A STUDY OF GRADE SEVEN STUDENTS' BASIC SCIENCE PROCESS SKILLS, ATTITUDE TOWARDS SCIENCE, AND SCIENCE ACHIEVEMENT

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Abstract

The main aim of the study was to investigate the relationship between the level of students' basic science process skills and science achievement and to investigate the relationship between students' attitude towards science and science achievement. Survey research design, one of the quantitative research designs, was used in this study. And, this study was restricted to two Basic Education High Schools in Sagaing Township. The participants were (228) Grade Seven Students from No (1) Basic Education High School and Shwe Min Wun Practicing High School. These schools were selected by using simple random sampling method. In the collection of data, Basic Science Process Skills Test, Science Achievement Test and questionnaires for Attitude towards Science were employed. The quantitative data were analyzed by using descriptive statistics (means, standard deviations, frequency and percentage). And then, Pearson Product Moment correlation was used to examine the relationship between the level of students' basic science process skills and their science achievement and the relationship between students' attitude towards science and their science achievement. The results revealed that most of Grade Seven students were competent in communicating skill among the six skills. The results also showed that many students were interested in science activity. Moreover, the results stated that most of the students were strong in understanding level among six levels. It was found that there is significant and moderate positive relationship between the level of Grade Seven students' basic science process skills and their science achievement. It was also found that there is significant and weak positive relationship between Grade Seven students' attitude towards science and their science achievement. It can be concluded that the more the students are good at basic science process skills, the higher they achieve in science achievement.

Keywords: attitude, science process skills, basic science process skills, science achievement

Introduction

Students are naturally curious, which makes science an ideal subject for them to learn. Science allows students to explore their world and discover new things. It is also an active subject, containing activities such as hands-on labs and experiments. This makes science well-suited to active younger children. Science is an important part of the foundation of education for all children. Therefore, basic education system that will develop productive and responsible citizens equipped with the essential competencies, skills and values for both life-long learning and employment.

Development of basic science process skills is important as well as development of proper scientific attitude and values. Science education aims to train students to think like scientists and emphasis would be expected on the development of attitude that good scientists are able to display. One of the purposes of teaching is inculcation of desirable attitudes and values (Pacia, 2014). Process skills and attitude towards science are important elements that may influence students' achievement. Science process skills are significant in improving students' cognitive development and facilitating students' active participation during the teaching and learning process. Attitude towards science is positively correlated with science achievement (Papanastasiou & Zembylas, 2004).

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Developing mastery in basic science process skills and positive attitude towards science is aiming for quality students' achievement. The students' performance (academic achievement) according to Mustaq and Khan (2012) plays an important role in producing great leader and manpower for the country responsible for the country's economic and social development. Therefore, this study is to identify the relationship between the level of the students' basic science process skills and their science achievement and the relationship between students' attitude towards science and their science achievement.

Purpose of the Study

The main purpose of the study is to investigate a study of grade seven students' basic science process skills, attitude towards science, and science achievement. The specific objectives of the study are as follows:

- To find out the level of the students' basic science process skills in terms of observing, communicating, classifying, measuring, inferring and predicting
- To investigate the attitude of students towards science in terms of teaching strategy, academic value, science activity and classroom environment
- To explore the science achievement of students in terms of cognitive process dimensions: remembering, understanding, applying, analyzing, evaluating and creating
- To examine the relationship between the level of the students' basic science process skills and science achievement
- To determine the relationship between students' attitude towards science and science achievement
- To give suggestions and recommendations based on the findings

Research Questions

The research questions of this study are as follows:

1. To what level do the students' basic science process skills differ in terms of observing, communicating, classifying, measuring, inferring and predicting?
2. What are the differences in attitudes of students towards science in terms of teaching strategy, academic value, science activity and classroom environment?
3. To what level do the science achievement of students differ in terms of cognitive process dimensions: remembering, understanding, applying, analyzing, evaluating and creating?
4. To what extent is there a relationship between the level of the students' basic science process skills and science achievement?
5. To what extent is there a relationship between students' attitude towards science and science achievement?

Definition of Key Terms

Attitude

Attitude is defined as a psychological tendency to evaluate an entity, and which is composed of emotional, cognitive, and behavioral components (Newbill, 2005).

Science process skills

Science process skills refer to skills or abilities that must be owned by the scientists on the process of scientific discovery (Chebii, 2011).

