

## TEACHERS' INFLUENCE ON PRIMARY SCHOOL PUPILS' ATTITUDE TOWARDS SCIENCE LEARNING

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### Abstract

*The declining enrolment for science professions necessitates the need to draw more students into science learning. Among the purposes of science education is the development of positive attitudes towards science learning. The teacher plays a vital role in this regard. This study focuses on the influence of teachers on primary pupils attitude towards science learning. The study is descriptive and the population consists of all primary five pupils in public schools of Ado local government area of Ekiti state. The sample was made up of 200 primary school pupils. The instrument used in the study was a 35 items questionnaire eliciting information on how teachers behaviour and teaching styles have influenced primary schools pupils attitude towards science subject. Validity of the instrument was censured by experts in science education and tests measurement. The reliability of the instrument was ascertained using test retest method. A reliability coefficient of 0.67 was obtained through Pearson's product correlation statistics. Two research hypotheses were formulated for the study and are tested at 0.05 level of significance. The data collected were analyzed using Pearson product moment correlation statistics. The result revealed a non-significant effect of excursion and outdoor learning on primary school pupils' attitude towards science learning and a significant effect of teacher's use of basic science laboratory and conduction of experiment on the attitude of primary school pupils towards science learning. It was concluded that teacher's pedagogical style has a positive influence on pupils attitude towards science learning. It was recommended that Government should organize workshops and trainings on the job for primary school teachers to improve their professional skills, also education stake holders and Government should provide equipped basic science laboratories in primary schools to enable participation in and create interest of o science in primary school children*

**Keywords:** Teacher, influence, primary school pupils, attitude, science learning

### Introduction

In many countries of the world, there is some concern that the enrolment in technical and scientific professions is declining and that it is necessary to recruit more students for a career in science and technology. As clearly stated by Osborne and Tytler, (2012) the cause for students not choosing science and technology related studies is usually not concerned with student's ability but with their perceived attractiveness of science and technology related subjects. For this reason, many programs have been developed to get students more enthusiastic for studying science and technology related subjects in order to maximize the chances of them opting for a future career in these fields. These programs thus assume that teacher competences and attitudes affect students' attitudes. Attitude is positive or negative feeling about a person, object or an issue it can be defined as feelings, beliefs and values held about school science and the impact towards the society (Orsborne, Simon & Collins 2003) This study explore the influence of teachers on the attitude of primary school pupils towards science learning. The study aims at gaining insight into the presumed effects that teaching influence have on the development of pupil's attitude.

Students generally do not seem to like studying science and technology very much. Research on students attitude towards science and technology consistently points to an increasingly negative attitude towards science in students especially, when they get older. It is suggested that students develop their attitude towards science and technology at an early age. Research indicate that students attitude towards science and technology are formed before the age of 14 (Osbourne, Simon and Tytler 2009) these is mostly primary school age. This is believed to largely affects their future career choices.

As in the case in many countries and unlike secondary school teachers, Nigeria primary teachers need not specialize in specific subject area. Primary school teachers provide teaching in many subject areas and their enjoyment in teaching varies across subjects. Primary teachers have been found to rate science among the least enjoyable subjects to teach (Wilkins 2002). It is therefore likely that teachers vary in degree to which they show enthusiasm while teaching science and technology. (Palmer, 2004). According to social cognitive learning theories, children learn by observing standards and behaviours of their teachers. Students shape their attitude towards a subject by listening to teachers' comments and by observing

their teacher's enjoyment when teaching about a topic as discovered in a study by Frenzel, Goetz, Ludtke, Pekrun and Sutton (2009) who further explained that teachers may thus influence students' experiences via their abilities to (accidentally or intentionally) instill values and beliefs in their teachings and students may adopt these value and beliefs as their own attitude. The more a teacher enjoyed the teaching, the more enthusiastic he taught and the more students enjoyed the lesson. As early as 1960s Mastin discovered that teacher attitude towards a specific subject influenced student attitude towards the subject. Moreover, teachers who lacked ability, confidence and enthusiasm were more likely to have students with poor attitudes Ardzejewska, Memaugh & Coutts (2010). A positive teacher attitude seems to be crucial in the development of a positive student attitude. A good content knowledge of subject, provide a base level of confidence in teachers

