



# **Influence of Principals' Professional Training on Creating Professional Learning Communities in Selected Kenyan Secondary Schools**

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## **Authors' contributions**

*This work was carried out in collaboration among all authors. Author JAA designed the study, performed the statistical analysis, wrote the protocol, wrote the first draft of the manuscript, managed the analyses of the study and the literature searches. All authors read and approved the final manuscript.*

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## **ABSTRACT**

The present study investigated the influence of principals' professional training on creating professional learning communities in Kenyan secondary schools. The study population comprised of 194 principals, 1526 teachers, 194 BOM Chairpersons, and 6 SCQASOs. The total population was 1920 respondents and informants. The study used both purposive and stratified random sampling procedures to obtain study participants of 20 principals, 153 teachers, 20 BOM Chairpersons and 6 SCQASOs. Questionnaires and interview schedule were used to collect data for the study. Reliability of questionnaires was ensured by Cronbach's methods and alpha value was 0.790. The statistical tool SPSS Version 23 was used to analyze the quantitative data, while thematic analysis used to analyze qualitative data. The study findings indicated that there was statistically significant positive correlation between principals' professional training and creation of professional learning communities ( $n=135$ ;  $r= .479$ ;  $p<.05$ ). It's recommended that Kenya Educational Management Institute (KEMI) should re-structure their training programmes to include creation of professional learning communities.

**Keywords:** *Principals; professional training; creating professional learning communities; secondary schools; Kenya.*

## **1. INTRODUCTION**

A professional learning community school focuses on results instead of rules or procedures,

focuses on learning instead of teaching students what they should know, embraces collaboration instead of isolation, and empowers teachers to research best practices for classroom use

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(DuFour & Eaker, 1998). Senge [1] had initially linked PLCs to description of learning organization in which “people continually expand their capacity to create desired results, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free”. Professional learning community (PLC) is as popular now as the terms restructuring, cooperative learning, alternative assessment, and outcome-based education have been in the past years [2]. In an earlier contribution, Huffman [3] traced the term professional communities as having emerged from organizational theory and human relations literature. By 1997, the concepts advocated by Senge had been established in the educational community under the concept of Professional Learning Communities. In her thorough literature review, Hord [4] suggested that Professional Learning Communities shared five common attributes: supportive and shared leadership; collective creativity; shared values and vision; supportive conditions; and shared personal practice [4]. The report identified the prominent role that principals play in initiating and developing Professional Learning Communities, but it also noted that there are “few models and little clear information to guide the creation of professional learning communities. A study by Owen (2014) revealed that one of the main goals of a PLC in an educational organization is increased achievement for all students. This will in turn have a positive impact on the students in the community to help promote positive social change.

Researches reveal collaboration as an effective strategy for improving student learning at schools [5,6]. When applied effectively, collaboration among teachers, is a strategy that has proven to be very useful in improving instructions and elevating student achievement. A study by Blankstein, Houston and Cole [7] reveal development of professional learning communities as rapidly-growing improvement efforts in today's schools. Professional learning communities are defined as collaborative teams whose members work interdependently to achieve common goals linked to the purpose of student learning [8], and it's essence is a focus on the learning of each student. A study by Owen (2014) on teacher professional learning communities: Going beyond contrived collegiality toward challenging debate and collegial learning and professional growth, a study in South Australia, revealed that one of the main goals of a PLC in an educational organization is

increased achievement for all students .This will in turn have a positive impact on the students in the community to help promote positive social change. This study was guided by transformational leadership thoughts. Transformational leadership inspires followers to do more than they would have expected to accomplish [9]. This theory was first put forward by Burns in the 1978 and was elaborated on by Bass in the 1980's. Since then it has gained enormous popularity both in academic and practitioner circles. It can be defined as the process of engaging commitment in a context of shared values and vision [10], or the aligning of the interests of the organization and its members [11]. It is essential for the principals to provide support, motivate and encourage the stakeholders to develop a common vision based on the other elements of the collaborative process: developing collegiality, treating teachers as professionals, sharing leadership / decision making, involving parents and community in a culture of dialogue and reflection, and engaging in joint planning and evaluation. Ultimately, a common vision leads to the establishment of a professional learning community and positive academic work of students.