Basic science process skills

Basic science process skills include observing, communicating, classifying, measuring, inferring and predicting (Chebii, 2011).

Science achievement

Science achievement has been defined as a level of proficiency attained in scientific work or as formally acquired knowledge in science, which is often represented by percentage of marks obtained by students in examinations (Kohli, 1975, cited in Mehdipour & Balaramulu, 2013).

Scope

This study is geographically restricted to two Basic Education High Schools in Sagaing Township. Research participants are (228) Grade Seven students from No (1) Basic Education High School and Shwe Min Wun Practicing High School within 2022-2023 Academic Year.

Review of Related Literature

Importance of Science

Education is characterized by a number of features that contrast greatly with education of, say, 50 years ago. First, learning is not understood in the way it was earlier. Today considerations of learning are not restricted to a selected type of methodologies but employ a plethora of methods, strategies, and approaches. Secondly, learning contexts today often encompass a diversified group of people, of different age, gender, social and professional backgrounds, and participating in education- schooling or training-for a very wide range of reasons. And a dramatically growing field of education is online learning, offering courses to endlessly diversified audiences located in very distant countries. The field of learning science is nowadays characterized by diversity in terms of learners, learning environments, and learning methods. As a consequence of these multiple diversities, there is a growing demand for interdisciplinary and advanced research on education in order to foster the processes of acquiring knowledge in different settings and for different audiences, as well as to enhance the potential of educational institutions in a world that has no effective geographic boundaries (Lederman, Khalick & Schwartz, 2015).

Science is now an accepted, indeed often a core, part of the school curriculum around the world. However, no matter how much time is put aside for teaching science, there always has to be a severe selection of material as there is much more potential science content than could realistically be fitted within a pupil's school career. In selecting curriculum, we should always keep our purposes in mind for teaching science. There are a number of good reasons that might be suggested for teaching science. In particular it is worth considering the following arguments:

- It is important to teach science because of the need for future scientists, engineers, technologists, and others who will need a strong science background for their work.
- It is important to teach science as it is an important aspect of modern culture and everyone should appreciate this aspect of culture.

- It is important to teach science because a knowledge of science is needed for citizenship in modern technological societies (Taber, 2017).

Science Process Skills and Science Achievement

Science process skills are a set of skills commonly used by scientists and others for conducting scientific inquiry. These process skills are classified into two as basic and integrated skills. Basic science processing involves observing, question raising, measuring, communicating, classifying, predicting and inferring. Integrated science process skills require controlling variables, defining terms operationally, formulating hypotheses, interpreting data, and formulating models. The basic and integrated skills together improve the thinking and reasoning abilities. Academic achievement of pupils refers to the knowledge attained and skills developed in school subjects. So, academic achievement in science means the achievement of students in the science subjects in relation to their knowledge, attaining ability or degree of competence in school tasks usually measured by standardized tests and expressed in grades or units based on pupil's performance (Suman, 2020).

Science Process Skills are essential for teaching science content knowledge and scientific inquiry because teachers who have a poor understanding of the science process skills are less likely to have a positive attitude towards them and are, therefore, less likely to teach them to their students (Cain, 2002 cited in Raj & Devi, 2014). Science Process Skills instruction also promotes positive attitudes toward science among students; thus, the avoidance of teaching the process skills can be detrimental (Bilgin, 2006 cited in Raj & Devi, 2014).

The development of teaching that students acquire knowledge, skills and scientific attitude and higher achievement can be arranged for students to participate in most activities and take action on their own. Teachers are those who have a critical role in promoting learning and development activities for the students to learn science process skills and have fun in learning science to achieve the goals set course (Ngiamjit, 2016).

Both basic and integrated scientific skills are important in any scientific investigation such as conducting projects and carrying out experiments. Appropriate selections of science process skills can be taught and studied in the early years of primary school. The young students can be given the opportunity to observe, handle things and explore the environment (Ango, 2002 cited in Chinyere et al., 2020).

Attitude towards Science and Science Achievement

Many research studies confirm the positive correlations between students' achievement in science subjects and positive attitudes toward science. Students who have positive attitudes show increased attention to classroom instruction and participate more in science activities (Osborne, Simon & Collins, 2003 cited in Said, Adam & Hannieh, 2018). The fact that science teaching is most commonly associated with a laboratory, which is part of the physical environment, may favor the positive impact of physical environment on students' attitude and achievement. Therefore, researchers mostly report positive correlations between school environment and students' achievement.

