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ABSTRACT

Limited literature on physical educator inservice education and training (INSET) needs provides little basis to design INSET programs for such specialized teachers. This study identified physical educators' perceived INSET needs and determined whether there were predictors of such needs. The sample consisted of 265 Alabama physical educators who responded to 16 demographic questions and a 5-factor, 30-item Professional Development Needs Questionnaire-Physical Education (PDNQ-PE), developed by the researcher. Data were analyzed using frequencies, means, and percents, with multiple regression analysis performed to determine whether predictor variables were statistically significant. The results indicated that physical educators' strongest INSET needs related to current issues and trends. Final mean rankings of INSET needs revealed preferences for several topics. INSET needs, on the five a priori scales, indicated that several variables significantly predict physical educator INSET needs. The findings support a desire for INSET that is designed to enhance instruction. Moreover, evidence suggests that select context and teacher variables have a relationship with teachers' INSET needs. Finally, an up-to-date, reliable, and valid INSET needs assessment instrument now exists for use in local systems. (Contains 5 tables of data, a copy of the Professional Development Needs Questionnaire-Physical Education, and 19 references.) (Author/JB)

Physical Educators' Inservice Needs and Variables That Predict Them

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Abstract

Literature regarding physical educator inservice education and training (INSET) needs is limited. Consequently, there is little basis on which to plan or design INSET programs for such specialized teachers. Thus, the purpose of the study was to identify physical educators' perceived INSET needs, and determine if there are predictors of such needs. The sample consisted of 265 Alabama physical educators who responded to 16 demographic questions and a 5-Factor, 30-Item Professional Development Needs Questionnaire--Physical Education (PDNQ-PE), developed by the researcher. Data were analyzed using frequencies, means and percents, with Multiple Regression Analysis performed to determine if predictor variables were statistically significant. The results indicated that physical educators' strongest INSET needs related to Current Issues and Trends. Final mean rankings of INSET needs revealed preferences for several topics. INSET needs, on the five apriori scales, indicated that several variables significantly predict physical educator INSET needs. The findings support a desire for INSET that is designed to enhance instruction. Moreover, evidence suggests that select context and teacher variables have a relationship with teachers' INSET needs. Finally, an up-to-date, reliable, and valid INSET needs-assessment instrument now exists for use in local systems.

Physical Educators' Inservice Needs and Variables that Predict them

Throughout teachers' professional careers they undergo growth. Whether there is acquisition of knowledge and skills, or adaptation to life in the work-place, growth occurs (Burden, 1980). Good teachers want to effectively convey knowledge and skills to students (Rink, 1993). Thus, school authorities have a responsibility to provide teachers with relevant personal and professional growth opportunities.

Inservice teacher education literature has provided information by which inservice content can designed and planned. Yet one defect of customary inservice programs is the disregard of teachers' concerns, needs, and preferences (Desmarais, 1992; Showers, Joyce, & Bennett, 1987). Impertinent programs are a waste of money and time because they do not respond to teachers' needs (Showers et al., 1987; Wood & Thompson, 1980). Moreover, the National Education Association (NEA) states that teachers must receive *meaningful* inservice programs. The NEA further recommends that teachers have solid input at all levels of "planning, implementation and evaluation" of inservice programs (NEA Today, 1993 p.30).

Numerous definitions exist regarding inservice, but since physical education is comprised of affective, cognitive, health/fitness and psycho-motor knowledge and skills, the concepts of education and training should not be separated, as suggested by Lawrie (1990). Thus, the definition offered by Bolam (cited in Eraut, 1987 p. 730) is possibly most suitable. Bolam refers to Inservice Education and Training (INSET) as:

> those education a. d training activities engaged in by primary and secondary school teachers and principals, following their initial professional certification, and intended mainly or exclusively to improve their professional knowledge, skills, and attitude in order that they can educate children more effectively.

Though preservice education is likely the most vital stage of teacher education, education does not end upon completion of a bachelors degree or fifth-year alternative masters program (Heath, 1974, Rubin, 1975, Runyan, 1990). Teacher development is

career-long and knowledge/ skills must expand so that societal, technological, and field-based advances do not bypass the professional. Teachers can remain current in their field throughout a career by undergoing periodic INSET that corresponds to needs-assessment (Bloom & Jorde-Bloom, 1987).

