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Research Article

THE CHEMISTRY TEACHER'S COMMUNICATION BEHAVIOUR IN RELATION TO STUDENT'S ATTITUDE AND PERFORMANCE

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ABSTRACT

The research sought to determine the influence of teachers' communication behavior on students' attitude and performance in Chemistry at the Bulacan State University, Bustos Campus, Bustos, Bulacan. Specifically, the study sought answers to the following questions: (1) What level do Chemistry teachers exhibit in the following communication behavior: challenging; encouraging and praising; non-verbal supporting; understanding; controlling? (2) What is the level of the attitude of students toward Chemistry? (3) What is the level of performance of students in Chemistry subject both in lecture and laboratory? (4) Is there a significant relationship between teachers' communication behavior and students' attitude toward Chemistry? And, (5) Is there a significant relationship between teachers' communication behavior and students' performance in Chemistry?

The expressive quantitative and qualitative methods of research were developed. The population of the study consists of 185 students who were arbitrarily selected from different courses in Bulacan State University, Bustos Campus.

The following conclusions were developed: (1) Chemistry teachers garnered very satisfactory ratings in the aspects of challenging communication behavior, encouraging and praising category of communication behavior, non-verbal supporting category of communication behavior, understanding communication behavior, and controlling communication behavior as perceived by their students. (2) The majority of the students have very satisfactory attitudes toward Chemistry. (3) Majority of the students obtained an average rating in their Chemistry grades in lecture and laboratory, and (4) There was no significant relationship between challenging communication behavior of teachers and attitude of the students, encouraging and praising communication behavior of educators and attitude of students, controlling communication behavior of instructors and attitude of students, challenging communication behavior of teachers and Chemistry performance of students, understanding communication behavior of schoolteachers and Chemistry performance of students, and controlling communication behavior of teachers and Chemistry performance. However, there was the significant relationship between non-verbal supporting communication of lecturers and attitudes of students, and understanding communication behavior of teachers and attitudes of students.

KEY WORDS: Communication behavior, attitude, performance.

INTRODUCTION

Communication is an exchange of feelings, ideas, and information, whether by speaking, writing, signals, or behavior. It is an activity in which meaningful information is suggested between two or more people and will be recognized by them by their shared interpretations. The communication between the student and the teacher serves as a connection between the two, which provides a better atmosphere for a classroom environment. Of course, a teacher is not going to understand every problem of every child in his or her classroom but will acquire enough information for those students who are struggling with specific tasks. The more the teacher connects or communicates with his or her students, the more likely they will be able to help students learn at a high level and accomplish quickly. A teacher and student, who have the qualities of good communications, respect in a classroom, and show interest in teaching from the viewpoint of the teacher and learning shape a student, will establish a positive relationship in the classroom.

METHODS OF RESEARCH

Research Design

This research used the expressive quantitative and qualitative approaches to research in determining the relationship of teachers' communication behavior on the students' attitude and performance in Chemistry subject.

Research Instrument

This study adopted the Teachers' Communication Behaviors Questionnaire (TCBQ) that was developed by She and Fisher (2000).

Data Gathering Procedure

A Permission to conduct the survey was sought after from the Administrator of Bulacan State University, Bustos Campus.

RESULTS AND FINDINGS

Table 1: Distribution of Respondents Based on Degree Program.

Degree Program	Total Population	Number of Respondents	Number of Respondents for Attitude Survey
Bachelor in Elementary Education (BEEd)	120	60	60
Bachelor of Secondary Education (BSEd) major in Physical Science	50	25	25
Bachelor of Science in General Engineering (BSGE)	200	100	100
TOTAL	370	185	185

Table 2: Frequency Distribution and Descriptive Measures of the Challenging Communication Behavior of the Chemistry Teachers (N = 185).

Statement	5	4	3	2	1	Mean	Verbal Interpretation
1	47	47	78	10	3	3.68	VS
2	49	66	43	23	4	3.72	VS
3	52	70	48	15	0	3.86	VS
4	31	63	65	22	4	3.51	VS
5	43	66	57	19	0	3.72	VS
6	34	54	68	19	10	3.45	VS
7	40	81	47	13	4	3.76	VS
8	56	61	49	12	7	3.79	VS
Average Mean						**3.69**	**VS**

Statement

This teacher asks questions that require me to provide steps or ways of solving problems, like "How will you prove that plants outside the room grow healthier than if it inside the classroom?"

This teacher asks questions that make me think hard about things that I have learned in class, like "How will you apply the concept in your everyday living?"

This teacher asks questions that require me to carefully analyze information to answer, like "How can we apply the concepts and principles in Chemistry to other fields of study?"

This teacher asks questions that require me to use judgment to answer, like "Given emphasis on know-how inventions, scientific investigations, and research, can Chemistry boost our economic recovery and national development?

This teacher asks questions that require me to apply what I have learned in class to answer, like "What situation in your life that you relate the scientific method?"

