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# INFLUENCE OF TEACHER FACTORS ON ACADEMIC ACHIEVEMENT OF LEARNERS WITH ATTENTION-DEFICIT HYPERACTIVITY DISORDER (ADHD) IN INTERNATIONAL PRIMARY SCHOOLS OF MOMBASA (KENYA) AND KAMPALA (UGANDA): A COMPARATIVE STUDY

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#### **Abstract:**

The purpose of this study was to investigate the influence of teacher factors (gender, qualification, and teaching experience) on academic achievement of learners with ADHD in inclusive learning environments in international primary schools of Mombasa (Kenya) and Kampala (Uganda). This was a comparative study that included 377 Learners (9-11 years) and their class teachers. The study adapted Attention Deficit Hyperactivity Disorder Scale Questionnaire (ADHD-SQ) which assessed the three ADHD subtypes, a self-formulated questionnaire that required class teachers to provide their demographic characteristic, and End of Term Assessment Results (ETAR) of learners in core subjects of math, science and English for their academic achievement. The results revealed that female class teachers in Kampala significantly influenced overall academic achievement (U = 19.50, p = .018) while male class teachers in Mombasa significantly influenced math achievement (U = 241.00, p = .036) of learners with ADHD condition. Teacher's qualifications did not significantly influence academic achievement of learners with ADHD in Mombasa ( $r_s = -.058$ , p = .675) and Kampala ( $r_s =$ .334, p= .139). Teaching experience significantly influenced science achievement of learners with ADHD in Kampala ( $r_s = -.486$ , p = .025). The study recommended exploration of these teacher factors in public primary schools across the two cities.

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### Biirah, J., Anika, A., Richard Simon Zigler INFLUENCE OF TEACHER FACTORS ON ACADEMIC ACHIEV

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**Keywords:** attention deficit hyperactivity disorder, teacher factors, academic achievement, primary school learners

### 1. Introduction

Attention deficit hyperactivity disorder (ADHD) is a prevalent disorder among school going children affecting 3–5% of primary school children (American Psychiatric Association- APA, 2013). Using clinic referred samples, Mpango, Kinyanda, Rukundo, Levin, Gadow, and Patel (2017), Wamithi, Ochieng, Njenga, Akech, and Macharia (2015), and Wamulugwa et al. (2017) established that this disorder exists among school going learners in Kenya and Uganda.

In an inclusive classroom environment, students diagnosed with ADHD may have difficulties with organizational skills, study skills, time management skills, and completion of class work and homework. They also may show inability to work within a set of rules causing them problems dealing with teachers and other learners in the school (Collins, 2016). According to Murphy (2014), difficulties associated with ADHD may first become apparent at school due to a mismatch between learners' behavior and classroom expectations. However, teachers in these inclusive learning environments lack special skills to handle learners with this condition and are thus unable to enhance their academic achievement. No study has investigated the effect of teacher factors on academic achievement of learners with ADHD in international inclusive learning environments in East Africa using a comparative approach. The study at hand explored this effect with reference to international primary schools in Mombasa (Kenya) and Kampala (Uganda).

### 1.1 Study Objectives

- 1. To establish the influence of teacher gender on academic achievement of learners with ADHD in an inclusive learning environment;
- 2. To determine the relationship between teachers' qualification and academic achievement of learners with ADHD in an inclusive learning environment;
- 3. To establish the relationship between teaching experience and academic achievement of learners with ADHD in an inclusive learning environment.

### 2. Literature Review

According to Hibel, Farkas, and Morgan (2010), the disproportionate representation of learners in special education is due to reliance on teacher's judgment for identification and most especially female teachers. A study done by Caldarella, Shatzer, Richardson, Shen, Zhang, and Zhang (2009) among Chinese elementary school teachers demonstrated that teachers rate certain behaviours as more serious when displayed by learners of the opposite gender and suggested that this interaction of teacher gender and perception of learners' behavior needs to be closely examined. Conversely,

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Hardman (2013), Tejeda-Delgado (2009) and Young, Sabbah, Young, Reiser, and Richardson (2010) found no gender differences in their sample. However, these studies highlight activities in non-African countries without identifying how male and female teachers' rate academic achievement of learners with ADHD. The current study thus explored this on the African continent with reference to Uganda and Kenya.

In their multisite longitudinal study of kindergarten to fifth grade learners in South Carolina and Oklahoma, Cuffee et al. (2015) found better academic achievement among girls than boys with ADHD in contrast with Owen, Hinshaw, Lee, and Lahey (2009) and Yoshimasu et al. (2011) who found higher impairment among girls than boys in their U. S. samples. However, another study done by Yong, Fleming, McCarty, and Catalano (2014) found low achievement for both genders. These studies however do not demonstrate the influence of teachers' gender on academic achievement of these learners which created a knowledge gap for the current study.

