

Exploring the Relationship between Class Participation and Student Performance in Science

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Abstract

This study is a cross-sectional study and finds out class participation as an essential indicator in elevating the performance of the students. It explored the factors affecting the degree of class participation and its effect on science performance. Students of grade IX were selected as the sample for the study. In addition to a structured, self-administered questionnaire, the mid-term exam result was taken as an academic performance of the students. Appropriate inferential statistical tests, like t-test and Pearson's Product Moment Correlation were computed to find the gender differences in class participation and academic performances of the students and their relationship respectively. Further, an Exploratory Factor Analysis (EFA) was performed to explore factors affecting the class participation. The inferential statistics results indicated that while there is no statistically significant difference between the class participation and academic performance in science by gender, there does exist a positive association between class participation and academic performance. The EFA results revealed three principal factors responsible for varying degree of class participation, namely the students' affective traits, students' cognitive traits and teachers' traits.

Keywords: Academic performance, class participation, secondary school students, science

Introduction

The ultimate goal of education is to create responsible educated individuals capable of making sound decisions, solve problems with ease, and think critically and creatively to lead an independent and meaningful life; and most importantly, prepare them to be contributory citizen for just and harmonious society. A person with a high degree of achievement in academic field is considered to be capable to fulfill the desired wholesome goal of the system. To meet this broad end, formal education plays a vital role in nurturing and molding the individuals. Varied strategies, procedures and interventions are incorporated by the stakeholders in the system to provide the best individuals to the society. The Bhutanese Education system has progressed over the years (Ministry of Education, 2014), but still struggle in delivering quality education that can instill sound knowledge, skills, and values in students. Interestingly, Bhutanese

students achieved an average solution rate of 45.10 percent in the PISA-D 2017 Scientific literacy assessment, which was significantly higher than the PISA-D average solution rate of 38.28 percent. However, the overall scientific literacy of Bhutanese students was significantly lower than OECD average (that is about 23 to 35 percent points below OECD average) (BCSEA, 2019). Hence, it has been a great concern of the stake-holders to enhance the academic performance of the students in which individual's capacity can be measured quantitatively.

There are innumerable factors like teachers' competence, parental involvement, and working conditions which affect the academic achievement of the students (MolokoMphale & Mhlauli, 2014). Class participation is one of the important factors influencing the performance of the students. Schools involving higher level of participation indicated higher levels of learning (Ahlström, 2010). Most of the schools in Bhutan experiences minimal class participation (Ghalley & Rai, 2019)., which is a problem. There can be multiple factors influencing the level of participation of students, which inhibit or elevate their productivity and achievement. However, there is limited research carried out in Bhutan about the participation of students in the classroom.

In response to the aforementioned problem, this study attempts to find out class participation as one of the determinants of better academic performance of an individual. It also purports to identify some factors affecting class participation of students in secondary level. Furthermore, it would bring in recommendations for the system's policies. It would specifically benefit the education system of the country to add in policies related to it and ultimately help the society at large.

Research Objectives

The study attempts to achieve the following objectives:

1. To explore the class participation of secondary school students in science subject based on gender.
2. To study the academic performance of secondary school students in science subject based on gender.
3. To investigate the relationship of academic performance and class participation of secondary school students.
4. To identify the factors affecting class participation of secondary school students.

Hypotheses

Underneath hypotheses were verified to achieve the aforementioned objectives:

- i. There is no significant difference in class participation of male and female secondary students in science subject.
- ii. There is no significant difference in academic performance of male and female secondary students in science subject.
- iii. There is no significant relationship between class participation and academic performance of secondary school students in science subject.

Literature Review

This study is attempted on the basis of Vygotsky's social constructivism theory. It emphasizes on knowledge constructions of an individual through social interaction. Human acquire knowledge, skills and values through dialogues with others around them. Cognitive development is driven by the individuals making meaning and forming constructs by talking to self and to others (Vygotsky, 1978). Therefore, class participation is considered the important variable in knowledge development and learning of the students in this study.

