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Students' Attitude Towards Interactive Demonstration Methods in Physical Education

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Abstract

This study was carried out to analyze the students' attitude towards interactive demonstration methods in physical education. The necessary information was taken from the eleven-community secondary school's students of the Kathmandu Valley. This study was based on descriptive research design. The majority of the responses were found to be associated with the statement that disagrees and strongly disagrees. The range of disagreeing and strongly disagree responses was 20.8-42.8% for the statement of sports skills test. These were all together 73.3% as the strong responses out of 120 students. It was found that the student has slightly negative responses towards the statements of sports skill test. Similarly, the chi-square value was 53.58, 103.0, 100.2, 75.86 and 90.16 respectively. The p-value for all statements was 0.000 which was less than that of the 0.05 level of significance with the degree of freedom 4. This indicated that there was a significant difference between the observed scores and the expected scores of the respondents.

***Keywords**: Achievement, Sports, Skills, Demonstration, Interactive, Learning, Test*

Introduction

Demonstration method is one of the important teaching techniques for providing actual skill and strategies of physical education by combining oral explanation (Nation, 2008). Interactive demonstrations methods are most useful and effective for enabling new skills and techniques of physical education and sports. It is introduced by Winning in 2011. He pointed out that by systematically addressing the various levels of inquiry learning like discovery learning, interactive demonstrations, inquiry lessons, inquiry labs, and hypothetical inquiry as to the inquiry spectrum. Thus, introduced the implementation of demonstrations into an interaction-based activity that is currently being developed by Wenning (Gross, 2002 as cited in Triayomi, 2019). Hassard and Dias (2005) illustrated that physical education should be active, experiential, constructivist, address prior knowledge, and include cooperative and collaborative work. Based on these instructions, an interactive demonstration method is generally implemented by a teacher in the Physical Education (PE) classroom (Wenning & Khan, 2011). In an interactive demonstration method, students are engaged in explanation and prediction-making that allows the teacher to elicit, identify, confront, and resolve alternative conceptions by addressing prior knowledge. Interactive demonstrations engage students in activities that meet their prior understanding of actual skills ant techniques (Triayomi, 2019).

Teaching physical education in Nepal is dominated through the theoretical aspect so that classroom teaching is not related to real-life situations of the students (Acharya, 2016). The practice of a rigid approach for teaching PE makes students feel boring and thus they are sure to memorize the reading materials. PE teachers are more theoretically driven, PE classrooms are less interactive and collaborative (Triayomi, 2019). The traditional methods and techniques are often adopted as methodological approaches to dealing with the PE concepts. Therefore, the interactive demonstration method has been a dire need in the PE classrooms of the schools of Nepal. Another concern is the size of the class in Nepalese schools.

The class size cannot be maintained by the individual interest of the teacher. It leads the teachers to apply the conventional methods including the lecture method of teaching. Since mass teaching practice is widely used in PE classrooms (Rani, 2017), the traditional role of teacher, mainly as the source of knowledge and sole decision-maker of the teaching-learning process is specified. The students are more controlled and they act as the passive recipients of the contents that the teachers expose. It not only discourages the interactive teaching practices in PE classrooms but also seriously affects the consciousness-raising of the students (Freire, 2008).

In the context of teaching-learning of physical education, this is the fact that the teacher has a central role in classroom teaching. The classroom interactions are less encouraged by the teachers as well as school administrators. Students are the passive listeners and the teacher is supposed to pour his/her knowledge into the empty vessels i.e. passive students. In classroom teaching and the learning situation, the PE teacher is usually found to be a problem solver and bank of knowledge. In meaningful learning, students can think that what they learn about, apply it in daily life situations, seek to connect future learning, and can continue to learn independently (Darling-Hammond et al., 2020). Teaching in such a way supports less classroom talk, interaction, and thinking. Students in schools are arranged in orderly and systematic rows in the classroom (Naution, 2008). The manipulation of meaningless words and symbols is found in the classroom similar to the students who are passive learners. The common practice is that students are forced to revise the same problems many times. The science classroom environment and real-life situations seem to be isolated because "most of the PE classrooms do not deal with basic concepts" (Williams, 2017) and "without linking on the real-life problems" (Rohandi, 2017).

