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Relationships between Teacher Qualification, Teacher Behaviour/Practices and Teacher Skills/Expertise

Charles Kwabena Sie*, Kipo Chonga
Department of Mathematics and ICT Education, C. K. Tedam University of Technology and Applied Sciences - Navrongo, Ghana.
*Corresponding Author: siecharles78@gmail.com

ABSTRACT
The central aim of this research was to identity the relationships between the perceived teacher quality constructs of elementary school mathematics instructors. The research employed purposive sampling approach to select 50 mathematics teachers in Bole District of the Savannah Region in Ghana to participate in the study. Specifically, 50 mathematics teachers were given questionnaires on teacher skills/expertise, teacher behaviour/practices and teacher qualification to establish the relationships between these variables. The results from the research with a correlation coefficient, r = 0.443 and a P-value of 0.001, revealed that teacher skills/expertise was statistically significantly correlated with Teacher behaviour/practices. The results from the mathematics teachers did not show significant relationships between teacher qualification and the other parameters of the study. This study showed that the interconnectedness between teacher skills/expertise and teacher behaviour/practices is a cornerstone of effective education. The implication of this study is that teachers' academic qualifications do not always guarantee comprehensive knowledge of teaching. A comprehensive knowledge of teaching requires the acquisition of the three competencies (professional values and attitudes, professional knowledge and professional practice) as contained in the National Teachers standards. This study has impact on the training and organisation of professional development programmes for mathematics teachers in Ghana and other countries with similar contexts. The researchers recommend that teacher training institutions should focus on the training of teachers to acquire the competencies necessary for effective teaching and learning. Teacher professional development opportunities should be made available to teachers as a way of developing their professional values and attitudes, professional knowledge and professional practices that are required to teach effectively.

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INTRODUCTION

According to Taiwo and James (2015), teaching is a scientific process that involves methodical planning and programming of instruction and classroom experiences, as well as the application of required methodologies to assist learners to acquire new skills, knowledge, and competence. Teaching is critical and fundamental to meaningful learning, which is especially important in mathematics classroom settings. A teacher is regarded as a leader, and his/her quality is evident in his/her ability to generate ideas, establish

structure, organize and manage the classroom effectively, enhance students' skills and knowledge, deliver engaging yet challenging lessons, guides students towards success, and accurately assess and evaluate their learning (Taiwo & James, 2015). Effective teaching signifies that learning is actively taking place, with students acquiring new skills and knowledge, leading to observable changes in the learners (Fenstermacher & Richardson's, 2005; Shamatov et al., 2017).

Teacher quality is a complex concept that lacks universal consensus on an all-encompassing definition. The literature on teacher quality incorporates a wide range of qualifications, attributes, practices, and outcomes, along with an examination of their connections to student learning (Goe, 2007). Strong (2011) analysed various characterizations of teacher quality in the literature, categorizing them based on their focus. These include teacher qualifications (such as degrees, college quality, exam scores, certification, and experience), personal or psychological qualities (like caring for children, honesty, compassion, and fairness), demonstrated ability to improve student learning (effective teaching), and adherence to pedagogical standards (employing specific teaching tactics, classroom management skills, and creating a positive classroom environment). Rice (2003) identified five key instructor qualities that seem to enhance educator excellence. These include: experience, educational preparation, certification type, coursework completed during teacher training, and teachers' own exam scores. Performance is closely tied to a teacher's experience, which results from their learning, training, and the acquisition of classroom management skills.

Teaching is a profession that requires a specific set of skills and qualities, and not everyone is suited for it. Ndu (1975), in his work "Who Should Teach," added that being a teacher requires both subject knowledge and inherent qualities that enable one to persevere in the challenging yet fulfilling task of teaching. Olatubosun (1980) questioned, "Who is a teacher?" and emphasized that a teacher should be an expert in his/her subject area and attuned to the specific needs of his/her students, providing appropriate attention and assistance. All these statements underscore the undeniable fact that well-qualified teachers not only possess subject knowledge but also the skills to effectively manage students and unlock their intellectual potential. A lot of researches that have been conducted in the area of teacher quality mainly used a proxy variable of teacher qualification as a replacement of teacher quality to establish its relationship with students' performance without looking at Teachers' Skills/Expertise and their classroom practices that have direct influence on what students learn (Darling-Hammond, 2000). This study feels a gap by identifying and finding the relationships among key variables that constitute teacher quality. This study is about examining the relationships between teacher qualification, teacher skills/expertise, and teacher behaviour/practices.