Class participation

Classroom participation is one of the essential tools to facilitate students' learning (Shore, 2013). It is therefore of utmost importance to understand what actually encompasses it. A constant behavioral engagement in learning having positive attitude, grasping the chance to participate with lots of effort while executing the work are aspects which keep the students engaged, asserts Skinner & Belmont (1993). If the students are listening to other's ideas, commenting on it and asking questions too, then the classroom setting is said to have an ideal classroom discussion (Wade, 1994)). Bomia, Beluzo, Demeester, & Elander (1997) delineate students' engagement as their readiness, requirement, desire and obligation to involve in the learning process and successfully enhance higher order skills of thinking for better understanding. It also portrays students' keenness to participate in school activities such as attending the class, submitting the task and following the teacher's instruction (Chapman, 2003). Student participation is the students' views of learning experience and their conscience on it Flutter & Rudduck (2004), their behavioral, emotional, and cognitive engagement (Fredricks, Blumenfeld, & Paris, 2004; Rotgan & Schmidt, 2011), students' involvement in the curriculum design, classroom management and school building climate (Fletcher, 2005).

An active type of class participation refers to students actively seeking information by asking questions, giving opinion and answering questions directed by the teacher or peer (Mohd Yusof, Noor Rahamah, & Maizatul Haizan, 2012). TALQAC (2014) refers to class participation as more than just sitting in the class and is related to learning objectives of the subject.

Importance of class participation

Class participation is beneficial in keeping the students active throughout the teaching and learning process making the class a lively setting (Cohen, 1991) and foster effective learning (Bean & Peterson, 1998, Burbules & Bruce, 2001). Junn (1994) corroborates that due to increased class engagement, students get motivated to learn more and better. They learn best in the classroom when they talk about their learning and apply to their daily life experiences claims Chickering & Gamson, 1987 (cited in Gallagher, 1997). Murray & Lang (1997) substantiated that the problem-solving skill and higher level of content knowledge are seen in students who participated more. Instead of passively sitting and listening, if the information is processed mentally by being actively engaged in the activity, it is understood better (Bransford, Brown, & Cocking, 2000).

Development of higher order thinking skill like critical thinking (Garside, 1996, Crone, 1997), character building (Kuh & Umbach, 2004), decreased practice of rote learning as per Smith, 1977 (cited in Susak, 2016), and enhancement of communication skill (Dancer & Kamvounias, 2005) are some valuable merits of class participation. Cieniewicz(n.d.) reports that retention power of the individuals is boosted through active participation resulting in better learning. Participation is an instructional strategy that can be used easily, and can accomplish the expected learning outcomes. It can promote interest of the pupils, provides students' and teacher's feedback on their learning and teaching respectively and maintain a balanced class communication (Weimer, 2011).

Factors affecting class participation

Active participation in the class plays the pivotal role in the teaching and learning process. However, it is least experienced in the classroom especially in Bhutanese classrooms with majority of them involved in passive participation: Sitting quietly, writing notes, listening and paying attention only (Ghalley & Rai, 2019). Lee (2007), Liu & Littlewood (1997) and Mack (2012) also claimed that Asian students in general stay inactive and don't want to participate in the class. Weimer (2011) feels that, good

number of students remain dormant in the class since they simply want other students to do it.

Personal characteristic and the formal and informal structures of classroom environment (Weaver & Qui, 2005), classroom size, fear, low confidence level, students' perception about the teacher and their preparation (Fassinger, 1995), disapproving gestures, uninterested behavior and discouragement (Dallimore, Hertenstein, & Platt, 2004) affect the class participation negatively.