The national curriculum framework (2019) has clearly stated that modern PE teaching in school education should create a conducive learning environment in schools. Schools should have the necessary ground and sports equipment so that the learners can learn sports skills and behavior in practical situations. As well, it has pronounced to link the PE contents and techniques to the everyday life of the children. However, the implementation of these ideals is far distant in different schools in Nepal. In poorly managed institutional schools and also community schools of the nation, PE teaching is not in action as in the expectations expressed in the curriculum. On the one hand, the contents, and classroom teaching-learning practices are still theoretically driven.

Similarly, the schools lack the necessary infrastructure as well as a good social and psychological environment. Students often experience diverse forms of social and cultural discrimination on the ground of caste, gender, poverty, disability, and regional background (Freire, 2008). Whether in the case of curriculum updating, or that of teaching-learning methods applied in the classrooms, or that of teacher expertise, or that of the curriculum implementation in the classrooms, there are serious problems. Similarly, the low performance of students in physical education and sports is a problem in secondary school.

Methodology

This research is based on descriptive research design. The populations of this study were 120 students selected from 460 students with the help of purposive sampling method from eleven community secondary school of Kathmandu Valley. Researcher had applied sports skills test and attitude scale with a 5-point Likert scale (strongly agree, agree undecided, partially disagree, and strongly disagree) for data collection. After collecting the data, the result was presented on percentage, standard deviation, t-test, correlation and chi-square test with the help of SPSS 20.

Results and Discussion

Interactive demonstration method is a method of providing lessons by exhibiting and demonstrating with explanation. It is a method of teaching by demonstrating things, events, rules, and sequences of activities, techniques of games and sports.

Table 1

Students' attitude towards interactive demonstrative methods of physical education

S.N	Statements	Responses									
		SA	%	A	%	UD	%	D	%	SD	%
1	I Like Physical Education	5	4.1	8	6.6	15	12.5	51	42.5	41	34.1
2	I feel nervous in PE class.	28	23.3	47	39.1	5	4.1	30	25	10	8.3
3	We do a lot of fun activities in PE class.	14	11.6	11	9.1	18	15	39	32.5	37	30.8
4	We cover interesting topics in PE class.	5	4.1	10	8.3	24	20	34	28.3	47	39.1
5	I love spending my free time playing games.	14	11.6	19	15.8	12	10	35	29.1	40	33.3

SA= Strongly Agree; A = Agree; UD=undecided; D = Partially Disagree; SD = Strongly Disagree.

Above table shows that 62 percent responses of the students had to be found that strongly agree and agree with the statement I feel nervous in the PE class of the sports skill test. For example, 23.3 to 39.1% of responses were strongly agreed and agree with this statement. These were all together 62.4% responses out of 120 students. The statement of the attitude scale was I like physical education. We do a lot of fun activities in physical education class. We cover interesting topics in physical education class and I love spending my free time playing games and sports. The majority of the responses were found associated with the statement disagree and strongly disagree. The range of disagreeing and strongly disagree responses was 28.3-39% for the statement of attitude scale. These were all together 76.6% as

the strong responses out of 120 students. This shows that students have slightly negative responses to the statement of sports skill test.

Table 2
Analysis of Attitude towards learning physical education

S.N	Statements	Responses									
		SA	%	A	%	UD	%	D	%	SD	%
1	To participate in PE class activities is interesting	3	2.5	9	7.5	20	16.6	37	30.8	51	42.5
2	I usually ask many questions in the PE class	24	20	11	9.1	16	13.3	44	36.6	25	20.8
3	My best friends like physical education.	24	20	17	14.1	17	14.1	26	21.6	36	30
4	Sports skill tests make me afraid.	43	35.8	25	20.8	17	14.1	7	5.8	28	23.3

Table 2 shows that the students' attitudes towards physical education at the secondary level. The statement to participate in physical education class activities is interesting. The majority of the responses were found to be associated with the statement that disagrees and strongly disagrees. The range of disagreeing and strongly disagree responses was 20.8-42.8% for the statement of sports skills test. These were all together 73.3% as the strong responses out of 120 students. This shows that students have slightly positive (56.6) response to the statement of sports skill test.

