

## **Pre-service science teachers, gender, and self-efficacy beliefs about school climate in Nigeria**

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### **Abstract**

Teachers are the implementers of the curriculum goals of all subjects in schools. No matter how good the curriculum goals are, the success depends largely on the teachers whose beliefs about the school climate can affect their performance. This study finds out the differences between male and female pre-service science teachers' self-efficacy beliefs about their schools' climate in each of the 7 subscales in the Bandura Teacher's self-efficacy scale. A total of 100 pre-service teachers (39 males and 61 females) were used for the study. The instrument used was the standardized version of Bandura Teacher's self-efficacy scale containing a total of 30 items in 7-subcales on a 4-points scale. The quantitative data generated with the instrument were analysed using t-test on SPSS stat. Results showed that although there were differences between male and female pre-service teachers' self-efficacy beliefs about their school climate in all of the 7 subscales; no significant difference was found between the male and female' pre-service teachers' self-efficacy beliefs in 6 of the subscales. But there was a significant difference between males and female pre-service science teachers' self-efficacy beliefs in creating a positive school climate in favour of the males. The males generally had higher means and positive self-efficacy beliefs in 6 of the subscales. It was interesting to note that although the males had a higher mean than the females in their self-efficacy belief about decision making in the school, however both the males and females had low means and lacked positive self-efficacy to make decisions in their schools. Recommendations were made on how to improve self-efficacy beliefs of male and female teachers about their school climate in areas where they had negative self-efficacy.

**Keywords:** Pre-service science teachers, School climate, Self-efficacy beliefs. Gender

### **Introduction**

The school climate is the overall quality and character of the school life and this includes the academic climate, the environment within and outside the classroom, the relationships or community climate, and the safety in the school. (Wikipedia, 2019). It is what makes people feel, believe and perceive that the school is being what it should really be- a school. Teachers are the implementers of the curriculum goals of all subjects in schools. No matter how good the curriculum goals are, the success depends largely on the teachers whose beliefs about the school climate can affect their performance on the job.

The school's climate is one very important factor that helps to determine student and teachers' success in the teaching-learning situation. Teachers need to understand what school climate is and

how the school climate is assessed to be sure they are positively impacting on their school's learning climate. (Hughes, 2019). According to Freinerg (1999) the school climate is that *essence of a school* that leads (in this case) a teacher to love the school and to look forward to being there each school day. Giving teachers an opportunity to respond to a school climate self-efficacy assessment scale can help them understand how the school climate can affect their self-efficacy beliefs about the school and their job; such assessments can also help them find out their areas of strength and the areas where they need to make improvement.

Self-efficacy is the belief in one's own capabilities. And for the teacher, it has the ability to make a teacher either effective or not in carrying out his professional duties. Studies show that teachers with high sense of self-efficacy provided more support for students to learn better and those teachers were also

able to create a more positive classroom learning environment (Ying Guo, 2012). Ying Guo(2012) and his co-researchers who carried out a group study on the effects of teacher qualification teacher self-efficacy and classroom practices on fifth grades literacy outcomes establish in their study that teachers' self-efficacy predicts teachers' practices which in turn predicts students' literacy over and above the other variables. Thus they conclude that teacher self-efficacy moves beyond the typical concept of teachers' qualification. It is important that besides the knowledge and skill components of teaching science students, science teachers need assistance to improve their self-efficacy beliefs about their school climate as this can help to contribute immensely to the success of achieving curricula goals. The physical layout, size, and material resources of a school can affect school climate. According to Wang and Degol (2016), environmental variables such as classroom layout, the adequacy of the school setting, the maintenance and infrastructure of the building, and the accessibility and allocation of educational resources and activity schedules can influence how safe teachers and students feel and how well they perform in school. The researcher was a first-hand witness of the case of a certain teacher who was teaching in a certain public school in an Urban town in Nigeria who refused to be visited in her school because according to the teacher, her school buildings were dilapidated, she had no office, the classes were rowdily overpopulated and the school generally was uninviting for a guest. That teacher displayed a negative self-efficacy belief about her school's climate and that affected her teaching job and prestige negatively.

Pre-service science teachers would generally need help in developing a strong self-efficacy belief about their career and this help should come early at their foundation stage. One of the ways to help

them in this regard is to introduce them to self-efficacy surveys or assessments. Many pre-service teachers have never responded to any self-efficacy assessment scale before and so they do not know for certainty the areas where they are likely to have their strength or weakness. Wang and Degol(2016) argued that in schools, obtaining an accurate picture of the school's climate is an essential component for improving the learning environment and that Information about school climate can be collected in many ways of which surveys are the most common method used by researchers.

In this research, the Bandura teachers perceived self-efficacy scale was used to assess pre-service science teachers' beliefs about their school climate. The scales consist of seven subscales which include:

1. efficacy to influence decision making in the school;
2. efficacy to influence school resources;
3. instructional efficacy;
4. disciplinary self-efficacy;
5. efficacy to enlist parental involvement;
6. efficacy to enlist community involvement; and;
7. efficacy to create a positive school climate.

These 7 subscales are among the many factors linked to school climate that have been found to affect teachers' turnover rates positively or negatively. And just as a positive school climate can improve on a teacher's self-efficacy beliefs and professional accomplishments, a negative school climate is associated to teachers having more feelings of low personal accomplishment, more cynicism, and depersonalization.(Thapa, Cohen, Guffey, & Higgins, 2013). Other school climate factors that can affect a teacher positively or negatively include the relationships between teachers and their colleagues and

the relationship between teachers and the school administration.

Several studies on the relationship between gender and self-efficacy beliefs of teachers have been inconclusive (Klassen & Chiu, 2010; Cubukcu, 2008; and Gurbuzturk & Sad, 2009). Hence this study looked at the issue of gender differences in self-efficacy beliefs of the pre-service science teachers about school climate indices.

Having established the importance of self-efficacy beliefs of teacher about their school climate and how it can impact on their performance and professional practices, this study was purposely carried out to find out pre-service science teachers' self-efficacy beliefs about their schools' climate and their capabilities in creating a more positive learning climate in Delta State Nigeria. It was also to find out the differences between the male and female pre-service science teachers' self-efficacy beliefs about their school climate in each of the 7 subscales in the Bandura Teacher's self-efficacy scale.

To guide this study, three research questions and two research hypotheses were stated.

### **Research questions**

The following research question are answered in this study:

1. Do the pre-service science teachers have positive self-efficacy beliefs (SEB) about their school climate?
2. Are there differences between male and female science teachers SEB about their school climate?
3. In what subscales of the self-efficacy scale do the male and female pre-service science teachers perceive that their school climate is positive or negative?

### **Research hypotheses**

The following hypotheses are tested in this study:

1. There is no significant difference between male and female pre-service teachers' self-efficacy beliefs about their school climate.
2. There is no significant difference between male and female pre-service science teachers' self-efficacy beliefs about their school climate in each of the seven subscales.

### **Literature review**

The Conceptual Framework for study is based on the work of Albert Bandura whose social cognitive theory of 1977 emphasized that the reciprocal interaction of a behaviour, person and environment is where learning occurs in a social setting. According to Bandura, self-efficacy is the beliefs in one's capacity to organize and execute the course of action required to produce given attainments (Bandura 1997). This is saying that self-efficacy beliefs of teachers about their jobs, school climate and learning environments have both positive and negative effects on the teachers and therefore affect their performance which in turn affects their students' performance positively or negatively too. The Bandura's Social cognitive theory's main concept is that an individual will act and react in almost every situation based on the influences from the external environments. This goes for teachers too.

The school learning Climate has a high influence on the self-efficacy beliefs of the teachers. For the pre-service teachers who are beginners', many researchers are of the view that the key to strong self-efficacy begins from the onset of the teaching experience (Pendergast, Garvis & Keogh, 2011; Lacks, 2016; Newbery 2018). The beliefs the pre-service teachers have about teaching in a particular environment shows off in the person's ability to cope in any unpleasant situations they are likely to come across in

the course of carrying out their duties as pre-service teachers.

A teacher has the capability to judge himself about his involvement with - his students, colleagues, parents, school heads, classroom activities and the entire professional environment. His judgement of himself in this regard is his self-efficacy beliefs. It is his personal beliefs about his teaching and professional abilities. Generally, it is believed that the higher the self-efficacy, the higher the positive outcomes. Many studies on Self-efficacy beliefs of teachers have been consistently related to positive teaching behaviours and learning outcomes (Raath & Hay, 2016). In a study carried out by Raath and Hay 2016, on teachers' commitment to integrate climate change resilience into their teaching practices in South Africa reports the differences amongst teachers regarding their self-efficacy and how this relates to their confidence and commitment to integrate climate change in their teaching practices. They found out that teachers with greater self-efficacy beliefs were more willing and resilient to engage in climate change project. They recommend amongst others that teachers need support to reinforce their belief that they can contribute meaningfully to teaching and developing climatic change resilience.

Teachers, most especially pre-service teachers generally would need support in virtually all 7 areas in the Bandura's teachers perceived self-efficacy scale. They need support to boost their efficacy to influence decision making; school resources; instructional self-efficacy; disciplinary self-efficacy; parental and community involvement and in their efficacy to create a positive school climate. According to Clark and Newbery (2018), teacher education programs are under great pressure to produce highly capable teachers whose beliefs have been influenced positively in order to produce good outcomes. In their recent study on

building pre-service teachers self-efficacy beliefs, they recommend that the teacher-educators and mentor teachers should provide more help in order to strengthen the pre-service teachers' self-efficacy beliefs which can be influenced by what they see and believe. For instance, in one of the items under disciplinary self-efficacy the pre-service teachers are asked "how much can you do to get children to follow classroom rules?" if the school authority has instructed the teachers to do little or nothing to get the children to obey the classroom rules; and each time they try to enforce discipline, they are queried, such teachers would develop a low self-efficacy belief about disciplinary self-efficacy. This can be demoralizing and even affect their performance in several areas while carrying out their professional duties.

In another instance, one of the items under efficacy to create a positive school climate had an item that state "how much can you do to make the school a safe place?" to this Hughes (2018) stated that "schools need to be concerned with the safety of the teachers and students and that It would be quite difficult trying to learn in a classroom where the teacher or students are afraid something or someone was going to physically harm them". Also related to this argument, Wang and Degol (2016) stated that a positive school climate to a teacher means to feel physically and emotionally safe and for the schools to have clear and consistent rules to maintain order and discipline in the school. In this research the pre-service science teachers' self-efficacy beliefs about their school climate in Delta State, Nigeria was considered and the school climate being a sum up of all the 7 sub-scales in the Bandura's instrument.

On gender differences, several studies have conflicting results on self-efficacy beliefs of male and female teachers. According to Raath and Hay (2016) teachers' self-efficacy beliefs

ranges from subject to subject in terms of gender differences. Results of their study shows that male teachers had a higher self-efficacy belief level to teach climate change resilience than the female teachers. Sonfo, Amankwah, Sam and Konin (2015) in a research on teachers' self-efficacy beliefs: the relationship between gender and instructional strategies, classroom management and student engagement; found out that male teachers differ from female teachers in relation to their instructional strategy efficacy beliefs with females having higher instructional efficacy beliefs. But in terms of classroom management and student engagement efficacy beliefs there were no differences between male and female teachers. In a similar research carried out by Klassen & Chiu (2010) they found out that female teachers have lower self-efficacy levels in classroom management and higher self-efficacy beliefs in instructional strategies.

Still on gender, several researchers have carried out researches that showed no significant differences in gender and self-efficacy beliefs (Phillips & Russels 1994, Cubukcu 2008, Garavand, Kareshki & Ahanhian 2014, and Amir et al (2017). Cubukcu (2008) in a study on the relationship between teachers' gender and self-efficacy beliefs found out there was no relationship between self-efficacy beliefs and gender.

On the other hands, some studies showed that there were significant relationships between gender and self-efficacy (Opare 2008, Gurbuzturk & Sad 2009). Gurbuzturk & Sad (2009) in their study on gender and self-efficacy beliefs; found that there was a relationship between self-efficacy and gender and the male teachers had stronger self-efficacy beliefs than the female teachers. Similarly, Opare 2008 in his study on gender differences in academic self-efficacy beliefs and perceptions dynamics of the collaborative learning context found the males to be more efficacious.

All the researches above were carried out in different places and subject areas and they all showed conflicting and inconclusive results of findings. This study was carried out again to ascertain the self-efficacy beliefs of male and female pre-service science teachers about their school climate in Delta State, Nigeria.

## **Methods**

### **Research design**

This study employed the survey design with a quantitative approach utilized to collect the data generated from the Bandura Teachers self-efficacy questionnaire. The dependent variable is the teacher self-efficacy belief while the independent variables are all the school climate indices which are the seven subscales in the Bandura self-efficacy scale.

### **Population, sample and sampling technique**

All the 349 pre-service science teachers from the three State Colleges of Education who just concluded their teaching practice exercises for the 2016/17 academic session were used in the study. A sample of 100 pre-service science teachers (39 males and 61 females) were participants of the study. Two selection criteria were used to get the 100 pre-service science teachers needed for the study. First, all those who did not complete their 6-week teaching practice exercise or who missed out in any of the days were not among those sampled. Thus the pre-service science teachers' population reduced to 215. Secondly probability without replacement sampling technique using small ballot papers with a "yes or no" was used to get the 100 pre-service science teachers (39 males and 61 females) for the study.

The demographic table is given as: Table 1

**Table 1: Demographic data of the study**

Schools	Males	Females	Total
1.	13	20	33
2	15	25	40
3.	11	16	27
<b>TOTAL</b>	39	61	100

### **Instruments**

The instrument used to collect data was the Bandura's teachers' self-efficacy scale consisting of 30 items in 7 subscales on a 4-point Likert scale of 1-4. (See the appendix section). The rating of 1 was used for "Nothing, 2 for "Very little" 3 "for some influence" and 4 for "a great deal".

The instrument's validity and reliability were determined. Since it was a slightly modified version of the original Bandura teacher self-efficacy scale, it was given to chief lecturers in curriculum department to evaluate the face and content validity. To establish the instruments reliability a pilot study was carried out on 30 pre-service teachers who were not part of the study and the Cronbach alpha reliability testing based on standardized items was carried out to test for internal consistency and 0.73 reliability co-efficient was obtained. This is acceptable according to George and Muller (2003) rule of thumb for Cronbach reliability.

The questionnaires were administered personally by the researcher to the pre-service science teachers in the three public Colleges of Education in Delta State. The administration took 3 days since the schools were far apart. The researcher spent one day in each of the three schools.

The quantitative data generated using the Bandura's pre-service teachers' self-efficacy questionnaire were analysed using both descriptive and inferential statistics. The research questions were answered using descriptive statistics while the independent sample t-test was used to analyse the research hypotheses. The sum of all the responses in the Likert scale was calculated to get their average score. The higher the score, the higher the efficacy. The scale is a 4-point scale in which 1 represents "nothing"; 2 represents "very little"; 3 represents "some influence"; and 4 represents "a great deal".

The Teachers self-efficacy scale (TSES) scoring sheet includes the total overall sum of each participant's score. To ensure accuracy, each survey was scored and then double-checked.

### **Method of data collection and analysis**

#### **Presentation of results and discussion**

#### **Research question one:**

Do the pre-service science teachers have positive self-efficacy beliefs (SEB) about their school climate?

**Table 2: Pre-service science teachers' self-efficacy beliefs about their school climate**

No. of respondents	items	$\sum X$	$\bar{X}$	x(Midpoint for all items on a scale of 1-4)	Mean diff.
100	1-30	7623	76.23	75.00 $x=(2.5 \times 30)$	1.23

From the Table 2 the pre-service science teachers had a total score of 7623 out of a highest score of 12000. Their mean value was 76.23 which is higher than the mid value of 75. The difference in mean is 1.23. Thus, the pre-service science

teachers generally have positive self-efficacy beliefs about their school climate. The research question two will tell if there are differences between male and female science teachers SEB in each of the 7 subscales.

**Research question 2:**

Are there differences between male and female science teachers SEB about their school climate?

**Table 3: Male and female pre-service science teachers' self-efficacy beliefs about the school climate**

Efficacy to influence school climate (scales 1-7)

No of items	Sex	No.	$\bar{X}$	Mid-value x	Decision
30	Males	39	80.49	75.00	Positive ( $X > x$ )
	Females	61	73.51	75.00	Negative ( $x < X$ )
<b>TOTAL</b>		<b>100</b>	<b>M.D 6.98</b>		

Table 3 shows that there is a mean difference of 6.98 between males and females in their self-efficacy beliefs about the school climate with the males having a higher mean value of 80.49 than the females with a mean value of 73.51. Since the mean value of 80.49 is higher than 75 which is the midpoint for all items on the scale, it shows that the males generally have a positive self-efficacy belief while the female with a lower mean score of 73.51 generally have negative self-efficacy beliefs about their school climate.

Also from Table 2, all the pre-service teachers have a mean value of 76.23 which shows a positive self-efficacy belief but table 3 made it clearer that it is the males with a mean value of 80.49 that caused this difference; the females had a mean value of 73.51 which is lower than the mid value of 75.

**Research question three**

In what subscales of the self-efficacy scale do the male and female pre-service science teachers perceive that their school climate is positive or negative?

**Table 4: descriptive statistics and *t*-test for all 7 subscales of male and female pre-service teachers' self-efficacy beliefs about their school climate.**

Variables	No. of teachers	No of items in scale/midvalue (mdv)	X	sd	df	<i>t</i> -cal.	<i>t</i> -crit	Decision
<b><i>efficacy to influence school climate (scales 1-7)</i></b>								
<b>male</b>	39	30(items 1-30) mdv=75	80.49	18.09	98	1.85 ( <i>p</i> =0.07)>	1.96 ( $\alpha$ =0.05)	NS
<b>female</b>	61		73.51	18.65				
<b>total</b>	100		6.98					
<b><i>scale 1: efficacy to influence decision making</i></b>								
<b>male</b>	39	2(items 1-2) mdv=5	4.97	1.91	98	1.01 ( <i>p</i> =0.32)	1.96	NS
<b>female</b>	61		4.57	1.98				
<b>total</b>	100	<b>mean diff</b>	0.40					
<b><i>scale 2: efficacy to influence school resources</i></b>								
<b>males</b>	39	1(item3) mdv= 2.5	2.74	1.06	98	0.05 ( <i>p</i> =0.96)	1.96	NS
<b>females</b>	61		2.72	1.59				
<b>total</b>	100	<b>mean diff</b>	0.02					
<b><i>scale 3: efficacy to influence instruction</i></b>								
<b>males</b>	39	9 (items4-12) mdv=22.5	24.70	6.81	98	1.93 ( <i>p</i> =0.06)	1.96	NS
<b>females</b>	61		22.00	6.71				
<b>total</b>	100	<b>mean diff</b>	2.69					
<b><i>scale 4: disciplinary self-efficacy</i></b>								
<b>males</b>	39	3 (items13-15) mdv=7.5	7.87	2.00	98	-0.26 ( <i>p</i> =0.49)	1.96	NS
<b>females</b>	61		8.00	2.60				
<b>total</b>	100	<b>mean diff</b>	-0.13					
<b><i>scale 5: self-efficacy to enlist parental involvement</i></b>								
<b>males</b>	39	3 (items16-18) mdv=7.5	7.77	2.34	98	0.46 ( <i>p</i> =0.64)	1.96	NS
<b>females</b>	61		7.52	2.70				
<b>total</b>	100	<b>mean diff</b>	0.25					
<b><i>scale 6: self-efficacy to enlist community involvement</i></b>								
<b>males</b>	39	04(items19-22) mdv=10	10.33	3.48	98	0.94 ( <i>p</i> =0.35)	1.96	NS
<b>females</b>	61		9.7	3.14				
<b>total</b>	100	<b>mean diff</b>	0.63					
<b><i>scale 7: efficacy to create positive school climate</i></b>								
<b>males</b>	39	08 (items23-30) mdv=20	22.46	6.28	98	2.42 ( <i>p</i> =0.02<	1.96 ( $\alpha$ =0.05)	S
<b>females</b>	61		19.26	6.55				
<b>total</b>	100	<b>mean diff</b>	3.20					



Table 4 shows the descriptive and t-test statistics for self-efficacy beliefs of males and females pre-service teachers in the 7 subscales.

From Table 4, the males have higher self-efficacy beliefs than the females in six of the subscales: efficacy to: influence decision, (4.97 > 4.57); influence school resources, (2.74 > 2.72); influence instruction (24.70 > 22.00); enlist parental involvement (7.77 > 7.52); and enlist community involvement (10.33 > 9.7); and efficacy to create a positive school climate (22.46 > 19.26).

The females have a higher self-efficacy belief than the males only in disciplinary self-efficacy (8.00 > 7.87).

On whether the males and female pre-service teachers have positive or negative self-efficacy beliefs in the seven subscales, result in table 4 shows that:

1. both male and female pre-service science teachers have negative self-efficacy beliefs in decision making; (4.97 & 4.57 < 5.00 mid value)
2. both males and females have positive self-efficacy in influencing school resources, (2.74 & 2.72 > 2.50 mid value); disciplinary self-efficacy (8.00 & 7.87 > 7.50 mid value); and efficacy to influence parental involvement (7.77 & 7.52 > 7.50 mid value);
3. only males have positive self-efficacy to influence instruction (24.70 > 22.50 mid value); influence community involvement (10.33 > 10.00 mid value) and efficacy to create positive school climate (22.46 > 20.00 mid value).

### Research hypotheses

**Ho1.** There is no significant difference between male and female pre-

service teachers' self-efficacy beliefs about their school climate.

Table 2 shows the t-test analysis on male and female pre-service science teachers' efficacy to influence school climate. And result shows that no significant difference occurred in the efficacy of male and female pre-service science teachers to influence their school climate. ( $t_{cal}=1.85 < t_{cri}$  is 1.96,  $p > 0.05$ ).

Since the *t*-test calculated value is lesser than the table value, hypothesis one is therefore accepted that there is no significant difference between male and female pre-service teachers' self-efficacy beliefs about their school climate.

**Ho2:** There is no significant difference between male and female pre-service science teachers' self-efficacy beliefs about their school climate in each of the seven subscales.

Results in Table 3 showed that:

- i. no significant differences were found between male and female pre-service teachers' self-efficacy beliefs about their school climate in six of the seven subscales (efficacy to: influence decision ( $p > 0.05$ ,  $t_{cal}$  1.01 < 1.96); influence school resources ( $p > 0.05$ ,  $t_{cal}$  0.05 < 1.96); influence discipline ( $p > 0.05$ ,  $t_{cal}$  0.26 < 0.96); influence parental involvement ( $p > 0.05$ ,  $t_{cal}$  0.46 < 1.96); influence community participation ( $p > 0.05$ ,  $t_{cal}$  0.94 < 1.96) and; influence instruction ( $p > 0.05$ ,  $t_{cal}$  1.93 < 1.96).
- ii. a significant difference between the self-efficacy beliefs of male and female pre-service teachers in only one of the subscale which is: efficacy to create positive school climate ( $p < 0.05$ ,  $t_{cal}$  2.42 > 1.96).

## Discussion

Results of this study has further shown the need to understand what school climate is and how the teachers' self-efficacy beliefs about the school climate can be assessed; to be sure the teachers are positively impacting on their school's learning climate. This is because the school climate is one very important factor that helps to determine student and teachers' success in the teaching-learning situation. In this study, although the males had higher means than the females in their self-efficacy beliefs in most of the subscales, yet the differences were not significant. This study agrees with results of other studies (Phillips & Russels 1994, Cubukcu2008, and Garavand, Kareshki& Ahanhian 2014), that there is no significant difference between male and female teachers' self-efficacy beliefs in six of the school climate subscales (efficacy to influence decision making in the school; efficacy to influence school resources: instructional efficacy; disciplinary self-efficacy; efficacy to enlist parental involvement; and; efficacy to enlist community involvement). On the other hand, the result of this study agrees with the findings of Opare (2008), and Gurbuzturk and Sad (2009) in their study that there was a relationship between self-efficacy beliefs and gender in teachers' efficacy to create a positive school climate.

## Conclusion

This study was to find out the self-efficacy beliefs of Pre-service science teachers about their school climate in Nigeria. It made use of the Bandura teachers self-efficacy scale that consist of 7 subscales with a total of 30 items. It was also to find out if there was a significant difference in the self-efficacy beliefs of male and female teachers in each of the 7 subscales.

Results of this study has shown that the males teachers have positive self-efficacy

beliefs about their school climate in their efficacy to influence school resources, instructional self-efficacy, efficacy to influence parental and community involvement and efficacy to create` a positive learning climate; while the female teachers' have positive self-efficacy to influence school resources, influence discipline and influence parental decision. The females themselves also lacked self-efficacy to influence community involvement, instructional self-efficacy and the efficacy to create positive school climate.

Also, both male and female pre-service teachers lack efficacy to influence decision making in the school. This may be because they were still pre-service teachers who are not regarded as full members of the school staff and so lack self-efficacy to make decision about their school.

In conclusion both male and female teachers and pre-service teachers as well as school head have roles to play in ensuring the school climate is a positive one for themselves, other teachers and the students.

## Recommendation

This study was carried out again to ascertain the self-efficacy beliefs of male and female pre-service science teachers about their school climate in Delta State, Nigeria. Based on the results of this study, it is recommended that more should be done by the school heads, principals and education authorities to involve both male and female pre-service teachers in decision making in the day to day running of the school. Teachers, especially the females should also try to improve their efficacy to make the school a positive place for learning and the school heads have their roles to play in ensuring comfort, safety and security for all teachers to boost their self-efficacy,

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**Modified Bandura teachers’ self-efficacy scale of rating from 01(Nothing)–04(A great deal)**

This questionnaire is designed to help us gain a better understanding of the kind of things that create difficulties for teachers in their school climate and school activities.

	<b>Efficacy to Influence Decision making</b>	<b>Nothing</b>	<b>Very Little</b>	<b>Some Influence</b>	<b>A Great Deal</b>
		<b>(x1)</b>	<b>(x2)</b>	<b>(x3)</b>	<b>(x4)</b>
<b>1</b>	How much did you influence the decisions that were made in the school?				
<b>2</b>	How much did you express your views freely on important school matters?				
<b>Efficacy to Influence School Resources</b>					
<b>3</b>	How much did you do to get the instructional materials and equipment you need?				
<b>Instructional Self-Efficacy</b>					
<b>4.</b>	How much did you do to influence the class sizes in your school?				
<b>5.</b>	How much did you do to get through to the most difficult students?				
<b>6.</b>	How much did you do to promote learning when there is lack of support from the home?				
<b>7</b>	How much did you do to keep students on task on difficult assignments?				
<b>8</b>	How much did you do to increase students’ memory of what they have been taught in previous lessons?				
<b>9</b>	How much did you do to motivate students who show low interest in schoolwork?				
<b>10</b>	How much did you do to get students to work together?				
<b>11</b>	How much did you do to overcome the influence of adverse community conditions on students’ learning?				
<b>12</b>	How much did you do to get children to do their homework?				
<b>Disciplinary Self-Efficacy</b>					

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13	How much did you do to get children to follow classroom rules?
14	How much did you do to control disruptive behavior in the classroom?
15.	How much did you do to prevent problem behavior on the school grounds?
<b>Efficacy to Enlist Parental Involvement</b>	
16	How much did you do to get parents to become involved in school activities?
17.	How much did you assist parents in helping their children do well in school?
18	How much did you do to make parents feel comfortable coming to school?
<b>Efficacy to Enlist Community Involvement</b>	
19	How much did you do to get community groups involved in working with the schools?
20	How much did you do to get churches involved in working with the school
21	How much did you do to get businesses involved in working with the school?
22	How much did you do to get local colleges and universities involved in working with the school?
<b>Efficacy to Create a Positive School Climate</b>	
23	How much did you do to make the school a safe place?
24	How much did you do to make students enjoy coming to school?
25	How much did you do to get students to trust teachers?
26	How much did you help other teachers with their teaching skills?
27	How much did you do to enhance collaboration between teachers and the administration to make the school run effectively?
28	How much did you do to reduce school dropout?
29	How much did you do to reduce school absenteeism?
30	How much did you do to get students to believe they can do well in schoolwork?

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