



Teacher Experience Factor Impetus on Student Academic Performance

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Abstract: Education is UNESCO's top precedential mandate because it is essential and a basic human right. Teachers are central in enhancing quality performance in education. This is why the purpose of this was to survey the teacher experience impetus on student's performance in secondary school education. This research paper was guided by an objective which assessed teacher experience impetus on students' academic performance. The study adopted mixed method (triangulation) research design. A sample involving 54 public secondary schools whereby 54 principals, and 348 teachers was drawn from target population of 182 secondary schools and 1160 teachers. Purposive sampling was used to sample schools and simple random sampling was used to identify respondent teachers. Data for the study was collected by use of two different sets of questionnaires and two different interview schedules for administrators and teachers respectively. Data collected was analysed qualitatively and quantitatively. Inferential statistics was used whereby Anova Test was used to gauge teacher experience impetus on student academic performance. The research revealed that teacher experience had significant effect on student performance. Based on the above revelation, the study concluded that administrators should put in place measures to enhance teacher Experience.

Keywords: Public Secondary education, teacher experience, academic performance, concurrent triangulation

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1. Introduction

Teacher experience means meeting students on a regularly scheduled basis, planning and delivering instruction, developing or preparing instructional materials, and evaluating student performance based on the pre-set qualifications inscribed in policy. For this paper, teacher experience will take into consideration teacher years in service and qualification.

Teacher experience involving qualification and years of service parameters have notable gaps worldwide. Different countries set different qualification benchmarks for employing teachers in post primary institutions. In United Kingdom, Undergraduate degree is the route for teacher's to qualify to teach in schools (Foster, 2018). In Botswana, the main paths for preliminary teacher education are three (3) year diploma in primary education obtained from primary colleges of education (Kuyini, Major, Mangope, & Alhassan, 2021). In Kenya, qualifications for secondary school teachers are set by Teachers Service Commission (TSC) whereby a teacher must hold a Bachelor of Education

degree in two (2) teaching subjects or Bachelor of Science or Arts and a Post Graduate Diploma in Education (PGDE) (Kwanya, 2020). In United States, to become a teacher, the requirement is a Bachelor's Degree and a teaching license (Nichols, Block, & Wilson, 2019). In South Africa, a four-year Bachelor of Education degree; a three-year or four-year general Bachelor's Degree supported by a one-year Postgraduate Certificate in Education (PGCE) (Shay, Wolff, & Clarence-Fincham, 2016). In Ethiopia teachers are not required to have any specific certification or qualification. But teachers that have better qualifications will automatically have a higher chance of securing a teaching position (Abebe, & Woldehanna, 2013). In essence, Teacher qualification have variability in most countries. Some countries have certificate requirement, some insist on degree requirement coupled with PGDEs, some raise requirement to master's degree. These facts corroborate that teachers qualification are country specific. This is a gap that need be filled for standardized teacher qualification parameters.

Teacher experience based on years in employment has several variabilities. Depending on years of service, the shift from no experience to some experience makes the biggest difference (Rapanta, Botturi, Goodyear, Guàrdia, & Koole, 2020; Most teachers reach their peak after about five years in service. Hanushek, Rivkin, & Schiman, (2016) indicated that effect of teacher experience on student performance shows positive relationship between years of experience; Teaching is experience not training and therefore content knowledge is not the basic indicator. Students taught by professional teachers perform better (Fischer, Fishman, Levy, Eisenkraft, Dede, & McCoy, 2020). In addition, as number of years of teaching progressed, students' performance increased. On the other hand, Less-experienced teachers are more effective than ones with years of experience (Sass, Hannaway, Xu, & Figlio, 2010).

Teaching experience is positively linked to student performance. Advances in teacher effectiveness associated with years of experience are most steep in teachers' initial years, but continue to be extensive as teachers advanced in years within their teaching careers. As teachers gain experience, the students not only acquire more but are likely to do better in performance procedures. Teachers' effectiveness increases at a greater rate when they teach in a caring and mutual working environment (Stronge, J. H., & Xu, X. 2021). More-experienced teachers support greater student learning for their colleagues and the schools as well for their own students. There are contradicting results in research and that is why this paper analysed collected data and gave suggestions to the most appropriate teacher qualification and assessed impetus of teacher years of experience on student performance.