Several studies showed that students' attitude have a relationship with teaching method and academic performance. Litke's (1995 cited in Luntungan, 2012) study showed that students have

various attitudes that are closely related to teaching methods. Sadi and Cakiroglu's (2011 cited in Luntungan, 2012) study also found that the method used seemed to affect students' attitude toward the class, and this may be the most influenced factor in learning. A study by Akkuzu and Akcay (2011 cited in Luntungan, 2012) showed a relationship between students' attitude and their academic performance. They suggested that students' positive attraction toward certain kinds of teaching may help increase their academic performance. Eastman, Iyer, and Eastman (2011 cited in Luntungan, 2012) suggested that when students have a positive attitude toward something, they will do the task well. Students' attitude towards science is an important factor that is associated with achievement in science. Parker and Gerber (2000 cited in Ali & Awan, 2013) explained that attitude towards science are very important for the achievement in science because the attitudes and achievement lead to the selection of careers by the students.

Research Method

Research Design

This study aims to investigate the effect of basic science process skills and attitude towards science on grade seven students' science achievement. The design used in this study is survey research design which is one of the quantitative research designs. In this study, data were mainly collected through a quantitative method.

Subjects

The samples of the study were (228) Grade Seven students from No (1) Basic Education High School and Shwe Min Wun Practicing High School. The schools were selected by using simple random sampling method. The sample size for two high schools was presented in the table 1.

Table 1 The Sample Basic Education High School and Sample Size

Name of Basic Education High School	Sample Size
No (1) Basic Education High School	127
Shwe Min Wun Practicing High School	101
Total	228

Instruments

This section describes the instruments used in the current study. The main instruments of the study are Basic Science Process Skills Test, questionnaires for Attitude towards Science and Science Achievement Test. Basic Science Process Skills Test and questionnaires for Attitude towards Science were based on Maranan, (2017) : "Basic Process Skills and Attitude toward Science: Inputs to an Enhanced Students' Cognitive Performance". Basic Science Process Skills Test was developed in terms of observing, communicating, classifying, measuring, inferring and predicting levels and included (30) items. Questionnaires for Attitude towards Science were developed under four dimensions: (1) Teaching Strategy, (2) Academic Value, (3) Science Activity and (4) Classroom Environment. Moreover, this questionnaire for attitude towards science was developed: strongly disagree, disagree, undecided, agree and strongly agree on a five-point Likert scale. There were (20) items and two open-ended questions in questionnaire for attitude towards science. Science Achievement Test was structured with (30) items according to cognitive process dimensions such as remembering, understanding, applying, analyzing, evaluating and creating.

Science Achievement Test was based upon Chapter 5 and 6 of Grade Seven Science Textbook (New Curriculum).

Procedure

Firstly, in order to get the required data, the instruments were constructed under the guidance of the supervisor. After preparing the tests and questionnaire, an expert review was conducted by two expert teachers who have special knowledge from the Department of Curriculum and Methodology, Sagaing University of Education. After that, tests and questionnaire were modified. And then, pilot testing was conducted with thirty grade seven students at No (3) Basic Education High School. By computing the results of basic science process skills test from pilot testing, four items were removed from (30) items of basic process skills test to be reliable. For the internal consistency reliability, Cronbach's alpha coefficient for questionnaire and Kuder-Richardson coefficient for two tests were used. The reliability coefficient of questionnaire was 0.852. The reliability coefficients of basic science process skill test and achievement test are 0.613 and 0.641. According to Taber (2016), the reliability value 0.8 or greater is a good level and the reliability value 0.6 or greater is acceptable level. Therefore, the questionnaire and tests were used in the main study. And then, the permission of principals was requested to distribute the instruments to all participants of two Basic Education High Schools and administered with the help of grade seven students of the respective Basic Education High School in October 2022. After two weeks, all the instruments were returned, and then the data were entered into a computer data file and were analyzed by using the Statistical Package for the Social Science (SPSS 25).

Data Analysis

The quantitative data was analyzed by using descriptive statistics (means and standard deviation) to examine attitude towards science. Descriptive statistics (means, percentage and frequency) were used to assess students' level of basic science process skills and science achievement. In order to examine the relationship between the level of the students' basic science process skills and their science achievement and the relationship between students' attitude towards science and their science achievement, Pearson product moment correlation was used.

