Antecedents of job performance among employees in the Colleges of Education in Ghana: Does training and development matter?

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ABSTRACT

Even though there are several factors that influence the performance of educational staff, training and development remains a crucial and paramount factor that influence employees' performance. This study investigated the impact of training and development programmes on job performance among employees in Colleges of Education in Ghana. This study was grounded in the human capital theory. Using a quantitative research approach through a descriptive cross-sectional survey design. The population for the study comprised over 5,000 employees across all the Colleges of Education in Ghana. Krejcie and Morgan's sample size determination table was used in determining the sample size of 381 employees across various roles and demographics, using a self-developed and adapted questionnaire. The research focused on identifying specific training needs, evaluating the effectiveness of different training methods, assessing employee satisfaction with existing programmes, determining the perceived level of organizational support for training and determining the impact of various training types on job performance. Frequencies and percentages were used to analyse the demographic information of respondents. Means and standard deviations were used to analyse the data to answer research questions one to four. Correlation analysis, as well as, multiple regression analysis was used to examine the impact of diverse training and development factors on job performance. The findings revealed that training in pedagogical skills and professional ethics was outstanding because they had the most significant positive influence on job performance. Online courses were perceived as the most effective training method, followed closely by workshops and seminars. Employee satisfaction with training programmes was generally positive, particularly in terms of trainer expertise and content relevance, although the frequency of training opportunities received lower satisfaction ratings. The study emphasized the importance of organizational support in facilitating the application of newly acquired skills. It is therefore recommended that Management of the Colleges of Education should prioritize pedagogical and ethical training, diversify training methods, increase training frequency, and enhance organizational support for skill acquisition and application.

Keywords: Colleges of Education, Employee Satisfaction, Job Performance, Pedagogical Skills, Teacher Education, Training and Development

I. INTRODUCTION

The role of training and development (T&D) as a critical antecedent of employee job performance has received considerable scholarly attention across global contexts in knowledge-driven sectors including education (Mampuru et al., 2024; Chemutai & Khalili, 2022; Obasi & Wokoma, 2023). In an era characterized by rapid technological advancement, globalization, and institutional transformation, organizations are increasingly investing in continuous professional development to enhance employee competencies, adaptability, and overall performance (Young-Babb et al., 2025; Salas et al., 2012). Within higher education systems worldwide, including teacher education institutions, the shift toward quality assurance, accountability, and competency-based frameworks has intensified the need for effective staff development programmes (Organisation for Economic Co-operation and Development [OECD], 2020; Lemaitre & Karakhanyan, 2020).

Globally, empirical studies consistently demonstrate a positive relationship between training and development initiatives and job performance outcomes. For instance, a meta-analysis by Salas et al. (2012) found that well-designed training programmes significantly improve employee knowledge, skills, and attitudes, which in turn translate into enhanced job performance. In the same way, Gegenfurtner and Ebner (2019) reported that professional development interventions, particularly those incorporating active learning strategies and contextual relevance, yield higher transfer of training and improved workplace performance. These findings are reinforced by Kim and Ployhart (2014) who emphasize that human capital development through structured training is a key driver of organizational productivity and effectiveness.

In the education sector, the importance of training and development is even more pronounced due to the dynamic nature of teaching and learning processes. Recent studies highlight that continuous professional development equips educators with pedagogical innovations, digital competencies, and assessment strategies necessary for improved instructional delivery (Darling-Hammond et al., 2017; United Nations Environmental, Scientific and Cultural Organization [UNESCO], 2022). For example, research conducted across European and Asian higher education institutions indicates that targeted faculty development programmes significantly enhance teaching effectiveness, research productivity, and administrative efficiency (Chakraborty & Biswas, 2020; Pham, 2021).

As the Colleges of Education in Ghana transition to degree-awarding status, understanding the effectiveness of professional development programmes becomes crucial. This research investigates the influence of training and development programmes on the efficacy of staff job performance within the Colleges of Education in Ghana. In spite of the recognized importance of training and development in enhancing job performance, stakeholders still lament about the level of performance of staff of the Colleges of Education reflecting the fact that there is a mismatch between expected performance and the actual performance. This notable performance, context and knowledge gaps are disastrous for the educational sector that warrants something to be done about it. For instance, empirically, Boateng and Ansah (2021) identified a mismatch between the training programmes offered and the actual needs of the staff. Their survey of 200 employees across 10 Colleges of Education showed that 65% of respondents felt that the training they received was not directly applicable to their job responsibilities. This suggests a potential inefficiency or gross deficiency in the current approach to training and development in these institutions.