INSET of classroom teachers has long been a focus of needs-based research (e.g., Brimm & Tollett, 1974). However, implications of classroom teacher INSET has few benefits for physical educators. Because classroom-oriented INSET is irrelevant for physical educators, it is important to determine what INSET needs they perceive as vital. Oliver (1987) states that teacher characteristics (e.g., age, gender, etc.) are also critical to understanding teachers' INSET needs. The contention is that research should focus more on how school-related attributes affect physical educators' INSET needs. Other scholars suggest that context (i.e., community, school, and student) variables influence teachers' INSET needs as well (Cruikshank, Lorish, & Thompson, 1979). Mayeske (1969) feels that schools and communities are inextricably linked, noting that ethnic/racial make-up of a school's students is vital to teachers' instructional approach, ultimately affecting INSET needs. Aylen (1978) notes that socio-economic-status (SES) of a community can also influence the INSET topics that teachers require. He maintains that teachers' recent inservice activity may can affect INSET needs, in addition to class sizes with which teachers must work.

The National Center for Education Statistics (NCES, 1993) reveals several related vital statistics. That report indicates that amount of inservice undergone by teachers over the previous two years is of importance. This is consistent with other literature which estimates that teachers should begin a new cycle of INSET about every five years. If teachers have had limited INSET during the past two years they may be stagnant personally and professionally. INSET is important for many reasons. One reason reported by the NCES is that teachers must meet new advancement and credentialing standards currently being adopted by many school systems nationwide.

They also note that awareness of community SES and percentage of non-white students in schools is vital to educators effectively working with diverse student populations.

Few researchers have investigated physical educators' needs, or what teacher, or community-school-student characteristics best predict INSET needs. Thus the purpose of this study was three-fold. One purpose was to develop a relevant and modern tool for physical educator INSET needs-assessment. A second intent was to provide a convenient and reliable source for school systems to collect to data regarding physical educator INSET needs. Finally, a third purpose was to learn what variables (teacher and community-school-student) best predict physical educators' INSET needs.

Methods and Procedures

Pilot-test

The Professional Development Needs Questionnaire (PDNQ-PE) used to collect data was a revision of an existing instrument developed by Oliver (1983) to identify physical educators' "preferences and needs for inservice activities." Oliver's questionnaire was initially pilot-tested by State Physical Educator of the Year nominees from 1991 through 1993, which is awarded by the Alabama State Association for Health, Physical Education, Recreation and Dance (ASAHPERD). Nominees for this award were representative of each school level (i.e., elementary, middle, and secondary).

The original 25 item instrument was completed by 15 respondents. Teachers were instructed to rate items regarding appropriateness for physical educators at their particular school-level. The 5-point scale was: 1 = No Need, 2 = Little Need, 3 = Moderate Need, 4 = Strong Need, or 5 = Extreme Need. Space was also provided for adding topics, for consideration, which Oliver (1983) did not include in his study.

Pilot-testing led to deletion of three items from the original document due to perceived inappropriateness by reviewers. All items receiving a computed response-mean of 3.50 or higher were considered acceptable through Stage 1 of the pilot-test.

Stage 2 of the pilot-test consisted of computing a ONEWAY ANOVA, which revealed no statistically significant differences between school-levels, on each individual item. The ANOVA helped ensure that the instrument was valid, regardless of grade-level taught by potential subjects.

The third validation stage included re-wording some initial items, to reflect the consensus of reviewer comments from Stage 1. Three items, similar to those deleted, were added to the instrument based on reviewer feedback. Finally, five totally new items were added to the PDNQ-PE which were commonly-shared by reviewers. Interestingly, three of the four lowest-rated items reported by Oliver (1987) were deleted from the PDNQ-PE based on perceived irrelevance by Stage 1 reviewers.

The revised PDNQ-PE was further reviewed for *face* and *content validity* in two phases. It was screened first at a ASAHPERD Board of Directors meeting, whereupon it was deemed appropriate for assessing physical educators' INSET needs. Furthermore, the PDNQ-PE was examined by four experts having special skill in research design and knowledge of physical education and pedagogy. Following the previous procedures, all existing items were grouped into five apriori categories, although they were not listed as such on the instrument itself.