Theoretical /Conceptual framework.

The development of a framework for teacher quality in this study stemmed from earlier investigations by Geo (2007). The need for this new paradigm arose from the desire to reconcile the diverse methodologies used by researchers over the years to gauge teacher quality. This framework comprises four distinct yet interconnected perspectives on teacher quality, which are further categorized into three groups: **Inputs:** (Qualifications of Teacher and Characteristics of Teacher); **Processes: (**Practices of Teacher); **Outcomes: (**Teacher effectiveness). The adaption of the framework used by Geo (2007) in the current study allows for the researchers to be able to find the relationships between three teacher quality constructs namely: teacher experience, teacher qualification, teacher skills/expertise, and teacher behaviour and practices. The conceptual framework of the present study is represented in figure 1 below showing a system of relationship between variables.

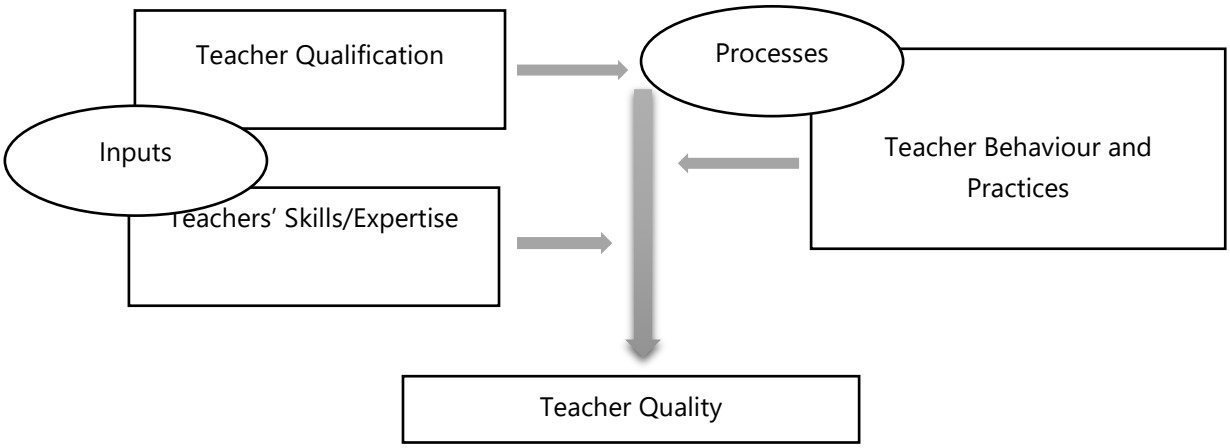

Figure 1 Framework of Teacher Quality (Authors Own Construct, 2024)

The conceptual framework identified teacher quality as a construct that comprises three sub-constructs namely: teacher qualification, teacher skills/expertise, and teacher behaviour and practices. From the diagram the researchers hypothesise that there are connections between teacher qualification, teacher skills/expertise, and teacher behaviour/practices. The various components of the conceptual framework are explained in the subsequent sections.

Teacher Qualification

Teachers' qualifications represent a valuable resource that teachers bring to the classroom and are widely regarded as crucial factors in determining who is fit for the teaching profession. Qualifications that demonstrate competence encompass educational degrees, the reputation of the college or institution attended, examination results, official certifications, and subject-specific credentials (Strong, 2011). There has been a growing interest in enhancing teacher qualifications, which are perceived to have a direct impact on student learning, within various nations. Some of these educational reforms advocate for the elevation of teacher education, including its extension to graduate programs, and the implementation of standards-based mechanisms for licensing, certification, and professional advancement (Thorenson, Darling-Hammond & Berry, 2001; Darling-Hammond, Chung & Frelow, 2002).

