



The Influence of Teacher Skill Variety on Pupils' Academic Performance in Tanzanian Public Primary Schools

Stephen James¹, Orest Masue², Henry Molle² 

¹Institute of Rural Development Planning, Dodoma-Tanzania

^{2,3}School of Public Administration and Management, Mzumbe University-Tanzania

Corresponding Author Email: skjkamugisha@gmail.com

Mobile Phone +2556240896464

Abstract

Pupils in many public primary schools in Tanzania still perform poorly academically. This study examined the influence of teacher skill variety on pupils' academic performance. The study employed a survey research design to collect data from four Local Government Authorities: Ngara, Kibondo, Tanga City and Mafinga Town and involved 95 public primary schools. The sample size included 354 teachers and (16) key informants. Purposive and, multi-stage stratified simple random sampling were employed to select participants. The data collection methods comprised questionnaires, interviews, and a documentary review. Binary logistic regression analysed quantitative data while qualitative data were analysed thematically and presented by quotations and descriptions. The findings showed that the Likelihood Ratio Chi-square values for teacher skill variety = (106.18; $p < .001$), implying that the teacher skill variety model had a vast and significant likelihood on pupils' academic performance. The odd ratio of teacher skill variety = 3.22 (95% Confidence Interval [CI]; 2.29, 4.17), suggesting that the odds of high teacher skill variety were three times more likely to influence pupils' academic performance than low teacher skill variety. The marginal effect showed that teacher skill variety had a probability on pupils' academic performance 16 per cent higher than teachers without skill variety. We concluded that skill variety enabled teachers to deliver educational material using practical skills for pupils' learning. We recommended that stakeholders collaborate with public primary schools to organise training programmes on skill variety for teachers to acquire a bundle of skills to enhance pupils' academic performance.

Keywords: Teacher skill variety, pupils' academic performance

Article info

Article history

Received:

March 2024

Accepted

September
2024

Published:

October 2024

1. Introduction

Pupils' academic performance has been positively associated with a nation's socio-economic development (Shahjahan *et al.*, 2021). In recognising the importance of pupils' academic performance, the Government of Tanzania has implemented strategies to increase primary school pupils' academic performance (URT, 2018). Some of these strategies comprised Primary Education Development Programme I and II (2001 – 2012), the Big Results Now of 2013 and the Education Sector Development Plan [2016/17 to 2020/2021] (URT, 2006-2018; World Bank Group, 2014). The achievement of literacy rate among 80 per cent of pupils in primary education, as suggested by the World Bank Open Data (2024), is associated with government strategies for improving pupils' academic performance in primary education. Despite these strategies Tanzania still experiences low pupils' academic performance in many primary schools (Mwesigye *et al.*, 2022; Kahangwa & Kafanabo, 2023). For instance, according to the United Nations Children's Fund [UNICEF] (2024), on average, pupils in primary schools in Tanzania scored 107 out of 200 points from four subjects, Kiswahili, English, Mathematics and Science, in 2021. The consolidated data of academic performance by *TAMISEMI* (2022) show that 18,221 public primary schools, on average, scored 126.51 out of 300 points from six (6) examined subjects in 2021. In contrast, for 2020 the points scored equals 107 out of 250 points for five (5) examined subjects. The respective public primary schools' academic performance in consecutive two-year periods is 41.2 and 42.8 per cent, indicating academic performance below 50 per cent of all points for specific years.

Variations by regions, districts, rural-urban, school ownership, and subjects also characterise low pupils' academic performance in Tanzania. For instance, Mathematics and English subjects perform poorly compared to other subjects in the country (Mazana *et al.*, 2020; *TAMISEMI*, 2024). Private schools perform better in all subjects than public schools. At the same time, some regions, such as Dar es Salaam and Arusha, have shown higher academic performance than Tanga, Mtwara and Tabora, showing lower academic performance as reported by UNICEF (2024). Urban districts achieve better academic performance than rural districts (Katera & Msafiri, 2020). Pupils' academic performance also varies among public primary schools directly managed by the Ministry of President's Office, Regional Administration and Local Government in collaboration with the Ministry of Education, Science and Technology (Kangu, 2022). Public primary schools such as Kilole, Bosha, Mangika, Makole, Mhezi, and Mbwei in Lushoto District persistently displayed

low pupils' academic performance when compared to public schools in Dar es Salaam and Iringa regions between 2021 and 2023 (Kahangwa, 2023; Kahangwa & Kafanabo, 2023; NECTA, 2022).

This study considers that teacher skill variety potentially influences pupils' academic performance in public primary schools. According to Park *et al.* (2020), teacher skill variety refers to using several complex or high-skilled techniques in teaching and learning activities. As Mehralian *et al.* (2020) suggest, skill variety, including conceptual, human, technical, and political skills, influences organisational performance. This hypothetical statement implies that teacher skill variety may influence pupils' academic performance in public primary schools.