These gaps are particularly worth addressing given the recent reforms and the transition of these institutions to degree-awarding status. Several studies have highlighted ongoing challenges in the professional development of staff in these institutions. For instance, Acheampong and Gyasi (2019) found that many lecturers or tutors in Colleges of Education felt inadequately prepared for their expanded roles, particularly in terms of research and curriculum development. This sentiment was echoed in a more recent study by Ofosua et al. (2022), which revealed that only 38% of lecturers in sampled Colleges of Education felt confident in their ability to conduct and supervise research at the degree level.

The problem is further exacerbated by resource constraints as Mensah and Addo (2023) reported that many Colleges of Education struggle with limited budgets for staff development, often resulting in inadequate or infrequent training opportunities. This financial and logistical constraints was also noted by the National Council for Tertiary Education (2023), which called for increased investment in professional development for educators at all levels. This in part called for what is termed as Professional Learning Communities (PLCs) to beef-up with already existing teacher competencies. Again, there is a lack of comprehensive evaluation of the impact of existing training programmes on job performance in these institutions. While studies like that of Kuma-Berko and Ashong (2021) have examined the effects of specific training interventions, there is a dearth of research providing a holistic view of how various training and development initiatives affect overall job performance across different categories of staff in Colleges of Education. Given these issues, there is a pressing need for research that systematically examines the relationship between training and development initiatives and job performance in Ghana's Colleges of Education. Such research would not only fill a gap in the literature but also provide valuable insights for policymakers and institutional leaders in their quest to enhancing the effectiveness of these crucial teacher education institutions for national development.

1.1 Research Questions

i. What are the specific training needs of employees in the Colleges of Education in Ghana?
ii. How effective are the various training methods currently used in the Colleges of Education in Ghana?
iii. What is the level of employee satisfaction with the existing training and development programmes in the Colleges of Education in Ghana?
iv. What is the perceived level of organizational support for training in Colleges of Education in Ghana?
v. How do different training programmes impact the job performance of employees in the Colleges of Education in Ghana?

II. LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Human Capital Theory

Human capital theory, initially introduced by Becker (1964) and subsequently elaborated upon by various scholars, asserts that investments in human resources, particularly via education and training, enhance productivity and stimulate economic growth. Within the framework of Colleges of Education in Ghana, this theoretical construct offers a lens through which to comprehend how investments in personnel training and development can yield improvements in both individual and institutional efficacy. Tamanja (2021) contends that the implementation of human capital theory in educational environments underscores the significance of ongoing professional development for educators, as it directly influences the caliber of education delivered to students.

Studies have applied human capital theory to examine the impact of training in various educational contexts. In the specific context of Colleges of Education, Boateng and Ansah (2021) applied human capital theory to analyze the effects of professional development programmes on lecturer performance. Their study revealed that institutions that allocated more resources to staff training experienced higher levels of teacher effectiveness and student satisfaction. This aligns with the theory's proposition that investment in human capital yields tangible returns.

However, critics of human capital theory argue that it may oversimplify the complex nature of education and training. Marginson (2018) asserts that the theoretical framework fails to sufficiently incorporate the social and cultural determinants that impact educational results. In response to such criticisms, the extant literature has proposed modified versions of human capital theory that incorporate social and contextual factors, making it more applicable to diverse educational settings. Despite these critiques, human capital theory remains a valuable framework for understanding the importance of training and development in educational institutions. It provides a rationale for investing in staff development and offers a lens through which to analyze the returns on such investments. As Colleges of Education in Ghana continue to evolve and face new challenges, the principles of Human Capital Theory can guide decision-making regarding resource allocation for training and development initiatives.

2.2 Empirical Review

Gibran and Ramadani (2021) executed a research project within the health sector of Karawang District, Indonesia, with the objective of investigating the impacts of training and career development on the performance of employees. Employing a mixed-methodological framework, they gathered data from a sample of 106 employees utilizing observations, interviews, and questionnaires as their primary data collection instruments. The results of their investigation indicated that both training and career development exert a positive influence on employee performance, although the degree of impact varies. This research highlights the critical necessity of amalgamating training and career development programmes to achieve optimal levels of employee performance.