Table 3
Analysis of Chi-square Value regarding students' attitude towards learning physical education

S.N.	Statements	Responses					χ^2	Df.	Sig.
		SA	A	Ud	D	Sd			
1	I Like Physical Education	5	8	15	51	41	71.50	4	0.000
2	I feel nervous in PE class.	28	47	5	30	10	47.41	4	0.000
3	We do a lot of fun activities in PE class.	14	11	18	39	37	56.60	5	0.000
4	We cover interesting topics in PE class.	5	10	24	34	47	49.41	4	0.000

5	I love spending my free time playing games.	14	19	12	35	40	26.91	4	0.000

The analysis of the chi-square value regarding students' attitude towards learning physical education is presented in table 3. It shows that statement, students' responses chi-square value, p-value, and degree of freedom for the chi-square statistics. The chi-square value of statements 1, 2, 3, 4, and 5 were 71.50, 47.41, 56.60, 49.41 and 26.91 respectively. The p-value for all statements was 0.000 which was less than that of the 0.05 level of significance with the degree of freedom 4, 4, 5, 4, and 4. This indicated that there was a significant difference between the observed scores and the expected scores of the respondents. Thus, there was an association between the performance scores of students and their responses regarding test items.

Table 4
Analysis of Chi-square Value regarding students 'attitude towards learning physical education

S.N.	Statements	Responses					χ^2	Df.	Sig.
		SA	A	Ud	D	Sd			
1	I am an Interactive Learner	5	13	22	28	52	53.58	4	.000
2	I remember things I see more than things I read	4	5	10	43	58	103.0	4	.000
3	Demon help me understand concepts.	6	2	11	47	54	100.2	4	.000
4	Demonstration activities in class help me pay attention more.	3	-	11	45	61	75.86	4	.000
5	I enjoy class more when demonstration activities are shown.	8	5	9	43	55	90.16	4	.000

Table 4 presents the analysis of the chi-square value regarding students' attitude towards learning chemistry. It consists of statements, students' responses chi-square value, p-value, and degree of freedom for the chi-square statistics. The chi-square value of statements 1, 2, 3, 4, and 5 were 53.58, 103.0, 100.2, 75.86 and 90.16 respectively. The p-value for all statements was 0.000 which was less than that of the 0.05 level of significance with the degree of freedom 4. This indicated that there was a significant difference between the observed scores and the expected scores of the respondents.

Table 5
Analysis of correlation between attitude and achievement

Variables/ Correlation		Achievements	Attitude towards learning PE	Attitude towards PE students	Attitude towards sports activity	Attitude towards teaching method
Some Sports	Pearson correlation	1	.103	.156	.226*	.225*
	Sig.	.	.263	.090	.013	.013
Attitude towards learning PE	Pearson correlation	.103	1	.153	.179*	.193*
	Sig.	.263	.	.096	.050	.034
Attitude towards PE students	Pearson correlation	.156	.153	1	.452*	.354*
	Sig.	.090	.096	.	.000	.000
Attitude towards PE	Pearson correlation	.226*	.179*	.452*	1	.289*
	Sig.	.013	.050	.000	.	.001
Attitude towards teaching method	Pearson correlation	.225*	.193*	.354*	.289*	1
	Sig.	.013	.034	.000	.001	.
	N.	120	120	120	120	120

*: significant correlation at 0.05

Table 5 presents the correlation between the students' attitudes and achievement regarding some skills. A Pearson correlation coefficient was computed to assess the relationship. The value computed as, (r) = 0.452, n= 120, p= 0.000. Since Pearson's Correlation Value (r) was 0.452 it shows that attitude towards sports activity and achievement scores of students have a positive correlation. Similarly, value computed as, (r) = 0.225, n= 120, p= 0.013. Since Pearson's Correlation Value (r) was 0.225 it shows that attitude toward the teaching method and achievement score of students have a positive correlation. The p-value of both attitude scores is less than that of the 0.05 level of significance. This shows that there was a significant relationship existed between attitudes towards extracurricular activities, teaching methods, and achievement scores of students. But the attitude towards PE and PE students was positively correlated with the achievement score of students at the secondary level. It means, the attitude towards PE has a significant impact on the achievement score of students in some skills.

Table 6
Analysis of correlation between attitudes towards interactive demonstration methods.