Regarding the influence of skill variety, the concept has two categories, hard and soft skills, as Sugiarti *et al.* (2021) suggested. Hard skills involve an application of job standards, procedures and technical skills while soft skills may involve acquiring knowledge and experiences (Putra *et al.*, 2020). Hard-teacher skill variety may include lesson planning, assessment, and teaching material preparation skills. Soft skills among teachers may include critical thinking skills, as Ma (2023) pointed out. Others may include behavioural skills of different forms, leadership skills, integrity skills, communication skills, motivating skills, collaboration skills, creativity skills, social-cognitive skills, rational skills, self-control skills, self-presentation skills and counselling skills as suggested by Hart *et al.* (2022), Magil *et al.* (2022) and Mommers *et al.*(2023). A combination of teacher skill variety may influence pupils' academic performance in public primary schools.

To ascertain the influence of teacher skill variety on learners' academic performance, Youssef *et al.*(2022) revealed a significant influence of digital skills on students' academic performance in a French university. However, there is little evidence of the influence of teacher skill variety on public primary school pupils' academic performance in the cited study. Similarly, Cutillas *et al.*(2023) observed that teacher-mentoring skills are positively related to undergraduates' academic performance. Likewise, the immediate study above focuses on skill variety at tertiary education institutions. Furthermore, a meta-analysis conducted by Jiang *et al.*(2020) also suggests that students' emotional intelligence skills have a significant influence on students' academic performance in schools and universities. The meta-analysis conducted by the researcher above used secondary data to examine the influence of students' skills on their academic performance.

The analysis paid no attention to the influence of teacher skill variety on pupils' academic performance in public primary schools.

A study by Olowo *et al.* (2020) suggests that students' social media skills strongly correlate with their academic performance in secondary schools. The study focuses on the influence of social media skills as part of skill variety at a secondary level of education. However, Olowo *et al.* (Ibid) do not address the influence of a composite teacher skill variety on pupils' academic performance in primary schools.

Other studies (i.e., Oluwadayo *et al.*, 2020; Saeed & Akbar, 2021; Khalid *et al.*, 2021) support the hypothesis that teacher skill variety significantly influences students' academic performance in secondary and tertiary educational institutions. Based on the foregoing observation, little attention was given to the influence of teacher skill variety on pupils' academic performance in public primary schools. Most of the existing research findings focus on the influence of teacher skill variety on students' academic performance in secondary schools and tertiary levels of education. Therefore, the objective of the current study was to examine the influence of teacher skill variety on pupils' academic performance in public primary schools. The rest of the study is organised into sub-sections on literature review and elaboration of the methodology, conceptual framework, data analysis procedures, findings, discussion of the findings, conclusions, policy implications, limitations and areas for further research.

2. Literature Review

2.1. Theoretical Literature Review

The current study reviewed three theories, namely the Job Characteristics Model, Skills-in-Demand Model, and Self-Determination Theory, published in electronic databases including SCOPUS, ERIC, Google Scholar, and Dimensions database. The theories were reviewed to identify a theoretical model to guide this study. Accordingly, the study chose the Job Characteristics Model (JCM) as an underpinning theory. JCM accommodates assumptions of the Skills-in-Demand Model and Self-Determination Theory, as shown briefly in Table 1.

The JCM assumes that employee skill variety relates to performance (Darma *et al.*, 2020). Hackman and Oldham found the model in the 1970s and 80s (Casey *et al.*, 2021). According to JCM, when jobs provide opportunities for employees to use various skills and talents, they achieve

high work outcomes using precise skills (Saeed & Akbar, 2021). Furthermore, JCM suggests that jobs providing skill variety opportunities are enjoyable, challenging, and reduce monotony (Lunenburg, 2011). The JCM emphasises that skill variety is a core job characteristic influencing employee work performance (Kamani, 2020b; Siruri & Cheche, 2021). The JCM implies that the lack of skill variety in an individual's job leads to low achievement of the work outcomes such as pupils' academic performance by teachers.

The study adapted skill variety from the JCM because many researchers, including Li *et al.* (2020) and Jantausch *et al.* (2023), used skill variety in academic performance research in secondary schools and higher education in the developed world. The viability of teacher skill variety in explaining pupils' academic performance at the primary school level in the developing world has drawn little attention from many previous researchers. In this respect, the study adapted teacher skill variety to examine its influence on pupils' academic performance in public primary schools in Tanzania.

Table 1: A Summary of Assumptions from Other Reviewed Theories

S/No.	Author (s) and Year	Theoretical Model	Assumptions
1.	Vankevich & Kalinouskaya (2020) and Neal & Kuppuswami (2020)	Skills-in-Demand Model	The model assumes that workers need relevant job skills to achieve performance. Low skills lead to underperformance, which subjects workers to low wages and discrimination.
2.	Carey (2021), Zhou & Li (2023), Ryan & Vansteenkiste (2023)	Self-Determination Theory	Employees have psychological needs, including competencies (skills), autonomy and relatedness. Performance happens when the job grants those three psychological needs.

Source: Literature, 2023

2.2. Empirical Literature Review

Papay *et al.* (2020) found that skills teachers learn from their colleagues significantly improve learners' academic performance. However, the cited study does not provide a deeper understanding of the influence of teacher skill variety on pupils' academic performance because it has employed

a mono-approach in its research. A meta-analysis conducted by Shen *et al.* (2020) also found that teacher skill variety, which includes instruction and assessment skills, is associated with pupils' academic performance. The cited study reports findings from secondary data sources. The current study, on the other hand, mixes secondary and primary data to learn the influence imposed by teacher skill variety on pupils' academic performance in Tanzania.