Research Findings

Descriptive Statistics of Level of Students' Basic Science Process Skills

To examine the level of students' Basic Science Process Skills, descriptive statistics were used. Table 2 showed the mean of Basic Science Process Skills on each dimension.

Table 2 Mean Scores of Basic Science Process Skills of Grade Seven Students

Basic Science Process Skill	*N*	Mean	*SD*
Observing	228	3.47	0.75
Communicating	228	4.98	0.15
Classifying	228	3.98	0.95
Measuring	228	3.83	1.19
Inferring	228	1.77	0.46
Predicting	228	3.23	0.97

According to the results, the mean of communicating skill was the highest (4.98) and inferring skill has the lowest mean (1.77). The level of means for each dimension was illustrated in Figure 1.

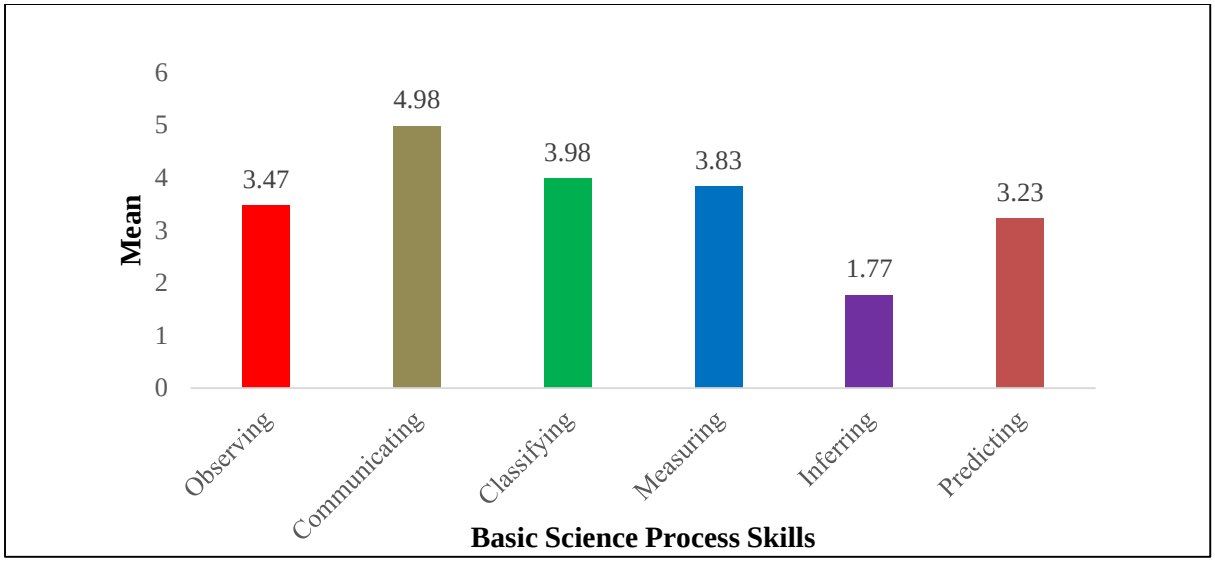

Figure 1. Mean comparison on each dimension of basic science process skills.

According to Figure 1, it was found that the mean of communicating skill had the highest mean among six basic science process skills.

Table 3 ***Analysis of Level of Students' Basic Science Process Skills***

	Obs		**Com**		**Class**		**Meas**		**Infer**		**Pred**		
Score	***f***	**%**	***f***	**%**	***f***	**%**	***f***	**%**	***f***	**%**	***f***	**%**	
5					86	37.7	83	36.4			22	9.6	M
4	136	59.6	5	2.2	63	27.6	65	28.5			68	29.8	NM
3	68	29.8	223	97.8	71	31.1	53	23.2			83	36.4	MTM
2	20	8.8			5	2.2	16	7.0	180	78.9	50	21.9	MTM
1	3	1.3			3	1.3	7	3.1	44	19.3	5	2.2	LM
0	1	0.4					4	1.8	4	1.8			NM
Total	228	100	228	100	228	100	228	100	228	100	228	100	

Note. 5 = Mastered (M); 4 = Near Mastery (NM); 3 = Moving Towards Mastery (MTM); 2 = Moving Towards Mastery (MTM); 1 = Low Mastery (LM); 0 = No Mastery (NM); Obs = Observing; Com = Communicating; Class = Classifying; Meas = Measuring; Infe = Inferring; Pred = Predicting.