In Kenya, public secondary schools are significant institutions which nurture the younger generation for their participation in the society. Principals as leaders of these institutions are viewed synonymously with the successes or failures emanating from the schools. As resources mobilizers and managers, principals of public secondary schools require direct involvement of the parents. The physical infrastructures like dormitories, classrooms, libraries, laboratories and academic activities, all impacting on students' academic achievement, require parents' input. The change in the curriculum introduced by 8.4.4 structure of education necessitated corresponding change in physical structures in the schools. In other words, the direct contact between the parents and the teachers, more specifically the principals, became mandatory because the principal is the secretary of both Board of Management and Parents Association.

## 2. LITERATURE REVIEW

Literature on principals training and creation of professional learning communities exists. For example, Sparks [12] contends that principals play pivotal roles in establishing and nurturing

professional learning communities. The study is however different from the present study as this study will establish whether principals received professional to create Professional Learning Communities while his study focused on the influence of Principals in developing Professional Learning Communities, and did not look into their training. Bryk, Camburn and Louis [13] suggest that principals play a key role in creating a normative order or culture that reinforces the practices of professional learning communities. Cross [14] indicated that much can be done at the school level to retain new teachers, however much of the power to make this happen lies in the hands of the principal. Lunenburg [15] reiterated that the principal's primary responsibility is to promote the learning and success of all students. That the school principals can accomplish this goal by focusing on learning; encouraging collaboration; analyzing results; providing support; and aligning curriculum, instruction, and assessment. Youngs and King (2002) qualitative study examined the extent to which and the ways in which principal leadership for professional development at four schools addressed three aspects of school organizational capacity: teachers' knowledge, skills, and dispositions; professional community; and program coherence. Findings from the study indicate that effective principals can sustain high levels of capacity by establishing trust, creating structures that promote teacher learning, and either connecting their faculties to external expertise or helping teachers generate reforms internally.

Kose (2009) suggest five principal roles worked together to optimize professional learning: transformative visionary, transformative learning leader, transformative structural leader, transformative cultural leader, and transformative political leader. Gebreselassie (2015) study also showed that the four predictor variables jointly produced significant contribution to teacher participation in CPD activities. It also showed that the variable 'creating a learning environment' significantly contributed to teacher participation in CPD activities from among the four variables. Mendez [16] study revealed that overall there is a strong relationship between principals' leadership practices and the transformational development of professional learning communities. Additionally, the results from this study suggest that the combination of all the leadership practices associated with this study can assist in informing school principals of the leadership practices associated with successful professional

learning communities. Pottorff [17] qualitative study suggested transformational leadership played an important role in the leadership styles of the principals of the study. Gillespie [18] study indicated that broad-based, skillful participation in the work of leadership was the most important leadership construct to the success of sustaining PLCs. Grissom and Harrington [19] reported a significant positive association between principal participation in formal mentoring and coaching and principal effectiveness but find that principals who invest in university coursework as professional development are rated less effective. Bhekukwenza [20] study reported that the schools whose principals play an active role in transforming them into professional learn communities show better performance in grade 12 than their counterparts that work in isolation.

The Kenyan government policy in pursuit of United Nations-UN' declaration of 'Education for All' by 2015 and Kenya's development agenda of Vision 2030 brought in new demands on the education system. The principals have had to juggle with parents' demands for improved academic performance while they cope with the government's demand for high transition rate of school leavers to the next level of education that has meant over-enrolment in public secondary schools. Attempts by principals and teachers to create extra hours of tuition to meet both demands were seen as putting too much pressure on the learners. Joint examinations among students within districts were abolished. Somehow the principals, the parents, Board of Management and teachers have had to find a way to manage schools. One such ways is the creation of a professional learning community which is a way of extending classroom practices into the community by utilizing community resources, both material and human In Kenya Professional Learning Communities was introduced in 1980s by the demands of the World Bank's Structural Adjustment Programs (SAPs) that forced the government to withdraw from funding of physical structures in public schools and increased the involvement of parents through Parents and Teachers Associations (PTAs). Principals have found themselves navigating not only hitherto unknown leadership terrains, but also those requiring the adoption of innovative leadership styles that not only consider, but also respect and take into account the community expectations (Dempster & Berry, 2003).

### 3. RESEARCH METHODOLOGY

#### 3.1 Research Design

The study adopted concurrent triangulation design within the mixed method approach as advanced by Creswell [21]. This design converges or merges quantitative and qualitative data in order to provide a comprehensive analysis of the research problem, and the investigator typically collects both forms of data at roughly the same time and then integrates the information in the interpretation of the overall results [21].