In Africa, teacher factors such as tolerance of classroom behaviors, qualification level and intervention acceptability have been shown to affect learning and academic outcomes of learners with ADHD. For instance a study done in Nigeria by Olaoluwa (2016) on teacher factors and academic achievement among primary two learners found out that learners with ADHD taught by highly qualified teachers performed better than those taught by teachers who are not highly qualified. This study therefore encouraged the researchers to replica the same with reference to East African context.

Teaching experience appears to play a key role in teachers' self-efficacy when handling and improving academic achievement of learners with ADHD. For instance DuPaul, Reid, Anastopoulos, and Power (2014) examined effects of teacher and student factors on ADHD symptom counts among 7-15 year-olds in the United States and found that teaching experience was a significant factor as more experienced teachers tended to report fewer ADHD symptoms than their inexperienced counterparts. However, this study did not establish the direct effect of teaching experience on academic achievement of learners with ADHD in an inclusive learning environment which created a knowledge gap that justified conducting the current study.

### 3. Material and Methods

A comparative study was conducted to investigate the influence of teacher factors on academic achievement of learners with ADHD in Mombasa (Kenya) and Kampala (Uganda). Purposive sampling was used to select both cities as no similar study had been carried out in the study areas. Stratified sampling was used to select schools according to region to ensure proper representativeness. Cluster sampling was used to select learners to avoid omitting learners who might have the ADHD condition. A sample of 395 respondents (18 class teachers and 377 learners) participated in the study.

Attention Deficit Hyperactivity Disorder Scale Questionnaire (ADHD-SQ) developed by Swanson, Nolan, and Pelham (1982) was used to measure ADHD among learners. The instrument has 26 items composed of two areas namely; attention deficit

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hyperactivity disorder (ADHD) and Oppositional Defiant Disorder (ODD). The study adapted this instrument as only 18 items out of 26 items were used because the last 8 Items measured Oppositional Defiant Disorder (ODD) which was not part of the study. The instrument's Cronbach Alpha reliability from test-retest was reported at .984 and .976 for Mombasa and Kampala respectively similar to Bussing et al. (2008) from teachers and parents at 0.94 and 0.97 respectively. Teacher factors were assessed using a self-formulated questionnaire that required teachers to provide their demographic characteristic. End of Term Assessment Results (ETAR) involved class teachers recording actual scores attained by individual learners in math, science and English in the previous term from school academic records and scores ranged from 0-100.

Data collection was done following these steps: 1) Permission from relevant authorities including; approval from Pwani University Ethics Review Committee and Uganda National Council for Science and Technology, County Director of Education, Mombasa and principals of the different schools. 2) Data collection appointments where prior arrangement for each of the sampled schools was set out at a particular time and day when the questionnaires were to be administered in the two regions. 3) Administration of Questionnaires; before the actual administration of questionnaires, the researcher trained class teachers on how to rate learners with ADHD on the Attention Deficit Hyperactivity Disorder Scale Questionnaire (ADHD-SQ). Thereafter, questionnaires were given to class teachers who were able to rate learners for ADHD condition. They also reported End of Term Assessment Results (ETAR) in the space provided on the same questionnaire. Teachers also provided their demographic information by filling a self-formulated questionnaire for class teachers.

Ethical considerations involved obtaining research permits from Pwani University Ethics Remuneration Committee Board and Uganda National Council for Science and Technology, Kampala. Consent was sought from respondents on a voluntary basis. During the study, privacy, confidentiality and anonymity were maintained as all participating schools were assigned codes that were used throughout the whole process of research and report writing. All literature cited in the study were highly acknowledged. Dissemination of research findings would be shared with respective schools.

Data were analyzed using both descriptive and inferential statistics. A Mann Whitney test and Spearman's rho correlation coefficient were used to test the null hypotheses at .05 alpha level.

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### 4. Results and Discussion

### 4.1 Results

Table 1: Demographic Characteristics of Learners

Mombasa	Mombasa (%)	Kampala (%)	
Gender			
Male	122 (51.7)	62 (44.0)	
Female	114 (48.3	79 (56.0)	
Class			
Year Five	111 (47.0)	70 (49.6)	
Year Six	125 (53.0) 71 (50.4)		

Majority of the participants in the study were girls with 51.2% compared to boys with 48.8% with more boys from Mombasa and more girls from Kampala. In addition, most of the participants were from year six at 53.0% in Mombasa and 50.4% in Kampala.

