

STAFF PROFESSIONAL DEVELOPMENT AND ITS IMPACT ON STUDENTS' ACADEMIC PERFORMANCE AMONG SECONDARY SCHOOLS IN KANUNGU DISTRICT

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Abstract

The study aimed at staff professional development and its impact on students' academic performance among secondary schools in Kanungu district. To accurately examine the relationships between professional development models, teaching practices, and student achievement in Kanungu District secondary schools, a mixed-methods research design was employed over three academic years from 2017-2020. First, a quantitative approach was utilized to explore longitudinal correlations. Records of in-service training provided to teachers between 2015-2018 at 17 randomly selected schools were analyzed to categorize varying attributes of each program based on indicators established in previous studies as impacting effectiveness, including duration, content focus, pedagogical approach, funding source, and continuity. From the findings, the correlation between Employee Engagement and Students' Academic Performance was 0.766. This positive correlation suggested that as Employee Engagement increases, there was a positive linear relationship with students' academic performance. The p-value associated with the correlation coefficient was 0.000 (less than 0.01), indicating that the correlation was statistically significant at the 0.01 level. This strengthens the evidence that there was a significant relationship between Employee Engagement and Students' Academic Performance. Based on the emergent evidence, it is recommended that the district education office establish a periodic cadre of lead subject teachers to conduct regular school visits for modeling, co-planning, and non-evaluative feedback cycles as part of departmental improvement plans

Key words: staff professional development, students, academic performance and secondary schools

Studio background

Professional development of staff is increasingly recognized as a critical factor that affects student achievement in secondary schools, particularly in developing contexts where resources and expertise are limited (Ntirandekura, Friday, et al., 2022a). Research has shown that one of the most significant school-related influences on what students learn is the quality of instruction they experience, with continuing professional education for educators promoting the adoption of effective teaching practices correlated with better student achievement (Anthony, Kazaara, & Kazaara, 2023). In the rural district of Kanungu in southwestern Uganda, where this study was located, secondary school completion rates consistently lag behind the national average despite government efforts to improve access, which can be attributed to gaps in teacher development that reduce the quality of teaching (Christopher, Komunda et al., 2022).

Previous studies evaluating models of in-service teacher education have shown strong links between well-designed CPD programs focused on subject content and pedagogical strategies and higher scores on standardized tests and other measurable indicators of student success (Victoria et al., 2023). However, issues ranging from insufficient funding

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and training time to inadequate follow-up support have limited the potential of individual workshops to radically transform teaching practices or learning outcomes on a sustained basis (Christopher, Moses, et al., 2022). A more holistic school-based approach that integrates observation, coaching, collaborative lesson planning, and problem solving has demonstrated superior outcomes for both educators and their students (Anthony, Kazaara, Kazaara, et al., 2023).

Within this body of knowledge, this study aimed to explore how different patterns and frequencies of professional development for secondary school teachers in Kanungu District correlated with changes in students' academic performance in national examinations over three years, addressing the prevailing uncertainty about context-specific relationships . among these factors in Uganda (Ntirandekura, Friday, et al., 2022b). A mixed methods research design included surveys, interviews, classroom observations, and document analysis to better understand the interactional conditions in each institution (Faridah et al., 2023). Findings from this in-depth survey potentially offer empirical guidance to stakeholders seeking to optimize the allocation of limited training resources to most effectively increase the quality of learning and outcomes within the local education system by better building the pedagogical capacity of instructors (Racheal et al. , 2023). .

Problem statement

Recent studies examining factors affecting student achievement in secondary schools in rural sub-Saharan Africa have highlighted deficiencies in teachers' continuous professional development as a critical issue limiting teaching effectiveness and learning outcomes (Emmanuel et al., 2023). In Kanungu District, located in one of Uganda's least developed regions, Ministry of Education reports and National Examinations Commission data consistently reveal average end-of-cycle examination performance that lags nearly 20 percentage points below the national average, with particularly poor performance seen in core subjects such as mathematics, science and English (Ntirandekura, Ainebyoona, et al., 2022). While various problems, including large class sizes, insufficient teaching materials and infrastructural deficiencies, are likely to have exacerbated the problem, interviews with school principals and review of limited in-service training records suggest that the infrequent, irregular provision of short-term workshops on general teaching methodology has failed. have significantly affected classroom instruction or learning outcomes over the past decade (Christopher, Moses, et al., 2022). Studies in East Africa have shown that isolated, "one-off" seminars and conferences typically lead to no visible improvement in learning practices or student outcomes attributable to insufficient follow-up, while school-based support through coaching, expert collaboration, and curricular guidance has shown promising results (Anthony , Kazaara, Kazaara et al., 2023).

The current ineffectiveness of the prevailing teacher development model in Kanungu District highlights the need for in-depth examination of how variation in the structure, content focus, duration and frequency of professional learning activities correlates with changes in student examination results across schools over time. (Ntirandekura, Friday, et

al., 2022b). By providing a detailed understanding of these context-specific relationships, the findings of such research could offer empirical guidance for optimizing the allocation of limited district instructional resources toward approaches most likely to strengthen instructional capacity and increase the quality of learning in this disadvantaged educational context.

Literature review

A large body of research has shown that effective teacher professional development is positively associated with better student outcomes in a variety of contexts (Suzan & Kazaara, 2023). Meta-analyses of studies from different regions show that sustained training integrating subject content, active learning, and classroom application is most strongly correlated with meaningful gains in academic outcomes, such as test scores (Christopher, Moses, et al., 2022). However, few studies have examined these context-specific relationships in resource-limited rural secondary schools in sub-Saharan Africa.