#### 3.2 Research Participants

The study targeted all the 194 principals in the 194 public secondary schools, and 1526 teachers in Siaya County. The principals were mainly targeted because the researcher believes that as leaders of the schools, they are best placed to facilitate creation of Professional Learning Communities. The study adopted stratified random sampling to obtain teachers and purposive sampling techniques. According to Crossman [22], a homogeneous purposive sample is vital in selecting a population that is having shared characteristic or set of characteristics that relates to the topic under investigation. Stratified random sampling into school categories were adopted to select 30% principals and 30% BOM Chairpersons within the study area. According to Kasomo [23], 10% to 30% of the accessible population is enough. Based on the consideration by Jwan [24] that between 10 – 30 percent of the total target population forms an adequately representative sample, using simple random technique, a consideration of 10% yielded 20 schools for involvement in the study, in which the calculated sample size of 153 teachers were distributed.

#### 3.3 Tools

In this study, research data were collected by use of questionnaires and interview schedules. The questionnaires were administered to the principals and teachers, whereas the interview schedules were conducted with BOM Chairpersons, QASO officers, and principals at the time of collection of questionnaires. From the table Bartlett's test for Sphericity are all significant ( $p < 0.001$ ,  $p = 0.000$ ) and Kaiser-Meyer-Olkin indexes are all  $> .6$  for all the subscales of the questionnaire. Hence, based on the results, it was correct to conclude that the data were of

adequate internal validity therefore it was suitable for inferential analysis. Cronbach's alpha coefficient analysis was used to measure the internal consistency of the instruments because Bhatt (2012) and Oso and Onen [25] recommends its use to establish internal consistence, observing that it is the most consistent test of inter-item consistency reliability for Likert scaled or rating scaled questionnaire. Cronbach's alpha coefficient of alpha of 0.790 was reported for principals training questionnaire. In this study, trustworthiness and authenticity of the research instruments was anchored on the mixed methods approach that embraces the data triangulation design.

#### 3.4 Data Collection Procedures and Analysis

Data collection procedure began after the proposal has been accepted and approved by the university supervisors. During data collection, both ethical and logistical considerations were observed by the researcher. The researcher then personally visited each of the sampled head teachers and teachers in their respective schools. The first visit was for acquainting oneself with respondents, create a rapport with them and obtained consent. The second visit was to distribute the questionnaires and make arrangements to conduct interviews with the respondents, after which the researcher interviewed principals and collected the completed questionnaires. Interview responses were tape-recorded, with permission from the respondents, and written on note books. Each participant was interviewed for about 45 minutes while it took an average of 30 – 45 minutes to fill questionnaires for each respondent. The data collection lasted for six months as those who were not met on the set date were met on another agreed date. Quantitative data was analyzed by both descriptive and inferential statistics while qualitative data was analyzed thematically.

### 4. RESULTS AND DISCUSSION

#### 4.1 Questionnaire Return Rate

Table 1, which shows the summary of return rate of questionnaires from the student respondents, reveals that the questionnaires were adequate for the study.

The study targeted a total of 153 sampled teachers on whom the questionnaires were

administered. Out of this number, a total of 135 of them returned their questionnaires having been properly filled, translating to an overall response rate of 88.2%. Creswell [21] recommends that a response rate of at least 50% is adequate, 60% is good and 70% and above is excellent for analysis and reporting on a survey study. Based on this assertion, the current study's response rate of 88.2% is therefore excellent. This indicates that the sample adequately represented of the target population. The recorded high response rate was attributed to the fact that the questionnaires in this study were personally administered by the researcher to the respondents, who were pre-notified of the purpose of the study.

#### 4.2 Principals' Professional Training and Creation of Professional Learning Communities

The study sought to establish the relationship between principals' professional training and creation of professional learning communities. The objective was addressed, first, by exploring the teachers' ratings on the principals' professional training and, second, using inferential statistics to establish whether is statistically significant relationship between principals' professional training and creation of professional learning communities. The respondents were presented with five-itemed Likert scaled questionnaire with items of the questionnaire being indicators of professional

training of the principals. The responses were ranging from Strongly Disagree (1) to Strongly Agree (5). Their responses were summarized in means and standard deviations as summarized in Table 2.

