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## Examining the Effect of Teacher Qualification, Teacher Experience and School Location on Teacher Efficacy and Learning Environments

**Judith Teebo Zabrina-Anyagre**

Lead Inspector of Schools, National Inspectorate Board, Ministry of Education, Accra, Ghana

**Dr. Samuel Asiedu-Addo**

Senior Lecturer, Department of Mathematics Education, University of Education, Winneba, Ghana

### **Abstract:**

*The study discusses the effect of teachers' educational (professional) Qualification, Experience and their Location of work on their efficacy building strengths, with particular interest on how the variables influence teachers' choices of instructional methods. The study was conducted among four-hundred and sixty (460) Ghanaian public basic school teachers in two regions: the Greater Accra and Upper-east regions. Instrumentation was by questionnaire designed by the researcher. The explorative study was underpinned by the research questions: To what extent do teachers' qualifications, experience and school location affect their efficacy strengths? How strongly can teachers' qualifications influence their choice of instructional methods and student management abilities? What importance do teachers attach to their choice of instructional methods, and how easy is it for them to employ interactive instructional techniques in their classrooms? It was found that, no significant difference exists between teachers' educational qualification and their teaching experience on both teacher- efficacy consciousness levels and Collective Teacher Efficacy (CTE) strengths. The study also found that the location of a school has telling effects on teacher's sense of efficacy. Although educational qualification had no statistical significance on teachers' efficacy strengths, it was found that teachers' educational qualification had a statistically significant difference on their choice of instructional methodology and student management abilities.*

### **1. Introduction**

Many educational reformers, particularly those associated with the standards movement, hold that the key to improving student performance lays in improving school systems. The school system comprises physical and social structures, teachers, management, equipment and materials. Such thinkers believe that "If academic standards are rigorous, curriculums and assessments are aligned to those standards, and teachers possess the skills to teach at the levels the standards demand, students' performance will improve". Although many factors contribute to a student's academic performance including individual characteristics, family and neighborhood experiences. Zuzovsky in TIMSS (2003) found that most findings suggest that, among school related factors, teachers matter most the teacher's place in the school and how well the school performs is incontestable and the conditions within which they work do exert extensive effects on their progress, irrespective of their values and expectations.

According to Darling-Hammond (2002), a US educator, the variables presumed to be indicative of teachers' competence and which are linked to students' learning include academic ability, years of education, years of teaching experience, measures of subject matter and teaching knowledge, certification status and teaching behaviors in the classroom. However, each study has different views on what qualities of a good teacher are and how they could be measured. Conclusively, teacher quality is more often than not tagged to teacher qualification, teacher and teaching experience, teacher behavior and practice, Darling-Hammond (2002).

Some studies point to teachers' professional beliefs and expectations as very important attitudinal qualities determining student and school achievement. (Hackett, 1995; Pajares, 1996; Schunk, 1991; Cubukcu, 2008; Ross, 1998; Zimmerman, 2000; in Henson 2001). Regarding teachers' beliefs in their professional functioning, Bandura (1977) formulated the Efficacy Theory which later saw two major operational constructs, (Self efficacy and Collective efficacy). Bandura (1977) defined self-efficacy as the "belief in one's capabilities to organize and execute the courses of action required to produce given attainments". Efficacious teachers have strong beliefs that they can bring about a change in student learning and attitude (Cubukcu, 2008; Ross, 1998; Scharlach, 2008 in Henson 2001. Hoy, (2000) defined teacher efficacy as teachers' confidence in their ability to promote student learning. The term is sometimes considered to be an indicator or prediction of teaching effectiveness, Gordon (2001).

Just as teachers' self-efficacy (the beliefs teachers' hold about their personal capabilities to perform their duties in the classroom), are related to a host of positive factors in the classroom, including reduced stress, student achievement gains, and career longevity (Woolfolk- Hoy & Davis 2006), teachers' collective efficacy (the beliefs teachers possess in their collective capabilities to influence the lives of their students (Tschannen- Moran, Woolfolk-Hoy and Hoy (1998), is enhanced by a number of school factors, ( internally