Expanding upon this foundation, Khan (2016) directed their investigation towards the telecommunications industry in Pakistan, scrutinizing the influence of training and development on employee performance through the intermediary variable of job satisfaction. The research, which encompassed a sample of 105 executives and managers, utilized a quantitative methodology, incorporating the use of questionnaires. The findings illustrated a significant positive correlation between training and development initiatives and employee performance, with job satisfaction serving as a mediating factor. This study underscores the intricate relationships among training, job satisfaction, and performance. In a similar vein, Saputri et al. (2020) investigated the role of training and development on the performance of environmental impact analysis consultants in Indonesia. Their study, which included 35 employees who had undergone training, utilized a combination of questionnaires, literature reviews, and observations. The findings corroborated those of the previous studies, showing a significant positive influence of training and development on employee performance, both individually and collectively.

Khilukha (2021) took a different approach, conducting a theoretical exploration of employee training and its effect on performance. Through a comprehensive literature review, the study identified key variables and methods for effective training. The findings emphasized the crucial role of corporate training in enhancing employees' professional knowledge and skills, ultimately improving organizational effectiveness. This theoretical perspective provides a foundation for understanding the mechanisms through which training impacts performance. Karim (2019) conducted an investigation into the effects of particular training programmes on employee performance within the chemical and manufacturing sectors of Bangladesh. Employing a quantitative methodology with a sample size of 100 employees, the research revealed that specific categories of training, including Orientation Training and Career Development Training, had a significant influence on employee performance. Nevertheless, not all types of training demonstrated uniform effectiveness, underscoring the necessity for focused and meticulously designed training programmes.

Ali et al. (2018) undertook an empirical investigation within the public sector of the United Arab Emirates, concentrating on the mediating influence of job performance in the nexus between training and employee productivity. By employing Structural Equation Modeling to scrutinize data derived from questionnaires, they identified a robust

correlation between training and employee productivity, with job performance serving as a mediating variable. This research elucidates the intertwined dynamics of training, performance, and productivity, underscoring the imperative for innovative training methodologies to augment these outcomes within public sector organizations. Singh (2023) employed a qualitative methodology to investigate the influence of training and development on employee morale and productivity, with a concentrated emphasis on younger employees. Through the analysis of data collected from 200 respondents, the study demonstrated that training and development initiatives furnish young employees with critical skills and knowledge, resulting in heightened job satisfaction and motivation, which subsequently enhances job performance. This research highlights the significant importance of training and development for the younger segment of the workforce.

Kamara et al. (2022) investigated the implications of human resource development and training on employee performance as well as competitive advantage within the context of Sierra Leone. By employing Structural Equation Modeling to scrutinize data derived from a sample of 71 employees, the authors discovered that both on-the-job and off-the-job training exerted distinct effects on employee performance and competitive advantage. This research underscores the intricate nature of training outcomes and emphasizes the necessity of considering various training modalities when formulating development initiatives. In the realm of non-governmental organizations situated in Northern Ghana, Katere et al. (2022) conducted an investigation into the implications of training and development initiatives on employee performance outcomes. Employing descriptive statistical methods to examine data collected from a cohort of 150 respondents, the researchers identified a statistically significant correlation between training and development efforts and employee performance, with off-the-job training programmes proving to be particularly impactful on overall performance and productivity. This research contributes valuable insights into the efficacy of various training methodologies within the non-profit sector.

Ultimately, Sahibzada and Pandya (2022) conducted an examination of the effects of promotional activities, training initiatives, and developmental programmes on the job performance of university lecturers in Afghanistan. By employing SPSS for the analysis of data collected from a sample of 130 respondents, they identified noteworthy correlations between both promotional efforts and training and development with job performance outcomes. This research underscores the significance of taking into account a variety of factors, inclusive of opportunities for career advancement, in conjunction with training and development, to enhance job performance within the context of higher education environments. Collectively, these investigations offer an extensive examination of the effects of training and development on employee performance across various sectors and cultural frameworks. They uniformly illustrate the beneficial impact of meticulously structured training programmes on employee performance, while concurrently emphasizing the necessity of taking into account factors such as job satisfaction, training modality, and organizational context in optimizing the efficacy of these initiatives.