Another quantitative study by Ansari *et al.* (2020) found that teacher's interaction skills influence students' learning outcomes across all domains. However, this study relied on a single quantitative approach in reporting the influence of teacher skill variety on pupils' academic performance. On the other hand, the current study seeks to integrate both quantitative and qualitative approaches to determine whether the findings would differ from those in the preceding empirical studies. Ozen and Yildirm (2020) also report qualitative findings showing that teacher classroom management skills, including creating an effective and transformative learning environment, practical instruction and communication, significantly improve students' academic performance. The study indicates that ineffective classroom management skills, including relationship-establishing problems, psychological and economic problems and shortcomings in professional experiences, negatively influence pupils' academic performance. However, the study above lacks quantitative findings on the researched phenomena. The current study, on the other hand, reports both quantitative and qualitative findings on the influence of teacher skill variety on pupils' academic performance in public primary schools. Thus, the current study seeks to determine whether there is a convergence or a divergence of findings when two research approaches are used to test the influence of teacher skill variety on pupils' academic performance.

In another study, Murkatik and Harapan (2020) also found that achieving the learning goals and achieving success in overcoming the students' learning problems rely on the teacher's abilities and competencies. This study considers that the authors have inadequately explained pupils' academic performance due to their bias in using a single research approach. The current study combines quantitative and qualitative approaches to generate scientific knowledge based on different research approaches.

3. Methodology

The study employed a convergent-parallel mixed methods approach. The study used a survey research design conducted across four Local Government Authorities (LGAs), including Kibondo, Ngara, Tanga City and Mafinga Town LGAs. A sample size of 354 teachers was used, and each study area contributed to the sample size, as displayed in Table 2. The study used multi-stage with stratified sampling and purposive sampling procedures. The study employed eight stages during the sampling and participants were selected using simple random sampling by lottery technique throughout all successive stages. Ultimately, two rural LGAs out of 139 were selected: Ngara and Kibondo LGAs. Two urban LGAs out of 46, namely Tanga City and Mafinga Town, were also selected. Furthermore, ninety-five public primary schools were selected in the study areas using a simple random sampling. Seventy-nine equivalents (83.2 %) of the selected schools had high pupils' academic performance, while sixteen (16) (16.8 %) had low pupils' academic performance in a consecutive three-year period (2020 to 2022). The distribution of the selected public primary schools by study areas is shown in Table 3.

The study used multi-stage stratified simple random sampling procedures to ensure that smaller strata, particularly those related to urban areas, had adequate representation during the data collection. In employing purposive sampling procedures, the study selected eight (8) head teachers and eight (8) Standard Seven pupils to participate as key informants. The study considered Head-teachers and Standard Seven pupils having more relevant opinions about the variables than other school individuals. Primary data were collected using interviews and questionnaires with items adapted from Hackman and Oldham's (1974) Job Diagnostic Survey. The study conducted factor analysis for teacher skill variety whereby the factor loadings of the items after Varimax rotation ranged from 0.62 to 0.76, above the cut-off points of 0.5. The study generated secondary data by conducting a documentary review of primary school leaving examination results (PSLE) for 2020 to 2022 in each selected public primary school. The authors sought permission from the selected schools to use their PSLE during the data collection period.

Table 2: Study Areas and Their Contribution to the Sample Size

Study Areas	Population of Teachers	Sample Size	Percentage (%)
Ngara LGA	1,159	92	26
Kibondo LGA	843	92	26
Tanga City	696	98	28
Mafinga Town	349	72	20
Total	3,047	354	100

Source: Authors, 2023

Table 3: The Number of Public Primary Schools Selected in the Study Areas

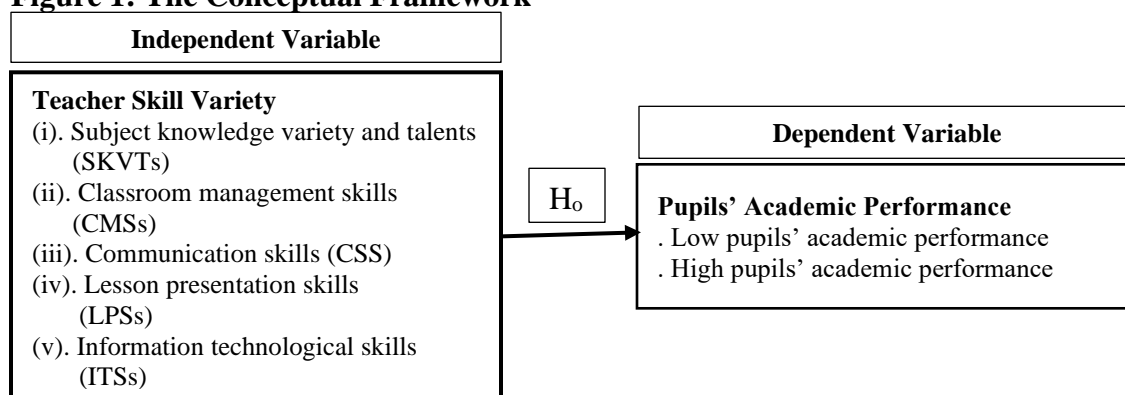
Study Areas	Number Of Public Primary Schools	Public Primary Schools Selected	Percentage
Ngara	110	26	27.8
Kibondo	81	25	26.3
Tanga City	41	25	26.3
Mafinga Town	27	19	29
Total	259	95	100