### Problem of the Study

It was observed that the enrolment of science student is inadequate compared with the need of scientist in the society. Students don't seem to like studying science. The foundation of science learning in school system seem in need of reinforcement to create positive attitude that will be able to attract students to science learning. The need to create a positive attitude towards science learning in children at early age thus become imperative. The ability of the teacher to influence a positive science learning attitude in primary school pupil need to be investigated.

### Purpose of the Study

The study purpose to investigate the influence of teachers pedagogical style on the attitude of primary school pupils towards science learning. This study is would stir the teachers up to their responsibilities of creating positive attitude towards learning into children at tender ages to enable them develop interest in science learning and science oriented careers. The focus of the study was to investigate teacher's pedagogical influence with regards to; the use of basic laboratory and carrying out experiment with pupils, taking pupils out for excursion and out-door learning in science

### Hypotheses

The following hypothesis are tested in this study

1. There is no significant influence of outdoor learning/excursions on the attitude of primary pupils towards science learning.
2. There is no significant influence of experiment on the attitude of primary pupils towards science learning.

### Instrumentation

The instrument consists of a questionnaire titled 'Teacher's influence on primary pupils attitude towards science learning'(TIPPASL). The 35 item questionnaire has two sections (A) and (B); Section

(A) elicited information on pupils' bio-data, while (B) was made of items to be tick Yes / No which sought information on pupils' attitude towards teacher's motivating good behaviors and performances in pupils, teacher's use of the laboratory and carrying out experiment with pupils, taking pupils out for out-door learning and excursions also on pupil's liking of teacher and science subject and pupil's hope for science career. The instrument was validated by experts in science education and test measurement. Reliability of instrument was done through test retest method and a reliability coefficient of 0.67 was obtained using Pearsons' product moment correlation which was adjudged high enough to be reliable.

### Population and Sample

The study employed descriptive design method. The population was made up of all primary five pupils in public primary schools in Ado local Government area of Ekiti State. The sample size was 200 selected through simple random sampling technique.

### Results and Discussion

The data collected from pupils response is thus presented in percentages and statistically analyzed to test the two hypotheses

Ho1. There will be no significant effect of excursion and outdoor learning on the attitude of primary pupils towards science learning.

Table 1 & 2 are presented on this hypothesis

**Table 1:** Primary school pupils response on excursions and outdoor learning

	Frequency	Percent	Valid percent	Cumulative percent
Yes	7	3.5	3.5	3.5
Valid	193	96.5	96.5	100.0
No	200	100.0	100.0	
<b>Total</b>				

The above table shows that 3.5% of the respondents indicated that they go on science excursion in their school while 96.5% of the respondents indicated that they have never experienced going on excursion in their school.

**Table 2:** Pearson product moment correlation on the effect of excursion and outdoor learning on primary school pupils' attitude towards science learning

Variable	N	Mean	SD	Df	r-calc	r-tab	Remarks
Excursion/ outdoor learning	200	50.00	33.730	199	0.165	0.195	Not significant
Primary school pupils attitude	200	82.75	12.487				

The result above revealed that the r-significant calculated (0.165) is less than the Pearson product moment correlation coefficient table of critical value (0.195) so the hypothesis is not rejected at

0.05 level of significance. Therefore, there was no significant effect of excursion and outdoor learning on primary school pupils attitude towards science learning.

Ho2. There is no significant influence of experiment on the attitude of primary pupils towards science learning.

