

EXAMINING THE FACTORS AFFECTING STUDENT TEACHERS' ATTITUDES TOWARD LEARNING PHYSICAL EDUCATION

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Abstract

The purpose of the study was to examine the factors affecting student teachers' attitudes toward learning physical education. A mixed research method was applied. 184 student teachers from eight Education Degree Colleges participated in the quantitative study. In the qualitative study, twenty-four student teachers and four physical education teachers from three Education Degree Colleges participated. Interview questions were developed based on the results of the quantitative study. Descriptive statistics, independent samples *t* test, one-way ANOVA, and multiple comparison analyses were used to analyze the data. The quantitative results indicated that student teachers' personal factors and teacher-related factors highly affected and school-related factors moderately affected student teachers' attitudes toward learning physical education. Volleyball players' perceptions of school-related factors were higher than football players ($t = -2.30, p < .05$). Significant differences were found in student teachers' perceptions of school-related factors ($p < .001$), and teacher-related factors ($p < .001$) in terms of their education degree colleges. In qualitative results, there were inadequate qualified and experienced physical education teachers, facilities, and sports equipment. The results of the study recommended that sufficient skilled and experienced physical education teachers, facilities, and sports equipment improve student teachers' attitudes toward learning physical education.

Keywords: attitudes, factors, physical education.

Introduction

Physical education is an educational process through the assistance of learning experiences for learners in the form of physical activities, games, and sports that are consistently prepared to encourage the improvement of physical, organic, motor skills, thinking skills, emotional, social, and moral (Yoda et al., 2021). Attitudes toward physical education are crucial variables that play a major part in learning (Sedai, 2012).

Besides, the student teachers' attitudes can be affected by many factors such as family, teachers, schools, and community (Yimer, 2014). Moreover, the physical facilities and sports equipment of the school have a variety of effects on teachers, students, and the teaching-learning process of physical education subject. Then, time has a diverse effect on the extent of participation by student teachers in the type of activities that can be offered and the student teachers' outcomes that can be experienced (Mossisa, 2021). Therefore, factors affecting student teachers' attitudes toward learning physical education were needed to examine in the learning physical education.

Significance of the Study

In recent years, the educational process has been reformed to create a better image and to achieve more effective education at the Department of Teacher Education in Myanmar. Physical education subject is included as a compulsory subject in the two-year course (Diploma in Teacher Education) as well as a core curriculum in the four-year teacher education of Education Degree College. Student teachers have to study academic standards equivalent to primary and secondary school levels to ensure a strong subject proficiency foundation for being effective teachers of the basic education sector.

According to the new curriculum of physical education, student teachers require the knowledge and skills of physical education subject thoroughly and they also need to develop positive attitudes toward learning physical education. In this way, they can teach physical education subject by modeling the values and attitudes. Student teachers desire to understand the concept, theory, and practice of physical education and how to apply them in the teaching and learning process and real-life situations.

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Currently, there are a large number of student teachers from the first year to the fourth year in Education Degree Colleges and inadequate physical education teachers for some Education Degree Colleges. Some physical education teachers who teach physical education do not match the subject they are assigned. So, they cannot apply new techniques and strategies for theory and practice. Moreover, some physical education teachers are facing such difficulties as shortage of time, insufficient facilities and equipment, large class sizes, and heavy teaching loads in achieving physical education objectives.

Due to determinant factors that might contribute to student teachers' attitudes toward learning physical education, the research is going to examine the factors affecting student teachers' attitudes toward learning physical education at Education Degree Colleges.

Research Objectives

The general objective of the study is to examine the factors affecting student teachers' attitudes toward learning physical education.

Specific Objectives

- To find out the major factors that affect student teachers' attitudes toward learning physical education,
- To examine the variation of factors affecting student teachers' attitudes toward learning physical education according to their participation in sports,
- To analyze the variation of factors affecting student teachers' attitudes toward learning physical education in terms of their Education Degree Colleges.

