8.8% of the common variance. The variables with higher loadings on this factor included competencies related to Curriculum in Physical Education, Teaching Methods in

**Table 1.** Varimax Rotated Factor Matrix

Variable	I	II	III	IV	V	Communality
Reading in Physical Education	.43	.15	.06	-.05	.02	.22
Curriculum in P.E.	.12	-.03	.55	.17	.17	.38
Teaching Methods in P.E.	.24	.07	.52	.30	-.10	.43
Psychology of P.E.	.46	.35	.26	.05	.04	.41
Lifetime Sports	.15	.14	.27	.29	.18	.22
Teaching Recreation	.14	.30	.46	.15	.32	.44
Exercise Physiology	.66	.18	.18	.07	.13	.52
Adapted Physical Education	.19	.24	.25	-.04	.38	.30
Health Education	.19	.34	.31	.11	.25	.33
Teaching First Aid	.30	.23	.26	.16	.09	.25
Coaching Theory	.31	.25	.16	.33	-.04	.29
Philosophy of P.E.	.39	.46	-.09	.03	.01	.38
Team Sports	.03	.03	.22	.81	.09	.72
Biomechanics	.67	.17	-.02	.22	.14	.55
Human Anatomy	.65	.14	.02	.14	.36	.59
Individual Sport	.21	.18	.18	.41	.16	.30
Administration of P.E.	.17	.46	.21	.15	.17	.33
Research Methods in P.E.	.39	.52	-.03	.14	.09	.45
Dance	.16	.09	.09	.11	.54	.34
History of P.E.	.28	.43	.06	.15	.37	.43
Tests & Measurement in P.E.	.48	.33	.17	.15	.18	.42
Sociology of Sports	.19	.64	.12	.06	.14	.39
Eigenvalue	6.08	2.00	1.33	1.11	1.04	
% of Common Variance	63.30	16.70	8.80	5.90	5.40	

Physical Education, and Teaching Recreation.

The competencies which loaded significantly on Factor IV were Team Sports and Individual Sports. Factor V was designated as Dance; this factor included only the competency related to Dancing.

Competencies loading significantly on the first factor, the Science of Movement, had low to moderate commonality coefficients ranging from .22 to .59. Competencies loading on the second factor, the Humanities and Social Science, had low commonality coefficients ranging from .30 to .45. The third factor, the Pedagogy area, had commonality coefficients ranging from .25 to .44. Competencies loading on the fourth factor, the Professional Activities, had low to moderately high commonality coefficients ranging from .30 to .72. The fifth factor, Dancing, had a low commonality coefficient of .34.

**Table 2.** Means and Standard Deviations of Scores for Importance of Competencies

Factors and Groups	N	M	SD
Factor I: Science of Movement	477	5.29	1.06
Faculty Members	130	5.84	0.08
Teachers	230	5.18	1.01
Senior Students	117	4.87	0.95
Factor II: Humanities & Social Science	484	4.93	1.02
Faculty Members	132	5.17	1.00
Teachers	237	4.90	0.96
Senior Students	115	4.72	1.10
Factor III: Pedagogy	493	5.54	1.00
Faculty Members	133	5.37	1.00
Teachers	238	5.76	0.90
Senior Students	133	5.30	1.12
Factor IV: Professional Activities	494	5.42	1.18
Faculty Members	133	5.35	1.13
Teachers	238	5.62	1.11
Senior Students	123	5.11	1.27
Factor V: Dance	497	4.75	1.71
Faculty Members	133	4.57	1.55
Teachers	240	4.83	1.78
Senior Students	124	4.80	1.74

Table 2 presents means and standard deviations of scores for importance of competencies. It is noteworthy to investigate how the three groups, i.e., faculty members, teachers, and students, differ from each other with reference to those five factors. For Factor I, Natural Science, faculty members showed highest values for importance of competencies, while students showed lowest values. The second factor, Humanities and Social Science, also shows the same trend with Factor I. Faculty members displayed the highest values, followed by teachers. Senior students (student teachers) scored the lowest values for importance of competencies.

Teachers scored highest in the third and fourth factors, the area of Pedagogy and the area of Professional Activities. Faculty members scored slightly higher than senior students in the third and the fourth factors. In addition, all three groups scored relatively high values in the area of Pedagogy ( $M = 5.54$ ) and the area of Professional Activities ( $M = 5.42$ ).

