

TEACHERS CONFERENCE

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Sub Theme: Teacher training and development in the 21st Century

**EFFECT OF TEACHERS' CHARACTERISTICS
ON LEARNERS' ACADEMIC OUTCOMES IN
SECONDARY SCHOOLS: Focus on Lesson Study
in Kenya**

By

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Introduction

- Kenya's Big four Agenda emphasizes on Manufacturing, Food security, Affordable housing and Universal Health Care (KIPPRA, 2018).
- This can be realized easily with a relatively literate population.
- There has been a campaign to improve global literacy level to at least quality basic education (GPE & EI Report, 2012). In Kenya, Basic Education is completed by the end of secondary school education (Basic Education Act, 2013)

Introduction cont...

- Learners' academic outcomes from secondary schools depend on availability and characteristics of teachers (Ojiambo, 2009)
- Kenya Vision 2030 of 2007 outlined the main goals of Economic, Social and Political pillars which may enable Kenya to be a globally competitive and prosperous nation.
- Quality Education- goal 4 of the 17 SDGs, is the key to the achievement of the Kenyan goals.

Introduction cont...

- Global target of Education for All since the year 2000 not yet achieved, due to teachers' shortage in schools (GPE & EI Report, 2012)..
- UNESCO Institute for Statistics (2012) suggested that teachers should be managed as professionals, be properly trained, supported and proportionately posted to effectively serve the 21st century learners.

Introduction cont...

- CBC has been launched by the Kenyan Government as per the global trend of emphasizing on 21st century learner competencies
- Policies of 100% transition of learners from primary schools to secondary schools and that of FDSE fund has led to the rapid increase of student enrolment(Ohba, 2009)
- Few overloaded and disheartened teachers constitute an ineffective teaching force unless the teachers' characteristics are refined (Shahid & Neelam, 2006).

Introduction cont...

- Lesson Study still being rolled out in phases by CEMASTEА with support of MOE and TSC, has attempted to effectively address the pedagogical challenges at school and local zonal levels.
- During Lesson study, Teachers of various work experiences from various neighboring schools come together and work collaboratively in planning, implementations and lesson reflections (CEMASTEА, 2018)

Introduction cont...

- Lesson study targets to improve teachers' classroom practice and students' acquisition of the 21st century skills which includes learning and innovation, digital literacy and life/ career skills (CEMASTEIA, 2019)

Statement of the problem

- There is teacher shortage in secondary schools
- Policies of 100% transition and FDSE funding has led to increased enrollment
- CBC has been rolled in response to the global demand for 21st century competencies, each learner deserves individualized attention
- Lesson study brings teachers with diverse work experience to a single table of professional sharing, to enhance better lesson delivery
- What is the effect of teachers' characteristics of work experience on academic outcomes in public secondary schools in Kenya?

Theoretical Framework

- This study was guided by the framework of Human Capital Theory (HCT). Human Capital theory (Mulongo, 2012) holds the view that human beings – learners in this study - are an investment, comparable to other economic resource investments, which should generate a return.
- That is, the theory gives the hope that the work output of a scholar should compensate the labor, money and time expenditure incurred during their education process.
- Thus according to the HCT, education builds the human capital of the secondary school learners not only to make them more productive after school, but also enable them to enjoy more benefits in future lives.
- This theory is relevant to this study due to the fact that take their children to secondary schools and expect them to get quality academic outcomes in the form of mean scores in KCSE exams at the end of the secondary school cycle.

Literature review

- Kini and Podolsky (2016) examined 30 studies that analyzed the effect of teaching experience on student outcomes in K-12 public schools of USA, as measured by student standardized test scores and non-test metrics when available. It was further found out that as teachers gain experience; their students are more likely to do better on other measures of success beyond test scores, such as school attendance.
- Gözde (2006) investigated the effects of mathematics teacher and classroom characteristics on students' mathematics achievement across Turkey, European Union countries. Results of the study showed that experience of teacher had a positive significant effect in some countries such as Turkey and Netherlands, but negative significant effect in other countries such as Slovak Republic and Slovenia

Literature review cont...

- In Nigeria's Ogun State, the influence of teachers' teaching experience on the academic performance of public secondary school students in Mathematics and English Language was investigated using a descriptive research design and the findings revealed that teachers' teaching experience significantly influenced students' academic performance (Temitope & Olabanji, 2015). The study proposed employment of professional and qualified teachers and are retained to enable them acquire experience on the job
- Kosgei, Kirwa, Odera & Ayugi (2013) studied the relationship between teacher characteristics and students' academic achievement in Nandi, Kenya for teachers of public secondary schools using a causal comparative research design. It was found out that as the number of teachers' years of experience progresses, student academic achievement increases and vice versa

Research Design

- This study adopted a mixed methods approach, and it followed convergent parallel mixed research design.
- Both quantitative and qualitative data were collected and analyzed at the same time but each type of data was handled separately.
- The convergent parallel mixed research design was used in this study “due to the numerical nature of most indicators” (Creswell, 2014, p.219) of education quality such as internal exam test scores, KCSE mean scores and mean grades.
- Nevertheless, there are critical issues that are likely to affect education quality such as perceptions and emotions of teachers – which could not be expressed explicitly in numerical form but were articulated well during discussions in interviews

Target Population

- This study focused on a total 209 TSC teachers (162 being male and 47 being female) in the existing 32 public secondary schools which presented students to KCSE national examinations in the year 2016 (TSC Suba data, 2017). This study also focused on 32 Director of studies and 32 Deputy Principals of the existing public secondary schools.