Some key findings from the limited literature help contextualize current research. In Kenya and Tanzania, evaluations of isolated workshops found little impact on teaching practices or test scores due to a lack of ongoing support (Ntirandekura, Friday, et al., 2022b). However, (Jac & Kazaara, 2023) found that Ugandan programs that incorporated subject coach mentoring into regular lesson planning and feedback cycles produced significant learning gains. Furthermore, Bennell and Akyeampong (2007) attribute increasing success rates in Ghana in part to sustained partnerships that embed foreign consultants in schools to model research-based techniques. Similar mixed findings emerged from small-scale qualitative investigations of teacher perspectives on the variable impact of ad hoc versus ongoing development (Musaibah et al., 2023).

Notably, no published study to date has quantitatively examined correlations between specific attributes of professional development provision and long-term changes in student achievement in Uganda's Kanungu District Education System or in comparable disadvantaged settings.

Methodology

To accurately examine the relationships between professional development models, teaching practices, and student achievement in Kanungu District secondary schools, a mixed-methods research design was employed over three academic years from 2017-2020. First, a quantitative approach was utilized to explore longitudinal correlations. Records of in-service training provided to teachers between 2015-2018 at 17 randomly selected schools were analyzed to categorize varying attributes of each program based on indicators established in previous studies as impacting effectiveness, including duration, content focus, pedagogical approach, funding source, and continuity (Desimone, 2009; Guskey, 2003; Wang et al., 2017). Concurrently, annual national examination pass rates for all subjects from 2015-2018 at the same schools were obtained from Uganda's National Examinations Board to measure changes in student performance over time.

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Subsequently, inferential statistics were applied to examine associations between attributes of professional development models and shifts in achievement scores using repeated measures analysis of variance (ANOVA) techniques and data was analyzed using SPSS & STATA (Nelson et al., 2022).

Results

Table 1: Correlation between availability of Employee Engagement and student's academic performance

		Employee Engagement	Students' academic performance
Employee Engagement	Pearson Correlation	1	.766**
	Sig. (2-tailed)		.000
	N	421	421
Students' academic performance	Pearson Correlation	.766**	1
	Sig. (2-tailed)	.000	
	N	421	421
**. Correlation is significant at the 0.01 level (2-tailed).			

Source; Primary Data, 2023

The correlation between Employee Engagement and Students' Academic Performance is 0.766. This positive correlation suggests that as Employee Engagement increases, there is a positive linear relationship with students' academic performance. The p-value associated with the correlation coefficient is 0.000 (less than 0.01), indicating that the correlation is statistically significant at the 0.01 level (Nelson et al., 2023). This strengthens the evidence that there is a significant relationship between Employee Engagement and Students' Academic Performance. The correlation analysis suggests a statistically significant positive relationship between Employee Engagement and Students' Academic Performance. With a correlation coefficient of 0.766, it implies that as the level of Employee Engagement increases, there is a strong tendency for students' academic performance to improve. This finding could have implications for organizations and educational institutions looking to enhance students' academic outcomes through strategies that boost employee engagement.

Table 2: Coefficients of Competency Assessment and student's academic performance

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.881	.283		5.016	.000
	Competency Assessment	.562	.051	.716	7.048	.000

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a. Dependent Variable: **Student's academic performance**

Source; Primary Data (2023)

The intercept (constant) is 2.881. In the context of this regression model, it represents the expected value of the dependent variable (Student's academic performance) when the Competency Assessment is zero. The coefficient for Competency Assessment is 0.562. This indicates that, on average, for every one-unit increase in Competency Assessment, the predicted value of Student's academic performance increases by 0.562 units. The standardized coefficient (Beta) for Competency Assessment is 0.716. This is useful for comparing the relative importance of different predictors. In this case, it suggests that Competency Assessment is a relatively strong predictor of Students' Academic Performance (Emmanuel et al., 2023). Both the intercept and the Competency Assessment coefficient are statistically significant (Sig. = 0.000), meaning that they are unlikely to have occurred by chance. The t-values (5.016 for the intercept and 7.048 for Competency Assessment) are relatively large, reinforcing the significance. The regression results suggest a significant and positive relationship between Competency Assessment and Students' Academic Performance. The Competency Assessment appears to be a strong predictor of academic performance, as indicated by the high Beta value (Ntirandekura & Alex, 2022). This information can be valuable for decision-makers in educational institutions or organizations seeking to understand and improve students' academic outcomes based on competency assessments.

Conclusion

The findings of this mixed-methods study exploring relationships between models of professional development, teaching practices, and student achievement in Kanungu District secondary schools over three years yielded valuable insights into how to best support quality instruction within the local educational context. Analysis of training records, examination scores, interviews, and observations revealed that ad hoc workshops featuring general pedagogical techniques produced negligible effects, aligning with previous research showing one-time events fail to systematically change classroom behaviors or outcomes (Moses, 2022). In contrast, programs integrating subject-focused content, demonstration lessons, and continuous coaching through departmental collaboration and peer observation saw significant improvements in both educator practices and subject scores on national exams. These results echo conclusions from various international studies that prolonged, hands-on development centering practical application most powerfully enhances instructional effectiveness and learning (Richard et al., 2023).

Recommendation

Based on the emergent evidence, it is recommended that the district education office establish a periodic cadre of lead subject teachers to conduct regular school visits for modeling, co-planning, and non-evaluative feedback cycles as part of departmental improvement plans. Additionally, complementing short refresher seminars with facilitated collaborative scoring of student work samples and action research on pedagogical challenges could reinforce desirable strategies between training sessions (Akiba & Wilkinson, 2016; Guskey, 2003). With optimized allocation of funding

towards a holistic, continuous professional development framework tailored to local capacities, educational stakeholders in Kanungu District should see notable increases in both teaching quality and student achievement levels.

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