Grading system (Boniecki & Moore, 2003), teachers' traits like; being approachable, encouraging and supportive behavior (Mustaphaa, Rahmanb, & Md.Yunus, 2010) fetched more participation. Aziz, Quraishi, & Kazi (2018) revealed that boys participated more than the girls due to some internal factors like fear, self-esteem and external factors like teachers, peers, parents and curriculum. Furthermore, course policies, type of course, language barrier, perceived benefits of participation, advanced preparation and classroom climate also indicated to be some parameters influencing the levels of participation of the students (Susak, 2016). Extroverted behavior of the learners can determine better class participation as compared to children who have introverted behavior (Congmin, 2016). Increased amount of class engagement where experienced task was challenging and their own skills were high and in balance, the instruction was relevant, and the learning environment was under their control (Shernoff et al., 2014). These factors altogether are but not limited as the determinants of the quality and quantity of class participation taking place in the classrooms.

Class Participation and Academic Performance

Class participation is mainly focused on discussion, which typically involve whole class. However, participation can also include short interactions between teachers and students, or within small groups of students. Through class participation, students can develop their learning abilities whereby that can enhance the academic performance.

Tutaleni Asino, professor of information science and technology said classroom participation was imperative as the learning becomes the whole class experience, learning from each other and internalization of knowledge takes place (Christina , 2007). Higher academic performance in the secondary level of education is assumed to have contributed to better performance in future endeavors generating better citizens who can serve the nations in the best manner possible. This was actually found by Voelkl (1995) that the school warmth and class participation seemed to be related to academic performance but when the class participation effect was removed, there was no noticeable influence of class warmth to the academic performance. The class

participation showed greater and significant influence on academic performance and perceptions of the students. Teachers therefore have started using required participation to measure the students' grasp of knowledge (Colletta, 1996).

Teachers' best tool to judge students' level of understanding of the lesson in the classroom is through participation which in a way boosts the overall academic performance of the students (Valiente, Lemery-Chalfant, Swanson, & Reiser, 2008). Participation of students have prominent and crucial impact on the students' perception and their learning performance (Kristin , 2010). There are various factors affecting the academic performance of the students in the school like gender, socioeconomic status, behavior, class size, teachers' competence, students' intellectual ability, facilities in the school, and class participation as well. From the review of literatures, it was found that higher class participation enhances better learning during teaching and learning process.

Gender difference in class participation and academic performance

Teachers in Bhutanese school normally observe gender difference in class participation. Boys are seen to be participating actively compared to girls in secondary level of schooling. The girls are found to be shy and reluctant to share their ideas and opinions in the class. Ministry of Education (2018) further revealed that there are significant differences in learning outcomes between boys and girls of different schools across Bhutan. Girls performed better in language while boys scored higher in math and science. Urban students tend to do better than rural students especially in English, math and science. Furthermore, private school students outperformed government students.

Garcia, (2008) had reported that girls participated more than boys and teachers too expected more from them than boys. On the otherhand, Aziz, Quraishi, & Kazi (2018) concluded that boys participated more in the class compared to girls. Different factors influenced their participation in the class but extent to which they influence were different in both the groups. High self-esteem and motivation were the two main factors that influenced boys and girls respectively. Furthermore, boys' participations were influenced by teachers, parents, peers and curriculum while girls were influenced by classroom environment. Similarly, male participated more than female in most participation categories with voluntary responses (Aguillon, et al., 2020). The gender difference could be due to the nature of subject, as Raheem (2017) corroborates that, male and female students performed equally in English language but males performed better than females in Mathematics, Science and Social Science.

The class participations of male and female seemed to vary as per previous studies. Moreover, class participation has prominent and crucial influence in academic performance of the students. But as per the study carried out by Joseph, et al. (2015), there wasn't a significant difference in male and female students in regard to academic performance, which may also indicate that the class participation level should have been similar gender-wise. In particular, girls have higher mean score than boys in science but there wasn't a significant difference between them (Sahranavard & Hassan, 2018). Bailey, et al. (2020) reveals that the gender gaps were all due to the variation in classroom in which female performed better when taught by female instructor and this could be due to higher class participation and attendances. In nutshell, it can be concluded that the literatures referred above clearly indicates that class participation is a significant factor that can influence the academic performance of the students.