2. Literature Review

A study conducted by Louws et al. (2017) posited that teacher experience makes a difference at the beginning of a teacher's career. Indeed, teachers at the beginning of their teaching career have different goals, aspirations, attitudes and views for teaching than mid-career and late career teaching. The number of years of a teacher's experience is crucial and important. On average, experienced teachers are more effective than newly employed teachers. Teacher experience improvement are mostly registered early in their careers (Ladd, & Sorensen, 2017). Further, Rapanta, Botturi, Goodyear, Guàrdia, & Koole, (2020) found out that the shift from no experience to some experience makes the biggest difference. However, most teachers reach their peak after about five years in the classroom. As one study put it that there is little evidence that improvement continues after the first three years (Ladd, & Sorensen, 2017).

A study conducted by Basri et. al., (2018) suggested that teacher experience in terms of years in service had significance on student performance. Effectiveness increased intensely each year during the first ten years of teaching. Podolsky, Kini, & Darling-Hammond,

(2019) showed evidence of growing teacher effectiveness out to 20 or more years in their analysis of teacher data although more than a half of the gains in teacher effectiveness had occurred earlier. The study showed influence over the years but did not indicate how the experience gained affected students' academic performance.

Another study conducted by Ingersoll et. al., (2018) found that, on average, teachers with twenty years of experience are not more effective. Grissom, & Bartanen (2019) found out that there is limited evidence that returns to experience vary based on how a teacher is assigned subjects over the years, and by how long they teach the same grade. However, Tsybulsky, D., & Muchnik-Rozanov, Y. (2019), found out that individual teachers tend to improve on the job. In addition, Ion, Sánchez Martí, & Agud Morell (2019) agree that on the bottom-line experience helps, but it doesn't guarantee excellence or academic performance. Rivkin, Hanushek, & Kain, (2000) supported by Kim, & Seo, (2018) indicated that effect of teacher experience on students' academic learning/performance had found a positive relationship between years of experience. The evidence currently available suggests that inexperienced teachers are less effective than more senior teachers. Hanushek, Piopiunik, & Wiederhold, (2019) concluded that experience is not related to performance following the initial years in the profession. Despite all the above, studies by Sass, Hannaway, Xu, & Figlio, (2010) asserted that some less-experienced teachers are more effective than teachers with more experience. This gap need be filled up to a reaffirm whether management strategy can improve academic performance through teacher experience by resolving the contradictions in earlier findings.

On the contrary Harris, Mishra, & Koehler, (2009) asserted that most of teaching is experience not training and therefore content knowledge is crucial for success in teaching and therefore concluded that there is no correlation between academic performance and good teaching arising from teacher experience.

In Nigeria, Olasehinde-Williams, F., Yahaya, L., & Owolabi, H. (2018) in a study on influence of teacher qualifications on student outcomes in secondary schools; examined the impetus of teacher qualifications on student performance in mathematics. It was recommended that only qualified teachers should teach mathematics in secondary schools. Stronge, (2018) examined teacher qualification on performance of senior school physics students. The results discovered that students mentored professional teachers perform better. Stronge, (2018) recommended that students' in the final year of examination should be taught by experienced teachers.

Lamb, et. al., (2018) found out that teacher teaching experience was significant with students' learning outcomes in examination. Schools having more experienced teachers achieved better results than schools having more teachers with less than five years teaching experience. In the above light, Du Plessis, P., & Mestry, R. (2019) recommended that governments should encourage experienced teachers to stay on the

job. Experience has been noted to be so critical in Nigerian education system that several views have come to the fore advancing need to involve retired teacher because of their long years of experience to teach in schools.

Sweeney, (2012) studied the relationship of teacher salary and teacher experience on student outcomes found teacher salaries and levels of education affected student's academic performance. But years of teacher experience had little to no effect on student's academic performance. This finding contradicted Du Plessis, P., & Mestry, R. (2019).

Harris & Sass (2011) in their study of teacher training, teacher quality and the impact on students' performance concluded that obtaining an advanced degree during a teacher's teaching career does not enhance productivity and may actually reduce in high school.

A study conducted by Kim, & Seo, (2018) revealed that the relationship between teacher qualification and mathematics performances was positive, strong and statistically significant. From their study findings, it was observed that the individual teacher's education standards contribute to the level of output and subsequent student performance in the subject matter. This implied that well educated teachers deliver instructional content more effectively and yield top quality results in national examinations. This finding however looked at mathematics as a subject but not the overall student performance in secondary education.

Further, Kosgei, et al., (2013) on the relationship between Biology Teachers' Experience (Years of teaching, attendance of in-service courses; setting and marking national examinations showed positive significance. The study noted that experience is highly valued in the teaching profession. Kosgei et al., (2013) noted that as years of teaching progressed, students' academic performance increased.