Research Questions

- (1) What are the major factors that affect student teachers' attitudes toward learning physical education?
- (2) Are there any variations of the factors affecting attitudes toward learning physical education according to their participation in sports?
- (3) Are there any variations of the factors affecting attitudes toward learning physical education in terms of their Education Degree Colleges?

Conceptual Framework of the Study

Student teachers' attitudes toward learning physical education may be affected by many factors (Yimer, 2014). In this study, Bayu (2019) "factors affecting students' toward learning physical education were used to examine the factors affecting student teachers' attitudes toward learning physical education. Student teachers' personal factors, school-related factors, and teacher-related factors were measured in student teachers' attitudes toward learning physical education in Education Degree Colleges.

The conceptual framework or theory of action guiding this study is summarized in Figure 1. With the help of this conceptual framework, the researcher attempted to answer the research questions. To achieve this, the researcher collected empirical evidence from selected eight Education Degree Colleges in Upper Myanmar, and then, analyzed the quantitative and qualitative data.

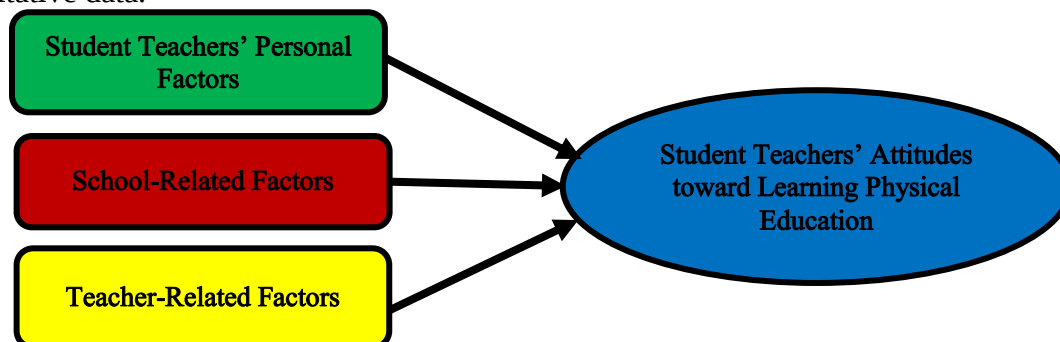


Figure 1. Conceptual Framework for Examining the Factors Affecting Student Teachers' Attitudes toward Learning Physical Education at Selected Education Degree Colleges

Definition of Key Terms

Attitudes: Attitudes are someone's positive or negative evaluation of, or feelings toward something (Eagly & Chaiken, 1995, as cited in Bayu, 2019).

Factor: A factor is one of the elements that contribute to a particular result or situation (Mossisa, 2021).

Physical Education: Physical education is an educational process that uses physical activity as a means to help individuals acquire skills, fitness, knowledge, and attitudes that contribute to their optimal development and well-being (Walton-Fisette & Wuest, 2018).

Operational Definition

Factors Affecting Student Teachers' Attitudes towards Learning Physical Education

Student teachers' attitudes toward learning physical education may be affected by many factors. In this study, factors affecting student teachers' attitudes toward learning will be measured through three factors: student teachers' personal factors, school-related factors, and teacher-related factors.

Review of Related Literature

There are many factors affecting students' attitudes toward learning physical education. In this study, student teachers' personal factors, school-related factors, and teacher-related factors are applied to explore student teachers' attitudes toward learning physical education at Education Degree Colleges.

Student Teachers' Personal Factors

Various factors can have an impact on student teachers' attitudes such as playgrounds, open spaces, recess, and standardized physical education curricula as a function of a curriculum that consists of repetitive activities or a lack of challenge leading to a boring physical education experience and teacher behavior (Subramaniam & Silverman 2007, as cited in Marttinen, 2018).

School-Related Factors

School is a whole learning environment formed by physical, psychological, and social elements (MOE, 2019). Various variables of the school hinder the successful taking of its activities and as result problems with the student teachers' attitudes toward physical education. The following school-related problems influence student teachers' attitudes toward physical education in the school (Bayu, 2019).