Teacher training for primary school educators in Ghana mostly takes place at the Colleges of Education (CoE). As of the most recent data in 2020, there are now 48 such Colleges of Education. These CoEs currently provide four-year bachelor of Education in early childhood, primary and JHS education programs. Furthermore, there are two established universities, the University of Cape Coast and the University of Education, Winneba, recognized as traditional teacher education institutions. These universities are entrusted with the task of preparing teachers for various educational levels, including basic schools. Additionally, there are instances where graduates from other universities, who have not undergone specific teacher training, may find themselves in teaching roles at different levels, including primary, junior high, or senior high schools.

The Education Act of 2008, also referred to as Act 778, has specific goals, which include the establishment of the National Teaching Council, responsible for overseeing matters concerning teacher licensing and registration. This process ensures that education is carried out in a professional and competent manner by teachers who possess the necessary licenses. Certified teachers must undergo registration and obtain a Teaching Authority license before they are eligible to engage in teaching.

The advancement of teachers within the Ghana Education Service has long been subject of debate, with many educators advocating for a more streamlined mechanism that automatically advances teachers when they attain higher qualifications. In this study, the researchers conceptualised teacher qualification as teachers' level of education. A teacher's level of education is a crucial component of his/her qualifications. It

refers to the highest degree or level of formal education a teacher has attained (Cert A, Diploma, Degree and others higher) which plays a significant role in determining their qualifications to teach in specific educational settings.

Teachers' skills/expertise

What makes a teacher truly effective goes beyond the classroom environment and curriculum. It includes the skills and expertise he/she brings to the table. Teaching is far more than just delivering lectures or disseminating information. Effective teachers wear many hats, taking on roles as educators, mentors, motivators, and facilitators of learning. They create a nurturing environment where students can thrive academically and personally. To excel in these roles, teachers must possess a wide array of skills and expertise.

In order to be effective in their roles, educators must possess a profound grasp of the subjects they teach. This expertise enables them to elucidate intricate concepts in a manner that is accessible to their students. A study featured in the "Educational Psychology" journal (Hattie, 2003) underscores the significance of content knowledge as the cornerstone of effective teaching. However, it's important to note that possessing subject knowledge is just one aspect; knowing how to impart that knowledge effectively is another. Pedagogical skills encompass understanding the learning processes of students and tailoring teaching approaches to suit their individual needs. Equally vital is the ability to maintain classroom discipline and foster a positive learning environment. Effective classroom management skills help teachers keep disruptions to a minimum and foster an environment where learning can flourish (Evertson & Weinstein, 2006). Skilled teachers adapt to changes in curriculum, technology, and educational trends. They embrace new methods and technologies while maintaining the core principles of effective teaching. Teachers use assessments to gauge students understanding. The assessment skills involve designing fair assessments, interpreting results, and providing timely and constructive feedback. Research published in the "Journal of Educational Psychology" (Black & Wiliam, 1998) highlights the importance of formative assessment in enhancing learning. Inclusive education is vital in today's diverse classrooms. Teachers need the skills to accommodate different learning styles, abilities, and backgrounds.

The researchers conceptualised teacher's skills/expertise as teacher's presentation in the classroom. Experienced teachers excel in structuring their presentations in a clear and organized manner. They establish a logical flow of information, making it easier for students to follow along and understand the material. Teachers with expertise have honed their communication skills. They articulate ideas and concepts effectively, using appropriate language and tone for their audience. They are also skilled at active listening, allowing them to respond to students' questions and concerns with empathy and clarity. Expert teachers use a variety of engagement techniques to capture learners' attention and preserve their interest. This might comprise storytelling, real-world examples, multimedia presentations, interactive activities, and asking thought-provoking questions. They are proficient in using visual aids such as slides, diagrams, charts, and multimedia presentations to enhance the learning experience. They understand how to use tools to complement their instruction rather than overshadow it. They are also inclusive in their presentations, making sure all students feel valued and included. They consider diverse learning styles, backgrounds, and abilities when designing and delivering their content. Again, they regularly reflect on their presentations. They assess what worked well and what didn't, seeking continuous improvement in their teaching methods and presentation skills.