Instrument

The PDNQ-PE contained 17 demographic questions, one of which (i.e., school-level) had a predetermined answer, via color-coded surveys. Only variables showing promise (according to research literature) as predictors were included, with one exception: "*Region* of the state where teachers work," which was included for reporting summary findings to interested parties. The 30-item needs-assessment tool was rated on a 5-point Likert-type scale (e.g., 1 = No Need, 5 = Extreme Need). Subjects were also asked to offer any INSET needs not covered in the instrument. The PDNQ-PE contained five sub-scales consisting of six items each. The sub-scales dealt with the

following themes: a) Items 1-6= Teacher Knowledge and Skills (TKS); b) Items 7-12= Psycho-Social Aspects of physical education (PSA); c) Items 13-18= Curriculum/Evaluation/ Supervision (CES); d) Items 19-24= Instructional Strategies (STR); and, e) Items 25-30= Current Issues and Trends (CIT). The PDNQ-PE is shown in the Appendix.

Subjects

Color-coded (by school-level) questionnaires were mailed to 500 physical educators throughout Alabama. The stratified sampling procedure consisted of percentages proportionate to the population of 1992-93 Alabama physical educators (at the time of the study it was the most recent data available from the Alabama State Department of Education). The initial sample included: 145 elementary (29%); 165 junior high/middle (33%); and, 190 secondary (38%) physical educators. The actual number of participants numbered 81 elementary (30.6%), 95 junior high/middle (35.8%), and 89 secondary (33.6%) school physical educators, with a total of 265 teachers responding.

Two weeks following the initial mailings, postcards were mailed to subjects, thanking those who had responded and encouraging prompt returns from others. At the end of four weeks, using confidential tracking numbers, non-respondents were given follow-up phone calls at their school. It was then learned that *at least* 72 of the subjects had either retired or transferred schools. Thus, retirees and transferees were not considered when the response-rate was computed.

Of the confirmed 428 possible subjects, 265 questionnaires were received (a 61.9% response-rate). A breakdown of teacher demographics are shown in Table 1; and, Community-School-Student Characteristics are presented in Tables 2 and 3.

Insert Tables 1 Through 3 About Here

Data Analysis

Analysis of data began by computing alpha coefficients for each sub-scale, and the overall instrument, as identified in Table 4. The PDNQ-PE was found both reliable and valid for INSET needs-assessment, yielding reliability estimates of .79 to .86 for the five sub-scales. The overall internal consistency reliability was estimated at .95.

Insert Table 4 About Here

Second, descriptive information was computed for non-continuous variables on each sub-scale of the PDNQ-PE. Criterion coding of variables consisted of recoding each level of the categorical variables with the mean of the dependent variable. This permitted treating all variables as continuous in the two performed regressions. The two regression blocks were created to help determine what variables were significantly significant for predicting the five dependent variables. Block 1 variables were those previously labeled as teacher demographics. Community-School-Student Characteristics, also shown above, were analyzed as Block 2. Backward Regression Analysis was computed for each sub-scale, whereby variables were entered into the equations and then removed at the "*P*-out" .100 level. Variables remaining in the final equations were significant when *t*-values resulted at the $p < 0.10$ level.

Results

Inservice Needs

Teachers indicated strongest perceived INSET needs in the pre-named Current Issues and Trends (CIT) domain. Table 5 presents the rank-ordered means, overall

item-means, and percentage of subjects responding that needs were "moderate," or "strong/extreme."

Insert Table 5 About Here

Though teachers preferred several INSET topics, more than 80% of the sample indicated that CIT items were at least "moderate" needs. The CIT sub-scale received powerful responses. The three greatest CIT needs were: "Fitness-testing strategies that motivate students to develop lifetime-wellness" (item 28); "implementing a wellness-oriented PE program" (item 29); or, "Methods for fitness-testing large classes" (item 30).

Another expressed need (84.5%) was obtaining modern equipment at modest expense (item 25). Moreover, teachers (83%) wanted to know more about development and use of media resources with their classes (item 26). And, over 80% of the respondents desired INSET on "grant availability and writing grant proposals" (item 27). Ability to secure grants could help teachers procure needed equipment and facilities for their physical education programs, needs depicted in Items 25 and 26.

Items grouped in the Teacher Knowledge and Skills (TKS) area typically received response in the lower tier of rankings. One exception was Item 1, which regarded "Learning innovative PE activities that are fun and positive for students". This statement yielded a higher favorable response (95.5%) than any other, and was the second highest mean-rated. Though five items in this domain related to knowledge and skills acquirable in preservice years, one (item 1) implied new concepts which might be of interest to students.

The Psycho-Social Aspects (PSA) sub-scale contained three statements (items 7, 10, and 12, respectively) receiving favorable rankings of fifth, and two tied for eighth. Over 87% of the subjects desired INSET related to Item 10, "motivating students in PE". About 84% of the participants believed they needed INSET relative to "Dealing with the

social forces that affect student existence, life, and survival" (item 7). And, about 85% felt a need to learn more about how physical education could develop greater student self-concept (item 12).