- (1) **The School Sites.** The school site should have proper drainage and surfacing to avoid mud and dust, removal of stumps and rocks, facing to prevent student teachers from running into the street, ensure the safety of student teachers by arranging and supervising the use of the playground, provision for frequent checking of apparatus for safety. The best use of available facilities by the school staff is most important (Bayu, 2019).
- (2) **The Factors of Facilities and Equipment.** The physical facilities of the school have a variety of effects on teachers, students, and the teaching and learning process of physical education subject. They include; administration attitude, gymnasium and textbook, classroom, guidance, examination, time allotments, and school grounds (Duressa, 2017).

Teacher-Related Factors

Teachers are the most important professionals in any nation's future. The teachers play a crucial role in determining the success or failure of curriculum implementation and teaching effectiveness. Thus, the teachers with their attitudes, skills, and experiences are the most important of all in determining the success or failure of the process of curriculum implementation (Posner, 1992).

- (1) **Teacher Attitudes.** Teacher attitudes are very important dimensions in the teaching process. Successful innovation depends substantially on the teacher's attitudes toward proposed curriculum alterations. Student teachers with teachers of positive attitudes

toward teaching and the curriculum are found to have high-level achieves in learning (Waritu, 2021).

- (2) **Teacher Skills.** One of the skills required by teachers to resolve challenges effectively to promote an effective teaching-learning environment of physical education is their pedagogical belief. Physical education teachers must be full of their professional obligations. Another important skill required by teachers is the skill of lesson planning and presentation which means the ability to transfer knowledge effectively to the learner good questioners, and demonstrators, and good skills full of classroom management (Bayu, 2019).
- (3) **Teacher Experiences.** Experienced teachers support greater student learning for their colleagues and their school as well as for their students. As teachers gain experience, their students not only learn more, as measured by standardized tests they are also more likely to do better on other measures of success (Simonton et al., 2022).

Methods

Research Method

Both quantitative and qualitative research methods were employed.

Population and Sample

184 student teachers (eighty-eight football selection players, forty-eight male volleyball selection players, and forty-eight female volleyball selection players) at selected eight Education Degree Colleges participated in Upper Myanmar by using simple random sampling. In qualitative study, twenty-four student teachers and four physical education teachers at selected three Education Degree Colleges participated.

Research Instruments

Bayu's (2019) "Factors Affecting Students' Attitudes toward Learning Physical Education" was used to examine the factors affecting student teachers' attitudes toward learning physical education. The questionnaire consisted of 12 items related to factors affecting student teacher attitudes toward learning physical education: 5 items for student teachers' personal factors, 4 items for school-related factors, and 3 items for teacher-related factors were involved. A five-point Likert scale was used for the student teachers' responses such as 1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree, and 5 = strongly agree. For the qualitative analysis, seven interview questions for student teachers and five interview questions for physical education teachers were employed to record information concerning specific outcomes.

Procedures

Questionnaires were distributed to 184 student teachers in eight selected Education Degree Colleges in Upper Myanmar on 17th November 2023 and collected after lasting two weeks. Interviews were conducted with twenty-four student teachers and four physical education teachers in three selected Education Degree Colleges in Upper Myanmar on 1st February 2024.

Data Analysis

The data obtained from student teachers' questionnaires were analyzed using frequency, percentages, mean values, and standard deviations. Regarding these items, a five-point Likert scale, from strongly disagree (1) to strongly agree (5) was employed, meaning, the range, means from 1.00 - 2.49 was taken as low level, 2.50 - 3.49 was taken as moderate level and 3.50 - 5.00 was considered as high level of participation. In addition, descriptive statistics, independent samples *t* test, one-way ANOVA, and post hoc multiple comparison tests (Games-Howell) were applied. Data collected from the qualitative analysis were categorized and analyzed to complete quantitative findings on factors affecting student teachers' attitudes toward learning physical education.

Findings

Quantitative Findings

Quantitative data analyses were presented through the interpretation of the results.