Table 3&4 are presented on this hypothesis

**Table 3:** Primary school pupils' response to the use of laboratory and participation in experiment.

	Frequency	Percent	Valid percent	Cumulative Percent
Yes	143	71.5	71.5	71.5
No	57	28.5	28.5	100
Valid	200	100	100	
No				
Total				

It is shown on the above table that 71.5% of the respondents said that they carry out experiment in science subject in their school while 28.5% said they don't do any experiment in their own schools.

**Table 4:** Pearson Moment correlation on the influence of experiment on primary pupils attitude towards science learning

Variable	N	mean	SD	Df	r-cal	r-tab	Remarks
experiment	20	50	26.736	199	0.323	0.195	Significant
Pupils' attitude	200	82.75	12.487				

The result above revealed that the r-significant calculated (0.323) is greater than Pearson product moment correlation coefficient table of critical value (0.195). Hence the null hypothesis was rejected at 0.05 level of significance. Therefore there is a significant effect of teacher's use of basic science laboratory and experiment on pupils' attitude towards science learning.

### Discussion

The teacher's teaching influence on primary pupils attitude towards science learning is imperative to his/her liking the subject and it also depends on teachers' knowledge of and interest in subject. The study reported a non significance effect of excursion on primary pupils attitude towards science learning. Salmi (2003) in his study, showed that visiting science centers increased pupils' intrinsic motivation. Though several works have shown that practical works positively influence pupils' attitudes in science and that it is usually difficult to create an interesting lesson via formal education. Some of the reasons that make excursion difficult might be: lack of planning time, lack of materials due to money, formal environment and some prejudices of pupils like; fear, anguish, dislike, aversion e.t.c.

Excursions could be a complex and expensive, though educative activity in education system, thus school management and teachers often try to device an alternative despite that researches have recorded

that most natural learning is realized through personal experience and in natural environment. This could be the reason for the low record of excursions in schools used in this study. The result of this study shows that primary pupils attitude towards science learning may not be influenced by excursion and outdoor learning in Ado local Government of Ekiti state as some pupils who never went on excursion still have some wish to learn science. Many science students in tertiary institutions when interrogated, acclaimed to the fact that they never experience excursion in their primary schools. There is need for encouragement on excursion and outdoor learning in science pedagogy to improve attitude of students towards learning.

According to Kristiana and Pavol (2006) practical activities have positively influenced pupils' attitude and achievement in science learning. This is supported by this study as a significant effect of laboratory usage on primary school pupils was recorded. Learning by doing Dewey (1938) is one of the oldest and most natural learning methods which help explore our surrounding and understand life. The study of Eddie, Fred and Monika (2014) recorded that pupils attitude can be a resulting effect of teacher's teaching attitude. Teachers who are keen and interested in laboratory usage will develop interest and liking for experiment and science practical studies and will be better equipped to teach primary school pupils using simple experiment to back up what was read in textbook. This will develop pupils' interest in science subjects. There is the need for teachers to constantly improve their professional skills to meet up with the task of creating a positive attitude towards science learning in primary school pupils by developing their manipulative, cognitive and affective domains, making science learning interactive, thus influencing a positive attitude towards science learning in them.

### Conclusion

It was concluded from the study that teachers has a significant influence on primary school pupils' attitude towards science learning. Positive attitudes towards science teaching in primary school teachers will have a corresponding effect on pupils' attitude towards science learning. It was also concluded that motivation by teacher has a positive effect on primary pupils attitude towards science learning. Primary school pupils are naturally very playful, thus learning through experiment has a positive impact on children's attitude towards science learning. Excursions and outdoor learning, though educative, may have no significant effect on primary school pupils attitude towards science learning.

### Recommendations

Based on the findings of the study, the following recommendations are made;

1. Primary school teachers should be given special training on science teaching methods regarding the importance of science to the society
2. Science teachers should endeavor to improve their professional skills daily
3. Education stake holders/Government should provide basic science laboratories in primary schools to create interest of experiment in children
4. Government and stake holders should encourage excursion and outdoor learning in science subjects teaching.
5. Creating a science attitude in primary school pupils should be priority in science teaching.

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