Teacher Behaviours/Practices

Teacher behaviours such as attitude, in the context of education, refers to an individual's consistent manner of responding to a particular academic subject, often characterized as either positive or negative (Eggen & Kauchak, 2001). This attitude encompasses both cognitive and emotional components that significantly shape how a teacher perceives and reacts to specific situations, as outlined by Fazio and Roskes

(1994). Eggen and Kauchak (2001) further emphasize that positive teacher attitudes play a pivotal role in effective teaching and students' academic achievements. The impact of teacher absenteeism on overall student educational outcomes has been explored in educational research, with findings indicating a negative association between substantial teacher absences and students' academic performance (Manlove & Elliott, 1977).

Organised teaching practices facilitate the learning process, and teachers' interactions with students significantly influence their motivation and attitudes toward education. To cultivate an orderly and productive classroom atmosphere, it is imperative for teachers to possess essential teaching skills. The teaching approach employed by teachers exerts a profound influence on the overall teaching and learning experience. Research on teacher behaviours within the classroom underscores the idea that effective teachers are those who can employ a variety of teaching strategies and exhibit flexibility in their approach rather than adhering to a single, rigid method.

As a result, the researchers conceptualised teacher behaviour/practices as teacher's attitude in the teaching and learning environment. Being punctual and well-prepared for lessons demonstrates professionalism and sets a good example for students. It ensures that instructional time is used effectively. Fairness in grading, discipline, and classroom policies is critical. Students appreciate consistency in expectations and consequences. Understanding the challenges and emotions that students may be facing can lead to a more compassionate approach. Teachers who show empathy can provide necessary support to students who are struggling. Maintaining professionalism in demeanour and interactions with students, colleagues, and parents is essential for creating a positive and respectful learning environment.

Research Hypotheses

This study sought to examine the associations between Teacher Qualification, Teacher Behaviour/Practices, and Teacher Skills/Expertise. To answer this, we formulated and tested three research hypotheses:

- H1: There is a significant correlation between teacher qualification and teacher behavior/practices.
- H2: There is a significant correlation between teacher qualification and teacher skills/expertise.
- H3: There is a significant correlation between teacher behavior/practices and teacher skills/expertise.

METHODS

Research Design

The study employed a correlational research design to collect and analyze data obtained from the respondents. The correlational research design was used in order to find relationships between Teacher Qualification, Teacher Behaviour/Practices, and Teacher Skills/Expertise.

Respondents

The population for this study comprised of all mathematics teachers in public junior high schools in Bole district of Ghana. The estimated population of the study is 63 mathematics teachers. The study's sample consisted of 50 mathematics teachers from 25 public junior high schools in the Bole District of Ghana. The choice of sample size for the study was based on correlational analysis as the only inferential analysis that were performed in this study. According to Norman, Monteiro and Salama (2012), a correlation analysis that results in a correlation coefficient of less than 0.2 accounts for less than 4% of the variance. It is therefore difficult to imagine why anyone would care about a relation that explains less than 4%. On the other hand, correlations coefficients greater than 0.5 are fairly rare and researchers would be unlikely to design a study in the hope of detecting a correlation this large. Norman, Monteiro and Salama (2012) noted that if typical correlations are assumed in the range of 0.2 to 0.5, then with $\alpha = 0.05$ and a power of 0.80 the estimated

sample size($n = \frac{2+8(1-r^2)}{r^2}$) ranges from 44 to 194. Norman and colleagues therefore concluded that for a correlational study a minimum sample size of 50 is acceptable.