Source: Authors, 2023

3.1. The Conceptual Framework

Based on the theoretical model, the study also developed the conceptual framework (CF), as illustrated in Figure 1. Thus, the CF portrayed the attributes that compose teacher skill variety. When combined, the conceptual framework assumes that teacher skill variety does not significantly influence pupils' academic performance, as illustrated in Figure 1. Based on the conceptual framework, the study developed the null hypothesis (H_0), as shown below.

H_0 : Teacher skill variety does not significantly influence pupils' academic performance.

Figure 1: The Conceptual Framework

Source: Literature

3.2. Operationalisation of the Dependent and Independent Variables

As shown in Table 4, pupils' academic performance was a dependent variable categorised into two dimensions: low pupils' academic performance coded as (0) and high pupils' academic performance coded as (1). Low pupils' academic performance was the percentage of Standard Seven pupils with overall average grades A, B and C but below 79.6 per cent as the national average per cent reported by the National Examination Council of Tanzania (NECTA) in 2022. High pupils' academic performance was the percentage of Standard Seven pupils who achieved respective grades at or above the national average per cent, which was 79.6. The measurement of pupils' academic performance reflected the national threshold because such percentage was the latest for all primary schools during the data collection and analysis period.

Table 4: Operationalisation of the Dependent and Independent Variables

S/No.	Set of Variable	Dimensions & Description	Type of variable	Coding
1.	Pupils' Academic Performance (2020 to 2022) (Dependent variable)	. Low pupils' academic performance: refers to standard seven pupils' academic performance with overall average grades A, B and C within selected schools but below 79.6% as the national percentage reported by the National Examination Council of Tanzania (NECTA) in 2022	Binary/Dichotomous	0 = Low 1 = High
		. High pupils' academic performance: represents standard seven pupils' academic performance with overall average grades A, B and C within selected schools but earning at or above 79.6% as the national percentage reported by NECTA in 2022		
2.	Teacher Skill Variety (Independent variable)	. SKVTs: Various knowledge and talents in subject contents	Ordinal	1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree
		. CMSs: Skills to manage the classroom during the teaching and learning sessions	-do-	
		. CSS: Effective communication skills, including reading, writing, speaking and listening.	-do-	
		. LPSs: Various skills during lesson presentation	-do-	
		. ITSS: Refers to various Information technological skills during lesson preparation and teaching	-do-	

Source: Literature Review

The independent variable was teacher skill variety, formulated as a composite variable by computing a potential mean score from a set of Likert Scale items indicating teachers' responses on five points levels ranging from 1 = Strongly Disagree to 5 = Strong Agree. The potential mean score of the teacher skill variety construct ranged from a minimum of 1 to a maximum of 5.

3.4. Quantitative and Qualitative Data Analysis Procedures

Quantitative data analysis involved binary logistic regression because the dependent variable was dichotomous. As Huddar (2023) suggests, the prediction of the binary outcome during binary logistic regression is acceptable when an ordinal independent variable is used as a predictor. Thus, the binary logistic regression in this study was relevant because of the nature of its dependent (Y) and independent (X) variables. The Y-variable was binary or dichotomous, while the X was an ordinal variable.

The findings from the binary logistic regression were presented using the logistic regression estimates, including the Likelihood ratio (LR) Chi-square, Pseudo R^2 , and p-values ($\leq .05$). The odd ratio was also computed by exponentiating the regression coefficients to interpret the relationship between variables more clearly. The odd ratio above 1 indicated that the independent variable could influence the outcome variable. The study also computed the marginal effects to assess the probability of teacher skill variety in influencing pupils' academic performance. As Niu (2018) suggests, most researchers worldwide used the above-stated statistics to report the findings from binary logistic regression analyses. Statistical Analysis System (SAS) was a tool that was used to analyse quantitative data. Qualitative data analysis was performed using thematic analysis from which opinions of Head-teachers and Standard Seven pupils were quoted and described during the presentation of the findings.

3. Findings

To examine the influence of teacher skill variety on pupils' academic performance, the study summarises the findings from logistic regression, as shown in Table 5. Part I of Table 5 shows that the teacher skill variety model has the Likelihood Ratio (LR) Chi-square (1) = (106.18), and it is significant ($p < .001$). The findings in part I of Table 5 suggest that the model of teacher skill variety has a vast and significant likelihood of influencing pupils' academic performance. Part I of Table 5 further shows that the Pseudo $r^2 = (0.288)$, suggesting that the model can explain about

29 per cent of the variance in pupils' academic performance. Because teacher skill variety has a vast and significant likelihood ratio, it can be suggested that the teacher skill variety model explains the variance in pupils' academic performance by 28 per cent and that the percentage is significant.