Over 50% of the respondents perceived a need for inservice concerning all 30 PDNQ-PE items. More than 70% of the participants indicated "moderate" to "extreme" needs on all items (with the exception of Items 15, 22, and 21). Item 15 regarded supervision and evaluation of "student teachers, parent volunteers, or teaching aides". The low rating may be due to teachers having no access to such persons.

Item 22 possibly received a low positive response due to the omission of required physical education in secondary schools. Moreover, small schools, having limited physical education staffs, could have contributed to this result. "Team teaching", also, may not be an option for physical educators in such situations.

Although over two-thirds of the sample had athletic coaching duties, "Coaching techniques and strategies" (item 21) yielded a poor response. Non-coaches may have hurt the overall level of need. Or more likely, coaches may feel they possess an adequate knowledge-level in this area.

Predictors of Inservice Needs

Multiple Regression Analysis (MRA) revealed many relationships relative to teacher characteristics (TEAC's) and community-school-student characteristics (CSSC's). The TEAC of "Inservice hours during the past two years" was a significant predictor on each sub-scale. "Percent of daily time as a physical educator" also was identified as a significant predictor of INSET needs in three domains, CES, STR, and CIT. Other significant TEAC's are shown in Table 6. Teacher experience and coaching duties did not reach statistical significance.

Insert Table 6 About Here

MRA of Block 2 (CSSC) variables revealed several significant predictors, as shown in Table 7. The most prevalent predictor was that of "School Size" where teachers work as it contributed significantly in all five sub-scales. Other CSSC variables prominently found as significant predictors included: "School Level, Percent of Minority Students in the School, and Typical Student Skill Level". School type or location (i.e., Rural/Small Town, Suburban, Urban) was a significant predictor for only the STR sub-scale.

Insert Table 7 About Here

PDNQ-PE Teacher Comments

Eighteen teachers chose to provide qualitative input following their questionnaire response, producing further information concerning INSET needs. Comments covered an array of themes.

Five teachers discussed "overcrowded-classes", indicating a solid need at each school-level. Three teachers stated a need for learning more, "safe, large-group activities." Another teacher remarked that INSET is needed on how to deal with "overcrowded classes" including "EC" boys. Still another teacher expressed a need for INSET concerning classes with up to 70 students and containing several children with "Attention Deficit Disorder".

Topics listed by participants who taught at the elementary level were. Re-learning long-forgotten activities and skills; Safety-measures for out-dated equipment and facilities; Motivating students when the school does not provide for assigning "real

grades in PE", gaining parental support for such programs; Activities for elementary students in the absence of a gym or multi-purpose room; Higher education faculty sponsoring economical INSET; Obtaining money to attend good INSET; and, Obtaining money for equipment and facilities.

Middle school and secondary teacher topics included the following: Learning effective discipline-measures; School Law and physical education; How to get a 4-year requirement for secondary physical education; Selecting good textbooks for physical education; Teacher physical fitness; Finding a physical fitness test that builds student-esteem, and is more realistic; Evaluating students with, and teaching students to use, modern equipment; New methods for teaching proper hygiene; Having more INSET for middle school and secondary teachers, and not so much for primary teachers; and, Coaching middle-school students.

Discussion

Can meaningful INSET programs be designed and planned that respond to physical educators' distinct INSET needs? Present results indicate that this is possible. Since many teachers in this study hold post-baccalaureate degrees, it is probable that they realize the importance of maintaining their professional knowledge and skills. Further evidence supports teachers solidly favoring INSET topics labeled (unknown to the sample) as Current Issues and Trends.

Information from this research builds upon knowledge instituted by Oliver (1983, 1987), in that there is a credible interaction between teachers, their CSSC's, and their INSET needs. Although Oliver's findings concern teacher characteristics that predict INSET needs, the current study was conducted to determine the influence of TEAC's, and context variables which might also predict physical educator INSET needs. With the newly-developed scales, it was found that physical educators desire to learn more about certain topics.

Teachers prefer to receive INSET addressing not only the fitness-testing of large classes, but how to teach their classes in ways that emphasize lifetime wellness. Other popular items were those dealing with obtaining new equipment, using media to enhance teaching/learning, and getting grants to fund program growth.