Table 3 presents a summary of analysis of variance of scores for importance of competencies. Factor I through Factor IV, the three groups of faculty members, teachers, and senior students were significantly different from each other ( $F = 6.49$  through  $31.68$ ;  $p < .001$ ). Although teachers showed the highest values for importance of competencies, there were no significant differences in the fifth factor, Dancing.

Table 4 presents a summary of the analysis of variance of scores for importance of competencies among faculty members. Neither main effects of major and age nor interaction effects of major and age were observed among faculty members.

A summary of the analysis of variance of scores for importance of competencies among teachers is presented in Table 5. For the areas of Natural Science, Humanities and Social Science, and Professional Activities, there were no significant differences according to gender, school, and/or career. For the area of Pedagogy, significant main effects were observed, which were mainly due to the significant difference of career. For the area of Dance, significant differences were observed according to gender or the type of school.

A comparison of male and female students' values for importance of competencies is presented in Table 6. For the two areas of Natural Science and Humanities and Social Science,

**Table 3.** Summary of Analysis of Variance of Scores for Importance of Competencies

Factors	SS	df	MS	F
<b>Factor I: Science of Movement</b>				
Between Group	62.7	2	31.4	31.7***
Within Group	469.2	474	0.99	—
Total	531.9	476	—	—
<b>Factor II: Humanities &amp; Social Science</b>				
Between Group	13.1	2	6.5	6.49***
Within Group	485.5	481	1.01	—
Total	498.6	483	—	—
<b>Factor III: Pedagogy</b>				
Between Group	22.6	2	11.3	11.7***
Within Group	478.0	490	0.97	—
Total	500.6	492	—	—
<b>Factor IV: Sports</b>				
Between Group	22.0	2	11.0	8.2***
Within Group	660.5	491	1.35	—
Total	682.5	493	—	—
<b>Factor V: Dance</b>				
Between Group	6.2	2	3.1	1.1
Within Group	1,445.9	494	2.6	—
Total	1,452.1	496	—	—

\*\*\*  $p < .001$ 

male student teachers scored significantly higher than their female counterparts. The opposite was true for the area of Dancing; female student teachers scored significantly higher than their male counterparts.

On the basis of the results obtained, the conclusions were drawn as follows: (a) A factor analysis identified five factors: the Science of Movement; Humanities and Social Science; Pedagogy; Teaching Sports; and Dance; (b) For the perception of importance of courses and competencies, there were significant

**Table 4.** Summary of the Analysis of Variance of Scores for Importance of Competencies among Faculty Members

Source of Variance	SS	df	MS	F
<b>Science of Movement</b>				
Main Effects	2.14	4	0.61	0.71
Major	0.14	1	0.14	0.16
Age	2.00	3	0.67	0.78
Interaction M × A	1.30	2	0.65	0.78
Residual	186.43	101	0.86	—
Total	189.8	107	0.84	—
<b>Humanities &amp; Social Science</b>				
Main Effects	4.34	4	1.10	1.11
Major	1.43	1	1.43	1.45
Age	2.68	3	0.89	0.90
Interaction M × A	1.45	2	0.72	0.73
Residual	99.76	101	0.99	—
Total	105.59	107	0.99	—
<b>Pedagogy</b>				
Main Effects	0.61	4	0.15	0.15
Major	0.04	1	0.04	0.04
Age	0.57	3	0.19	0.18
Interaction M × A	0.46	2	0.23	0.22
Residual	105.28	101	1.04	—
Total	106.34	107	0.99	—
<b>Professional Activities</b>				
Main Effects	6.96	4	1.74	1.46
Major	0.16	1	0.16	0.13
Age	5.63	3	1.88	0.56
Interaction M × A	2.07	2	1.04	0.87
Residual	120.87	101	1.20	—
Total	29.91	107	1.21	—
<b>Dance</b>				
Main Effects	9.01	4	2.25	0.92
Major	2.78	1	2.78	1.14
Age	4.27	3	1.42	0.59
Interaction M × A	11.96	2	5.98	2.46
Residual	245.88	101	2.43	—
Total	266.85	107	2.49	—