The results of the survey show that there is fairly low rating of principals' professional training in respect to creation of professional learning communities in secondary schools. This was reflected by mean average rating of 2.06 (SD=0.51) in the scale of 1 to 5. It emerged that only small proportion of the teachers held opinion that their principals have adequate professional training relevant to the creation of professional learning communities. For instance, most of the teachers refuted that claim that their principals are adequately trained on enhancing students' academic performance, as reflected by a low positive response of 1.87 (SD=0.60). Equally, just a handful (mean=2.03; SD=.68) of the teachers accepted that their principals are appropriately trained on developing school vision and mission. Similarly, on delegation of duties, only a small proportion of principals are trained on delegation of duties, as was revealed by low response rate of 2.04 (SD=0.66). This finding agrees with Sparks (2005) who reported that leaders matter in the creation and long-term maintenance of professional learning communities. The quality of teaching, learning, and relationships in professional learning communities depend on the quality of leadership provided by principals and teachers. In addition,

**Table 1. Questionnaire return rate**

Respondents	Questionnaires administered	Questionnaires returned	Return rate (%)
Students	153	135	88.2
Principals	20	20	100

Source: Survey data (2018)

**Table 2. Rating on principals' professional training (n=125)**

Item	Mean	Standard deviation
1. Principals are trained on enhancing students' academic performance.	1.87	0.60
3. Principals are trained on developing school vision and mission.	2.03	0.68
4. Principals are trained in delegation of duties.	2.04	0.66
5. Principal training includes value of benchmarks.	2.11	0.65
6. Principals are trained on importance of capacity building of teachers.	2.24	0.82
7. Mean average principals' professional training	2.06	0.51

Source: Survey data (2019)

Golden, (2017) reiterated that teachers were developing skills in the school based PLC meetings that would allow them to conduct professional development activities. Similarly, Gaspar, (2010) study reported that the effectiveness of professional learning communities is dependent in part on democratic leadership with teachers sharing power, authority and decision making.

Qualitative findings were also obtained on whether principals have been trained on creation of professional learning communities. There were two themes which emerged as some respondents reported having been trained while others reported no training on this phenomenon. Most principal respondents reported that they had been trained and this enhanced the creation of professional learning communities. The respondents reported that they had been trained on aspects such as creation of child friendly schools, transformational leadership in schools, parental education on school issues and collaborations with the school communities. Qualitative findings indicated that most respondents reported having been trained on how to create child friendly schools which would enhance creation of professional learning communities. The principals also reported training on transformational leadership in schools which they had obtained through professional courses. The respondents reported that this has helped them to enhance the creation of professional learning communities. In addition, the principal respondents also reported training on parental education on school matters. The respondents reported:

“I have received training on how to make schools to be child friendly to be able to enhance creation of professional learning communities. We have been trained by several NGO’s on making schools more friendly, and this has helped me create more professional learning school” (Principal, 17).

“Well, as a principal, I have been trained on transformational leadership in school by attending several management courses such as KEMI which are very helpful in knowledge of how to practice delegated leadership” (Principal, 3).

“As a school principal, I have been trained on several issues. I have been enlightened on trainings on collaboration with stakeholders which have helped me to bring more resources to this school” (Principal, 10)

From the interview excerpts, it can be concluded that there were several trainings for school principals and this enhanced the creation of professional learning communities. This finding agrees with Payne and Wolfson (2000) who made a similar case for the principals’ role in supporting teacher development from the perspective of principal practitioners. Lieberman and Miller (1990) also reiterate on the importance of principals’ active involvement in teachers’ development in professional practice schools. These examples illustrate a subtle but important shifting of focus from what the principal does to what the teacher needs.

On the contrary, the results of the survey revealed that there was some kind of professional training which supports creation of professional learning communities. For example, it emerged that principals training includes some value (mean=2.11; SD=0.65) of benchmarks. Likewise, it came out that principals are also trained on importance of capacity building of teachers, though to a small extent, as reflected by response rate of 2.24 (SD=0.82). In support, Cross [14] also indicated that much can be done at the school level to retain new teachers, however much of the power to make this happen lies in the hands of the principal. Similarly, Lunenburg, (2010) reiterated that the principal’s primary responsibility is to promote the learning and success of all students. That the school principals can accomplish this goal by focusing on learning; encouraging collaboration; analyzing results; providing support; and aligning curriculum, instruction, and assessment. Principals need to be provided with the training, teaching tools, and the support they need to help all students reach high performance levels. In addition, Murphy (2002) agrees that to nurture a professional learning community, a principal needs to adapt strategies and styles that are in harmony with the central tenets of hierarchical school organizations, he suggests that in a professional community the basis of a principal’s influence must be professional expertise and moral imperative rather than simply line authority.