Physical educators in this study seemed concerned for their students, not just health-wise, but also their psychological well-being. Response-patterns indicated that teachers are concerned about effective discipline in the physical education setting, which may be influenced by the aggregate of social forces facing today's youth. Moreover, amidst the psycho-social aspects of physical education, teachers perceived a need to participate in INSET that would help them facilitate positive student self-concept. Furthermore, the high percentage of respondents desiring to learn new and fun activities for students indicated this was a high-priority need as well. Physical education is a socializing discipline, and teachers want to help students function socially, increase their self-esteem, and help them learn to compete in positive recreational activities.

Several teacher variables have been identified as predictors of INSET needs (Oliver, 1987). He further noted that many contextual predictors may exist relative to teachers' INSET needs. In the presence of assorted community-school-student characteristics, teacher variables seem less influential in predicting needs.

Significant predictors identified in this needs-assessment expand the knowledge-base and should permit planning of more relevant programs for physical educators. Perhaps teacher-involvement in planning will foster greater teacher interest and enjoyment in INSET. The instrument reported here gives INSET planners a reliable and valid instrument for frequent needs-assessment and designing INSET.

In an age of education reform, it is unacceptable to busy teachers with irrelevant INSET, and waste precious funds. Addressing issues that engender teacher growth and lead to innovative practices in physical education can produce student pleasure in, and benefits from, the total school program. I recommend that public school officials

collaborate with higher education representatives to devise pertinent programs that address physical educators' needs and the problems they encounter. I further suggest that a "state grants program" be initiated to help physical educators obtain modern equipment, facilities, and technology their students can use. Finally, local school systems should develop a comprehensive needs-assessment program, permitting progressive INSET for this unique group of educators. School systems should develop ongoing INSET programs, with periodic meetings throughout the year. The possibilities for improving the school program are endless, with a proper emphasis placed on applicable physical educator INSET.

References

Aylen, D. (1978, March). Situations and characteristics related to the adoption and implementation of innovative practices. Paper presented at the annual meeting of the American Educational Research Association, Toronto, Canada. (ERIC Document Reproduction Service No. ED 153 318)

Bloom, D., & Jorde-Bloom, P. (1987). The role of higher education in fostering the personal development of teachers. *College Student Journal, 21*, 229-240.

Brimm, J. L., & Tollett, D. J. (1974). How do teachers feel about in-service education? *Educational Leadership Supplement, 31*, 521-525.

Burden, P. R. (1980). Teachers' perceptions of the characteristics and influences on their personal and professional development. Manhattan, Kansas. (ERIC Document Reproduction Service No. ED 198 087)

Cruikshank, D. R., Lorish, C., & Thompson, L. (1979). What we think we know about inservice education. *Journal of Teacher Education, 30*, 27-31.

Desmarais, J. (1992). Teachers' opinions of the characteristics of good inservice programs as suggested in current research. (ERIC Document Reproduction Service No. ED 354 592)

Eraut, M. (1987). Inservice. In Dunkin, M. J. (Ed.). *The international encyclopedia of teaching and teacher education*. Oxford: Pergamon Press.

Heath, E. J. (1974). In-service training: Preparing to meet today's needs. *Academic Therapy, 9*, 267-280.

Lawrie, J. (1990). Differentiate between training, education and development. *Personnel Journal, 69*(10), 44.

Mayeske, G. W. (1969). A study of our nation's schools: A working paper. Office of Education, Department of Health, Education and Welfare, Washington, DC. (ERIC Document Reproduction Service No. ED 036 477)

National Center for Education Statistics (NCES). (1993). *America's teachers: Profile of a profession*. Washington, DC: U.S. Government Printing Office.

NEA Today, Staff (1993, September). Resolutions. *NEA Today, 12*(2), 30.

Oliver, B. (1983). Addressing a unique audience: Inservice needs of physical educators and coaches. *NASSP Bulletin, 67*(461), 55-59.

Oliver, B. (1987). Teacher and school characteristics: Their relationship to the inservice needs of teachers. *Journal of Teaching in Physical Education, 7*, 38-45.

Rink, J. (1993). Teaching physical education for learning (2nd ed.). St. Louis: Mosby-Year Book.

Rubin, L. J. (1975). The case for staff development. In Sergiovanni, T. J. (Ed.), Professional supervision for professional teachers (pp. 34-38). Alexandria, VA: Association for Supervision and Curriculum Development.

Runyan, C. K. (1990). No more isolated Cindarellas at the swimming hole: A call for needs-based developmental induction. Paper presented at the annual conference of the National Council of States on Inservice Education, Orlando, Florida. (ERIC Document Reproduction Service No. ED 327 535)

Showers, B., Joyce, B., & Bennett, B. (1987) Synthesis of research on staff development: A framework for future study and a state-of-the-art analysis. *Educational Leadership, 45*(3), 77-87.