Instrument

Quality Teacher Questionnaire

Quality teacher questionnaire was the only instrument that was developed to assess the quality of mathematics teachers. This instrument comprised two sections. Section A gathered demographic information from the respondents about their academic qualifications. Section B included 20 items that represented variables related to teacher behaviour/practices and teacher skills/expertise. The instrument drew inspiration from the proposal presented by Jang, Guan, and Hsieh (2009). The questionnaire was giving to Mathematics education experts who reviewed the questionnaire in line with the various constructs for content relevance, accuracy and completeness. The researchers also conducted a pilot testing using a sample of 20 teachers from a different district and modified the questionnaire based on the issues of wording, format or respondents' burden that were identified. In the main study, the questionnaire was administered to the 50 mathematics teachers since they were considered the most suitable source for providing insights into the quality of mathematics teachers. Respondents were asked to rate the items on a 5-point Likert scale, ranging from "Strongly Agree (SA)" to "Agree (A)," "Undecided (UD)," "Disagree (D)," and "Strongly Disagree (SD)," allowing teachers to indicate their opinions. The respondents were giving the questions to answer and return same to the researchers on the next day. The distribution and collection of the questionnaire were done by the researchers in person. The researchers checked for Cronbach's alpha reliabilities of the instruments both in the pilot study and in the main study. The Cronbach's alpha reliabilities of: teacher behaviour/practices construct (.$\alpha = 0.72$) and teacher skills/expertise construct ($\alpha = 0.0.70$) exceeded the acceptable threshold value of 0.60, making the instruments reliable.

Data analysis

This study utilized the positivist quantitative research methodology to analyse numerical data obtained from 50 mathematics teachers. The researchers performed descriptive statistics (frequencies and percentages) to analyse the demographic data about the academic qualification of respondents. Additionally, inferential statistics, specifically the Pearson correlation coefficient, was utilized in analysing data to answer the research hypothesis.

RESULTS

Correlations between Teacher Qualification, Teacher Behaviour/Practices and Teacher Skills/Expertise

Before finding the correlations between the variables, the researchers performed descriptive analysis to obtain the frequencies and percentages of the academic qualifications of the respondents. Table 1 provides demographic details concerning the academic qualifications of the teachers involved in the study.

Table 1: Academic qualification of teachers

Academic qualification	Frequency	Percent
Diploma	14	28.0
B. A	4	8.0
B. ED	30	60.0
BSc	2	4.0
Total	50	100.0

Table 1 shows that 14 teachers representing 28% were Diploma holders, 8% were B. A holders', 60% had B. ED and 4% were BSc holders. This shows that the participants attained a generally high level of education and were, therefore equipped to give accurate and reliable data.

To explore the correlations between Teacher Qualification, Teacher Behaviour/Practices and Teacher Skills/Expertise; and answer the research hypotheses: 1, 2, and 3, the researchers performed bivariate correlation analyses with the results shown in Table 2.

Table 2: Correlation between Academic Qualification, Teachers' Behaviour & Practices, and Teachers' Skills/Expertise

Correction		Teacher Behaviour	Teacher Skills	Academic qualification
Teacher Behaviour	Correlation	1	.443**	.179
	Sig. (2-tailed)		.001	.215
Teacher skills	Correlation	.443**	1	.186
	Sig. (2-tailed)	.001		.195
Academic qualification	Correlation	.179	.186	1
	Sig. (2-tailed)	.215	.195	

**. Correlation is significant at the 0.01 level (2-tailed).

Table 2, reveals important correlations among different factors. Firstly, it was observed that there exists a medium positive correlation, with a correlation coefficient of r = 0.443, between Teacher Behaviour and Teacher Skills. Furthermore, the p-value associated with this correlation is 0.001, which is less than the predetermined significance level (α=0.05). Consequently, it can be concluded that there is indeed a significant positive relationship between Teacher Behaviour and Teacher Skills an indication that when teacher's skills changes, their behaviour also changes in the same direction. This means when teachers are trained to have sound knowledge it helps to improve their classroom practices.

Secondly, an examination of the data unveiled a small positive correlation, represented by a correlation coefficient of r = 0.179, between Teacher Behaviour and Academic Qualification. However, the corresponding p-value, which stands at .215, exceeds the established significance level (α=0.05). Consequently, it is accepted that there is no significant association between Teacher Behaviour and Academic Qualification. This means that teacher's qualification does not show any significant direct relationship with their behaviour/practices.