According to Table 3, about 80 students were mastered in classifying and measuring skills. In predicting skill, 22 students were mastered. About 60 students were near mastery in classifying, measuring and predicting skills and 136 students were also near mastery in observing skill. 223 students were moving toward mastery in communicating skill. Then, 88 students in observing skill, 76 students in classifying skill, 69 students in measuring skill and 133 students in predicting skill were moving toward mastery. A few students were low mastery in all skills except communicating skill and also are no mastery in observing, measuring and inferring skills. Table 4 showed the means and standard deviation of the attitude of students towards science.

Descriptive Statistics of the Attitude of Students towards Science

To examine the attitude of students towards science, descriptive statistics were used. Table 4 showed the mean and standard deviation of attitude towards science on each dimension.

Table 4 Mean Scores of the Attitude of Students towards Science

Attitude towards science	*N*	Mean	*SD*	Minimum	Maximum
Teaching Strategy	228	20.00	3.13	9	25
Academic Value	228	20.15	2.75	11	25
Science Activity	228	20.40	2.96	8	25
Classroom Environment	228	16.84	4.13	5	25

According to Table 4, the mean score of students' attitude towards science was the highest in science activity (20.40) and it was followed by the mean scores of students' attitude towards science in academic value (20.15), teaching strategy (20.00) and classroom environment (16.84). The comparison of the mean for each dimension was presented in Figure 2.

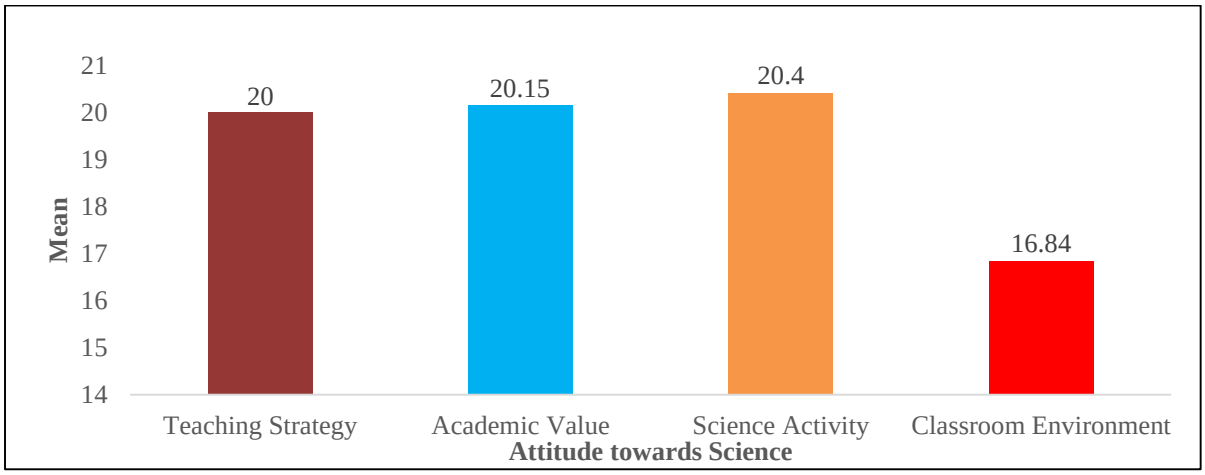

Figure 2. Mean comparison of the attitude of students towards science.

According to Figure 2, mean comparison of the attitude of students towards science can be seen clearly.

Descriptive Statistics of the Level of Students' Achievement in Science

To examine the level of students' achievement in science, descriptive statistics were used. Table 5 showed the mean of cognitive process dimensions on each dimension.

Table 5 Mean Scores of Cognitive Process Dimensions of Grade Seven Students

Cognitive Process Dimension	*N*	Mean	*SD*
Remembering	228	4.65	0.68
Understanding	228	4.72	0.68
Applying	228	4.16	1.32
Analyzing	228	3.73	1.35
Evaluating	228	4.07	1.09
Creating	228	3.41	1.61

According to the results, the mean of understanding was the highest (4.72) and creating has the lowest mean (3.41). The level of means for each dimension was illustrated in Figure 3.