Wood, F. H., & Thompson, S. R. (1980). Guidelines for better staff development. *Educational Leadership, 38*, 374-378.

Table 1. * Number and Percentage distribution of selected categorical teacher characteristics.

Variable	Level	Number	Percent
TOTAL		265	100.0
Teaching Experience			
	1- 3 years	21	07.9
	4- 9 years	50	18.9
	10-19 years	113	42.6
	20 or more years	77	29.1
Teacher Age			
	20-29 years	35	13.2
	30-39 years	112	42.3
	40-49 years	101	38.1
	50 years or over	16	06.0
Teacher Gender			
	Male	138	52.1
	Female	127	47.9
Highest Degree Earned			
	Bachelors	94	35.5
	Masters	143	54.0
	Ed.S/AA	25	09.4
	Ed.D/Ph.D	2	00.8
Coaching Duties			
	No	88	33.2
	Yes	177	66.8
Percent of Day as Physical Educator			
	1- 20	30	11.3
	21- 40	20	07.5
	41- 60	37	14.0
	61- 80	34	12.8
	81-100	138	52.1
Number of Inservice Hours During Past Two Years			
	Zero	21	07.9
	1-20	103	38.9
	21-40	80	30.2
	41-60	36	13.6
	61-80	9	03.4
	81 or more	13	04.9

Note * All numbers and percents do not total 265 or 100% due to some subjects ommitting data for a given categorical variable.

Table 2. * Number and Percentage distribution of selected categorical community-school-student characteristics.

Variable	Level	Number	Percent
TOTAL		265	100.0
Percent of Perceived Input about Inservice Content			
	Zero	92	34.7
	1- 20	105	39.6
	21- 40	29	10.9
	41- 60	22	08.3
	61- 80	6	02.3
	81-100	3	01.1
School System Management			
	City	101	38.1
	County	163	61.5
School Type			
	Rural/Small Town	145	54.7
	Suburban	62	23.4
	Urban	55	20.8
School Size (Student Enrollment)			
	1-137	11	04.2
	138-204	16	06.0
	205-272	11	04.2
	273-375	24	09.1
	376-643	80	30.2
	644 or more	122	46.0
School Level			
	Elementary	81	30.6
	Jr. High/Middle	95	35.8
	Secondary	89	33.6
# Regional Location of School in Alabama			
	Southwest	25	09.4
	Southeast	17	06.4
	Westcentral	30	11.3
	Eastcentral	22	08.3
	Central	65	24.5
	East	28	10.6
	Northwest	22	08.3
	Northeast	56	21.1

Note * All numbers and percents do not total 265 or 100% due to some subjects omitting data for a given categorical variable.

Note # Regions of State correspond to the Alabama High School Athletic Association's District Mapping.

Table 3. * Number and Percentage distribution of selected categorical community, school, and student characteristics.

Variable	Level	Number	Percent
TOTAL		265	100.0
Estimated Percent of Minority Students in Teacher's School			
	1- 20	108	40.8
	21- 40	69	26.0
	41- 60	46	17.4
	61- 80	18	06.8
	81-100	19	07.2
Estimated Typical Family Income for School's Community			
	Less than $15,000	44	16.6
	$15,000-$24,999	103	38.9
	$25,000-$34,999	68	25.7
	$35,000-$49,999	22	08.7
	$50,000-$74,999	14	05.3
	$75,000 or more	4	01.5
Typical Number of Students Taught per PE Class			
	1-19	6	02.3
	20-29	41	15.5
	30-39	83	31.3
	40-49	73	27.5
	50 or more	59	22.3
Estimated Physical Skill Level of Students in Teacher's PE Classes			
	Very Low	8	03.0
	Moderately Low	39	14.7
	Average	174	65.7
	Moderatley High	38	14.3
	Very High	3	01.1

Note * All numbers and percents do not total 265 or 100% due to some subjects omitting data for a given categorical variable.

Table 4. Alpha Internal Consistency Reliabilities for the Overall Questionnaire and the Apriori Scales of the Professional Development Needs Questionnaire--Physical Education (PDNQ--PE).