Agwanda, (2015) in Kisumu Central Sub-County put two variables to test. The two variables were teacher qualification and experience. The result showed significant relationship. An earlier study by Agwanda in Kisumu Municipality noted positive correlation with student performance. The earlier study did not put teacher experience to test. The two contradicting views by Agwanda need be resolved through research to enable planners come up with informed decision. This would resolve whether teacher experience has effect on student academic performance.

Sureiman, (2010) on "Determinants of Performance in Secondary Schools in Nandi Sub-County, Kenya" revealed that the teachers experience has significant impact on Academic Performance in secondary schools while studies conducted by Kimani et. al., (2013) and Eisenkopf, et. al., (2015) established that teacher experience based on qualification was not related to performance. The two researches conducted by Sureiman and Kimani have different implications whereby this research will strive to resolve the arising gaps.

3. Methodology

3.1 Research Design

The study utilized Mixed Research Method (Triangulation). Mixed research method was selected since it offered chance for recreating research outcome. Mixed Research Method propositions extraordinary means of data collection to collect both quantitative and qualitative data and offer two crucial pathways for data analysis.

3.2 Sampling and Sampling Procedure

The target population of 182 principals (182 public secondary schools), 1160 teachers. The sample was 54 public secondary schools, 54 principals, and 348 teachers. This research exploited 54 principals, and 348 teachers. This is based on Best and Khan (2009) who proffered that 30% is statistically convenient for making generalizations. The sample size determination was based on discrete Weibull and zero-inflated discrete Weibull regression models. The discrete Weibull regression was used because of its attractive feature. Discrete Weibull regression has a desirable feature in that it can be used for both over and under dispersed respondents. The formular determined that within a population of 1160 respondents a sample of 348 will suffice. However, schools were sampled through stratified random sampling, purposive sampling was used to sample the principals and stratified sampling was further used to sample teachers.

3.3 Data Collection

Questionnaires and interview schedules were used to collect data. The questionnaires items were designed to enable collection of data for the study. Two sets questionnaires and two sets of interview schedules were used. The first sets of questionnaires and interview schedules facilitated collection of data from principals, while the second set of questionnaires and interview schedules facilitated collection of data from teachers.

3.4 Validity and Reliability

Fraenkel, Wallen, & Hyun (2010) refers to validity as the appropriateness, correctness, meaning fullness and usefulness of specific inferences. This research ensured validity of research tools by discussing them with faculty members. Content validity was ensured since instrument adequately covered all the content exploited in the research. The research instruments covered the entire sphere related to the variable teacher experience. Construct validity enabled the researcher to draw inferences about impetus of teacher experience on student performance.

Reliability is related to the consistency of a measure (Heale, & Twycross, A. 2015). Homogeneity for this

study was attained through The Kuder-Richardson test which is an advanced version of the split-half test. The split half combinations were determined on a correlation between zero to One (0–1). This test was more accurate than the split-half test, since most of the questionnaires had exploited answers (yes or no) which made The Kuder-Richardson test more attributable and accurate. A coefficient of 0.81 was achieved.

3.5 Ethical Considerations

This study assessed whether teacher experience had impetus on student performance in education. The following are the results and discussion arising from the study entitled teacher experience impetus on student academic performance.

4.1 When does teacher experience makes a difference?

The data collected from the respondents was treated with confidentiality and was used for study entitled ‘Teacher Experience Factor Impetus on Student Academic Performance’. The researcher ensured that data was not partial. Research rules were pragmatic to endorse outcomes that promoted social good. Data analysis, discussions and findings were presented based on data analysis.

4. Results and Discussion

The variable that looked at when teacher experience made a difference was used in this research to find out when teacher experience started making a difference in a teacher’s career. Respondents were given year of service ranges to designate where they felt teachers experience started making a difference in their teaching career. Table 1 indicated their responses.