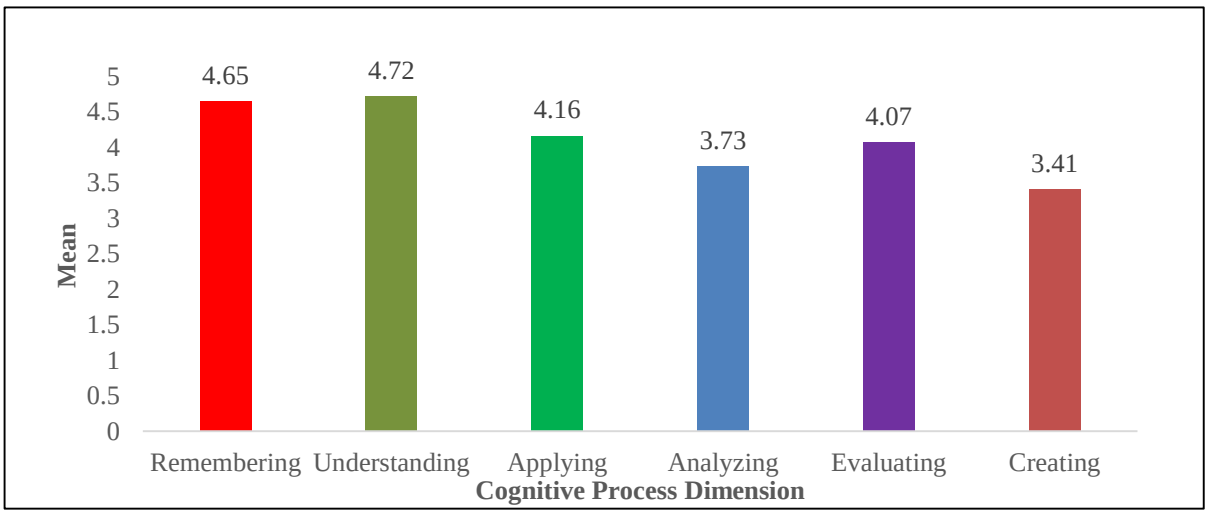

Figure 3. Mean comparison on each dimension of cognitive process dimensions.

According to Figure 3, the mean of understanding had the highest mean among six cognitive process dimensions.

Table 6 Analysis of Level of Students' Achievement in Science

	Rem		**Und**		**App**		**Ana**		**Eva**		**Cre**		
Score	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	
5	169	74.1	191	83.8	152	66.7	83	36.4	110	48.2	89	39.0	O
4	44	19.3	13	5.7			64	28.1	51	22.4	35	15.4	VS
3	9	3.9	21	9.2	56	24.6	45	19.7	44	19.3	31	13.6	S
2	6	2.6	3	1.3	9	3.9	19	8.3	19	8.3	40	17.5	FS
1					2	0.9	6	2.6	3	1.3	19	8.3	DNME
0					9	3.9	11	4.8	1	4	14	6.1	DNME
Total	228	100	228	100	228	100	228	100	228	100	228	100	

Note. 5 = Outstanding (O); 4 = Very Satisfactory (VS); 3 = Satisfactory (S); 2 = Fairly Satisfactory (FS); 1 = Did not meet expectations (DNME); Rem = Remembering; Und = Understanding; App = Applying; Ana = Analyzing; Eva = Evaluating; Cre = Creating.

According to Table 6, it can be seen the number of students in line with their scores in each level. In remembering level, 169 students were outstanding, 44 students were very satisfactory, 9 students are satisfactory and 6 students were fairly satisfactory. In understanding level, 191 students were outstanding, 13 students were very satisfactory, 21 students were satisfactory and 3 students were fairly satisfactory. In applying level, 152 students were outstanding, 56 students were satisfactory, 9 students were fairly satisfactory and 11 students did not meet expectations. In analyzing level, 83 students were outstanding, 64 students were very satisfactory, 45 students were satisfactory, 19 students were fairly satisfactory and 17 students did not meet expectations. In evaluating level, 110 students were outstanding, 51 students were very satisfactory, 44 students were satisfactory, 19 students were fairly satisfactory and 4 students did not meet expectations. In creating level, 89 students were outstanding, 35 students were very satisfactory, 31 students were satisfactory, 40 students were fairly satisfactory and 33 students did not meet expectations.

Analysis of the Relationship between the Level of the Students' Basic Science Process Skills and Science Achievement

The Pearson-product moment correlation was utilized to find out the relationship between the level of the students' basic science process skills and science achievement. The results of Pearson-product moment correlation between the level of the students' basic science process skills and science achievement were presented in Table 7 in detail.