Apriori Scales	Item Numbers	Alpha Reliabilities
Teacher Knowledge and Skills	1 - 6	.86
Psycho-Social Aspects of PE	7 - 12	.85
Curriculum/Supervision/Evaluation	13 - 18	.86
Strategies	19 - 24	.79
Current Issues and Trends	25 - 30	.82
Overall Questionnaire	1 - 30	.95

Table 5. * Respondents indicating "Moderate" or "Strong/Extreme" Needs by Percent and Mean, and Final Overall Ranking (N = 265).

Scale Item	% (3)	% (4-5)	Mean	Final Mean Rank
Teacher Knowledge and Skills				
1. Innovative Activities	24.2	71.3	3.97	(2)
2. Ability Grouping	39.6	38.1	3.23	(22)
3. Scientific Principles	38.8	34.0	3.09	(28)
4. Individualized Instruction	36.9	44.2	3.34	(17)
5. Teaching Skills	32.9	41.1	3.22	(23)
6. Observational Skills	38.5	35.5	3.14	(27)
Psycho-social Aspects				
7. Social Forces	33.3	50.9	3.51	(8)
8. Feedback and Reinforcement	40.0	34.7	3.17	(26)
9. Counseling Skills	40.4	39.2	3.25	(18)
10. Motivating Students	22.6	65.3	3.77	(5)
11. Discipline Procedures	23.4	50.9	3.39	(12)
12. Student Self-concept	32.8	52.1	3.51	(8)
Curriculum/Evaluation/Supervision				
13. Student Evaluation	41.6	42.6	3.36	(15)
14. Self Evaluation	36.6	40.8	3.25	(18)
15. Personnel Supervision	32.5	29.8	2.85	(30)
16. Curriculum Evaluation	36.2	45.3	3.37	(14)
17. Curriculum Models	37.0	38.1	3.19	(24)
18. Designing Curricula	35.1	46.8	3.42	(11)
Strategies				
19. Inclusion Strategies	32.5	46.4	3.35	(16)
20. Coeducation Strategies	29.8	44.5	3.25	(18)
21. Coaching Strategies	26.0	43.4	3.18	(25)
22. Team-teaching Strategies	29.1	39.2	3.09	(28)
23. Teaching Styles	35.9	48.3	3.39	(12)
24. Involving Parents	31.7	44.5	3.25	(18)
Current Issues and Trends				
25. Technological Equipment	28.3	56.2	3.58	(7)
26. Media Use	34.3	48.7	3.43	(10)
27. Grant Proposals	21.2	59.2	3.60	(6)
28. Fitness Strategies	18.1	77.0	4.06	(1)
29. Wellness Program	23.4	68.7	3.89	(3)
30. Large-class Testing	19.6	69.1	3.88	(4)

Note * 1=No Need 2=Little Need 3=Moderate Need 4=Strong Need 5=Extreme Need.

Note # Frequencies do not total 100% due to the omission of Options (1) "No Need", and (2) "Little Need".

Table 6. Regression Analyses of Teacher Characteristics on the Five Scales.

Variable	Scale 1 TKS b	t	Scale 2 PSA b	t	Scale 3 CES b	t	Scale 4 STR b	t	Scale 5 CIT b	t
Block A										
1	n/s		n/s		n/s		n/s		n/s	
2	n/s		n/s		n/s		.17	2.90[b]	n/s	
3	n/s		n/s		n/s		-.12	-1.96[@]	n/s	
4	n/s		n/s		.14	2.32[a]	n/s		n/s	
5	n/s		n/s		n/s		n/s		n/s	
6	n/s		n/s		.14	2.28[a]	.16	2.63[b]	.20	3.32[b]
7	.20	3.25[b]	.14	2.26[a]	.22	3.68[c]	.17	2.82[b]	.22	3.68[c]
Mult.R =	.20		.14		.29		.34		.29	
R^2 =	.04		.02		.09		.11		.09	
F =	10.58[b]		5.11[a]		7.78[c]		7.81[c]		11.68[c]	

Note n/s = non-significant variable for given scale.

Note [@] $p < .10$. [a] $p < .05$. [b] $p < .01$. [c] $p < .001$.

Note Scales
TKS = Teacher Knowledge and Skills
PSA = Psycho-Social Aspects of Physical Education
CES = Curriculum, Evaluation, and Supervision
STR = Strategies for Instruction
CIT = Current Issues and Trends

Note Variables
1 = Teaching Experience
2 = Teacher Age
3 = Teacher Gender
4 = Highest Degree Earned
5 = Athletic Coaching Duties
6 = % Time as Physical Educator
7 = # of Inservice Hours for Past Two Years

Table 7. Regression Analyses of Community, School, and Student Characteristics on the Five Scales.