Furthermore, the findings in part II of Table 5 also show that teacher skill variety is significant ($p < .001$). These findings imply that an increased teacher skill variety influenced pupils' academic performance significantly. It is also observed from part II of Table 5 that teacher skill variety had an odd ratio = (3.22); (95% Confidence Interval [CI], 2.49, 4.17). The findings reveal that the odds of high teacher skill variety are three times more likely to influence pupils' academic performance than low teacher skill variety. The findings on the odds of teacher skill variety are essential evidence suggesting that teacher skill variety significantly influences pupils' academic performance.

The quantitative findings also corroborate with opinions of Head-teachers and Standard Seven pupils. Almost all Head-teachers who participated in this study as key informants in Ngara, Kibondo, Tanga City and Mafinga Town LGAs support that teacher skill variety is a critical job characteristic which increases pupils' academic performance as shown in the following extracts from interviews,

... when used effectively in teachers' jobs, teacher skill variety can build a child's academic competencies because it increases subject enjoyment for the teacher and among pupils. Because of skill variety, the teacher delivers educational material using practical skills, which benefit pupils' academic performance. ...teachers' jobs should offer skill variety for pupils to achieve academic performance (Interviews, January to March 2023).

Head-teachers' observations show that teacher skill variety benefits pupils' academic performance by increasing joy during subject teaching and learning. Teacher skill variety also helps teachers to teach subject content using practical skills, which impart academic competence among school pupils. Head-teachers from Kumwambu and Mkombwe Primary Schools in Kibondo and Mafinga Town LGAs also had the following to say in support of teacher skill variety:

.... skill variety mainly related to practical, listening, and involving skills.
... when used by teachers, they help pupils understand the subjects more easily..... also address every child's learning needs and experiences,

promoting academic performance among school pupils (Interviewees, January to March 2023).

Based on the cited extract, teacher skill variety addresses the needs of all pupils in the school. Therefore, the qualitative and quantitative findings above converge in explaining the influence of teacher skill variety on pupils' academic performance. These findings were considered adequate evidence, which permits the rejection of the null hypothesis. Alternatively, the study suggests that teacher skill variety significantly influences pupils' academic performance. Most Standard Seven pupils also shared the following opinions regarding the importance of teacher skill variety on pupils' academic performance:

Yes, teacher skill variety helps us to achieve good academic performance. We understand our subjects' topics and answer examination questions correctly when our teachers implement skill variety in classrooms. We can live a good life after school graduation by using our education to help our parents (Pupils' Interviews, January to March 2023).

Similarly, Standard Seven pupils also believe that teacher skill variety increases pupils' academic performance because it helps school pupils to understand the subjects' topic effectively. Thus, school pupils can tackle examination questions correctly and use academic competence to help their parents after graduation. Therefore, both quantitative findings and opinions from Head-teachers and Standard Seven pupils consistently suggest that teacher skill variety significantly influences pupils' academic performance. The null hypothesis regarding the influence of teacher skill variety on pupils' academic performance is rejected by this study. Alternatively, the study emphasises that teacher skill variety significantly influences pupils' academic performance.

The study also analysed the marginal effect in part III of Table 5 to determine the magnitude of teacher skill variety probability on pupils' academic performance. The findings have shown that teacher skill variety has the marginal effect values of (.16; $p < .001$). The marginal effect findings suggest that teacher skill variety is likely to influence pupils' academic performance by 16 per cent higher than teachers without skill variety. The marginal effect findings provide more evidence to help this study to reject its null hypothesis. The study emphasises that teacher skill variety is more likely to influence pupils' academic performance than teachers without skill variety.

Table 5: Binary Logistic Regression Findings on Teacher Skill Variety and the Outcome

I. Summary of Logistic Regression Model of Teacher Skill Variety							
Likelihood Ratio							106.18
Chi-square (1)							
Prob > Chi-Square							.001
Pseudo R ²							0.288
II. Teacher Skill Variety							
Teacher Skill Variety	Odd Ratio	P-Values	[95% Conf. Interval				
	3.22	< .001	2.49	4.17			
III. Marginal Effect of Teacher Skill Variety							
Marginal Effect of Teacher Skill Variety	(dy/dx)	Std. Error	Z	P-values	[95% Conf. Interval		
	.16	.020	7.67	< .001	.1164	.1964	

Source: Data, 2023

4. Discussion

Based on the findings, the model of teacher skill variety has a vast and significant likelihood ratio, suggesting that an increased teacher skill variety increases the likelihood of achieving pupils' academic performance. These findings support the findings in other studies, such as Saeed and Akbar (2021) and Cutillas *et al.* (2023), reporting the significant influence of teacher skill variety on students' academic performance in higher education. In this regard, teacher skill variety similarly influences academic performance in primary and tertiary educational institutions.