and externally). Bandura (1997) postulated four general sources of efficacy building information: verbal persuasion, vicarious experiences, psychological arousal, and mastery experiences; of which mastery experiences ranked as likely the most powerful source of efficacy. Donohoo (2017) found in her research, “six most enabling conditions” for collective efficacy. They are Advance teacher influence, Goal consensus, Teacher knowledge about one another’s work, cohesive staff, Responsiveness of leadership, and Effective system of intervention. In a similar study conducted with the aim of getting teachers’ views on factors most likely to influence their sense of collective efficacy besides administrative factors as already postulated by Donohoo (2017), Zabrina-Anyagre (2017) found that, teachers’ collective beliefs in their professional capabilities depended much on the conditions within which they worked. The environment was ranked highest, followed by supervisors’ role, parental roles and caliber of students respectively as factors likely to affect teachers’ collective efficacy and professional functioning.

Because teacher efficacy covers all aspects of a teacher’s confidence to exhibit an all-round ability to produce positive results in his or her students, the very approaches adopted in classroom situations to encourage effective instruction are highly crucial. It is factual that, if a teacher believes that all students in that classroom are capable of learning, the teaching methods will include highly effective techniques to make it work for all, regardless of their ability levels. Teacher beliefs and efficacy orientations guide and influence what teachers do in the classroom (Henson, 2001; Gordon, 2001). Henson (2001) observed that the answer to the question of how people are able to face challenges, direct their actions, and somehow succeed in life has a lot to do with the concept of self-efficacy.

Whilst teacher personal qualities, professional roles and society’s expectations are highly crucial, it is necessary to consider the context within which teachers operate. Pollard (2001) opines that if the context within which teachers operate is not supportive enough, only few teachers, however committed can hope to fulfill all their aims. For instance, some parents may have a different set of educational priorities from that of teachers; staff may take up another value-position; the established practices of the school may not support the particular styles of teaching which teachers might wish to adopt; teachers may disagree with some aspects of government policy or the resources which they need may not be available. For reasons such as these, teachers must continually adjust. They must know themselves and the situations in which they work, and they must be able to make astute strategic judgments as they seek to achieve personal and professional fulfillment and to resolve the dilemmas posed by idealism and pragmatism, Pollard (2001).

Education for All Global Monitoring Report (EAA GMR 2010) revealed that, ‘what students achieve in school is heavily influenced by classroom practices and teacher skills. Wenglinsky (2011), found that classroom practices indeed have a marked effect on student achievement; concluding that schools indeed matter, due to the overwhelming influence of the classroom practices of their teachers.

Learner-centered pedagogy has been proven to be the best way of enhancing learning, Stephen Carney, (2008). It is an approach to teaching that is increasingly being encouraged. Learner Centered teachers do not employ a single teaching method. This approach emphasizes a variety of different types of methods that shift the role of instructors from givers of information to facilitators of student learning. Unlike learner-centered teaching, traditionally, instructors focus on what they do and not on what the students are learning (Instructor-centered teaching). In contrast, Learner centered teaching occurs when instructors focus on student learning” Blumberg (2008).Learner centered pedagogy encourages interactive learning. Studies have shown that interactivity promotes understanding and cognitive development. Interactivity consists of learning or knowledge construction emphasizing *learners as active participants* in making sense of their environment and their experiences within that environment (Vygotsky, 1978).

A study conducted by Dibapile (2012) of Botswana suggested that, when it comes to learning and memory reflection, the overwhelming opinion in the scientific community is that we learn best by repeated exposure in an interactive environment. Research has proven that active learning is an exceptionally effective, teaching technique. Students learn more material, retain the information longer and enjoy the class more Bornwell et al, (2010).

The study was guided by the following research question:

1. To what extent do teachers’ qualifications, experience and school location affect their efficacy strengths?
2. How strongly can teachers’ qualifications influence their choice of instructional methods and student management abilities?
3. What importance do teachers attach to their choice of instructional methods, and how easy is it for them to employ interactive instructional techniques in their classrooms?

## 2. Methodology

The exploratory research was, conducted in two regions (Greater Accra and Upper east). The two regions were selected by stratification to reflect the main geographical divide of the country (The north and south), considering several factors (socio-economic, geographical etc.) in the dichotomy. The study was done among four-hundred and sixty (460) teachers in public Basic Schools in two regions of Ghana. Instrumentation was by a questionnaire generated by the researcher.

## 3. Results

- Research question 1. To what extent do teachers’ qualifications, experience and school location affect their efficacy strengths?