Qualitative findings also indicated that a few respondents reported not having been trained on creation of professional learning communities for school management. The respondents reported that they had little knowledge on creation of professional learning communities. The participants probably were not aware of the phenomenon of creation of learning communities. Some respondents reported that:

“There is no professional training as it stands, but we get new information mostly through bench marking with other heads and schools. I am not aware of that concept of creation of learning communities” (Principal, 14).

“I am not aware of training on creation of professional learning communities. I have not attended any courses on the same but what I have seen is KEMI courses that help us on school management” (Principal, 5).

From the interview excerpts with the principal respondents, it can be concluded that the principals were not aware of creation of professional learning practices in schools. On the contrary, Steffy, Poston and English (2009) also reiterate that principals need training on using assessment results to diagnose learning gaps. Principals must know how each student performed on every multiple choice item and other questions on the assessment measure and training must be in the teachers' subject areas. Similarly, Youngs, and King, (2002) indicated that effective principals can sustain high levels of capacity by establishing trust, creating structures that promote teacher learning, and either connecting their faculties to external expertise or helping teachers generate reforms internally.

#### **4.3 Relationship between Principals' Professional Training and Creation of Professional Learning Communities**

To investigate whether there was any statistical significant relationship between principals' professional training and creation of professional learning communities, the null hypothesis was tested.

**Ho1:** There is no statistically significant relationship between principals' professional training and creation of professional learning communities.

Parametric tests, Pearson Moment Coefficient and regression analysis were conducted, with scores on principals' professional training as the independent variable and creation of professional learning communities as the dependent variable. The level of principals' professional training were computed from frequency of responses and converted into continuous scale. Professional learning communities was computed from the teachers' responses on the indicators of professional learning communities in their schools. All the negatively worded statements

were reversed, such that high scale ratings implied high perceived level of principals' professional training and high professional learning communities and vice-versa. The significant level (p-value) was set at .05, such that if the p-value was less than 0.05, the null hypothesis would be rejected and conclusion reached that a significant difference exists. If the p-value was larger than 0.05, it would be concluded that a significant difference does not exist. Table 3 shows the correlation analysis results in SPSS output.

The finding of the study in Table 3 shows that there was statistically significant positive correlation between principals' professional training and creation of professional learning communities ( $n=135$ ;  $r= .479$ ;  $p<.05$ ). Since  $p\text{-value} = 0.000 < 0.05$ , the null hypothesis was rejected. Therefore, there exists enough evidence to conclude that there is statistically significant relationship between principals' professional training and creation of professional learning communities among secondary schools, with high level of principals' professional training associated to creation of more collaborative teams whose members work interdependently to achieve the common goals and vice-versa. Similarly, Kose (2009) suggested five principal roles worked together to optimize professional learning: transformative visionary, transformative learning leader, transformative structural leader, transformative cultural leader, and transformative political leader. In agreement to the current study findings, Khan, and Khan, (2014) reported that the principals should also be proficient in human relationship. Therefore, for development and successful achievement of these qualities one is required to attend rigorous training sessions. Continuous Professional Development (CPD) enables them on a regular basis to negotiate the emerging issues and deal with the challenges in day to day managerial/leadership activities. Similarly, Mendez [16] study revealed that overall there is a strong relationship between principals' leadership practices and the transformational development of professional learning communities. Additionally, the results from this study suggest that the combination of all the leadership practices associated with this study can assist in informing school principals of the leadership practices associated with successful professional learning communities.

However, to estimate the level of influence of principals' professional training on creation of professional learning communities, a coefficient

of determination was computed using of regression analysis and the result was as shown in Table 4.

The model summary reveals that of principals' professional training accounted for 22.4%, as signified by Adjusted R<sup>2</sup>=.224, of the variation in creation of professional learning communities. This finding implies that variation in the principals' professional training explains about

22.0% of the variability in creation of professional learning communities among secondary schools. This is a fairly considerable influence on a dependent variable by a predictor, however, it reveals the importance of principals' professional training on creation of professional learning communities. Table 5 shows the coefficients values of regression model on influence of principals' professional training on development of professional learning communities.