Lastly, the analysis showed a small positive correlation, reflected by a correlation coefficient of r = 0.189, between Teacher Skills and Academic Qualification. Nevertheless, the associated p-value, which stands at .195, surpasses the predetermined significance level (α=0.05). As a result, it is concluded that there is no significant relationship between Teacher Skills and Academic Qualification an indication that teacher's qualification does not significantly reveal a direct relationship with the skills they have acquired.

The results obtained from the correlations between Teacher Qualification, Teacher Behaviour & Practices, and Teacher Skills/Expertise are represented in an Empirical Triangular model as in figure 2. The below empirical triangular model further explains the relationship between Academic Qualification, Teacher Behaviour & Practices, and Teacher Skills/Expertise. CC is Pearson Correlation coefficient. This value indicates the strength and direction of the relationships between the various pairs of variables. The P-Value is the calculated probability level that is used' to reject or fail to reject the null hypothesis.

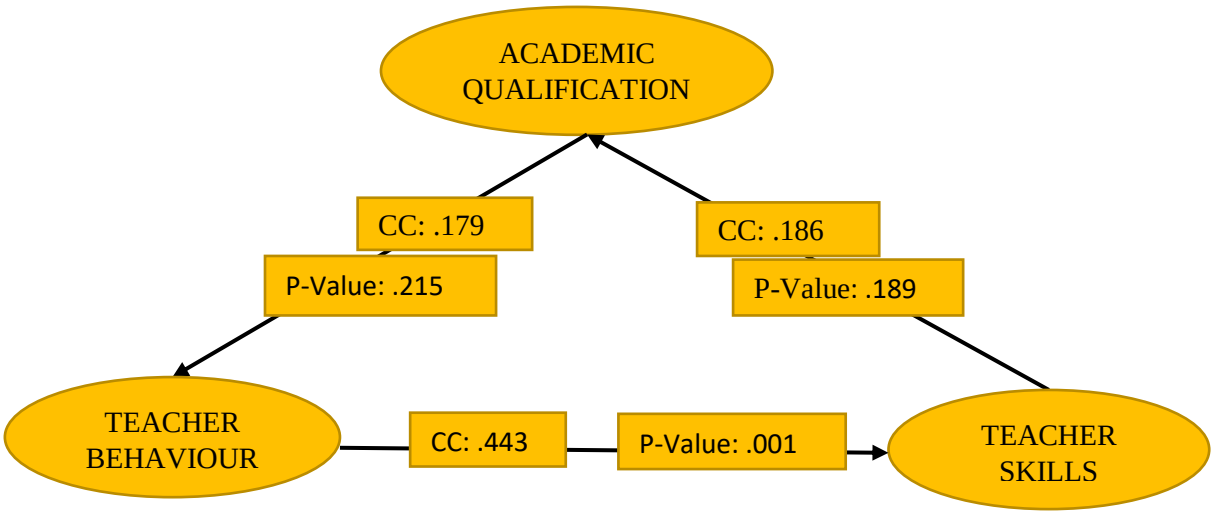

Figure 2: Empirical Triangular model of Academic Qualification, Teachers' behaviour & Practices and Teachers Skills/Expertise (Authors Own Construct, 2024)

This study has identified teacher skills and teacher behaviour as two key constructs of teacher quality that are positively related and therefore needs to be emphasised and developed in teachers during their training in school and professional development programmes organised at their field of work. The results further reveal that having a higher qualification or certificate does not mean one will have high skills and improved behaviour/practices

DISCUSSION

This study aimed at examining the relationships between Teacher Qualification, Teacher Behaviour/Practices, and Teacher Skills/Expertise. The study adapted the teacher quality framework by Geo that identifies: **Inputs** (Qualifications of Teacher and Characteristics of Teacher) and **Processes (**Practices of Teacher) as teacher quality variables. The discussion of the results of the study follows in the subsequent sub-headings.