Table 1 below presents a summary of results from the Kruskal-Wallis test, a non-parametric equivalent of the one-way between-subject ANOVA performed on five groups (A-3 year, A-4 year, Diploma in Basic Education (DBE), Bachelor of Education (B.Ed) and Master of Education (M.Ed) for teachers’ professional qualification and on seven groups (1-5 years, 6-10 years, 11-15 years, 16-20 years, 21-25 years, 26-30 years, 31 and above) for teaching experience of teachers on teachers’ collective. Out of **460 teachers**, **455** of them responded to the questions.

Factors	Groups	N	Mean Rank	Chi-Square	df	Sig.
Professional Qualification	A 3 YEAR	69	207.59	8.843	4	0.065
	A 4 YEAR	18	168.39			
	DBE	209	234.16			
	B' Ed	148	237.91			
	M'Ed	11	203.18			
	Total	455				
Teaching Experience	1-5 YEARS	136	227.83	4.179	6	0.652
	6-10 Years	123	239.08			
	11-15 years	63	228.54			
	16-20 years	63	205.40			
	21- 25 years	34	216.26			
	26- 30 years	26	239.92			
	31 and Above	10	241.90			
	Total	455				

Table 1: Teachers' educational qualification and experience on teacher efficacy  
\*Significant ( $p < 0.05$ ), \*Highly Significant ( $p < 0.001$ )

The test indicated a no significant difference statistically,  $X^2$  ( $df=4$ ,  $n = 455$ ) = 8.843,  $p > 0.05$  between teachers' professional qualification and their self-efficacy. Also, there was no significant difference,  $X^2$  ( $df=6$ ,  $n = 456$ ) = 4.179,  $p > 0.05$  between teachers' teaching experience and their self-efficacy. The results of these tests indicated a non significant difference between the groups and the categories (professional qualification and experience). It appears that statistically, teachers' professional qualification for the five groups (A-3 year, A-4 year, Diploma in Basic Education (DBE), Bachelor of Education (B.Ed.) and Master of Education (M.Ed.) and the teaching experience of teachers for the seven groups (1-5 years, 6-10 years, 11-15 years, 16-20 years, 21-25 years, 26-30 years, 31 and above) had no significant difference on their self-efficacy. Therefore, the null hypothesis that there is no significant difference between teachers' professional qualification and the teaching experience of teachers on their self-efficacy was retained.

Factors	Groups	N	Mean Rank	U	Z	Sig.
Location	URBAN	273	216.06	21584.000	-2.656	0.008
	RURAL	182	245.91			
	Total	455				

Table 2: A Mann-Whitney U test and Kruskal Wallis test on Location of school and how much it influences teacher efficacy

The analyses of the research question was based on responses from 455 teachers out of the 460. It was noticed that, 5 respondents failed to answer the question. Analyses are found below.

To examine the extent to which location of school, professional qualification of teachers, 455 teaching experience boosts efficacy strengths, the scores (Strongly agree, Partially Agree, I don't agree) for teachers' collective efficacy levels of the categories in each of the factors (location of school, professional qualification of teachers, teaching experience) were computed (see Table 1 and Table 2). The scores on teachers' collective efficacy levels were analyzed for differences in the categories for each of the factors (location of school, professional qualification of teachers, teaching experience). Mann-Whitney U test, a non-parametric test equivalent to Independent samples t-test, and Kruskal Wallis Test, a non-parametric equivalent of the one-way between-subject ANOVA was used to test the null hypothesis that "there is no significant difference between school location and teachers' collective efficacy levels.

The results suggested that the rural group had higher rankings than the urban group. This was also confirmed by the test statistics which revealed that indeed the teachers who were in the rural group found it to be significantly different than that of the urban group on teachers' collective efficacy to improve students' learning at ( $U=21584.000$ ,  $Z= -2.656$ ,  $p<0.05$ ). Therefore, the null hypothesis that there are no significant differences between the groups (urban and rural) on teachers' collective efficacy to improve students' learning was rejected. So we conclude statistically that, there is a significant difference between the groups (urban and rural school teachers) on their efficacy and ability to improve students' learning.

Hence from results in Tables 1 and 2, location of school statistically influences the development of collective efficacy but teachers' professional qualification and their teaching experience do not.