Sample size and techniques

- This study employed both probability and non-probability sampling techniques. In particular, this study used stratified sampling, single-stage simple random sampling, convenient sampling and purposive sampling techniques to identify 80 teachers, 20 Director of Studies and 20 Deputy Principals in 20 schools out of the total 32 public secondary schools in Suba Sub County

Research Instruments

- Data was gathered from the institutions by use of questionnaires, in-depth interview schedules and document analyses. The questionnaires were issued to teachers employed by TSC. Teachers in management positions – the deputy principal and the Director of Studies, were requested to participate during in-depth interviews with the interview schedules. The KCSE exam results for the immediate past four years up to 2016, were analyzed to assess the quality reflected against the teachers who handled the students during the identified period

Validity of the Instruments

- This is the extent to which the instruments (Oso and Onen, 2006:92) measure what they are intended to measure. The research design was used amid many possible challenges such as unequal sample sizes, different concepts or variables on both sides of the design, and lack of follow up on conclusions due to time constraint. The validity was therefore established by presenting the instruments to the two assigned research supervisors – who are experts - to evaluate, correct and approve them when the instruments had satisfactory validity of content, prediction, concurrence, construct and face value

Reliability of The Instruments

- Reliability is defined as a measure of how consistent a test yields the same results or data from repeated tests (Mugenda and Mugenda, 2003). Reliability of the instruments was assessed and confirmed through pilot testing in similar environment as that of the research area.
- Reliability test was done through split half method and the result found a reliability correlation coefficient $r=0.858$, which is greater than 0.6 and according to George and Mallery (2003) it was considered appropriate

Reliability test

The results of the reliability test were as shown in Table 2 below

Table 2: Reliability test results

		1 st half	2 nd half
1 st half	Pearson correlation	1	0.752
	Sig. (2-tailed)		0.000
	N		74
2 nd half	Pearson correlation	0.752	1
	Sig. (2-tailed)	0.000	
	N	74	

**Correlation is significant at the 0.05 level (2-tailed)

$$r_{SB} = \frac{2r_{hh}}{1+r_{hh}} = \frac{2 \times 0.752}{1+0.752} = 0.858$$

Data collection procedures

- The process of data collection process involved two stages- authorization and the actual administration of instruments.
- The first authority was sought from The Catholic University of Eastern Africa (CUEA). The second permit was from Kenyan chapter of the National Commission for Science, Technology and Innovation (NACOSTI) – the body mandated to authorize all research work in Kenya.
- The researcher then gave notice of the intended study to Homa Bay County and Suba Sub County directors of education, as well as the management of the sampled schools through their Principals.
- The researcher thereafter visited the schools to deliver questionnaires and to analyze necessary school documents targeted for this study. After some period, within two weeks from the first visit, the researcher again made a second visit to the same schools to collect the filled questionnaires and conduct interviews.

Data analysis

- Descriptive and inferential statistical analysis approach was used with the help of SPSS to analyze data. The Pearson correlation coefficient was used to test hypotheses.
- Qualitative data was analyzed using the thematic framework. Thematic analysis refers to the method of identifying, analyzing and reporting patterns or themes within data and interpreting various aspects of the research topic (Braun and Clarke, 2006).
- This included the reading and re-reading of the entire set of data to look for patterns of meanings and issues of potential interest before, during and or even after analysis.

Ethical considerations

- The respondents were requested to sign a consent letter indicating their willingness to participate in the study.
- For anonymity and privacy, the researcher concealed identity of respondents using codes.
- The proceedings of interviews were recorded verbatim for accountability of the originality of the information, and all information was acknowledged accordingly to avoid plagiarism.
- The researcher thus made efforts to ensure that no arising unethical issue was unaddressed.

FINDINGS

Effect of teachers' work experience:

- The Pearson Product-Moment correlation coefficient computed indicated that there was a positive correlation ($n= 73$, $r = .613$, $p<0.05$) between teachers' work experience and academic outcomes, as indicated in Table 8. The result shows that the significance (p -value) of Levene's test is 0.00 but the alpha (α) level is 0 .05. Hence for this test, $p < \alpha$, (i.e $0.00 < 0.05$).

Decision

- The null hypothesis was rejected and the alternative hypothesis was upheld

Inference

- The analysis revealed highly significant ($p < 0.05$) positive relationship between teachers' work experience and academic outcomes, with high levels of teacher work experience associated with high academic outcome. Hence, it is acceptable to conclude that the more teachers gain experience the more they are likely to perform well in their service delivery as measured through academic outcome

Conclusion

- These findings done in Suba, H/Bay – Kenya agreed with results of a study done in Nandi, Kenya (Kosgei, Kirwa, Odera & Ayugi, 2013) as well as the results to another study done in Nigeria's Ogun State (Temitope & Olabanji, 2015) on the effect of teacher's work experience on academic outcome
- Thus, the more teachers gain experience the more they are likely to perform well in their service delivery as measured through learners' academic outcomes.
- Thus, lesson study, through its bench-marking, team work and collaboration approach, it is emphasizing a key contributor to learners' academic outcomes

Recommendations

- **Lesson Study for all subjects** to enable on-job learning through bench-marking, team work and collaboration
- **Staff balancing** all schools have teachers with diverse experiences mixed up proportionately through new postings, deployment and transfers
- **Internal appointments:** school principals to consider teachers' years of experience when appointing teachers to handle responsibility in school, particularly the teaching duties and patronage of the candidate classes..
- **More funding for Lesson Study:** MOEST and TSC to lobby for increased stakeholder support for lesson study to enhance in-service TPD for 21st century competencies in all teachers.

THE END

THANK YOU