**Table 3. Relationship between the principals' professional training and professional learning communities**

		principal professional training	Professional learning communities
Principal professional training	Pearson	1	.479 <sup>*</sup>
	Correlation		
	Sig. (2-tailed)		.000
	N	135	135
Professional learning communities	Pearson	.479 <sup>**</sup>	1
	Correlation		
	Sig. (2-tailed)	.000	
	N	135	135

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

**Table 4. Model summary on regression analysis of influence of principals' professional training on creation of professional learning communities**

Model	R	R Square	Adjusted R square	Std. error of the estimate
1	.479 <sup>a</sup>	.230	.224	.30655

*a.* Predictors: (Constant), Principal Professional Training  
*b.* Dependent Variable: Professional Learning Communities

**Table 5. Coefficients-influence of principals' professional training on creation of professional learning communities**

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.	95.0% Confidence interval for B	
	B	Std. error				Lower bound	Upper bound
1 (Constant)	1.488	.111		13.409	.000	1.268	1.707
principal professional training	.330	.052	.479	6.299	.000	.226	.433

*a.* Dependent Variable: Professional Learning Communities  
 $Y = \alpha + \beta x + \epsilon$   
 Creation Professional Learning Communities = 1.488 + 0.330x + error term

**Table 6. ANOVA- influence of principals' professional training on creation of professional learning communities**

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	3.728	1	3.728	39.674	.000 <sup>b</sup>
	Residual	12.499	133	.094		
	Total	16.227	134			

*a.* Dependent Variable: Professional Learning Communities  
*b.* Predictors: (Constant), Principal Professional Training



From the model it is evident that the slope coefficient for principals' professional training was 0.330, implying that creation of professional learning communities improves by 0.330 units for each one unit increase in the principals' professional training. Similarly, an increase on level of principals' professional training one standard deviation results to improvement of creation of professional learning communities by .479 standard deviations.

However, to investigate whether principals' professional training was a significant predictor to creation of professional learning communities, Analysis of Variance was conducted, in line with the recommendation by Tabachnick & Fidell (2001), as shown in Table 6.

From the ANOVA output, there exists enough evidence to conclude that the slope of the population regression line is not zero, meaning principals' professional training is significant predictor of creation of professional learning communities  $F(1, 133) = 39.674, p = .000 < .05; R^2 = .230$ . Therefore, it was concluded that there is statistically significant influence of principals' professional training on development of professional learning communities. This implies that school whose principal is of high professional training, tend have more developed professional learning communities relative to their schools whose principals have lower professional training. Similarly, Pottorff [17] indicated that the components of the PLC process were implemented in each school, though at varying degrees, and that the principal played an important role in the implementation of the PLC program in each building. The results suggested that transformational leadership played an important role in the leadership styles of the principals of the study. Similarly, Gillespie [18] study indicated that broad-based, skillful participation in the work of leadership (Construct 1) was the most important leadership construct to the success of sustaining PLCs. The outcome of this project study was that a professional-development model would provide knowledge and understanding of the key leadership elements needed to develop an environment for sustaining PLCs. In addition, Shorter, (2012) also revealed that overall there is a strong relationship between principals' leadership practices and the development of professional learning communities. Additionally, the results from this study suggest that the combination of all the leadership practices measured by the Leadership Practices Inventory can help predict the

development of professional learning communities.

## 5. CONCLUSION AND RECOMMENDATION

From the study findings, it can be concluded that there was statistically significant positive correlation between principals' professional training and creation of professional learning communities. Therefore, there exists enough evidence to conclude that there is statistically significant relationship between principals' professional training and creation of professional learning communities among secondary schools, with high level of principals' professional training associated to creation of more collaborative teams whose members work interdependently to achieve the common goals. From the model it is evident that the slope coefficient for principals' professional training was 0.330, implying that creation of professional learning communities improves by 0.330 units for each one unit increase in the principals' professional training. Similarly, an increase on level of principals' professional training one standard deviation results to improvement of creation of professional learning communities by .479 standard deviations. The Kenyan Ministry of Education should train principals in secondary schools on creation of professional learning communities. This is because, it emerged that although principals' professional training had least effect on creation of professional learning communities.

## CONSENT AND ETHICAL APPROVAL

The ethical considerations to observed in this study included obtaining research permit from the National Council for Science and Technology and Innovation (NACOSTI). The participants were issued with informed consent forms where they filled to participate in the study.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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