The study further observed that the teacher skill variety model can explain the variance in pupils' academic performance by almost 29 per cent and that the percentage based on the findings is significant ($p < .001$). The study's findings are consistent with those in other studies, including Oluwadayo *et al.* (2020) and Yasmeen *et al.* (2023), reporting the positive influence of teacher skill variety on students' academic performance in higher education. The findings suggest that the teacher skill variety model is essential for pupils' academic performance and other students' performance in tertiary education.

The study further observes from the findings that the odd ratio of teacher skill variety on pupils' academic performance is positive and greater than one. The findings imply that high teacher skill variety odds are three times more likely to influence pupils' academic performance than low teacher skill variety. Key informants, including Head-teachers and Standard Seven pupils, also support that teacher skill variety enhances pupils' academic performance. Key informants emphasise that teacher skill variety promotes great pleasure during subject learning and helps school pupils internalise educational concepts. Therefore, qualitative and quantitative findings

align and suggest that teacher skill variety significantly influences pupils' academic performance. Partly, the findings in public primary schools support studies by Mandasari (2020) and Khalid *et al.* (2021), showing the significant influence of teacher skill variety on students' academic performance in tertiary education. The similarities between the findings emphasise that teacher skill variety is essential for the academic performance of pupils and other students in higher education.

The study further observes that teacher skill variety significantly affects pupils' academic performance. It is learned from the findings that teacher skill variety can influence pupils' academic performance by 16 per cent higher than teachers without skill variety. The findings imply that teacher skill variety occupies a vital position more than when teachers have no skill variety in their jobs. The findings on the probability of teacher skill variety are additional evidence which allows the study to reject its null hypothesis. Thus, teacher skill variety significantly influences pupils' academic performance in public primary schools.

The study findings also support the assumptions of the job characteristics model, which considers performance as an outcome of employees' skill variety. By using the findings, the study confirms that skill variety, as assumed by JCM, is not only vital for performance in non-academic spheres, as revealed by Kamani (2020), but also works significantly better for teachers on pupils' academic performance in educational organisations, as suggested by Khassawneh *et al.*(2022). Therefore, skill variety, which the JCM initially proposed in the developed world, is essential for enhancing pupils' academic performance in the developing world.

5. Conclusion

The study's objective was to examine the influence of teacher skill variety on pupils' academic performance. Based on the findings, teacher skill variety is paramount for increasing pupils' academic performance. Therefore, we conclude that teachers with high teacher skill variety are significantly more likely to achieve pupils' academic performance. Teachers with low skill variety are less likely to achieve pupils' academic performance than teachers with high skill variety. Skill variety enables teachers to deliver educational material by using practical skills.

6. Recommendation

Based on our conclusion, we recommend that public primary schools collaborate with stakeholders such as the training institutions to organise training programmes for teachers to acquire skill variety in schools. Training programmes, among others, may emphasise subject knowledge variety, communication skill variety, information and technological skills, lesson presentation skills and classroom management skills. Implementing skill variety training programmes focusing on those areas may act as an advantage for teachers to acquire a bundle of skills for achieving pupils' academic performance in public primary schools.

7. Policy Implication

The Education and Training Policy of 2014, the 2023 edition, stipulates relevant skill variety to be developed in primary education. Specific skills identified by the policy include communication, collaboration, creativity, and problem-solving skills. The policy includes digital skills, integrity skills, patriotic skills, mathematical skills, science skills, information, and technological skills. These and many other skills that improve pupils' academic performance can be successfully developed among subject teachers through regular integration with primary education curriculum, school budgeting and practical training programmes of skill variety.

8. Limitations and Areas for Further Research

The first limitation of this study is that it has drawn the sample size from a few public primary schools. The second limitation of this study is that it has not involved private primary schools. Another study can be conducted to include a larger sample size from a broader range of public primary schools to validate the findings. A study that focuses on the influence of teacher skill variety on pupils' academic performance in private primary schools will also be critical in future.

Acknowledgement

The authors are grateful for the financial support from the Institute of Rural Development Planning for data collection, analysis, and presentation of findings.