(1) Exploring the major Factors Affecting Student Teachers' Attitudes toward Learning Physical Education

Table 1. Frequency, Percentages, Mean Values, and Standard Deviations of Student Teachers' Perceptions of their Personal Factors Affecting toward Learning Physical Education (N = 184)

Items	Number of Student Teachers (%)					Mean	SD	Remark
	1	2	3	4	5			
I believe that physical education subject provides learning opportunities.	-	4 (2.2%)	29 (15.8%)	139 (75.5%)	12 (6.5%)	3.86	.54	high
I like physical education because it helps develop personal discipline.	-	1 (.5%)	5 (2.7%)	132 (71.8%)	46 (25.0%)	4.12	.51	high
I am getting appropriate advice and support from my teacher and colleagues regarding learning physical education.	-	5 (2.7%)	19 (10.3%)	142 (77.2%)	18 (9.8%)	3.94	.56	high
I have a good relationship with my physical education teacher.	-	1 (.5%)	6 (3.3%)	130 (70.3%)	47 (25.5%)	4.21	.52	high
I am satisfied with learning physical education class because it is given as a national exam.	4 (2.2%)	14 (7.6%)	22 (12.0%)	114 (61.9%)	30 (16.3%)	3.83	.87	high
Student Teachers' Personal Factors	1 (.5%)	5 (2.7%)	16 (8.8%)	131 (71.4%)	31 (16.6%)	4.01	.39	high

Note: 1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree, 5 = strongly agree

Scoring direction: 1.00 -2.50 = low level, 2.50 -3.49 = moderate level, 3.50 -5.00 = high level

Table 1, the frequency and percentages of student teachers' personal factors affecting attitudes toward learning physical education are 31 (16.6%) *strongly agree*, 131 (71.4%) *agree*, 16 (8.8%) *undecided*, 5 (2.7%) *disagree* and 1 (.5%) *strongly disagree*. Most of the student teachers *agree* that their personal factors affecting attitude towards learning physical education. Student teachers' personal factors were *high level* because the mean value was 4.01. Therefore, student teachers' personal factors *highly affected* their attitudes toward learning physical education.

Table 2. Frequency, Percentages, Mean Values, and Standard Deviations of Student Teachers' Perceptions of School-Related Factors Affecting Their Attitudes toward Learning Physical Education (N = 184)

Items	Number of Student Teachers (%)					Mean	SD	Remark
	1	2	3	4	5			
A suitable practical field is available in our Education Degree College.	15 (8.2%)	36 (19.5%)	6 (3.3%)	98 (53.3%)	29 (15.7%)	3.47	1.21	moderate
There are enough facilities and equipment for learning physical education in my Education Degree College.	30 (16.3%)	93 (50.5%)	16 (8.7%)	38 (20.7%)	7 (3.8%)	2.45	1.11	low

Items	Number of Student Teachers (%)					Mean	SD	Remark
	1	2	3	4	5			
Physical education makes important contributions to mental health.	-	2 (1.1%)	5 (2.7%)	121 (65.8%)	56 (30.4%)	4.26	.56	high
The length of time allotment per week for physical education is enough.	16 (8.7%)	85 (46.3%)	49 (26.6%)	33 (17.9%)	1 (.5%)	2.55	.90	moderate
School-Related Factors	15 (8.2%)	54 (29.3%)	19 (10.3%)	73 (39.6%)	23 (12.6%)	3.19	.55	moderate

Note: 1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree, 5 = strongly agree

Scoring direction: 1.00 -2.50 = low level, 2.50 -3.49 = moderate level, 3.50 -5.00 = high level

Table 2, the frequency and percentages of school-related factors affecting attitudes toward learning physical education are 23 (12.6%) *strongly agree*, 73 (39.6%) *agree*, 19 (10.3%) *undecided*, 54 (29.3%) *disagree* and 15 (8.2%) *strongly disagree*. Most of the student teachers *agree* that school-related factors affect their attitudes toward learning physical education. The mean value for school-related factors affecting attitudes toward learning physical education was 3.19. Therefore, school-related factors *moderately affected* student teachers' attitudes toward learning physical education.