Research Methodology

This study is guided by the theory of Vygotsky which focuses on the social interactions as the key component in development of the cognition. It is the community that plays an important role in making meanings out of anything (McLeod, 2017). With this theory, constructivism is also relied on as it explains that people learn and make meanings from their experiences.

Research Design

This research has used cross-sectional descriptive research design using survey method. The investigator adopted this method since it helps to find relationship of variables by employing mathematical models, theories, and hypotheses pertaining to phenomena (Given, 2008). Therefore, students' class participation experiences were gathered using the survey questionnaire. Through such method, people's understanding, practice, values, and views can be gathered for interpretation quantitatively.

Sampling Technique

The current research has employed purposive sampling method. The class IX students of Kuzhugchen were selected as the sample to represent the whole population. Thus, 16 students of grade IX of Kuzhugchen MSS, Thimphu, Bhutan, were selected as the sample for the data collection. From the 16 students, 8 were boys and 8 were girls.

Tools for Data Collection

Questionnaire of class participation

The survey questionnaire to gather information about students' understanding and practice of class participation was self-constructed and based on four-point Rensis

Likert scale. For the construction of the scale, the lists of statements were selected under two major parts of questionnaire as: level of class participation with 30 statements, and factors affecting class participation with 20 statements. To check if the scale was reliable, split-half method was employed. Then, correlation coefficient of these half tests was calculated and used to find the reliability using Whole Test Spearman Brown Formula. The reliability came out as 0.863 which was quite high. The scale needs to be valid to be reliable. To measure the validity, pilot testing was carried out and some items were modified. The items which were redundant and ambiguous were removed. Furthermore, face validity was carried out by expert to subjectively assess the degree of the coverage of the content it is supposed to measure.

Academic Performance Test for students of 9th grade

Academic performance is the achievement of the students in the science subjects commonly measured by assessment and evaluation. The achievement of the students is taken from the Mid-Term Examination average marks of the student who have studied physics, chemistry and biology from the month of February to May. The test to gather the data for academic performance of the students were developed by deciding the objectives of the test, content analysis, preparing blueprint in reference to the syllabus prescribed by REC, Bhutan for 9th grade and the level of objectives to be achieved as per Blooms Taxonomy, writing of the test items, moderation and finalizing of test items.

Data Collection and Procedure

The data of students' class participation were collected using the self-constructed questionnaire and mid-term average marks (out of total 100 marks) in overall science subjects were taken for correlating the two variables. The data for class participation and academic performance were taken from the sample after 4 months (first half of the academic session in the school) of learning done. During the collection of data, the objectives and instructions of the data were informed to the participants and the maintaining of data confidentiality was ensured to them. The teaching pedagogy consisted of lecture, ICT-based, cooperative learning and inductive/deductive teaching strategies.

Statistical Technique

The data collected were tabulated, and analyzed using the SPSS version 23 statistical package for windows. The sample is drawn from the normally distributed population. However, due to small sample size, robust statistical method, bootstrapping is used to make inferences for sample sizes less than 40 (Taylor, 2020). Thus, following

techniques of analysis were employed with bootstrapping for further interpretation:

- To check the significant difference, independent sample t-test was employed.
- Pearson Correlation was employed to compute the correlation between two variables.
- Exploratory Factor Analysis to find the principal factors affecting class participation.

Results and Discussion

Difference in class participation of male and female secondary students

The first objective of the present study was to find the difference in class participation of secondary students on the basis of gender. The data pertaining to scores of mean differences, and t-test are depicted in the table 1 and table 2 respectively.