References

- Ansari, A., Hofkens, T., L., Pianta, R., C. (2020). Teacher-Student Relationships across the First Seven Years of Education and Adolescent Outcome, *Journal of Applied Developmental Psychology*, 71, 101200
- Casey, R., Hilton, R., & Schmidt, T. (2021). A Study of Motivation Using the Job Characteristics Model with Comparisons to U. S. and Non-U.S. Companies. *Journal of Business*, 12(1), 101-114
- Cutillas, A., Benolirao, E., Camasura, J., Golbin, R., Yamagishi, K., & Ocampo, L. (2023). Does Mentoring Directly Improve Students' Research Skills? Examining the Role of Information Literacy and Competency Development, *Edu. Sci.* 13(7), 694
- Darma, D.C., Purwadi, P., Sundari, I., & Hakim, Y.P. (2020). Job Characteristics, Individual Characteristics, Affective Commitments and Employee Performance, *Research and Review: Human Resources and Labour Management*. 1(1), 7-18
- Hackman, J. R., & Oldham, G. R. (1974). *The Job Diagnostic Survey: An Instrument for Diagnosis and Evaluation of Job Redesign Projects*. <https://files.eric.ed.gov/fulltext/>
- Hart, W., Kinrade, C., Lambert, J. T., Breeden, C. J., & Witt, D. E. (2022). A Closer Examination of the Integrity Scale's Construct Validity. *Journal of Personality Assessment*, 105(6), 743–751. <https://doi.org/10.1080/00223891.2022.2152346>
- Huddar, M. (Director). (2023, May 9). *Logistic Regression Applications Advantages Linear Regression vs Logistic Regression*, <https://www.youtube.com/watch?v=mh61cva4tPI>
- Jantusch, B. A., Bost, J. E., Bhansali, P., Hefter, Y., Greenberg, I., & Goldman, E. (2023). Assessing trainee critical thinking skills using a novel interactive online learning tool. *Medical Education Online*, 28(1), 2178871. <https://doi.org/10.1080/10872981.2023.2178871>
- Jiang, M., Brown, J. Y., Double, L. E. R., Busich, M., & Minbashian, A. (2020). Emotional intelligence predicts academic performance: A meta-analysis. *Psychological Bulletin*, pp. 146, 150–186.
- Kahangwa, G. (2023). Sociocultural Factors associated with learners' poor academic performance in Lushoto Primary Schools, Tanzania. *Tanzania Journal of Development Studies*, 21(2), 130-148
- Kahangwa, G., & Kafanabo, E. (2023). School-based Factors Explaining Poor Academic Performance of Primary School Pupils in Lushoto District, Tanzania | Papers in Education and Development. *Papers in Education and Development*, 41(1), 30-50. <https://www.ajol.info/index>
- Kamani, T. (2020). *Analysis of the Job Characteristics Model by Tanvi Kamani: SSRN*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3600844
- Kangu, S. A. (2022). *Factors influencing academic performance in public primary boarding schools: A case of Loliondo and Sale divisions, Ngorongoro district, Tanzania*. <http://repository.costech.or.tz/handle/20.500.12661/440>

- Katera, L., & Msafiri, D. (2020). Learning Environment and Performance of Primary Education in Tanzania. *Repoa Brief*. 1-4.
- Khalid, M., Hashmi, A., Javed, Z., & Javed, I. (2021). Effect of Teachers' Advance Knowledge and Pedagogy Skills on Students' Academic Performance. *Elementary Education Online Year*, 20 (4),2009-2014.
- Khassawneh, O., Mohammad, T., Ben-Abdallah, R., & Alabidi, S. (2022). The Relationship between Emotional Intelligence and Educators' Performance in Higher Education Sector, *Behav Sci (Basel)*. 12(12), 511
- Li, J., Sekiguchi, T., & Qi, J. (2020). When and why skill variety influences employee job crafting: Regulatory focus and social exchange perspectives. *Employee Relations*, 42(3): 662-680.
- Lunenburg, F. (2011). Motivating by Enriching Jobs to Make Them More Interesting and Challenging, *International Journal of Management, Business, and Administration* 5, (1),1-11.
- Ma, Y. (2023). Exploration of flipped classroom approach to enhance critical thinking skills. *Heliyon*, 9(11), e20895. <https://doi.org/10.1016/>
- Magill, M., Mastroleo, N. R., & Martino, S. (2022). Technology-Based Methods for Training Counseling Skills in Behavioral Health: A Scoping Review. *Journal of Technology and Behavioral Science*, 7(3), 325–336
- Mandasari, B. (2020). The Impact of Online Learning toward Students' Academic Performance on Business Correspondence Course. *EDUTECH: Journal of Education and Technology*, 4(1), 98-110
- Mazana, M. Y., Montero, C. S., & Casmir, R. O. (2020). Assessing Students' Performance in Mathematics in Tanzania: The Teacher's Perspective. *International Electronic Journal of Mathematics Education*, 16(3), 1-28.
- Mehralian, G., Peikanpour, M., Rangchian, M., & Aghakhani, H. (2022). Managerial Skills and Performance in Small Business: The Mediating Role of Organizational Climate, *Asian Business Studies*, 14(3), 361-372
- Mommers, L., Verstegen, D., Dolmans, D., & van Mook, W. N. K. A. (2023). Observation of behavioural skills by medical simulation facilitators: A cross-sectional analysis of self-reported importance, difficulties, observation strategies and expertise development. *Advances in Simulation*, 8(1), 28. <https://doi.org/10.1186/s41077-023-00268-x>
- Murkatik, K., Harapan, E., & Wardiah, D. (2020). The Influence of Professional and Pedagogical Competence on Teacher Performance, *Journal of Social Work and Science Education*, 1(1), 58-69
- Mwesigye, P. N., Mbyemeire, P., & Kombi, R. (2022). Academic Performance of Learners by Education Level of Parents in Primary Schools in Ibanda Municipality. *IAA Journal of Management*, 10(1), 1–9.
- NECTA. (2022). *Primary School Leaving Examinations, 2022*. https://onlinesys.necta.go.tz/results/2022/psle/results/shl_ps2003075.htm
- Olowo, B. F., Alabi, F. O., & Yusuf, M. (2020). Social media: Online Modern Tool to Enhance Secondary Schools Students' Academic Performance | Semantic Scholar. <https://www.semanticscholar.org/paper/>