Table 3. Frequency, Percentages, Mean Values, and Standard Deviations of Student Teachers' Perceptions of Teacher-Related Factors Affecting Their Attitudes toward Learning Physical Education (N = 184)

Items	Number of Student Teachers (%)					Mean	SD	Remark
	1	2	3	4	5			
My physical education teacher manages the class properly.	2 (1.1%)	27 (14.7%)	25 (13.5%)	112 (60.9%)	18 (9.8%)	3.84	.89	high
My physical education teacher encourages me to learn physical education.	-	19 (10.3%)	10 (5.4%)	114 (62.0%)	41 (22.3%)	3.96	.83	high
Physical education teachers teach us various sports and games.	1 (.5%)	18 (9.8%)	9 (4.9%)	125 (67.9%)	31 (16.9%)	3.91	.81	high
Teacher-Related Factors	1 (.5%)	21 (11.5%)	15 (8.2%)	117 (63.5%)	30 (16.3%)	3.84	.70	high

Note: 1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree, 5 = strongly agree

Scoring direction: 1.00 -2.50 = low level, 2.50 -3.49 = moderate level, 3.50 -5.00 = high level

Table 3, frequency and percentages of teacher-related factors affecting attitudes toward learning physical education are 30(16.3%) *strongly agree*, 117 (63.5%) *agree*, 15 (8.2%) *undecided*, 21 (11.5%) *disagree* and 1 (.5%) *strongly disagree*. Most of the student teachers *agree* that teacher-related factors affect their attitudes toward learning physical education. The mean value for teacher-related factors affecting student teachers' attitudes toward learning physical education was 3.84. Therefore, teacher-related factors *highly affected* student teachers' attitudes toward learning physical education.

(2) Examining the Variations of the Factors Affecting Student Teachers' Attitudes toward Learning Physical Education according to their Participation in Sports

Table 4. Mean Values and Independent Samples *t* Test Results Showing the Factors Affecting Student Teachers' Attitudes toward Learning Physical Education according to their Participation in Sports (N = 184)

Variables	Sports	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Student Teachers' Personal Factors	football	88	3.97	.36	-1.60	182	.112
	volleyball	96	4.05	.33			
School-Related Factors	football	88	3.09	.53	-2.30	182	.022*
	volleyball	96	3.28	.56			
Teacher-Related Factors	football	88	3.80	.70	-.67	182	.507
	volleyball	96	3.87	.70			

Note. * $p < .05$

Table 4, there was no significant difference in student teachers' personal factors and teacher-related factors affecting attitudes toward learning physical education in terms of their participation in sports. However, there was a significant difference in school-related factors according to their participation in sports ($t = -2.30$, $p < .05$). The mean value for the perception of volleyball players was 3.28 and the mean value for the perception of football players was 3.09. Therefore, it can be noted that volleyball players were higher than football players in school-related factors affecting attitudes toward learning physical education.

(3) Analyzing the Factors Affecting Student Teacher's Attitudes toward Learning Physical Education in terms of their Education Degree Colleges

To analyze the factors affecting student teachers' attitudes toward learning physical education in terms of their Education Degree Colleges, descriptive statistics and one-way ANOVA were conducted. The mean values and standard deviations of student teachers' personal factors, school-related factors, and teacher-related factors are shown in Table 5.

Table 5. Mean Values and Standard Deviations of Factors Affecting Student Teachers' Attitudes toward Learning Physical Education in terms of their Education Degree Colleges (N= 184)

Education Degree Colleges	Student Teachers' Personal Factors		School-Related Factors		Teacher-Related Factors	
	Mean	SD	Mean	SD	Mean	SD
EDC 1	3.97	.30	3.34	.45	4.14	.39
EDC 2	4.08	.37	3.51	.58	3.70	.72
EDC 3	3.87	.36	2.84	.57	3.84	.70
EDC 4	3.99	.43	3.10	.31	3.77	.62
EDC 5	4.03	.34	3.21	.53	4.26	.50
EDC 6	4.15	.30	3.30	.53	4.13	.39
EDC 7	4.03	.33	2.90	.58	3.12	.87
EDC 8	3.97	.32	3.30	.54	3.72	.63
Total	4.01	.35	3.19	.55	3.84	.70