Table 1

Independent sample t-test for level of class participation of male and female students

	t-test for Equality of Means			
	t	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Level of class participation	-1.183	.257	-7.12500	6.02358
	df			
	14			

Table 2

Bootstrap for Independent Samples Test

		Bootstrap				
		Mean Difference	Bias	Std. Error	a 95% Confidence Interval	
					Lower	Upper
Level of class participation	Equal variances assumed	-7.12500	-.28582	5.86384	-16.37500	2.02573
	Equal variances not assumed	-7.12500	-.28582	5.86384	-16.37500	2.02573

An independent t-test with bootstrapping was conducted to explore the difference between male and female in their class participation. All groups were normally distributed. Variances were homogenous ($p=0.335$) as assessed by Levene's test for equality of variances. Hence, equal variance was assumed. There is slight difference of -7.2 in mean score of male and female students in their level of class participation in science classes but this difference is not significant at 0.05 level ($p=0.257$). Thus, there is no significant difference of class participations between male and female. The result of the mean score of level of class participation in science class based on gender is shown in figure 1.

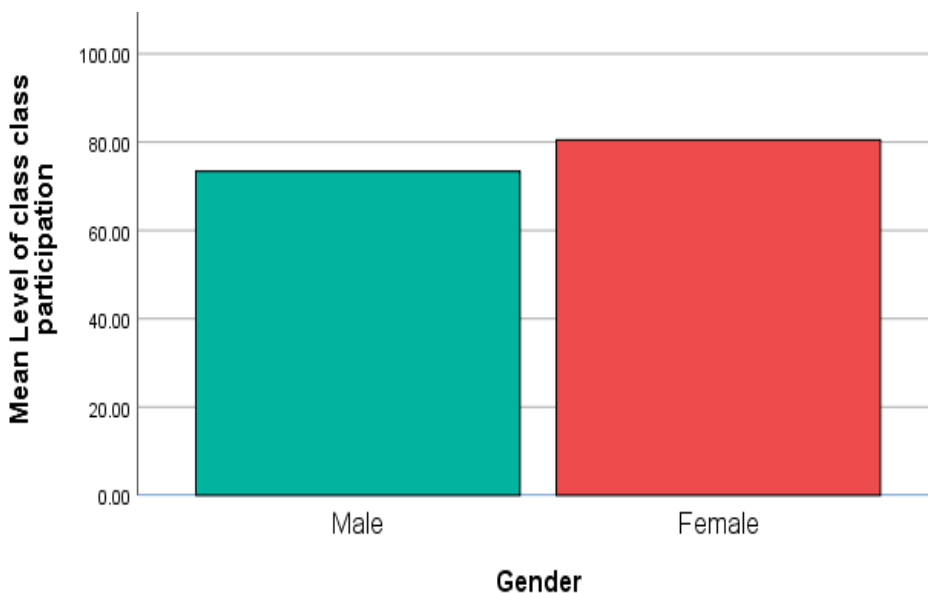


Figure 1: Mean score of level of class participation in science class based on gender

Female students showed slightly higher level of participation in science class compared to male students according to their mean score but there isn't significant difference in their level of participation statistically. The slight difference could have appeared due to various factors like teacher influence, intelligence level, classroom atmosphere, preparedness and so on. Hence, it is evident that there is no significant difference in the class participation of secondary school students based on gender. Similar result was found by Olatoye et.al (2016) that there was no significant difference between male and female students' overall performance in biology, chemistry and physics though female students are still under-represented in biology, chemistry and physics.

Difference in academic performance of male and female secondary students in science

The second objective of the study was to explore the difference in academic performance of the secondary school students in science subject on the basis of gender. The data pertaining to scores of mean difference and t-test are depicted in the table 3 and 4 respectively.

Table 3: Independent sample t-test for academic performance of male and female students in science

	t-test for Equality of Means				
	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Academic Performance	-1.211	14	.246	-10.91250	9.01126

Table 4

Bootstrap for Independent Samples Test

			Bootstrap ^a					
			Mean Difference	Bias	Std. Error	Sig. (2-tailed)	BCa 95% Confidence Interval	
							Lower	Upper
Academic Performance	Equal variances assumed		-10.91250	.19944	8.61546	.240	-28.63233	8.21650
	Equal variances not assumed		-10.91250	.19944	8.61546		-28.63233	8.21650

Table 3 shows that the significant value for the academic performance of male and female students is 0.246 which accepts the null hypothesis. Thus, we can conclude that male and female students do not differ in their level of academic performance in science classes. There is slight difference of -10.91 in mean score of male and female students in their level of academic performance in science classes but this difference is not significant. The result of the mean score of level of academic performance in science subject based on gender is shown in figure 2.