- Research question 2. How strongly can teachers' qualifications influence their choice of instructional methods and student management abilities?

To examine research question 2, a non-parametric equivalent of the one-way between-subject ANOVA, the Kruskal Wallis Test conducted to ascertain if a relationship exists between teachers' professional qualification and their sense of efficacy and consciousness of instructional methods.

It is worth noting that, the number of respondents to this question varied between 452 and 460, depending on who answered which question, see table below.

Categories	Prof. Qualification (Factors/ Groups)	N	Mean Rank	Chi-Square	Df	Sig.
Teacher Self-Efficacy	A-3 Year	18	206.92	7.055	4	0.133
	A-4 Year	68	229.71			
	DBE	207	212.91			
	B'Ed	147	245.86			
	M'Ed	12	234.96			
Total		452				
Consciousness of instructional methods	A-3 Year	18	227.56	13.321	4	0.010
	A-4 Year	69	265.86			
	DBE	212	220.00			
	B'Ed	149	230.76			
	M'Ed	12	213.92			
Total		460				
Ability to manage students	A-3 Year	18	162.83	38.862	4	0.000
	A-4 Year	69	251.33			
	DBE	211	198.97			
	B'Ed	147	259.89			
	M'Ed	11	339.68			
Total		456				
Collective efficacy	A-3 Year	17	214.09	3.128	5	0.537
	A-4 Year	68	227.14			
	DBE	212	235.82			
	B'Ed	144	216.79			
	M'Ed	12	211.17			
Total		453				

Table 3: Kruskal Wallis Test (ANOVA) on teachers' professional qualification as against their sense of efficacy, consciousness of instructional methods and ability to manage students

A Kruskal-Wallis test was conducted to evaluate differences among the five groups (A-3 year, A-4 year, Diploma in Basic Education (DBE), Bachelor of Education (B.Ed) and Master of Education (M.Ed.) on following variables, Teacher Consciousness of self-efficacy, Instructional methods, and ability to manage students. From responses from the 453 teachers, the test indicated a statistically significant difference,  $X^2 (df=4, n = 452) = 13.321, p < 0.05$  between Professional qualification and Instructional methods. Also, a statistical significant difference,  $X^2 (df=4, n = 456) = 38.862, p < 0.05$  between Professional qualification and the ability to organize or manage students. The results of these tests indicated a significant difference between the groups and their categories. It appears that statistically, teachers' professional qualification influences their consciousness of instructional methodology and student (class) management.

It also appears, teachers with the highest professional qualification have the highest propensity to adopt suitable teaching techniques that make their classes meaningful interactive.

- Research Question 3: What importance do teachers attach to their choice of instructional methods, and how easy is it for them to employ interactive instructional techniques in their classrooms?

To examine research question 3, a non-parametric chi-square test was again conducted on a dichotomous data to assess if there is a relationship on teachers' views on interactivity; that is, interactivity being key to the teaching and learning process and how easy it is for them to involve the class actively and effectively. Although the original sample size was 460, respondents to this question totaled between 454 and 456 out of the 460 respondents.

Teachers' views on interactivity	Yes (N)	No (N)	Total (N)	Chi-Square	Df	Sig.
Interactivity being key to the teaching and learning process	429	27	456	354.395 <sup>a</sup>	1	0.000
Easy involvement of students in lessons	320	134	454	76.203 <sup>b</sup>		

Table 4: Non-parametric chi-square test on teachers' views on interactivity

Again, a non-parametric chi-square test was conducted to assess whether a relationship exist on Teachers' views on interactivity. The results of the non-parametric chi-square test were found to be statistically significant,  $X^2 (df=1, n = 456) = 354.395, p < 0.05$  for interactivity being key to the teaching and learning process and  $X^2 (df =1, n = 454) = 76.203, p < 0.05$  for the easy involvement of students. Thus, there was a significant relationship between the respondents who responded 'Yes' to the view that interactivity is key to the teaching and learning process (n=429) and those who thought it is easy to adopt interactive techniques in the class during lessons (n=320). The results suggest that the null hypothesis that there is no statistical relationship on teachers' views on interactivity was



rejected at  $p < 0.05$ . It appears clearly that statistically, a relationship exist between the element of interactivity being key to the teaching and learning process and how easy it is for teachers to employ interactive strategies during instructional delivery.