Table 1: When Teacher Experience Made a Difference

When Teacher Experience Made a difference		F	Percent %	Valid %	Cumulative%
Year of Service	The 0yr - 4th Year of Service	69	19.8	19.8	19.8
	The 5th - 9th Year of Service	116	33.3	33.3	53.2
	The 10th - 14th Year of Service	89	25.6	25.6	78.7
	The 15th - 19th Year of Service	51	14.7	14.7	93.4
	Above 20th Year of Service	23	6.6	6.6	100.0
Total		348	100.0	100.0	

Source: Survey data (2022), SPSS Analysis

Table 1 indicated that in the first 4 years, 69 (19.8 percent) of teacher respondent showed that teacher experience started making a difference on classroom delivery; 116 teacher respondents (33.3 percent) exhibited that teacher experience made a difference from the 5th year to the 9th year of service. The data further revealed that 89 teacher respondents (25.6 percent) indicated that at the 10th year to 14th year bracket, teacher experience started making a difference. Cumulatively, 274 teacher respondents (78.7 percent) felt that by 14th year teacher experience had made a difference in the way they taught. In addition, out of all the 348 teacher respondents, 51 (14.7 percent) indicated that teacher experience started making a difference between the 15th years to the 19th year of teaching

service. Finally, only 23 teacher respondents (6.6 percent) indicated that teacher experience only made a difference beyond the 20th year of service.

The research noted that in the first 4 years only 19.8 percent had made an impact. Cumulatively, 53.2 percent (Half) of the teaching personnel had made an impact on the ninth year. This finding revealed that in the first decade of a teacher’s career was important because cumulatively 53.2 percent had made a difference on delivery and by the 20th year 93.4 percent had made a difference. The finding above agrees with the findings of a study by Ingersoll, Merrill, et. al, (2018) who suggested that teachers with more years of experience were not more effective than those with less years.

Table 2: Teacher Experience Effects by Gender

		Teachers Gender		Total	Percent %
		Male	Female		
Teacher Experience Effects	The 1st - 4th Year of Service	49	20	69	19.8
	The 5th - 9th Year of Service	83	33	116	33.3
	The 10th - 14th Year of Service	55	34	89	25.6
	The 15th - 19th Year of Service	29	22	51	14.7
	Above 20th Year of Service	12	11	23	6.6
Total		228	120	348	100

Source: Survey data (2022), SPSS Analysis

Table 2 showed a cross tabulation between teacher gender and teacher experience effects. The data categories proportions did not differ significantly from each other at the 0.05 level. 69 (19.8 percent) respondents whereby 49 male teacher respondents (21.5 percent) and 20 female teacher respondents (16.7 percent) specified that teacher experience is felt between the 1st year to 4th years of service. overall, 116 (33.3 percent) respondents whereby 83 male teacher respondents (36.4. percent) and 33 female teacher respondents (27.5 percent) showed that teacher experience is felt between the 5th to 9th years of service. Further, 89 (29.6 percent) respondents whereby 55 male teacher respondents (24.1 percent) and 34 female teacher respondents (28.3 percent) indicated that teacher experience is felt between the 10th year to 14th years of service. Also, 51 (14.7 percent) respondents whereby 29 male teacher respondents (12.7 percent) and 22 female

teacher respondents (18.3 percent) exhibited that teacher experience is felt between the 15th year to 19th years of service; and 23 (6.6 percent) respondents whereby 12 male teacher respondents (5.3 percent) and 11 female teacher respondents (9.2 percent) indicated that teacher experience is felt above the 20th year of service mark. Cumulatively, 274 respondents (78.7 percent) indicated that teacher experience effects were felt within the first 14 years of a teacher's service.

4.2 What are the Academic indicators of teacher experience?

Table 3 shows findings on academic indicator of teacher experience. Academic indicator of experience was considered to certain the effect of teacher academic experience on student academic performance.

Table 3: Indicator of Teacher Academic Experience

	Indicator of teacher Academic Experience		
	Frequency	Percent (%)	Cumulative Percent (%)
PhD	2	3.7	3.7
Master's Degree	13	24.1	27.8
Bachelor's Degree	24	44.4	72.2
Diploma	11	20.4	92.6
Others	4	7.4	100.0
Total	54	100.0	

Source: Survey data (2022), SPSS Analysis

Table 3 indicated that only 2 principal respondents (3.7 percent) advanced that PhD certificate would be a good indicator for teacher experience. Master's degree as an indicator was preferred by 13 principal respondents (24.1 Percent) and Bachelor's Degree by 24 respondents (44.4 percent). Further, 11 (20.4 percent) indicated that the acceptable indicator for teacher experience should be Diploma certificate, whereas only 4 respondents (7.4 percent) showed that other academic indicators could also be applicable. The result indicated that the best indicator for teacher experience in secondary school is a Bachelor Degree in education.

On teacher experience, one of the County Quality and Standard Officer (CQASO) who were interviewed responded by indicating that an experienced teacher has

more confidence and definitely has good mastery of content area of specialization. Armed with mastery and content, an experienced teacher executes a more effective coverage of the syllabus. However, the CQASO respondent added that teachers having minimal experience are more energetic. This extra energy at times may be misconstrued as effectiveness or efficiency.