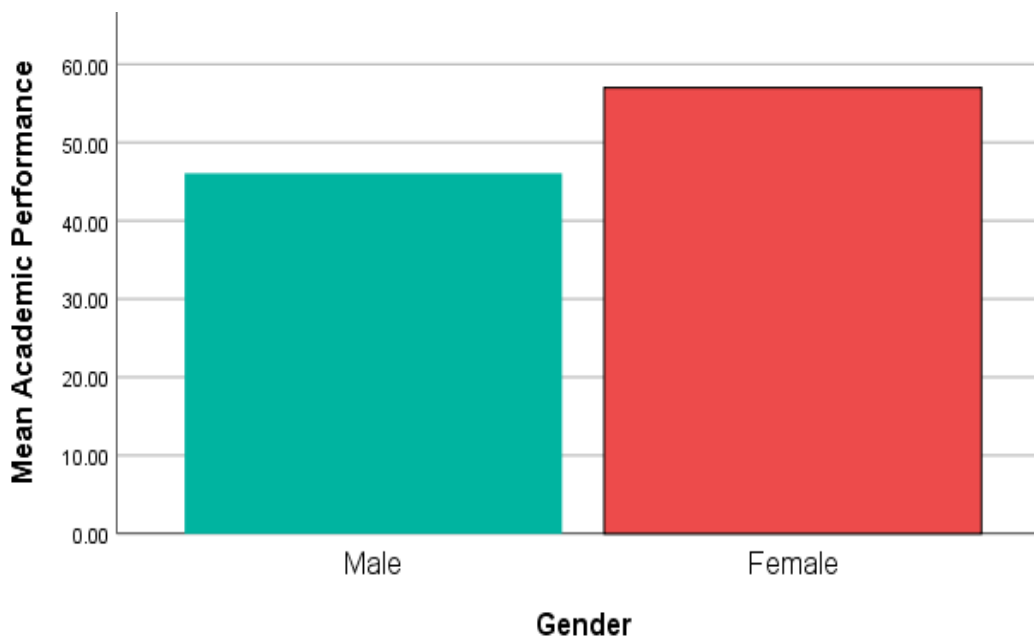


Figure 2: Mean score of level of academic performance in science subject based on gender

The female students performed slightly better than male students. However, there isn't a significant difference statistically in academic performance of male and female secondary school students in science. The thin difference could be due to some factors like teacher competency, motivation level, preparedness, intelligence etc. Thus, it is concluded that there is no significant difference in the academic performance of male and female secondary school students in science which was also corroborated by Joseph, et al. (2015); and Sahranavard & Hassan (2018).

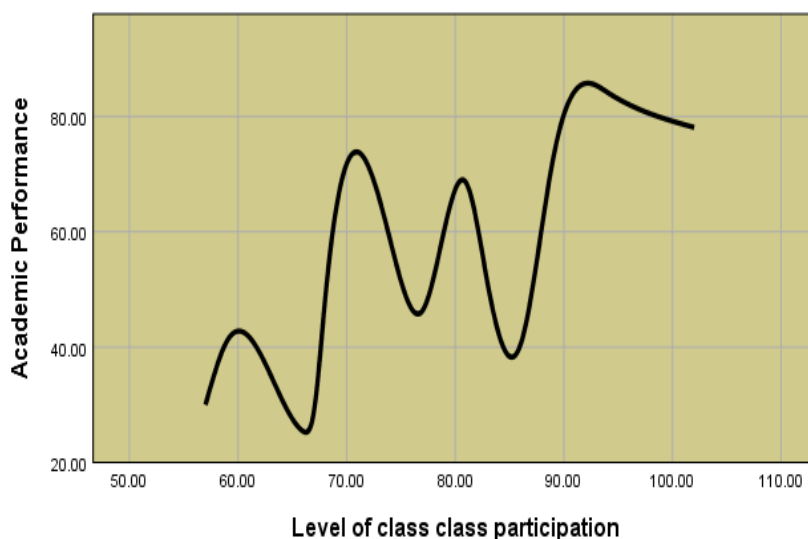
Relationship between academic performance of secondary school students and their class participation in science