#### 4. Discussion of Major Findings

On the research question, to what extent do teachers' qualifications, experience and school location affect their efficacy strengths? The study found from the Kruskal Wallis test, a no significant difference between teachers' educational qualification and their teaching experience on Collective Teacher Efficacy (CTE). The null hypothesis therefore, that there is no significant difference between teachers' qualification (**0.065**) and their experience (**0.652**) on collective teacher efficacy was retained (table 1). This revelation was quite intriguing, given the fact that, many research findings had shown a strong association between teacher educational attainment and teacher quality, Wenglinsky (2001), student achievement and teachers' qualification (training) GMR 2010, Goe (207); Wenglinsky (2000, 2002). Darling- Hammond, 1999, 2000, and Darling-Hammond et al 2002). This implies that the development of a faculty with a strong character and culture depends on a lot more than mere qualification and experience. It is an indication that attitude building must form part of teacher training at the pre-service and post service (newly-trained) stages. Stronger values and beliefs, whether individually or collectively can be built in faculties with strong-rooted and goal-oriented behaviors, having faculty members at the center of it all, to get them to meet organizational goals through firm cultural and ethical orientations. This is interestingly in line with earlier studies, particular that of Bandura (1997, Tschannen-Moran, Woolfolk Hoy & Hoy 1998, and Zimmerman 2000); supporting Bandura's four efficacy information sources, being largely external (outside individual characteristics): They are more extrinsic than intrinsic. Collective efficacy is consciously nurtured; it is more of a leadership task than a personal one. Donohoo (2017) found in her research, "six most enabling conditions for collective efficacy". They are: Advanced teacher influence, Goal consensus, Teacher knowledge about one another's work, Cohesive staff, Responsiveness of leadership, and Effective system of intervention, most of which were administrative and psycho-social. Zabrina-Anyagre (2017) also found that most teachers placed more importance on the conditions within which they work, such as the school environment, the role of supervisors, parents and students as boosting factors of their collective efficacy, above anything else. The finding that teacher experience had no statistical significance with teacher collective efficacy also confirms earlier discussions that teachers' collective efficacy does not necessary depend on their personal characteristics; they are generally acquired and nursed.

It is important to note that although Bandura (1997) , Tschannen-Moran et al (1998), Henson (2001) postulate 'mastery experiences as the most likely and strongest source of efficacy (experience in this context does not merely refer to number of years in service but the intensity of result-yielding service, irrespective of length of time), Pretheroe (2008) applauded their postulations but cautioned that an important factor in the determination of a teacher's sense of efficacy is surprisingly not 'experience' or what Bandura (1977) calls performance accomplishment but in the question-"Has he or she been able to make a difference in student learning?"

A Mann-Whitney U test, and Kruskal Wallis test conducted on school location (rural/urban) and the extent to which the variable can affect teachers' efficacy beliefs and professional values also revealed that the location of a school has telling effects on teacher's sense of efficacy. The test pulled a significant value of **0.008**, rejecting the null hypotheses that, school location has no effect on teachers' efficacy beliefs (**table 2**); implying that, the environment of a school, including community has consequential relations with teachers' values, beliefs and expectations. Zabrina-Anyagre (2017) also found that environmental factors were highly viewed by teachers as most influential to their efficacy building as faculties. A striking difference was also found between the efficacy consciousness of rural teachers and their urban counterparts; reasons leading to that were not readily revealed.

Another interesting finding from the research was that, teachers' educational qualification had no significant difference with their efficacy consciousness, whether in an individual or collective sense (**table 3**). This revelation was a confirmation of an earlier finding that educational qualification had no statistical significance on teachers' efficacy strengths. However, it was found that teachers' educational qualification had a statistically significant difference on their consciousness of instructional methodology and student management.

In a follow-up question on teachers' views about employing interactive learning strategies in instructional delivery and the possibility to regularly do so, it was also revealed(**table 4**), that a significant relationship exists between the respondents who responded 'Yes' to the view that interactivity is key to the teaching and learning process( $n=429$ ) and those who thought it is easy to adopt interactive techniques in their classes ( $n=320$ ), a confirmation of an earlier suggestion that, teachers' educational qualification strongly associates with their methodological consciousness during instructional, hence the desire to employ interactive teaching techniques, which they also perceived as easily adoptable in the management of instruction.

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