Table 2: Demographic Characteristics of Class Teachers

Mombasa	Mombasa (%)	Kampala (%)	
Gender			
Male	4 (50.0)	6 (60.0)	
Female	4 (50.0)	4 (40.0)	
Qualification			
Master's degree	_a	2 (20.0)	
Post graduate diploma	_a	2 (20.0)	
Bachelor's degree	7(87.5)	2 (20.0)	
Diploma	1 (12.5)	4(40.0)	
Teaching Experience			
1-5 years	1 (12.5)	8 (80.0)	
6-10 years	5 (25.0)	_a	
16 years and above	2 (62.5)	2 (20.0)	

Note: -a No participants were found for those groups.

Results in Table 2 revealed that there were more male class teachers (56%) than female class teachers (44%). In schools of Mombasa, gender distribution among class teachers was the same, males (50%) and females (50%). In Kampala, male class teachers were more (60%) than female class teachers (40%).

Table 2 revealed that class teachers in Mombasa schools had higher qualification by their grades compared to class teachers in Kampala. That is 88% of class teachers in Mombasa had a bachelor's degree compared to 60% in Kampala.

Results in Table 2 further revealed that majority of class teachers in schools of Mombasa had more years of teaching experience (6-10 years) in contrast to majority class teachers in schools of Kampala who had 1-5 years' experience.

### 4.2 Academic Achievement of Learners according to Class Teachers' Gender

**Table 3:** A Mann Whitney Test between Class Teachers' Gender and Academic Achievement of Learners with ADHD

		N	Mean Rank	Mean Rank	Mean Rank	Mean Rank
	Mombasa		Total AA	Math	Science	English
Gender	Male	33	30.39	31.70	28.50	28.36
	Female	22	24.41	22.45	27.25	27.45
	Total	55				
Mann-W U	J		284.00	241.00	346.50	351.00
Asymp. sig	3		.175	.036	.776	.837
	Kampala		Total AA	Math	Science	English
Gender	Male	13	8.50	9.08	9.04	9.04
	Female	12	15.06	14.13	14.19	14.19
	Total	25				
Mann-W U	J		19.50	27.00	26.00	26.00
Asymp. siş	g		.018	.067	.062	.064

Results in Table 3 revealed statistically significant differences between mean ranks of male and female class teachers in Kampala in total academic achievement (U = 19.50, p = .016). On the contrary, non-statistically significant differences between mean ranks of male and female class teachers in total academic achievement (U = 284.00, p = .175) were observed in Mombasa.

In addition, Table 3 revealed significant differences between mean ranks of male and female class teachers in Mombasa in math (U = 241.00, p = .036) but not science (U = 346.50, p = .776), and English (U = 351.00, p = .837) at .05 alpha level. In Kampala, no significant differences between mean ranks of male and female class teachers were noticed in math (U = 27.00, p = .076), science (U = 26.00, p = .064), and English (U = 26.00, p = .064) at .05 alpha level.

### 4.3 Influence of Class Teacher Qualification on Academic Achievement of Learners with ADHD

Results in Table 4 from Mombasa revealed a non-significant negative relationship between class teachers' qualification and total academic achievement (= -.058, p = .675). In Kampala sample, the test revealed a non-significant positive relationship between class teachers' qualification and total academic achievement ( $r_s$  = .334, p = .139).

Furthermore, Table 4 revealed non-significant relationships between class teacher qualification and math ( $r_s$  = -.210, p = .124), science ( $r_s$  = .037, p = .787), and English ( $r_s$  = .188, p = .170) achievement in Mombasa. In the same way, Table 4 revealed non-significant relationships between class teachers' qualification and math ( $r_s$  = .204, p = .375), science ( $r_s$  = .379, p = .090), and English ( $r_s$  = .193, p = .401) achievement in Kampala.

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**Table 4:** A Spearman's rho Correlation Coefficient between Class Teachers' Qualification and Academic Achievement of Learners with ADHD

Mombasa	1	2	3	4	5
Total AA	1.00				
Math	.865**	1.00			
Science	.851**	.717**	1.00		
English	.676**	.392**	.402**	1.00	
Qualification	058	210	037	.188	1
Kampala	1	2	3	4	5
Total AA	1.00				
Math	.683**	1.00			
Science	.813**	.414	1.00		
English	.757**	.296	.477**	1.00	
Qualification	.334	.204	.379	.193	1

<sup>\*\*</sup> Correlation is significant at the .01 level (2-sided), \* Correlation is significant at the .05 level (2-sided)

### 4.4 Influence of Teaching Experience on Academic Achievement of Learners with ADHD

**Table 5:** A Spearman's rho Correlation Coefficient between Teaching Experience and Academic Achievement of Learners with ADHD