**Table 5.** Summary of the Analysis of Variance of Scores for Importance of Competencies among Teachers

Source of Variance	SS	df	MS	F
<b>Natural Science</b>				
Main Effects	1.59	8	0.20	0.20
Gender	0.15	1	0.15	0.15
School	1.09	5	0.22	0.22
Career	0.20	2	0.10	0.10
Residual	172.24	175	0.98	—
Total	173.83	183	0.95	—
<b>Humanities &amp; Social Science</b>				
Main Effects	3.82	8	0.48	0.55
Gender	0.14	1	0.14	0.16
School	.74	5	0.55	0.63
Career	0.97	2	0.49	0.56
Residual	151.54	175	0.87	—
Total	55.37	183	0.85	—
<b>Pedagogy</b>				
Main Effects	17.25	8	2.16	2.84**
Gender	1.75	1	1.75	2.30
School	7.49	5	1.49	1.96
Career	4.36	2	2.18	2.87**
Residual	132.7	175	0.76	—
Total	145.00	183	0.82	—
<b>Professional Activities</b>				
Main Effects	12.64	8	1.58	1.40
Gender	2.08	1	2.08	1.84
School	8.56	5	1.71	1.51
Career	0.47	2	0.23	0.21
Residual	98.10	175	1.13	—
Total	210.74	183	1.15	—
<b>Dance</b>				
Main Effects <sup>1</sup>	19.40	8	14.93	5.16**
Gender	18.98	1	18.98	6.56***
School	43.78	5	8.96	3.03*
Career	0.93	2	0.46	0.16
Residual	506.47	175	2.98	—
Total	625.86	183	3.42	—

\*p &lt; .05

\*\*p &lt; .01

\*\*\*p &lt; .001

**Table 6.** Comparison of Male and Female Senior Students' Scores for Importance of Competencies

Variance N	M	SD	F	
Natural Science				
Male	37	5.24	1.06	7.34**
Female	80	4.70	0.97	—
Humanities & Social Science				
Male	37	5.10	1.14	6.86**
Female	78	4.54	1.01	—
Pedagogy				
Male	40	5.14	1.31	1.21
Female	82	5.39	1.01	—
Professional Activities				
Male	39	5.21	1.22	0.38
Female	84	5.07	1.30	—
Dance				
Male	40	4.13	1.74	9.55**
Female	84	5.20	1.65	—

\*\*  $p < .01$ 

difference among three different subject groups.

#### IV. Discussion

The size of total variance indicates a factor's comprehensiveness and strength. The Movement of Science factor accounted for the largest percentage of total variance (38.5%). This fact may reflect the increase interest in science-related areas such as the so-called "Basic Stuff" by Bain, Trimble, Rothstein, and Mullan (1981). However, the value of science-related courses have been challenged. Several teacher educators have suggested that it is difficult to determine whether such courses will be effective in improving analytic teaching behavior concerning the acquisition of physical skills (Locke, 1972; Siedentop, 1972). The importance attributed to the science of movement competencies does not exclude such

potentials. However, if faculty members are to implement their beliefs related to important competencies, the teacher education programs should then emphasize more strongly the Science of Movement courses.

The fact that each group of the respondents significantly differs in their perception of importance to competencies related to Factor I through Factor IV, suggests that the faculty members, teachers, and student teachers are different from each other in their degree of interest regarding course offerings. The faculty members attributed more importance to competencies related to the Science of Movement factor than any other factors; teachers showed more interest in competencies related to the Pedagogy factors and the Teaching Sports factors; and senior students scored the least with the exception of the 5th factor, Dancing.

The findings of this study warrants further study which will investigate the reason why their perceptions were different and whether these discrepancies could be reduced. It may be that the differences of their perceptions related to the importance of competencies among the three groups is attributed to the fact that the faculty members included almost all the professors who were teaching at least one of the activity classes that are recommended for prospective teachers. The area of concern for many of the faculty members in this study were, strictly speaking, not the pedagogy field. The importance of "the area of sport pedagogy" needs to be re-evaluated and more emphasized to the prospective teachers. By doing so, the gap between practitioners (prospective teachers and inservice teachers) and researchers (professors) may be reduced.

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