Scoring direction: 1.00-2.50 = low level, 2.50 -3.49 = moderate level, 3.50 -5.00 = high level

Table 5, the mean value for student teachers' personal factors was 4.01. It had *high level* of student teachers' attitudes toward learning physical education and the mean value for school-related factors was 3.19. It had *moderate level* of attitudes toward learning physical education and the mean value for teacher-related factors was 3.84. It had *high level* of student teachers' attitudes toward learning physical education at Education Degree Colleges.

To ensure the differences in the factors affecting student teachers' attitudes toward learning in terms of their education Degree Colleges, one-way ANOVA was conducted. The results are shown in Table 6.

Table 6. ANOVA Results for Factors Affecting Student Teachers' Attitudes toward Learning Physical Education in terms of their Education Degree Colleges (N = 184)

Variables		Sum of Squares	df	Mean Square	F	p
Student Teachers' Personal Factors	Between Groups	1.126	7	.161	1.342	.233
	Within Groups	21.092	176	.120		
	Total	22.218	183			
School-Related Factors	Between Groups	8.439	7	1.206	4.506	.000***
	Within Groups	47.092	176	.268		
	Total	55.531	183			
Teacher-Related Factors	Between Groups	21.111	7	3.016	7.755	.000 ***
	Within Groups	68.444	176	.389		
	Total	89.555	183			

Note. *** $p < .001$

According to the results of Table 6, there was a significant difference in two related factors affecting student teachers' attitudes toward learning physical education such as school-related factors ($p < .001$), and teacher-related factors ($p < .001$).

Moreover, to find out which of the Education Degree Colleges had the greatest differences in factors affecting student teachers' attitudes toward learning physical education in Education Degree College, Post Hoc Multiple Comparison Tests (Games-Howell) were conducted among the sample Education Degree Colleges.

Table 7. The Results of Multiple Comparisons for Factors Affecting Student Teachers' Attitudes toward Learning Physical Education in terms of their Education Degree Colleges (N = 184)

Variables	(I) EDC	(J) EDC	Mean Differences (I-J)	p
School-Related Factors	EDC 1	EDC 3	.500	.037*
	EDC 2	EDC 3	.674	.006**
		EDC 7	.609	.019*
Teacher-Related Factors	EDC 1	EDC 7	1.029	.000***
	EDC 5	EDC 7	1.145	.000***
	EDC 6	EDC 7	1.014	.000***

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Table 7, there were statistically significant differences in school-related factors and teacher-related factors. For school-related factors affecting student teachers' attitudes toward learning physical education in Education Degree College, EDC 1 was higher than those rated by student teachers in EDC 3 ($p < .05$), and EDC 2 was higher than those rated by student teachers in EDC 3 ($p < .01$) and EDC 7 ($p < .05$). Then, for teacher-related factors affecting student teachers' attitudes toward learning physical education in Education Degree Colleges, EDC 1, EDC 5, and EDC 6 were higher than those rated by student teachers in EDC 7 ($p < .001$).

Qualitative Findings

Interview Responses

Based on the questionnaire survey instrument, interview forms were developed with seven items for student teachers to investigate student teachers' attitudes toward learning physical education and three related factors that affect student teachers' attitudes toward learning physical education. Twenty-four student teachers from three selected Education Degree Colleges in Upper Myanmar participated in this interview.

The Education Degree Colleges were selected according to the results of factors affecting the level of the student teachers. Eight student teachers (four football players and four volleyball players) were selected from one Education Degree College with the highest mean values of related three factors among selected Education Degree Colleges, and those student teachers were labeled as Group A. The other sixteen student teachers (eight football players and eight volleyball players) were also selected from two Education Degree Colleges with the lowest mean values of school-related factors but the high mean values in the other two factors among selected Education Degree Colleges, and they were labeled as Group B.