- Oluwadayo, A. T., Adegbola, O. M., & Ayoola, A. A. (2020). Teachers' skills as predictors of students' academic achievement in mathematics in Ogun state, Nigeria, *Sapientia Foundation Journal of Education, Sciences and Gender Studies (SFJESGS)*, 2 (3), 69- 76.
- Ozen, H., Yildirm, R. (2020). Teacher Perspectives on Classroom Management, *International Journal of Contemporary Educational Researcher*, 7(1), 99-113, DOI <https://doi.org/10.33200/ijcer.645818>
- Papay, J., Taylor, E., S., Tyler, J. H., & Laski, M. (2020). Learning Job Skills from Colleagues at Work: Evidence from a Field Experiment Using Teacher Performance Data, *American Economic Journal*, 12(1), 359-388
- Park, S. H., Lee, P. J., Lee, B. K., Roskams, M., & Haynes, B. P. (2020). Associations between job satisfaction, job characteristics, and acoustic environment in open-plan offices. *Applied Acoustics*, 168, 107425. <https://doi.org/10.1016/>
- Putra, A. S., Novitasari, D., Asbari, M., Purwanto, A., Iskandar, J., Hutagalung, D., O, S., & Cahyono, Y. (2020). Examine Relationship of Soft Skills, Hard Skills, Innovation and Performance: The Mediation Effect of Organizational Learning. *International Journal of Science and Management Studies (IJSMS)*, 3(3), 27-39
- Ryan, R., M., & Vansteenkiste, M. (2023). *Self-Determination Theory: Metatheory, Methods and Meaning*. Department of Developmental, Personality and Social Psychology. Oxford University Press.
- Saeed, A., & Akbar, R. A. (2021). *Relationship of Teachers' Professional Skills and .pdf*. Bulletin of Education and Research, 43 (1), 31-44.
- Shahjahan, M., Ahmed, K. R., Al Hadrami, A., Islam, Md. R., Hossain, S., & Khan, Md. S. (2021). Factors influencing poor academic performance among urban university students in Bangladesh. *International Journal of Evaluation and Research in Education (IJERE)*, 10(4), 1140. <https://doi.org/10.11591/ijere.v10i4.21158>
- Shen, J., Wu, H., Reeves, P., Zheng, Y., Ryan, L., & Anderson, D. (2020). The Association between Teacher Leadership and Students' Achievement: A Meta-Analysis, *Educational Research Review*, 31, 1000357
- Siruri, M. M., & Cheche, S. (2021). Revisiting the Hackman and Oldham Job Characteristics, *European Journal of Business and Management Research*. 6 (2), 162-167
- Sugiarti, Y., Julyanidar, G. K., Rahayu, D. L., & Khoerunnisa, I. (2021). Hard Skills and Soft Skills as a Result of Industrial Practices and Their Impact on Graduates Job Performance, *Advances in Social Science, Education and Humanities Research*, 520, 29-32
- TAMISEMI. (2019). List of Regions and Districts. *.pdf*.
- TAMISEMI. (2022). *Public Primary Schools Academic Performance 2020-2021.xlsx*. United Republic of Tanzania.
- TAMISEMI. (2024). *English to be taught since Standard One. Mmbu Post*. <https://www.mmbuclub.com/2024/05/>

- Tuzlukova, V., & Heckadon, P. (2020). Gaining in-demand skills in the ESP Classroom: A Case Study in Oman. *Journal of Applied Studies in Language*, 4(2), 210-225
- UNICEF. (2024). *Unpacking Factors Influencing School Performance in Mainland Tanzania*. UNICEF Innocenti – Global Office of Research and Foresight.
- URT. (2006). *Primary Education Development Programme II -2007-2011*. 1–52.
- URT. (2018). *Education Sector Development Plan 2016-2021.pdf*. Ministry of Education Science and Technology.
- Vankevich, A. & Kalinouskaya, I. (2020). Ensuring Sustainable Growth Based on Artificial Intelligence Analysis and Forecast of in-demand skills. E3s Web of Conferences, 208, 03060, <https://www.e3s-conferences.org/articles/>
- World Bank Group. (2014). *Tanzania Big Results Now in Education: Technical Assessment for Program for Results Financing*.
- World Bank Open Data. (2024). World Bank Open Data. <https://data.worldbank.org>
- Yasmeen, R., Shah, A. A., Naseer, S., & Syeda, Z. F. (2023). Teacher-class relationship and emotional intelligence in higher education students' academic output and generic competence. *PLOS ONE*, 18(10), e0292120. <https://doi.org/10.1371/journal.pone.0292120>
- Youssef, B. A., Dahmani, M., & Ragni, L. (2022). ICT Use, Digital Skills and Students' Academic Performance: Exploring the Digital Divide. *Information*, 13(3), 1-19, <https://doi.org/10.3390/info13030129>
- Zhou, L., & Li, J. (2023). The Impact of ChatGPT on Learning Motivation: A Study Based on Self-Determination Theory, *Education Science and Management*, 1(1), 19-29