Teacher Skills/Expertise and Teacher Behaviour & Practices

From research hypothesis three, it was established that, Teacher skills/expertise and Teacher behaviour & practices are positively related in the mathematics classroom. This is supported by empirical studies: Effective teaching hinges on a solid foundation of subject matter expertise. Teachers who possess a deep understanding of the content they are teaching are better equipped to choose appropriate pedagogical approaches. Darling-Hammond (2017) asserts that teachers' content knowledge allows them to connect concepts and present information in multiple ways, catering to diverse learning styles.

Expertise empowers teachers to adapt their methods to meet the diverse needs of their students. Tomlinson (2017) emphasises that skilled teachers are more likely to embrace differentiated instruction, tailoring their lessons to accommodate varying readiness levels and learning preferences. Such adaptability not only promotes better learning outcomes but also creates a supportive and inclusive classroom environment. Teacher behaviour and practices are closely tied to classroom management. According to Marzano and Marzano (2003), teachers' knowledge of effective classroom management techniques directly relates to their ability to create an orderly and conducive learning environment. Skilled teachers integrate formative assessment seamlessly into their instructional practices. Hattie and Timperley (2007), emphasise that informed teachers use ongoing assessment data to identify student progress and adjust their teaching methods accordingly.

Expertise extends beyond subject matter knowledge; it also encompasses interpersonal skills that influence teacher-student relationships. As Roorda et al. (2011) highlight, teachers who possess strong interpersonal skills can establish trust, respect, and rapport with their students. This positive teacher-student dynamic fosters a safe and supportive environment, encouraging student engagement and participation. The relationship between teacher skills/expertise and behaviour/practices is dynamic and ever-evolving. Darling-Hammond (2017), suggests that proficient teachers are more likely to engage in ongoing professional development, staying current with advancements in educational theory and practice. This commitment to growth translates into more effective teaching strategies over time. According to Akiri and Ugborugbo (2009), a teacher's skill is regarded as a multidimensional construct: teaching encompasses numerous interconnected elements towards transformation of knowledge to learners. Also, previous studies conducted by Schacter and Thum (2004), Adediwura and Tayo (2007), Adu and Olatundun, (2007) reveal that different elements of teacher skills/expertise include teacher's subject knowledge, teaching skills/expertise, teacher behaviour and teacher attendance.

Teachers Academic Qualification and Teachers Skills/Expertise

The discussion regarding the connection between a teacher's skills/expertise versus their academic qualifications has been a focal point in educational conversations. Common belief has traditionally implied a robust correlation between one's educational qualifications and their teaching competence (Domas & Tiedeman, 1950)). Surprisingly, the research findings of this study did not establish any association between a teacher's academic qualifications and his/her skills/expertise. This study therefore challenges the conventional perspective that there is a robust correlation between one's educational qualifications and his/her teaching competence, suggesting that the link between a teacher's academic credentials and his/her teaching effectiveness may not be as pronounced as previously assumed.

While advanced degrees undoubtedly demonstrate a certain level of commitment and dedication, they do not guarantee effective teaching. Teaching is a multifaceted skill that involves communication, adaptability, classroom management, and the ability to connect with students. These attributes cannot be solely attributed to one's academic credentials (Hunt, Wiseman & Touzel, 2009). Possessing advanced degrees might indicate a deep understanding of subject matter, but teaching goes beyond merely transferring theoretical knowledge. The ability to explain complex concepts in a relatable and understandable manner is a skill that is often honed through experience and continuous improvement. Teachers with practical teaching experience may develop a better grasp of how to adapt their lessons to various learning styles, making them more effective educators. In the modern educational landscape, ongoing professional development plays a crucial role in enhancing teaching skills. Workshops, training sessions, and collaborations with fellow educators offer opportunities to refine teaching techniques, regardless of one's academic qualifications. This means that teachers who are committed to lifelong learning can bridge any potential gaps between their qualifications and their actual teaching skills. Effective educators combine practical experience, ongoing professional development, and a deep understanding of diverse learning needs to create impactful learning experiences. It's therefore recognized that a teacher's true expertise is a blend of qualifications, experience, and a commitment to continuous improvement.

Teachers Academic Qualification and Teachers Behaviour/practices.