Table 7 Correlation between the Level of the Students' Basic Science Process Skills and Science Achievement

Basic Science Process Skills	Cognitive Process Dimensions					
	Rem	Und	App	Ana	Eva	Cre
Observing	.160*	.069	.196**	.266**	.124	.194**
Communicating	.099	-.062	-.005	-.052	.009	.038
Classifying	.208**	.115	.167*	.271**	.324**	.375**
Measuring	.099	.147*	.266**	.409**	.273**	.291**
Inferring	.081	-.064	.131*	.112	.109	.108
Predicting	.108	.037	.098	.195**	.110	.173**

Note. Rem = Remembering; Und = Understanding; App = Applying; Ana = Analyzing; Eva = Evaluating; Cre = Creating.

*$p < .05$. **$p < .01$.

Table 7 revealed that the relationships of each dimension of basic process skills and each dimension of cognitive process dimensions were presented. Among them, there was a significant relationship and moderate correlation between measuring skill and analyzing dimension ($r = .409$, $p < .01$) at (.01) level. Moreover, there was a significant relationship and moderate correlation between classifying skill and creating dimension ($r = .375$, $p < .01$) at .01 level.

Table 8 The Relationship between the Level of the Students' Basic Science Process Skills and Science Achievement

Scale	Students' Basic Science Process Skills	Students' Science Achievement
Students' Basic Process Skills	1	.462**
Students' Science Achievement	.462**	1

**Correlation is significant at (.01) level (2-tailed).

According to Table 8, it was found that students' basic science process skills were significantly and positively related to students' science achievement (r=.462) at (.01) level. According to Mills and Gay (2016), the strength of correlation was moderate. It can be said that the better students are clever in basic science process skills, the more they achieve in science.

Analysis of the Relationship between Students' Attitude towards Science and Science Achievement

The Pearson-product moment correlation was utilized to find out the relationship between students' attitude towards science and science achievement. The results of Pearson-product moment correlation between students' attitude towards science and science achievement were presented in Table 9 in detail.

Table 9 Correlation between Students' Attitude towards Science and Science Achievement

Variables	Teaching Strategy	Academic Value	Science Activity	Classroom Environment
Remembering	.219**	.084	.279**	-.057
Understanding	.031	-.020	.063	-.006
Applying	.169*	.156*	.200**	-.102
Analyzing	.182**	.144*	.185**	-.185**
Evaluating	.297**	.144*	.270**	-.079
Creating	.366**	.279**	.337**	-.112

Note. $^{*}p < .05$. $^{**}p < .01$.

Table 9 revealed that the relationships of each variable of students' science achievement and each dimension of students' attitude towards science were presented. Among them, there was a significant relationship and moderate correlation between creating and teaching strategy (r = .366, p < .01) at .01 level.

Table 10 The Relationship between Students' Attitude towards Science and Science Achievement

Scale	Students' Attitude towards Science	Students' Science Achievement
Students' Attitude towards Science	1	.211**
Students' Science Achievement	.211**	1

**Correlation is significant at the (.01) level (2-tailed).

It was found that students' attitude towards science was slightly related to students' science achievement (r = .211) at (.01) level. According to Mills and Gay (2016), the strength of correlation was weak.

Discussion and Suggestions

Discussion

In this section, the research findings of the study are described as follows:

1. To what level do the students' basic science process skills differ in terms of observing, communicating, classifying, measuring, inferring and predicting?

According to the findings, the biggest percentage of students were "moving towards mastery" in terms of communicating. The result may imply that using maps, graphical representations and diagrams which can help students to improve this skill. Most of the students were "near mastery" in terms of observing. Observing as fundamental science process skills is essential to the development of the other science process skills and the result may imply that students' mastery in observing greatly affects their mastery in other process skills. One-third of students were "mastered" in classifying skill. The result may imply that the students were competent in using different basic units in science so as that number of students were "mastered" in measuring skill. The result may imply that the students completely understood the different measuring instrument and solving simple conversion of units.

2. What are the differences in attitudes of students towards science in terms of teaching strategy, academic value, science activity and classroom environment?

Findings revealed that students have "positive attitude" in science in terms of teaching strategy. Students perceived their teacher as a person who is helpful, uses various instructional materials and makes science easy and funny. Majority of the students had "positive attitude" towards science in terms of academic value. The data may imply that the students know the importance of science. They also know that science is an important role in their everyday lives. They value science as a subject they work hard to implement their dreams. The data may imply that students had "positive attitude" in science in terms of science activity. Students are interested in science activities and enjoy and learn more when working in groups. Students had "positive attitude" towards science in terms of classroom environment. Their classrooms are enough to use laboratory classroom and those rooms have fairly useful laboratory instruments.