This teacher asks questions that require me to integrate information that I have learned, like "Where else can we apply the concepts of balancing equation to everyday living?"

This teacher asks questions that require me to understand what I have learned in class to answer, like "What is it necessary to add acid to water and not water in acid?

This teacher asks questions that require me to give explanations in own words, like "Why do people put salt on icy roads?"

Table 3: Frequency Distribution and Descriptive Measures of the Encouraging Communication Behavior of the Chemistry Teachers (N = 185)

Satement	5	4	3	2	1	Mean	Verbal Interpretation
9	81	54	40	10	0	4.11	VS
10	47	74	54	10	0	3.85	VS
11	36	64	57	26	2	3.57	VS
12	50	54	59	20	2	3.70	VS
13	43	53	61	20	8	3.56	VS
14	60	63	51	7	4	3.91	VS
15	32	59	66	23	5	3.49	VS
16	30	62	70	23	0	3.54	VS
Average Mean						**3.72**	**VS**

Statement

This teacher asks for my opinions during discussions like "What is the importance of Chemistry in life?"

This teacher encourages me to discuss the answers to my questions like "Why are the gasses more easily compressed than liquid?"

This teacher encourages me to discuss my ideas with other students like "According to the law of conservation of mass no mass gain destroyed. But when we boil milk more and more at least it changes the type of sweet. Then why the mass of sweet is less than milk?"

This teacher encourages me to express my opinions about a topic like "Why do leaves change color?

This teacher praises me for asking a good question by saying "Very clear question."

This teacher praises my answer by saying “That’s right.”

This teacher uses my ideas as part of the lesson.

This teacher uses my answer as part of the explanation of the lesson.

Table 4: Frequency Distribution and Descriptive Measures of the Non-verbal Supporting Communication Behavior of the Chemistry Teachers (N = 185)

Satement	5	4	3	2	1	Mean	Verbal Interpretation
17	47	64	55	13	6	3.72	VS
18	43	76	40	20	6	3.70	VS
19	44	69	50	14	8	3.69	VS
20	30	58	72	14	11	3.44	VS
21	36	75	52	17	5	3.65	VS
22	31	53	76	22	3	3.47	VS
23	34	47	86	16	2	3.51	VS
24	30	76	60	15	4	3.61	VS
Average Mean						**3.60**	**VS**

Statement

This teacher nods his/her head to show his/her consideration in my opinion.

This teacher nods his/her head to show support while I am struggling to answer a question.

Without speaking, this teacher indicates support for me through facial expression.

Without speaking, this teacher sustains me when I have a problem with his/her facial expression.

Without speaking, this teacher shows he/she understands my opinion through his/her facial expression.

Without speaking, this teacher shows her enthusiasm about my answer through his/her facial expression.

Without speaking, this teacher shows her enthusiasm about my question through his/her facial expression.

Without speaking, this teacher shows his/her support through his/her eyes.

Table 5: Frequency Distribution and Descriptive Measures of the Understanding Communication Behavior of the Chemistry Teachers (N = 185).

Satement	5	4	3	2	1	Mean	Verbal Interpretation
25	56	84	31	13	1	3.98	VS
26	55	59	52	15	4	3.79	VS
27	100	59	21	0	5	4.35	E
28	44	86	40	14	1	3.85	VS
29	70	72	37	6	0	4.11	VS
30	93	48	34	9	1	4.21	E
31	13	62	57	37	16	3.10	S
32	20	52	62	39	12	3.16	S
Average Mean						**3.82**	**VS**

Statement

This teacher trusts me in solving difficult exercise problems.

This teacher is willing to explain things to me again especially after class hours.

If I have something to say, this teacher will listen.

This teacher realizes when I do not understand by his/her eye contact and repeating the topic again.

This teacher is patient with me if I consistently ask question/s that I don't understand.

This teacher is friendly to me by smiling to me and says good morning or good afternoon.

This teacher is someone I can depend on especially if I have a personal problem.

This teacher cares about me by explaining the difficult lessons to me personally especially after class hours

Table 6: Frequency Distribution and Descriptive Measures of the Controlling Communication Behavior of the Chemistry Teachers (N = 185)

Satement	5	4	3	2	1	Mean	Verbal Interpretation
33	71	71	32	7	4	4.07	VS
34	79	67	29	6	4	4.14	VS
35	20	66	62	27	10	3.32	S
36	26	45	58	26	30	3.06	S
37	32	48	72	19	14	3.35	S
38	25	45	73	21	21	3.17	S
39	47	66	51	15	6	3.72	VS
40	62	49	44	16	14	3.70	VS
Average Mean						**3.57**	**VS**

Statement

This teacher's standards of behavior are very high by reminding his/her students the proper behavior inside and outside the school.

This teacher expects me to obey his/her instructions in lecture and laboratory class.

This teacher insists that I follow his/her rules by enumerating consequences for every violation.

This teacher claims that I do everything he/she tells me to do by giving deduction/s for my mistakes.

This teacher demands that I do accurately as I am informed in doing laboratory experiments/activities.

This teacher does not allow me to do things differently from what he/she expect by reminding me that these are not related to what I need to do.

This teacher makes very clear to me the standard of behavior expected of all students in this class by reminding us before the class starts.

This teacher demands that I listen to instructions to avoid deductions.

Table 7: Level of Attitude of the Students Toward Chemistry (N = 185).

Satement	5	4	3	2	1	Mean	Verbal Interpretation
1	39	72	63	8	3	3.74	VS
2	37	98	46	1	3	3.89	VS
3	49	69	60	4	3	3.85	VS
4	4	8	27	94	52	2.02	F
5	14	41	101	22	7	3.18	S
6	28	87	61	1	8	3.68	VS
7	58	91	33	0	3	4.09	VS
8	47	73	58	5	2	3.85	VS
9	36	80	63	2	4	3.77	VS
10	85	83	14	0	3	4.34	E
Average Mean						3.64	VS

Statement

Chemistry as a subject is more interesting and enjoyable as compared to other areas of interest I enrolled.

I find Chemistry as providing some practical solutions to simple problems in life.

I am eager to learn more about Chemistry.

I think Chemistry is important only in school.

If given a chance/ opportunity, I would like to be in charge of a Chemistry project in my classroom.

If I don't understand a Chemistry topic discussed in class, I read more about it.

The more I learn about Chemistry, the more I like it.

If higher Chemistry be expected in my curriculum/ course, I would welcome it with enthusiasm.

I maximize my effort in doing Chemistry homework

In preparing for a Chemistry examination, I review carefully, making sure that I understand everything.

Table 8: Level of Performance of the Students Toward Chemistry (Lecture) (N = 185).

Grades	Frequency	Percentage	Verbal Interpretation
1.0	0	0	Outstanding
1.25	4	2.16	Outstanding
1.50	23	12.43	Outstanding
Total	**27**	**14.59**	
1.75	27	14.60	Satisfactory
2.0	37	20	Satisfactory
2.25	30	16.22	Satisfactory
Total	**94**	**50.82**	
2.50	29	15.68	Poor
2.75	30	16.22	Poor
3.0	5	2.70	Poor
Total	**64**	**34.60**	
Mean = 2.13			**Satisfactory**

Table 9: Level of Performance of the Students Toward Chemistry (Laboratory) (N = 185).

Grades	Frequency	Percentage	Verbal Interpretation
1.0	1	0.54	Outstanding
1.25	16	8.65	Outstanding
1.50	36	19.46	Outstanding
Total	**53**	**28.65**	
1.75	46	24.87	Satisfactory
2.0	39	21.08	Satisfactory
2.25	15	8.11	Satisfactory
Total	**100**	**54.06**	
2.50	19	10.27	Poor
2.75	13	7.03	Poor
3.0	0	0	Poor
Total	**32**	**17.30**	
Mean = 1.67			**Satisfactory**

Table 10: Regression Analysis of the Teachers' Communication Behavior on the Attitude and Performance of Students in Chemistry

Variables	P value	Decision	Interpretation
Challenging Communication Behavior vs. Attitude	0.062	Accepted	Not significant
Encouraging and Praising Communication Behavior vs. Attitude	0.133	Accepted	Not significant
Non-verbal Supporting Communication Behavior vs. Attitude	0.002	Rejected	Significant
Understanding Communication Behavior vs. Attitude	0.012	Rejected	Significant
Controlling Communication Behavior vs. Attitude	0.455	Accepted	Not significant
Challenging Communication Behavior vs. Chemistry Performance	0.459	Accepted	Not significant
Encouraging and Praising Communication Behavior vs. Chemistry Performance	0.395	Accepted	Not significant
Non-verbal Supporting Communication Behavior vs. Chemistry Performance	0.297	Accepted	Not significant
Understanding Communication Behavior vs. Chemistry Performance	0.317	Accepted	Not significant
Controlling Communication Behavior vs. Chemistry Performance	0.351	Accepted	Not significant

CONCLUSIONS

Based on the findings, the following conclusions have been constructed:

Chemistry teachers garnered very satisfactory ratings in the aspects of challenging communication behavior, encouraging and praising category of communication behavior, non-verbal supporting category of communication behavior, understanding communication behavior, and controlling communication behavior as perceived by their students.

The majority of the students have very satisfactory attitudes toward Chemistry.

The majority of the students obtained a satisfactory rating in their Chemistry grades in lecture and laboratory.

There is no significant relationship between challenging communication behavior of teachers and attitude of the students, encouraging and praising communication behavior of educators and attitude of students, controlling communication behavior of instructors and attitude of students, challenging communication behavior of teachers and Chemistry performance of students, understanding communication behavior of schoolteachers and Chemistry performance of students, and controlling communication behavior of teachers and Chemistry performance. However, there is the significant relationship between non-verbal supporting communication of lecturers and attitudes of students, and understanding communication behavior of teachers and attitudes of students.

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