Interview Responses of Student Teachers

In the first question, student teachers were asked to describe how their perceptions on attitudes toward learning physical education. The responses of student teachers were as follows:

- All Group A student teachers (n = 8) expressed that they were satisfied with learning physical education because physical education helped them to develop physically fit, healthily, happily, mentally, emotionally, socially, and morally.
- All Group B student teachers (n = 16) responded that they were interested in learning physical education because physical education activities made them happy, healthy, refreshed, united, and systematic student teachers.

For the second question, student teachers were asked whether importance of the learning physical education compared with other academic subjects. The responses of student teachers were as follows:

- All Group A student teachers (n = 8) reported that physical education was recognized as one of the most important subjects in Education Degree Colleges because physical education played a significant role in the all-round development of the student teachers and it made possible to develop leadership quality, discipline, and decision-making ability in the individual.
- All Group B student teachers (n = 16) responded that physical education was the most important part of general education in today's educational system because it gave them improved healthy attitudes and team spirit, teamwork, cooperation, patience, honesty, and respect by participating in sports and games.

For the third question, student teachers were asked to describe how the teaching-learning process took place in the practical classes. The responses of student teachers were as follows:

- All Group A and Group B student teachers (n = 24) expressed that they were enjoyable and more interested in learning physical education through both theories and practices in practical sessions. Their teachers explained some lessons step by step by using new teaching methods, techniques, or strategies. If their teachers gave discussion and group work lessons, they hoped that communication skills and mutual respect would be improved. Their teachers practiced repetitive activities to be more effective and systematic in sports and games lessons.

In the fourth question, student teachers were asked to express the benefits obtained by learning physical education. The responses of student teachers were as follows:

- All Group A student teachers (n = 8) replied that learning physical education led to physical well-being, adhered strictly to the rules of sports and games, and made good communication skills, team spirit and unity, and friendliness by playing games and doing aerobic exercises and physical fitness dances. Therefore, they said that they practiced when they had an opportunity to practice.
- All Group B student teachers (n = 16) expressed that learning physical education not only strengthened their physical well-being but also made them feel good about themselves and it also contributed to improving health knowledge, mutual respect, and developed intelligence.

In the fifth question, student teachers were asked about the influence of facilities and equipment in physical education. The responses of student teachers were as follows:

- All Group A student teachers (n = 8) reported that there were insufficient facilities and equipment in physical education at their education degree colleges. There were some problems among student teachers in practical classes and also delayed in their training such as competitive games and cooperative games.
- All Group B student teachers (n = 16) responded that there were inadequate facilities and equipment for physical education. Because of inadequate facilities and equipment for physical education, student teachers shared the materials they had. Therefore, it could not be convenient in systematic sports techniques and strategies because of a waste of time and little exposure to using equipment. Additionally, the number of students was large and the provided equipment was not small.

For the sixth question, student teachers were asked whether time allotment of physical activity or practical class was adequate or not in Education Degree Colleges. The responses of student teachers were as follows:

- All Group A and Group B student teachers (n = 24) responded that there was not enough time for physical education because it was only once a week for both theories and practice. Student teachers were not trained well in both theories and practice such as competitive and cooperative games.

In the seventh question, student teachers were asked about the influence of the teacher-student ratio in practical physical education classes. The responses of student teachers are as follows:

- All Group A and B student teachers (n = 24) responded that there were insufficient physical education teachers, large class size, and large population of student teachers at Education Degree College. Requirement of physical education teachers couldn't make innovative and creative activities in the teaching-learning process. Large class sizes not only made it difficult for learners to concentrate but also limited by the amount of time. Physical education teachers were not even able to move freely to monitor the student teachers' work such as collective physical fitness exercise programs and physical fitness dances. Moreover, there could be time-consuming and delay in accomplishing the target lesson.

Interview Responses of Physical Education Teachers

Based on the questionnaire survey instrument, interview forms were developed with five items for physical education teachers to investigate student teachers' attitudes toward learning physical education and three related factors that affect student teachers' attitudes toward learning physical education.

In the first question, physical education teachers were asked to describe how their perceptions on attitudes toward learning physical education.