Variable	Scale 1 TKS b	t	Scale 2 PSA b	t	Scale 3 CES b	t	Scale 4 STR b	t	Scale 5 CIT b	t
Block B										
8	n/s		.14	2.33[a]	n/s		n/s		.15	2.39[a]
9	n/s		n/s		n/s		n/s		n/s	
10	n/s		n/s		n/s		.14	2.22[a]	n/s	
11	.19	3.19[b]	.15	2.41[a]	.23	3.84[c]	.25	4.12[c]	.16	2.68[b]
12	.13	2.17[a]	.16	2.72[b]	.10	1.72[@]	.15	2.45[a]	n/s	
13	.15	2.39[a]	.15	2.42[a]	.14	2.29[a]	n/s		.15	2.46[a]
14	n/s		.13	2.03[a]	n/s		n/s		.10	1.70[@]
15	n/s		.12	1.92[@]	n/s		n/s		.12	2.01[a]
16	.18	3.01[b]	n/s		.18	3.01[b]	.12	1.99[a]	.13	2.17[a]
Mult. R=	.35		.38		.36		.35		.36	
R^2 =	.12		.15		.13		.12		.13	
F =	8.15[c]		6.87[c]		8.95[c]		8.42[c]		6.04[c]	

Note n/s = non-significant variable for given scale.

Note [@] $p < .10$. [a] $p < .05$. [b] $p < .01$. [c] $p < .001$.

Note Scales
TKS = Teacher Knowledge and Skills
PSA = Psycho-Social Aspects of Physical Education
CES = Curriculum, Evaluation, and Supervision
STR = Strategies for Instruction
CIT = Current Issues and Trends

Note Variables
8 = % of Inservice Input
9 = School System
10 = School Type (location)
11 = School Size
12 = School Level
13 = % Minority Students
14 = Family Income
15 = (Per PE Class-- Average # of Students)
16 = Student Skill Level

Professional Development Needs Questionnaire--Physical Education

(*sample copy*)

Directions=Mark an "X" through the number representing your professional development needs.

1= No Need 2= Little Need 3= Moderate Need 4= Strong Need 5= Extreme Need

1) Learning innovative PE activities that are fun and positive for students	1 2 3 4 5
2) Acquiring knowledge about the use of ability grouping	1 2 3 4 5
3) The use of scientific principles in teaching PE	1 2 3 4 5
4) Developing skills for individualizing instruction programs	1 2 3 4 5
5) Improving my activity skills so I can teach better	1 2 3 4 5
6) Developing observational skills for use in diagnosing student skill errors	1 2 3 4 5
7) Dealing with the social forces that affect student existence, life, and survival	1 2 3 4 5
8) Administering feedback and reinforcement to students	1 2 3 4 5
9) Developing empathetic counseling/intervention skills	1 2 3 4 5
10) Techniques for motivating students in PE	1 2 3 4 5
11) Developing effective student discipline procedures	1 2 3 4 5
12) Using physical education to develop student self-concept	1 2 3 4 5
13) Developing and using student evaluation instruments for improving my teaching	1 2 3 4 5
14) Developing self-evaluation skills for improving my teaching	1 2 3 4 5
15) Supervising and evaluating student teachers, parent volunteers, or teaching aides	1 2 3 4 5
16) Curriculum improvement, implementation, and evaluation	1 2 3 4 5
17) Using "curriculum models" in PE	1 2 3 4 5
18) Designing curricula resulting in maximum student success and optimal evaluation	1 2 3 4 5
19) Diagnostic and prescriptive instructional strategies for "inclusion" (mainstreaming) of disabled students	1 2 3 4 5
20) Instructional strategies for "coed" activities	1 2 3 4 5
21) Coaching techniques and strategies	1 2 3 4 5
22) Team teaching strategies	1 2 3 4 5
23) Using "multiple" teaching styles and strategies	1 2 3 4 5
24) Strategies for involving parents in the schooling process	1 2 3 4 5
25) Economically acquiring and using technologically advanced equipment	1 2 3 4 5
26) Developing and using media in physical education	1 2 3 4 5
27) Learning of grant availability and writing grant proposals	1 2 3 4 5
28) Fitness-testing strategies that motivate students to develop lifetime wellness programs	1 2 3 4 5
29) Teaching skills for implementing a wellness-oriented PE program	1 2 3 4 5
30) Methods for fitness-testing large classes	1 2 3 4 5

Other professional development needs I have are: