DETERMINATION OF TEACHERS' SELF-EFFICACY IN TEACHING IN SECONDARY SCHOOLS USING ALBERT BANDURA'S SELF-EFFICACY MEASUREMENT INSTRUMENT IN ENUGU STATE

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Abstract

This study determined teachers' self-efficacy in teaching in secondary schools using Bandura's self-efficacy measurement scale. Teachers' belief in discharging their duties in schools has been shown to be of concern to stakeholders in education. When teachers have low level of self-efficacy in teaching, their productivity will be hampered. The general purpose of this study was to determine teachers' self-efficacy in teaching in secondary schools in Enugu State using Albert Bandura's self-efficacy measurement instrument. Three research questions and one hypothesis guided the study, which adopted descriptive survey research design. The population was 8,503 public secondary school teachers in Enugu State. Multi-stage sampling procedure was employed in drawing a sample of 425 teachers. The instrument was face-validated by three experts, one in Psychology and two in Measurement and Evaluation unit. It was also construct validated using factor analysis. The internal consistency index was estimated using Cronbach alpha method and a reliability estimate of .81 was obtained. The scale was found to be valid and reliable. The major finding of the study is that the teachers did not show self-efficacy for three of the sub-scales while they showed sect efficacy for font sub-scales. The study has implication for teachers whose understanding of their level of self-efficacy will motivate them to strive harder in the teaching profession. It was recommended that the determination of teachers' self-efficacy is important in order to reveal to them the need to improve their self-efficacy and thus increase teacher efficiency and productivity.

Keywords: *Self-efficacy, Self-efficacy scale, Bandura's self-efficacy scale, Teacher and Teaching.*

INTRODUCTION

Education is one of the ways through which the individual or society can be empowered. It inculcates long life skills and knowledge on individuals. It is the instrument that launches any nation into science and technology with the consequential hope of improved living conditions, human advancement and national development. It is through teaching that skills and the knowledge attached to education can be imparted into learners.

Teaching in the context of educational institution involves the transmission of skills which include knowledge and interpersonal skills, to a learner. Munna and Kalam (2021) defined teaching as change that is permanent in nature because change is brought into students by a teacher through techniques like developing specific skills, changing some attitudes, or understanding specific scientific law, operating behind a learning environment. All these are geared towards inculcating knowledge into the learner. Rajagopalan (2019) maintained that when a person imparts information or skills to another, it is common to describe the action as teaching. Teaching can be regarded as an intimate contact between a more mature personality

and a less mature one which is designed to further the education of the latter. It involves an interpersonal influence aimed at changing the behaviour potential of another person.

The teacher is one who provides education for people or can be regarded as one who instructs another. The teacher helps students to acquire knowledge, competence, skills, etc. through the practice of teaching. The teacher is a professional and is supposed to help students to gain knowledge, competence, virtue, skills, etc. Teachers are agents through whom the quality of education can be improved. Okeke, Agu, Chigbu and Nwankwo (2019) opined that a teacher is a person who had undergone approved professional training in education at appropriate levels and is capable of imparting knowledge, attitude and skills to learners. Improvement in teacher quality positively impacts everything they do at school. One of the teacher qualities and values that may be challenging in instruction is the teachers' sense of self-efficacy especially the teacher-efficacy in handling the situations that arise in the classroom. To support this, Keiler (2018) opined that students and teachers in twenty first century STEM classrooms face significant teaching and learning challenges in preparing post-secondary education, career and citizenship. It is believed that teachers' behaviour in the classroom is complemented by the teacher's belief. In other words, teachers' actions are influenced by their belief.

Self-efficacy is the belief or conviction that one has about himself that he can succeed in an activity. Han, Liou-Mark, Yu and Zeng (2015) defined self-efficacy as one's belief or perception about one's capability to perform at a certain level on a task while Zuya, Kwalat and Attah (2016) defined it as the belief in one's potentialities. Wilde and Hsu (2019) stated that an individuals general self-efficacy affects their cognitive behaviors in a number of ways and that previous research has found general self-efficacy to influence how people interpret persuasive messages designed to encourage behavioral change. Further, Barni, Danioni and Benevene (2019) noted that teachers with high levels of self-efficacy experience high levels of job performance, lower levels of job-related stress and face less difficulties with students' misbehavior.

Therefore, self efficacy is one's conviction about ones capabilities to perform a task at a certain level. High level of efficacy is important for one to succeed in life as it motivates the individual to strive harder in a task. Aghadinazu and Ezenwa (2022) carried out a study on self-efficacy as a correlate of test anxiety among students. The study adopted a correlational research design . Sample was 143 respondents. Multi stage sampling procedure was employed. Two instruments titled self-efficacy questionnaire and test anxiety identification questionnaire were used. Pearson moment correlation method was used to determine a reliability estimate of 0.86 and to answer the research question while regression was used to test the hypothesis. The result showed a very high positive correlation between self-efficacy and performance and with mathematics test anxiety.

Teacher sense of self-efficacy means the belief of the teachers in their ability to effectively handle the tasks that will make them succeed in the teaching profession. According to Barni, Danioni and Benevene (2019), teachers' self-efficacy is the teachers' belief in their ability to effectively handle the tasks, obligations and challenges related to their professional activity, and be able to play a key role in influencing important academic outcomes students' achievement and motivation, and well-being in the working environment.

Originally, Albert Bandura developed the concept `of self-efficacy. Gavora (2011) noted that the concept of self-efficacy was constituted by Bandura as a part of the Social Cognitive theory. Bandura (1997) defined self-efficacy as a belief in one's own ability to organize and perform a certain task. Zuya, Kwalat and Attah (2016) defined self-efficacy as

ones conviction about their capabilities to carry out certain tasks in a suitable and effective manner.

Bandura's theory of 1997 noted that self-efficacy has two components: efficacy expectation and outcome expectancy. Efficacy expectation is the conviction that one has the ability, knowledge and skills to perform successfully, actions required to produce desired outcome while efficacy expectancy is the person's estimate of the likely consequences of performing a task at the self expected level of performance. This theory is important in this work because the teacher is expected to have both components in order to be successful. Gavora (2011) noted that if the teacher has efficacy expectation but not outcome expectancy, it is unlikely that the teacher will be successful even if the teacher is professionally well-qualified.

The self-efficacy scale is an instrument or a tool that can be used in measuring self-efficacy. This scale was developed by Albert Bandura in 1998. Bandura's self-efficacy scale was designed to help one gain a better understanding of the kinds of things that create difficulties for teachers in their school activities. The scale has seven sections namely, efficacy to influence decision making, efficacy to influence school resources, instructional self-efficacy, disciplinary self-efficacy, efficacy to enlist parental involvement, efficacy to enlist community involvement and efficacy to create a positive school climate. The scale has five response options of nothing, very little, some influence, quite a bit and a great deal.

The issue of gender differences in educational outcomes has been of great concern to researchers. Aghadinazu and Ezenwa (2022) discovered no significant gender differences in relation to self-efficacy. Mohiuddin (2015) noted that gender difference exists in educational assessment, competence, knowledge and practices. The researchers discovered that female teachers were found to have, on the average, a higher level of knowledge and self-perceived confidence in educational assessment and practices than their male counterparts. This paper is anchored on the determination of secondary school teachers' self-efficacy in teaching in public secondary schools in Enugu State using Bandura's self-efficacy measurement instrument and gender as a moderating variable.

Statement of the problem

Literature has revealed that teachers' actions are influenced by their beliefs and assumptions about the school, teaching and student. Self-efficacy means ones conviction or belief that they can succeed in an activity. Teacher self-efficacy or teachers' perception of their competence may affect teachers' output. Literature also has it that a low sense of self-efficacy is associated with anxiety and helplessness which also affects teachers' output in their profession. Again literature has it that many researchers focus their investigation on achievement of teachers and students without considering the measurement of the self-efficacy mind set of the teachers. If teachers lack self-efficacy, it is unlikely that they will be successful even if they are professionally qualified. Also, the controversies surrounding the issue of gender in educational research has also warranted the inclusion of gender in this study as a moderating variable. Therefore, the researchers adapted the Bandura's self-efficacy measurement instrument in determining teachers' self-efficacy in teaching in public secondary schools in Enugu State.

Purpose of the study

The general purpose of this study was to determine public secondary school teachers' self-efficacy using Bandura's self-efficacy measurement instrument.

Research Questions

1. What is the mean level of self-efficacy of secondary school teachers in Enugu State at different levels of Bandura's measurement instrument?
2. What is the level of self-efficacy of male and female secondary school teachers in Enugu State using Bandura's measurement instrument?

Hypothesis

The following hypothesis was tested at 0.05 level significance.

Ho_1: There is no significant difference in the male and female public secondary school teachers' levels of self-efficacy using Bandura's self-efficacy measurement instrument.

Method

This study adopted the descriptive survey research design. Nworgu (2015) stated that a descriptive survey research design aims at collecting data on, and describing in a systematic manner the characteristics, features or facts about a given population. Descriptive survey design studies are interested in describing certain variables in relation to the population. Therefore, this design helped the researchers to gain a greater understanding about the teachers' self-efficacy in discharging their duties. There are 293 public secondary schools in Enugu State. The population of the study comprised 8,503 (1,920 males and 6,783 females) teachers in public secondary schools in the six education zones in Enugu State. The sample comprised 425 teachers made up of 86 males and 339 females. Nwana (1981) wrote that no fixed number and no fixed percentage is ideal for sample size, rather it is the circumstances of the study situation that determine what the number or percentage of the population should be.

Multi-stage sampling procedure was used in drawing the sample. The first stage comprised using simple random sampling technique specifically balloting with replacement method to draw three education zones out of the six education zones. This method was used in order to give every zone equal chance of being drawn into the sample. These education zones are Enugu education zone, Udi education zone and Agbani education zone. The second stage comprised using the same technique to draw three Local government areas, one from each zone. During the third stage, purposive sampling technique was used to draw only the public coeducational secondary schools from the three LGAs because gender is a variable in the study. There are 198 coeducational secondary schools in Enugu State. The fourth stage involved using simple random sampling technique to draw three schools from each LGA making a total of nine schools. Lastly, accidental random sampling technique was used to draw all the teachers present in the schools as at the time of administration of the instrument. This gave a total of 425 teachers. Bandura's self-efficacy scale(BSES) which the researchers have named Bandura's teacher self-efficacy measurement instrument (BTSEMI) was adapted for the study. The original version of the instrument is a 30 items instrument with seven sub-sections and five response options of nothing, very little, some influence, quite a bit and a great deal. The BTSEMI has two sections, A and B. Section A covered the demographic data of the teachers (gender) while section B contained 30 items on teachers' self-efficacy. The researchers changed the response options to four response options of Strongly Agree(SA), Agree(A), Disagree(DA), Strongly disagree(SDA). All the sub-sections were adopted as they were, but the items were rephrased to reflect the level of agreement and disagreement of the teachers on their self-efficacy. The rating scale options were Strongly agree(SA) = 4, Agree(A) = 3, Disagree(D) = 2 and Strongly disagree(SDA) = 1.

The BTSEMI was face validated by two specialists in Measurement and Evaluation unit and one in Education Psychology unit. It was also construct validated using factor analysis.

The factor analysis showed that the 30 items in the Bandura's instrument were also valid. Therefore, all of them were retained. The internal consistency index was estimated using Cronbach alpha method which yielded an internal consistency reliability estimate of .81. The instrument was found to be reliable even in our own environment. The method of data collection was face to face administration of the BTSEMI to the teachers present in the schools. This allowed for easy retrieval of the instrument. All the research questions were answered using mean and standard deviation while the hypothesis was tested using the t-test at 0.05 level of significance. In the analysis of the data, items with mean ratings below 2.50 were considered as negative self-efficacy/ not being self-efficacious while items with mean of 2.50 and above were considered as positive self-efficacy/ being self-efficacious.

Results

Table 1: Mean and standard deviation of self-efficacy of public secondary school teachers in Enugu State at different levels of Bandura's measurement instrument

S/N	Cluster 1: Efficacy to Influence Decision Making	Mean	Std. Dev.	Decision
1	How much can you influence the decisions that are made in the school?	1.64	0.99	NSE
2	How much can you express your views freely on important school matters?	2.33	1.21	NSE
	Mean	**1.99**	**0.12**	NSE
	Cluster 2:Efficacy to Influence School Resources			NSE
3	How much can you do to get the instructional materials and equipment you need?	1.80	1.00	NSE
	Mean	**1.80**	**1.00**	NSE
	Cluster 3:Instructional Self-Efficacy			
4	How much can you do to influence the class sizes in your school?	2.44	1.29	NSE
5	How much can you do to get through to the most difficult students?	2.52	1.14	PSE
6	How much can you do to promote learning when there is lack of support from the home?	2.53	1.21	PSE
7	How much can you do to keep students on task on difficult assignments?	2.80	1.20	PSE
8	How much can you do to increase students' memory of what they have been taught in previous lessons?	2.90	1.28	PSE
9	How much can you do to motivate students who show low interest in school work?	2.81	1.25	PSE
10	How much can you do to get students to work together?	3.01	1.19	PSE
11	How much can you do to overcome the influence of adverse community conditions on students' learning?	3.25	0.87	PSE
12	How much can you do to get children to do their homework?	3.05	1.10	PSE
	Mean	**2.81**	**0.07**	PSE
	Cluster 4:Disciplinary Self-Efficacy			PSE
13	How much can you do to get children to follow classroom rules?	2.90	1.05	PSE
14	How much can you do to control disruptive behavior in the classroom?	2.82	1.22	PSE

15	How much can you do to prevent problem behavior on the school grounds?	1.83	1.21	PSE
	Mean	**2.52**	**0.24**	PSE
	Cluster 5:Efficacy to Enlist Parental Involvement			
16	How much can you do to get parents to become involved in school activities?	2.67	1.21	PSE
17	How much can you assist parents in helping their children do well in school?	1.90	1.19	NSE
18	How much can you do to make parents feel comfortable coming to school?	3.37	1.11	PSE
	Mean	**2.65**	**0.36**	PSE
	Cluster 6:Efficacy to Enlist Community Involvement			
19	How much can you do to get community groups involved in working with the schools?	2.37	1.29	NSE
20	How much can you do to get churches involved in working with the school?	2.46	1.15	NSE
21	How much can you do to get businesses involved in working with the school?	2.31	1.14	NSE
22	How much can you do to get local colleges and universities involved in working with the school?	1.72	1.12	NSE
	Mean	**2.22**	**0.08**	NSE
	Cluster 7:Efficacy to Create a Positive School Climate			
23	How much can you do to make the school a safe place?	2.80	1.30	PSE
24	How much can you do to make students enjoy coming to school?	3.49	1.03	PSE
25	How much can you do to get students to trust teachers?	3.00	1.19	PSE
26	How much can you help other teachers with their teaching skills?	2.56	1.25	PSE
27	How much can you do to enhance collaboration between teachers and the administration to make the school run effectively?	2.31	1.26	NSE
28	How much can you do to reduce school dropout?	2.37	1.22	NSE
29	How much can you do to reduce school absenteeism?	2.17	1.23	NSE
30	How much can you do to get students to believe they can do well in schoolwork?	2.75	1.09	PSE
	Mean	**2.68**	**0.16**	PSE
	Grand Mean	**2.56**	**1.09**	PSE

Note: *NSE = Negative self-efficacy, PSE = Positive self-efficacy.*

Table 1 shows mean ratings of the levels of self-efficacy as follows: Cluster 1 had a mean rating of 1.99 and a standard deviation of p.12 with all the items sharing negative self efficacy, cluster 2 had a mean rating of 1.80 and a standard deviation of 1.00, cluster 3 had a mean of 2.81 and a standard deviation of 0.07, cluster 4 had a mean rating of 2.52 and a standard deviation of 0.24, cluster 5 has a mean rating of 2.65 and a standard deviation of 0.36, cluster 6 has a mean rating 2.22 and a standard deviation of 0.08 while cluster 7 had a mean rating of 2.68 and a standard deviation of 0.10 . The table also showed a grand mean rating of 2.56 with a standard deviation of 1.09.

Table 2: Mean and Standard deviation of self-efficacy of male and female secondary school teachers in Enugu State.

S/N	Item Statement	Male Teachers		Female Teachers		
		Mean	**Std Dev.**	**Mean**	**Std. Dev.**	**Dec.**
1	How much can you influence the decisions that are made in the school?	2.87	1.16	1.32	0.65	_
2	How much can you express your views freely on important school matters?	1.72	1.04	2.48	1.21	NSE
	Cluster 2:Efficacy to Influence School Resources					
3	How much can you do to get the instructional materials and equipment you need?	1.66	0.79	1.83	1.05	NSE
	Cluster 3:Instructional Self-Efficacy					
4	How much can you do to influence the class sizes in your school?	1.73	0.80	2.63	1.33	_
5	How much can you do to get through to the most difficult students?	2.36	1.07	2.55	1.16	_
6	How much can you do to promote learning when there is lack of support from the home?	1.62	0.69	2.76	1.20	_
7	How much can you do to keep students on task on difficult assignments?	3.08	1.03	2.70	1.23	PSE
8	How much can you do to increase students' memory of what they have been taught in previous lessons?	3.66	0.64	2.71	1.33	PSE
9	How much can you do to motivate students who show low interest in school work?	1.79	0.86	3.07	1.20	_
10	How much can you do to get students to work together?	2.65	1.19	3.10	1.17	PSE
11	How much can you do to overcome the influence of adverse community conditions on students' learning?	3.29	0.73	3.24	0.90	PSE
12	How much can you do to get children to do their homework?	2.40	1.25	3.22	0.99	_
	Cluster 4:Disciplinary Self-Efficacy					
13	How much can you do to get children to follow classroom rules?	3.26	0.80	2.76	1.08	PSE
14	How much can you do to control disruptive behavior in the classroom?	3.40	0.77	2.67	1.15	PSE
15	How much can you do to prevent problem behavior on the school grounds?	2.99	1.26	1.53	1.01	NSE
	Cluster 5:Efficacy to Enlist Parental Involvement					
16	How much can you do to get parents to become involved in school activities?	2.87	1.16	2.61	1.22	PSE
17	How much can you assist parents in helping their children do well in school?	1.30	0.90	2.05	1.20	NSE
18	How much can you do to make parents feel comfortable coming to school?	3.67	0.83	3.29	1.16	PSE

	Cluster 6:Efficacy to Enlist Community Involvement					
19	How much can you do to get community groups involved in working with the schools?	2.97	1.25	2.22	1.26	_
20	How much can you do to get churches involved in working with the school?	1.73	0.91	2.64	1.13	_
21	How much can you do to get businesses involved in working with the school?	1.62	0.69	2.49	1.17	NSE
22	How much can you do to get local colleges and universities involved in working with the school?	1.12	0.56	1.87	1.17	NSE
	Cluster 7:Efficacy to Create a Positive School Climate					
23	How much can you do to make the school a safe place?	3.66	0.64	2.58	1.33	PSE
24	How much can you do to make students enjoy coming to school?	2.28	1.25	3.79	0.68	_
25	How much can you do to get students to trust teachers?	3.19	1.10	2.91	1.20	PSE
26	How much can you help other teachers with their teaching skills?	1.33	0.79	2.87	1.48	_
27	How much can you do to enhance collaboration between teachers and the administration to make the school run effectively?	1.30	0.75	2.56	1.24	_
28	How much can you do to reduce school dropout?	1.27	0.75	2.65	1.16	_
29	How much can you do to reduce school absenteeism?	3.40	0.77	1.86	1.13	_
30	How much can you do to get students to believe they can do well in schoolwork?	3.26	0.80	2.63	1.11	PSE
	Grand Mean	**2.45**	**1.20**	**2.60**	**0.06**	**_**

Table 2 shows that the male teachers had a mean rating of self-efficacy of 2.45 with a standard deviation of 1.20 while the female teachers had a mean rating of self-efficacy of 2.60 with a standard deviation of 0.06. The responses of the female students are clustered around the mean more than the responses of the males.

Table 3: t-test analysis of the difference in mean of male and female teachers' self-efficacy

Gender	Number	Mean	Standard deviation	Df	t-value	Sig.	Decision
Male Teachers	86	2.87	1.16	423	11.97	0.000	Ho Rejected
Female Teachers	339	1.32	0.65				

Table 3 above shows that the t-test data revealed that the t-value of 11.97 is higher than the critical value set for the study and the null hypothesis is therefore rejected. The mean value of male and female teachers are 2.87 and 1.32 respectively. The result also shows that there is a

significant difference in the mean ratings of the teachers on self-efficacy in favour of the male teachers, t(423) =11.97< 0.05. The null hypothesis of no significant difference between the male and female teachers was rejected since the probability value was less than the 0.05 level of significance. The conclusion is that there is a significant difference between the male and female teachers' self-efficacy in teaching.

Discussion

The findings of this study show that the teachers did not show self-efficacy in influencing decision making, school resources and being able to enlist community involvement in the school. However, they showed self-efficacy in instructional self-efficacy, disciplinary self-efficacy, efficacy to enlist parental involvement and efficacy to create a positive school climate. The summary of the findings here is that the teachers in public secondary schools in Enugu State showed above average/positive self=efficacy and therefore should be effective in discharging their duties. Supporting this idea, Barni, Danioni and Benevene (2019) stated that teachers with high levels of self-efficacy experience high levels of job performance, lower levels of job-related stress and face less difficulties with student behavior. Also, Zuya, Kwalat and Attah (2016) discovered that mathematics self-efficacy and mathematics teaching self-efficacy of pre-service teachers were significantly related and that they showed above average instructional self-efficacy.

. Teachers may not have done well in influencing decision making and school resources probably because some of them might think that those sections of school administration are left specifically for the school management. The grand mean shows that the teachers' responses are above average and are therefore regarded as being self-efficacious. Pendergast, Garvis and Keogh (2011) maintain that the context and the areas of content are important influences on the formation and judgments of teacher self-efficacy.

The result of the study also reveal that there is a significant gender difference in male and female self-efficacy in teaching. The null hypothesis of no significant difference in the male and female teachers' responses was rejected in favour of the males. However, Mohiuddin (2015) discovered that female teachers were found to have, on the average, a higher level of knowledge and self-perceived confidence in educational assessment and practices than their male counterparts. This finding disagrees with the finding of Aghadinazu and Ezenwa (2022) that there is no significant gender influence on self-efficacy as a correlate of mathematics test anxiety among senior secondary school students.

Conclusion

Literature has shown that self-efficacy is related to teacher performance. Bandura's self-efficacy measurement instrument has been found to be useful in measuring teacher self-efficacy in Enugu State public secondary schools. When teachers' self-efficacy is known, it will help them to restructure their orientation and self confidence in whatever they do at school. Gender differences also exist between male and female teachers self-efficacy in teaching. Therefore, the self-efficacy of male and female teachers should always be checked because both are involved in laying foundation for human development.

Implications of the study

1. The teachers' understanding of their level of self-efficacy using the Banduras' self-efficacy measurement instrument will make them to strive harder to develop higher level of self-efficacy and this will make them experience higher level of job performance.

2. Teachers' understanding of their self-efficacy will help to motivate them to overcome the stresses associated with the teaching profession.

Recommendations

1. The researchers' recommend that the determination of secondary school teachers' self-efficacy from time to time is necessary in order to reveal to them the need to improve their self-efficacy and thus increase productivity.
2. This study also recommends further investigation into the sources of teacher self-efficacy in order to enhance teacher self-efficacy development.
3. The researchers recommend that Bandura's self-efficacy scale can also be used in our context.

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