- All physical education teachers had optimum attitudes to physical education subjects.

The second question, physical education teachers was asked about difficulties in the teaching-learning process in the practical classes.

- All physical education teachers had a bit of difficulty in the teaching-learning process because there was shortage of facilities and equipment and requirement of physical teachers in their Education Degree Colleges.

In the third question, physical education teachers were asked to describe how principal support of teaching aids, facilities, and sports equipment for practical sessions.

- The principal was weak at support such as teaching materials, facilities, and sports equipment in teaching the learning process of physical education.

In the fourth question, physical education teachers were asked to describe how perceptions of student teachers were interested in learning physical education practical sessions.

- All student teachers were more interested in playing football game than volleyball. They were also interested in doing aerobic exercises, collective physical fitness exercise programs, and fitness dances.

In the fifth question, physical education teachers were asked to describe how the principal's attitudes toward physical education.

- The principal had positive attitude toward physical education.

Results and Discussion

Research question one was to explore the major factors affecting student teachers' attitudes toward learning physical education. In quantitative results, student teachers' personal factors were a major factor and *highly affected* student teachers' attitudes toward learning physical education. In the qualitative results, student teachers expressed that they were very happy and active in the practical classes. They participated in the individual and group sport events. They also played sports activities in their free time.

In quantitative results, teacher-related factors appeared as a second major factor and had *highly affected* student teachers' attitudes toward learning physical education at Education Degree Colleges. In the qualitative results, all student teachers said that they needed a great number of physical education teachers. Moreover, they had a bit of difficulty in the teaching-learning process both theoretical and practical sessions.

According to quantitative results concerning the school-related factors, it was seen as the third major factor that it *moderately affected* the student teachers' attitudes toward learning physical education. In the qualitative results, there was a shortage of facilities and equipment in their education degree colleges. They also described that the principals had less support the teaching materials, facilities, and sports equipment in the teaching-learning process of physical education.

Research question two was to examine the variations of factors affecting student teachers' attitudes toward learning physical education according to their participation in sports. In quantitative results, volleyball players' perceptions of school-related factors were higher than football players. In qualitative results, most Education Degree Colleges had no comfortable volleyball court as it was sandy, and dusty, and its floor was made of cement volleyball court. Additionally, there was insufficient volleyball equipment

Research question three was to analyze the variations of factors affecting student teachers' attitudes toward learning physical education in terms of their Education Degree Colleges. In quantitative results, there were significant differences in school-related factors and teacher-related factors affecting student teachers' attitudes toward learning physical education according to their Education Degree Colleges.

In the qualitative results, student teachers' interview results for teacher-related factors, one of the Education Degree Colleges said that they had qualified and experienced physical education teachers who could handle their practical classes. Their teachers gave instructions step by step and shared systematically about competition and cooperation games but there were not enough physical education teachers. The other Education Degree College which had the lowest mean value had less experience and no specialist physical education teacher who had a bit of difficulty in teaching not only theoretical classes but also morning physical training classes and spent more time in practical sessions.

In the 21st century knowledge-driven economies, rapid information exchange, and fast-moving communication technologies have created new demands on education systems. To meet the demands of today's world, education must focus on nurturing the whole student teachers morally intellectually, physically, socially, and aesthetically. Although the student teachers from education degree colleges had positive attitudes toward learning physical education, they were weak in practices of physical education because of insufficient facilities and equipment, a shortage of time allotment per week, and the required physical education teachers.

Therefore, the educational policy-makers, principals and physical education teachers should provide to improve student teacher's positive attitudes toward learning physical education. They should contribute to developing teacher-related factors such as qualified and experienced physical education teachers or specialized sports teachers, and school-related factors such as enough length of time allotment per week for teaching in physical education, comfortable football field, indoor volleyball court, track and field, sports hall, sufficient sports equipment and enough material in the teaching-learning process in theories and practices. Thus, this study highlights that student teachers not only improve positive attitudes toward physical education but also implement physical education programs effectively as all-round development student teachers themselves. And then they will be good teachers in the future.

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