The intricate dynamics of teaching involve a blend of instructional strategies, classroom management techniques, and interpersonal skills. While common assumptions often suggest a direct link between teacher academic qualifications and their behaviour/practices in the classroom, this study found that there is no significant relationship between Teachers Behaviour and Teachers Academic Qualification. A teacher brings a variety of teaching styles to the classroom, influenced by his/her experiences, personal beliefs, and teaching philosophy. These styles may not necessarily align with teachers' academic qualifications. A teacher's

approach to instruction can be moulded by factors beyond his/her academic background, including the ability to connect with students, adaptability, and innovative teaching methodologies. Effective teaching requires adaptability to changing student needs and evolving educational trends. While academic qualifications might demonstrate subject knowledge, they do not inherently guarantee a teacher's ability to adapt his/her behaviours to suit diverse learning styles.

Ingersoll and Strong (2011) highlight that teachers tend to refine their classroom strategies and behaviour during their initial years in the profession, independent of their academic qualifications. This underscores the role of practical experience in shaping effective teaching practices. Marzano and Marzano (2003) assert that effective classroom management is driven by a teacher's ability to establish rapport, manage student behaviour, and create an optimal learning environment. While academic qualifications contribute to knowledge, they might not inherently include these interpersonal competencies. Ball and Forzani (2009) emphasise that many teacher education programs focus on theoretical aspects of education rather than practical classroom skills. As a result, academic qualifications might not adequately reflect a teacher's ability to translate his/her knowledge into effective instructional practices.

CONCLUSION, IMPLICATIONS, RESEARCH LIMITATIONS AND FUTURE WORK

This study aimed to examine the associations between Teacher Qualification, Teacher Behaviour/Practices, and Teacher Skills/Expertise. This study helps to bridge the gap in literature about the existing relationships between the teacher quality constructs in education. The correlational analyses yielded a remarkable positive relationship between Teacher Behaviour/Practices and Teacher Skills/Expertise an indication that an increase in teacher skills/expertise is related to an increase in teacher behaviour/practices. The study further shown that academic qualification did not corelate with behaviour/practices and skills/expertise. This means that the interconnectedness between teacher skills/expertise and teacher behaviour/practices is a cornerstone of effective education. Informed pedagogy, adaptability, classroom management, formative assessment, teacher-student relationships, and continuous professional development all depend on the depth of a teacher's knowledge and experience.

The conventional belief in a direct relationship between teacher behaviour/practices and teacher academic qualifications is challenged by the multifaceted nature of effective teaching. While academic qualifications provide a foundation, the intricate interplay of teaching skills, contextual responsiveness, experience, interpersonal competencies, and the broader dimensions of teaching effectiveness indicates a more complex reality. Acknowledging these nuances is crucial for a comprehensive understanding of how teachers' behaviour and practices influence student learning outcomes. This study implies that teachers' academic qualifications do not always guarantee comprehensive knowledge of teaching. But a comprehensive knowledge of teaching requires the acquisition of the three competencies (professional values and attitudes, professional knowledge and professional practice) as contained in the National Teachers standards (Anamuah-Mensah, Ananga, Wesbrook, & Kankam, 2017). The researchers recommend that teacher training institutions should focus on the training of teachers to acquire the professional knowledge/skills and behaviour/practices that are necessary for effective teaching and learning. Teacher professional development opportunities should be made available to teachers as a way of developing their skills and behaviour to teach.

This study was without limitations. In exploring teachers' behaviour/practices and teachers' skills/expertise, it would have been better to use observation data instead of using questionnaires that teachers were made to tick with little evidence that teachers actually portray such behaviours/practices or skills/expertise in their classrooms. However, the use of questionnaire enabled us to obtain data from the mathematics teachers about the same behaviour/practices or skills/expertise for easy comparison that would have been difficult if observation data was used. Future research is therefore needed to use both observation

data and questionnaire data to explore the mathematics teachers' behaviour/practices or skills/expertise in order to compare whether their responses in the questionnaire is similar to their behaviour/practices or skills/expertise in the observation data.

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