3. To what level do students' science achievement differ in terms of cognitive process dimensions: remembering, understanding, applying, analyzing, evaluating and creating?

Over a half of students were "outstanding" in remembering. Many students may be good in memorizing. Almost 200 students were also "outstanding" in understanding. They pay attention to their teacher whenever she teaches them. One-third of students were outstanding in terms of applying. In analyzing, evaluating and creating level, over 80 students were also outstanding. Students who "did not meet expectations" were very few. As a result, there is a need to help that students improve in each dimension.

4. To what extent is there a relationship between the level of the students' basic science process skills and science achievement?

It was found that there was a significant relationship between the level of the students' basic process skills and science achievement. It can be said that the more they are clever in basic science process skills, the more they achieve in science.

5. To what extent is there a relationship between students' attitude towards science and science achievement?

It was found that there was a low correlation between students' attitude towards science and science achievement. It can also be said that there was a slight significance between students' attitude towards science and science achievement.

Suggestions

From this study, it was found that there was a positive significant relationship between students' basic science process skills and science achievement. This is consistent with the findings of (Suman, 2020) in which there is significant high positive correlation between basic process skills and achievement in science of the secondary school students. It has been proved that students' basic process skills have an important influence on their science achievement. The more students' competence in basic process skills, the more achievement in science. Science should be taught through experimentation and hands on activities so as to train the students in scientific enquiry and process skills of science. Students should be encouraged to design low-cost innovative apparatus and experiments to have a deeper understanding of scientific laws and principles. Teaching of science should not be confined within the four walls of classroom and laboratory. Rather they should be motivated to observe their surroundings and the natural phenomenon for developing the scientific attitude and basic process skills of science. Policy makers, curriculum developers and textbook writers and other stakeholders involved in science education should

modify the school science curriculum and textbooks so as to give more emphasis on the practical aspects of science. According to Raj (2014), science teachers should contribute to narrowing the gap between classroom science and its application to daily life by emphasizing the contributions that laboratory activities could make in raising the learners' various intellectual and procedural skill that are likely to be useful in their future careers. Through constant motivation and encouragement during the teaching-learning activities in science the students can re-conceptualize their perceptions about science learning and they will be more involved in the activities. Innovative and creative instructional styles may aid in facilitating a fun filled and enjoyable science environment. Student-centered strategies should be applied by science teachers or instructors to improve the achievement of students by emphasizing basic process skills and by giving them group activities that need collaboration effort.

This study revealed that there was low correlation and slightly significant relationship between students' attitude towards science and science achievement. In class activities, the importance should be given to learning-teaching status in order to prove students to learn the subject completely, and giving more time to individual activities would help students to improve positive attitudes towards learning the science. Students should be provided a chance to see and visit the science and natural museums. Therefore, students will be interested in these activities and will improve positive attitudes. In order to improve positive attitudes towards science, aims concerning the perception and senses should be incorporated in the curriculum and tried to be transformed to behavior. The studies examining the students' attitude and science achievement should be implemented to other groups with different ages, classes and places. Studies determining the teacher's attitude towards students can be recommended. Moreover, school support in the areas of building for science related activities like laboratories and e-classroom is needed.

Conclusion

The main purpose of the study was to investigate a study of grade seven students' basic science process skills, attitude towards science, and science achievement. Teachers should help their students to improve the skills which need to be clever. The students had homogeneity of positive attitude in all the items in the survey of attitude towards science. Most students have outstanding achievement in science. It was found that there was a positive significant relationship and moderate correlation between students' basic process skills and their science achievement. It was found that there was slightly significant and low correlation between students' attitude towards science and their science achievement. In conclusion, basic process skills are the skills that increase the permanence of learning. Learning attitude is concerned with learners' learning experiences, beliefs, values as well as a learner's educational background. The attitude of learning has great effect on the learning process and learning outcomes which determines a learner's success or failure to a great extent. Therefore, more attention should be paid to the problem of the students' attitude toward learning. Basic process skills are essential for all students' science achievement. Moreover, high positive attitude towards science of students plays an important role to improve in science achievement. Therefore, basic science process skills and attitude towards science are things that help students to achieve in science. By having competence in science, the students will be good citizens who can contribute to the public regarding with their science knowledge.

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