The third objective of the present study was to study the relationship between academic performances of secondary school students in science with their level of class participation. For this purpose, Pearson Correlation with bootstrapping was applied to find the association between academic performances of secondary school students in science with their level of class participation. The data pertaining to scores of correlations of the two variables is depicted in the table 5.

Table 5: *Correlation between class participation and academic performance of secondary school students in science subject.*

		Level of class participation	Academic Performance
Level of class participation	Pearson Correlation	1	.763**
	Sig. (2-tailed)		.001
	N	16	16
	Bootstrap ^c Bias	0	-.011
	Std. Error	0	.118
	BCa 95% Lower Confidence Interval	.	.424
		.	.923

According to table 5, the correlation (r) obtained is 0.763. This signifies that there is strong positive correlation between the variables. The calculated significance level (0.001) is also less than 0.05, which gives enough evidence that the correlation is statistically significant. Thus, the level of class participation and academic performance of secondary school students in science are positively associated. So, we conclude that higher level of class participation will elevate the academic performance of the students in science subject. Figure 3 represents the positive relationship of level of class participation and academic performance of secondary school students in science subject. The findings by Voelkl (1995); and Kristin (2010) also support that higher the level of class participation, higher shall be the academic performance of the students.

**Figure 3:** *Relationship of level of class participation and academic performance of secondary school students in science*

Factors affecting the class participation of secondary school students in science.

The fourth objective of the study was to determine the factors affecting class participation of secondary school students. For this purpose, the data was resampled using simulation since resampling is recommended as a remedy when the sample size is small and does not conform to the parametric assumptions (Diaconis & Efron, 1983). Even if the assumptions are met, small sample will have low power level and thus bootstrapping can treat it to generate more observation (Yu, n.d.)

The Exploratory Factor Analysis (EFA) was performed using Principal Axis Factoring and Oblique Rotation initially. The factors showed low correlation with Oblique Rotation and thus, the author selected the Orthogonal Rotation i.e., Varimax Rotation for EFA. The minimum factor loading criteria was set to 0.40. The KMO value which indicates the appropriateness of data was 0.623 which was an acceptable mediocre (Hair et al., 2006) value for EFA. Bartlett's test of sphericity result (0.000 which is less than 0.05) was significant and indicated its suitability for factor analysis. The communalities of the scale were over 0.500. As per the Kaiser Criterion, Eigen value under 1.0 were dropped and hence, the factor solution from this analysis yielded three factors for the scale. However, item number 7, 9, 12, 19 in the factor pattern cross-loaded in the extracted factors, due to which the author repeated the EFA without them.

The new result of the analysis indicated three factors that aligned with the theoretical proposition in this research. Factor 1 includes items 1, 2, 5, 6, 14, 15, 16 referring to students' affective traits, factor 2 includes items 3, 8, 11, 17 that represent the students' cognitive traits and factor 3 includes items 4, 10, 13, 18, 20 that represent the Teachers' traits. The data pertaining to the rotated factor matrix is explained in the table 6.