Principal respondents who were interviewed by the researcher on teacher experience supported the above finding in the following comment.

"Teachers with no experience are not any better. Experience builds character and confidence is two essential components involved in making of a great

teacher. Experience should not be measured in terms of certificated held but should also include numbers of years a teacher has been actively teaching.”

Respondent no.15

4.3 Hypothesis test on influence of Teacher experience on Performance

This section presents more findings from analysis of data to test the hypothesis below:

Hypothesis H₁: *There is NO significant impetus of teacher experience on student performance in secondary education.*

The hypothesis testing on influence of teacher experience on students’ academic performance in secondary school education used Anova test to analyse data based on alpha P=0.05 level of significance.

Table 4: Influence of Teacher Experience on Students’ Experience

Influence of Teacher Experience on Students Performance					
Anova Test					
	Sum of Squares	Df	Mean Square	f	Sig.
Regression	6.622	1	6.622	.254	.615 ^b
Residual	9027.126	346	26.090		
Total	9033.747	347			

a. Dependent Variable: Total Years of Service
b. Predictors: (Constant), School MSS in KCSE – 2020

Source: Survey data (2022), SPSS Analysis

Table 4 enumerated a regression coefficient was 0.615 or 61.5 percent between teachers. There is thus strong relationship between years of experience and performance. In other words, secondary school performance can be explained by the prevailing teacher years of experience.

This finding supports findings by Sureiman, (2010) whose study entitled “Determinants of Academic Performance in Public Day Secondary Schools in Nandi Sub-County, Kenya” revealed that teachers experience influenced Academic Performance among students in secondary schools. Further, the study supported Du Plessis, P., & Mestry, R. (2019) which indicated that teacher teaching experience impacted on learning outcomes. Indicators of teacher experience were based on certification, whereby cumulatively, 72 percent of teachers had bachelor’s degree certificate and above. Interviewed education officers supported this finding by suggesting that experienced teachers have more confidence and have good mastery of the content. Armed with mastery and content, experienced teachers execute more effective coverage of the syllabus. The 72 percent teacher experience revelation could work well for the education system but the other 28 percent needed monitoring.

The indicators of teacher experience were cumulatively felt within the first 14 years of a teacher’s service. Further, Kim, & Seo, (2018) supported by reporting those conditions under which a person carried out the first years of teaching have a strong influence on the level of effectiveness which the teacher is able to achieve and sustain over the years.

The research also confirmed in this section that teachers with marginal experience are not any better than their

counterparts with experience. Experience builds character and confidence; Character and confidence are two essential components involved in making of a great teacher. The finding illustrated that experience should not only be measured in terms of certificates held; but should also include numbers of years a teacher has been actively teaching.

In addition, the research revealed that there was a strong relationship between teacher experience and academic performance. In other words, secondary school performance can be explained by the prevailing teacher certification and years of experience. Therefore, harnessing teacher qualification and involving experienced teaches enhances performance.

The section revealed that there is thus strong relationship between years of experience and students’ academic performance (Regression coefficient was 0.615 or 61.5 percent). In other words, secondary school performance can be explained by the prevailing teacher experience.

5. Conclusion and Recommendations

5.1 Conclusion

The study concluded that teacher’s experience was essential for improving student academic performance. The study noted that teacher experience was predominantly based on certification. Interviewed educationists supported this finding by indicating that experienced teachers have more confidence and have good mastery of subject content. Armed with mastery and content, experienced teachers execute effective syllabus coverage. They further concluded that teacher

experience should not be measured in terms of certificates but should also embrace number of years of a teachers career in teaching. Older teachers were effective although the required attitude for teaching was acquired much earlier in the teaching career. Lastly, this research paper concluded that there was a strong relationship between teacher experience and student academic performance. In other words, secondary school performance in secondary schools can be explained by the prevailing teacher certification and years of experience.

5.2 Recommendations

The study recommends that:

- i. To enhance performance, experienced teacher with at least Bachelor of Education Degrees be hired and staffed in secondary schools.
- ii. A programme be put in place to ensure newly trained teachers are inducted by experienced teachers to fast-track teacher experience.
- iii. Teachers certification be compulsory for all teachers because it is the starting point for enhancing teacher experience
- iv. For posterity in learning, Proactive measures be put in place to ensure experienced teachers are maintained in service.

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