Mombasa	1	2	3	4	5
Total AA	1.00				
Math	.865**	1.00			
Science	.851**	.717**	1.00		
English	.676**	.392**	.402**	1.00	
Teaching experience	037	.061	.047	195	1
Kampala	1	2	3	4	5
Total AA	1.00				
Math	.683**	1.00			
Science	.813**	.414	1.00		
English	.757**	.296	.477**	1.00	
Teaching experience	381	.051	486*	301	1

<sup>\*\*</sup> Correlation is significant at the .01 level (2-sided),

Results in Table 5 from Mombasa revealed a non-significant relationship between teaching experience and total academic achievement ( $r_s = -.037$ , p = .789). Similarly, in Kampala sample the test revealed a non-significant relationship between teaching experience and total academic achievement ( $r_s = -.381$ , p = .104).

Furthermore, Table 13 showed non-significant relationships between teaching experience and math ( $r_s$  = .047, p = .767), science ( $r_s$  = -.061, p = .656), and English  $r_s$  = -.195, p = .154) achievement in Mombasa. In Kampala on the contrary, a significant relationship was revealed between teaching experience and science ( $r_s$  = -.486, p = .025). However, there were non-significant relationships between teaching experience and math ( $r_s$  = .051, p = .828), and English ( $r_s$  = -.301, p = .185) achievement.

<sup>\*</sup> Correlation is significant at the .05 level (2-sided)

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### 5. Discussion

The study investigated the influence of teacher factors on academic achievement of learners with ADHD in international schools of Mombasa and Kampala. The findings were discussed systematically as per objectives. This study makes several inputs to literature.

Firstly, significant gender differences were found in math among Mombasa class teachers and overall academic achievement among Kampala class teachers. Studies have shown that female teachers tend to pay much attention and provide classroom support to learners with ADHD. A case in point is Abaoud (2016) who claimed that female teachers tend to implement interventions strategies towards enhancing academic achievement of learners with ADHD than male teachers which coincides with the feminine instinct of care and warmth common in females.

Secondly, the study provides evidence on non-significant relationship between class teachers' qualification and academic achievement of learners with ADHD. These results are in disagreement with studies by Olaoluwa (2016), Safaan et al. (2017), Youssef et al. (2015) in Nigeria, Egypt and Caribbean Nation respectively which found out that learners with ADHD taught by highly qualified teachers performed better than those taught by teachers who were not highly qualified. On the other hand, Sikotane (2016) found that participants' education background had no difference in their experience to teach learners with ADHD in South Africa. However, Imeraj et al. (2013) and Garg and Arun (2013) attribute low academic achievement among learners with ADHD to their less engagement in class than their comparison peers but not necessarily teachers' qualification while Gaastra et al. (2016) attribute low academic achievement among learners with ADHD to poor self-regulation.

Thirdly, results revealed that teaching experience partially significantly influenced achievement in core subjects of learners with ADHD. This corroborates Soroa et al. (2014) who found that teachers who have greater experience in dealing with learners who have ADHD are more able to work with them in their classrooms whereas Anderson et al. (2012) urged that it is not teaching experience that matters but the interaction with these learners on a daily basis that is important.

### 6. Recommendations

The study found that being a male class teacher favored grades of learners with ADHD in Mombasa while being a female class teacher enhanced grades of learners with ADHD in Kampala. Therefore, this gender factor requires another study to be done.

Another study may be done to establish the influence of teacher factors on academic achievement of learners using their final exams as this was beyond the scope of this study.

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### 7. Conclusion

In conclusion, teacher factors partially influenced academic achievement of learners with ADHD condition in an inclusive learning environment. Specifically, gender of the class teacher significantly influenced overall academic achievement and math achievement of learners with ADHD condition in Kampala and Mombasa schools respectively. Similarly, teaching experience significantly influenced science achievement of learners with ADHD in Kampala. On the contrary, academic achievement of learners with ADHD was not dependent on class teachers' qualification; however, positive and negative relationships observed in different subjects should not be ignored as non-significance might be explained by small sample of class teachers. Therefore, the schools should pay attention to these teacher factors as a way to enhance academic achievement of learners with ADHD in an inclusive learning environment.

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### Biirah, J., Anika, A., Richard Simon Zigler INFLUENCE OF TEACHER FACTORS ON ACADEMIC ACHIEVEMENT OF LEARNERS WITH ATTENTION-DEFICIT HYPERACTIVITY DISORDER (ADHD) IN INTERNATIONAL PRIMARY SCHOOLS OF MOMBASA (KENYA) AND KAMPALA (UGANDA): A COMPARATIVE STUDY

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