Table 6: *Rotated Component Matrix^a*

	Component		
	1	2	3
Q14-Language Barrier	.759		
Q2- Shyness	.699		
Q6- Class Size	.692		
Q1- Fear of Teacher	.679		
Q5- Happy Mood	-.673		
Q16- Introvert	-.670		
Q15- Lively class	-.589		
Q8- Confidence		.713	
Q3- Awareness of importance of CP		.712	

Q11- Understanding concept clearly		.670	
Q17- High Self-esteem		.649	
Q4- Teaching Styles			.776
Q20- Critical Thinking			.693
Q13- Dislike to subject			-.535
Q10- Teacher's supportive behaviour			.488
Q18- Skilled Teacher			.486

The rotated component factor represents the three latent factors affecting the class participation in table 6. Based on the 20 traits employed on the identified sample, the factor analysis helped to identify the following three principal factors responsible for the degree of participation in the classroom. They are:

- a) **Students' Affective traits:** This factor comprises of shyness, fear of teacher, happy mood, introvertness, lively class, class size, and language barrier. The affective factors of the students can hugely affect the students to participate more or vice-versa. Students who are emotionally strong can show positive class participation. Whereas, affective factor like shyness, fear, mood, introvert-ness, or language barrier can negatively affect their participation in the classroom activity. Past literatures also revealed that fear of letting teachers down (Hargreaves, n.d.), fear of getting scolded by teachers, and uninterested behaviour (Abdullah, Bakar, Mahbob, 2012), level of shyness (Masek & Masduki, 2017), fear, classroom size, low confidence level (Fassinger, 1995), and lack of confidence in oral communication (Medved et al., 2013) are the students' affective factors that inhibits the participation of students.
- b) **Students' Cognitive traits:** This trait includes confidence level, awareness on importance of class participation, understanding the concept clearly, high self-esteem are traits that are portrayed by the students when students are well prepared before the class and are aware of teaching and learning process. Thus, the positive cognitive traits will allow students to open up and speak in the class. The finding is consistent with finding with Gomez et al. (1995), Fassinger (1995), Abdullah, Bakar, Mahbob (2012) that lack of knowledge, low self-confidence and unpreparedness were some passive cognitive behaviour lowering the students' engagement.
- c) **Teachers' Traits:** This factor includes teaching style, dislike to subjects, teacher's supportive behavior, critical thinking. The supportive behavior of the teacher can also help students get connected to the teacher happily and introvert ones would also participate more which hence can allow them to understand the concept clearly. Therefore, teachers' qualification, and their personal

characteristics play pivotal role in enhancing the class participation of the students, hence motivating learners to perform well academically and shape their decisions about the future (Ngugi & Mumiukha, 2016). Aziz, Quraishi, & Kazi, (2018) also claims that teachers, parents, peers and curriculum and classroom environment are some external factors that influence the class participation of the students.

Conclusions and Recommendations

The students' class participation is found to have strong influence over their academic performances. There were no differences in the class participation and academic performance between students by gender. Students' affective traits, students' cognitive traits and teachers' traits are the principal factors affecting the degree of class participation. The study recommends the need for the teachers to focus on building the higher level of class participation of their students. Teachers need to help students recognize the factors inhibiting class participation and channelize them towards better participation and learning. If the teacher uses variety of pedagogical strategies to make the lesson interesting and lively, students' interest and curiosity shall be evoked allowing them to think critically and participate. Effective learning assessment that takes into account the class participation of students must be put in place. Additionally, the findings of the study inform the policy makers to conduct long-term and short-term courses and workshops regarding the enhancement of the class participation of the students through application of variety of pedagogies and learning assessment for the teachers.

Furthermore, students must be thoroughly orientated regarding the importance of class participation and ways to participate during the learning process. Emotion management skills must be taught to students, so they speak up during lessons without fear, shyness, and other negative personal traits. Finally, interventions must be put in place to nurture the factors like higher confidence level, self-esteem, language skills, small group discussion, etc., that are positively related in elevating the class participation of the students.

Limitations of the study

Some limitations of the study are as follows:

1. The area of the study was limited to only one school.
2. The sample size was very small; i.e. 16 secondary school students.
3. The tool used was self-constructed which may compromise on the reliability and validity of the test. The future study needs to be carried out using data from government and private schools as well as rural and urban schools, to explore the

differences in learning outcomes in relation to class participation and confirm if the findings, that urban students tend to do better than rural students especially in English, math and science. Furthermore, private school students outperformed government students, as per Ministry of Education (2018) is related to students' class participation or not

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