Variables/ Correlation		Achievements	Attitude towards learning PE	Attitude towards PE students	Attitude towards sports activity	Attitude towards teaching method
Achievements	Pearson correlation	1	0.082	.025		.190*
	Sig.	.	.375	.783		.037
	N.	120	120	120		120
Attitude towards learning PE	Pearson correlation	0.082	1	.153		.179*
	Sig.	.375	.	.096		.050
	N.	120	120	120		120
Attitude towards PE students	Pearson correlation	025	.153	1		.452*
	Sig.	.783	.096	.		.000
	N.	120	120	120		120
Attitude towards sports activity	Pearson correlation	.190*	.179*	.452*		1
	Sig.	.037	.050	.000		.
	N.	120	120	120		120
Attitude towards teaching method	Pearson correlation	.104	.193*	.354*		.289*
	Sig.	.260	.034	.000		.001
	N.	120	120	120		120

*: Significant correlation at 0.05

Table 6 shows the correlation between the students' attitudes and achievement scores. A Pearson correlation coefficient was computed to assess the relationship. The value computed as, (r) = 0.190, n= 120, p= 0.037. Since Pearson's Correlation Value (r) was 0.19 it shows that the attitude towards sports activity and achievement scores of students have a positive correlation. Similarly, value computed as, (r) = 0.354, n= 120, p= 0.000. Since Pearson's Correlation Value (r) was 0.354 it shows that attitude toward the teaching method and achievement score of students have a positive correlation. The p-value of both attitude scores is less than that of the 0.05 level of significance. This shows that there was a significant relationship existed between attitudes towards sports activities, teaching methods, and achievement scores of students.

Discussion

A huge number of students showed their anxiety in the masses of the PE classes 62.4% of them accepting or strongly accepting the statement. This is consistent with previous research which indicates that traditional PE classes in Nepal are usually led by theoretical, rigid, and teacher-centered instruction. In such classes students are passive recipients rather than active participants in their learning (Acharya, 2016; Freire, 2008). Furthermore, the students' lack of engagement, as reported, is indicative of the systemic problem of the enormous size of the classes, the scarcity of resources, and the insufficient training of the teachers, as referred to by Rani (2017) and Wenning & Khan (2011). Those conditions limit the appropriate realization of the active and student-centered techniques such as interactive demonstration method.

Though the interactive demonstration techniques have great pedagogical potential, students' answers to questions such as "We do a lot of fun activities in PE" and "We cover interesting topics" were mostly negative. This is quite worrying, as it is revealed from the research that interactive demonstrations are designed to improve student interest, attention, and retention by making the connection between students' prior knowledge and real-life situations (Triayomi, 2019; Hassard & Dias, 2005). The gap between the desired results and student understanding may imply a deficit in the genuine integration of interactive demonstration method in the practice, thereby confirming Wenning's (2011) argument that even the most brilliantly designed interactive methods will not result in meaningful learning if facilitation is not provided and teachers are not adequately prepared to work with them.

Besides that, the positive and significant chi-square values throughout all the statements related to attitudes indicate students' considerably inconsistent feelings about their experience of PE. The statistical results ($p < 0.05$) demonstrate that the attitudes which are observed differ significantly from those which are expected if the classroom is engaging and participatory. The same thing can be seen in the findings of Darling-Hammond et al. (2020), who state that real learning is the one that students are autonomous, interact with each other, and, the most important part, have the possibility of practically applying the knowledge obtained all these elements, however, are mostly absent in the classrooms for PE in Nepal.

This study corroborates the wider literature, which claims that positive student attitudes, nurtured through interactive, enjoyable, and student-centered learning, correlate with improved academic and skill-based outcomes (Bailey et al., 2009; Kirk, 2010). For example, the positive relation between sports activity pleasure and achievement ($r = 0.190$, $p = 0.037$) points to the fact that those students who see PE as meaningful and fun will probably perform better, and this is in accordance with the socio-ecological understanding of physical activity engagement (Sallis et al., 2009)

Therefore, the findings highlight a critical need to bridge the theory-practice divide in PE instruction. Teacher training programs should emphasize the application of interactive demonstration method and related participatory strategies, supported by adequate infrastructure and policy enforcement. Without such systemic reforms, student attitudes toward PE are unlikely to improve, limiting their physical, social, and cognitive development through sports education.

Conclusion

This interactive demonstration methods are growing international recognition that interactive pedagogy is necessary for skill acquisition and motivation. Nepalese PE classes are still stuck with traditional teacher centered approach. The main causes of unimplemented interactive demonstration methods due to systemic barriers like overcrowded classrooms, lack of sports infrastructure and rigid curriculum practices that hindered the implementation of

experiential student-centered PE instruction. So, teachers should be trained in interactive demo methods that promote student participation, real life application and inquiry-based learning. The sharing of experience between facilitator and trainees takes place through the demonstration. When facilitator demonstrates and explains about new skills and techniques of physical education while students watching and listening and learning easily.

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