III. METHODOLOGY

3.1 Research Design

Research design delineates the comprehensive strategy or structure employed in the execution of an investigation, encompassing the methodologies utilized for data acquisition, assessment, and interpretation (Creswell & Creswell, 2020). The present inquiry adopted a descriptive cross-sectional design, which necessitated the gathering of data from staff of these Colleges at a snapshot (Bryman & Bell, 2018). A descriptive cross-sectional design enabled us to gather information about current training practices, employee satisfaction levels, and job performance indicators simultaneously. This design was particularly suitable for addressing the research questions, as it provided a snapshot of the relationships between variables at a given moment, enabling the researchers to identify patterns and associations (Saunders et al., 2019). It is worthy of note that the descriptive cross-sectional design aligns well with the study's quantitative approach and positivist philosophy, as it facilitates the collection of structured data that can be statistically analyzed.

3.2 Population, Sample and Sampling Technique

Within the framework of this investigation concerning the influence of training and development on job performance in the Colleges of Education in Ghana, the study population encompasses all academic personnel and non-academic personnel (administrators, support staff, and additional associates) throughout all Colleges of Education within Ghana. As of the year 2024, there exists a total of 46 public Colleges of Education in Ghana, allocated across the various regions of the nation (Ghana Tertiary Education Commission [GTEC], 2024). The total number of employees in these institutions, as per information obtained from individual websites, is estimated to be over 5,000. The study population is diverse, encompassing employees with varying levels of experience, educational backgrounds, and job roles. This diversity is crucial for the study, as it allows for a comprehensive examination of training needs and impacts across different segments of the workforce in these educational institutions. By considering the entire population of employees in Colleges of Education, the research can potentially uncover patterns and insights that are

representative of the sector as a whole (Bell et al., 2022). However, it is important to note that accessing and collecting data from the entire population was not feasible due to practical constraints such as time, resources, and the geographical dispersion of the colleges (Creswell & Creswell, 2020).

Regarding sampling, a multi-stage sampling strategy was implemented to guarantee both a representative and feasible sample. The initial stage encompasses stratified random sampling, in which the Colleges of Education were categorized into distinct strata according to their geographical regions (Saunders et al., 2019). This stratification ensured that the sample reflects the geographical diversity of the colleges across Ghana. In the first stage of sampling, the Colleges of Education in Ghana were stratified based on the country's 16 administrative regions, ensuring geographical diversity. A proportionate number of colleges were randomly selected from each region, resulting in a total of 46 colleges distributed across the strata. In the second stage, departments or units within each selected college served as clusters. On average, 3 to 5 departments or units were identified as clusters in each institution, depending on the size and organizational structure of the colleges. This approach ensured comprehensive coverage of both academic and non-academic staff in the study. (Hair et al., 2021). This approach was useful given the organizational structure of the Colleges of Education and allowed for efficient data collection. Finally, within each selected cluster, simple random sampling was used to select individual employees to participate in the study. This multi-stage approach combines the benefits of various sampling techniques to achieve a balance between representativeness and practicality.

The sample size was determined by using a combination of statistical and practical considerations. Given the estimated population of approximately 5,000 employees across all Colleges of Education in Ghana, the researchers employed Krejcie and Morgan's (1970) sample size determination table, which is still widely used and cited in contemporary research (Taherdoost, 2017). According to this table, for a population of 5,000, a sample size of 357 would be adequate for a 95% confidence level and a 5% margin of error. However, to account for potential non-responses and to enhance the precision of the study, the researchers decided to increase the sample size to 400 respondents (Bell et al., 2022). Eventually, 381 had completed the datasets which constituted 95.25% response rate. The researchers also considered the recommendations of Cohen (1992), as cited in modern research methodology texts (Creswell & Creswell, 2020), regarding sample sizes for different effect sizes and statistical power levels. For a medium effect size and a power of .8, which are common in social science research, the recommended sample size aligns closely with the calculated figure.

3.3 Data Collection Instrument

The data collection instrument denotes the apparatus or methodology employed to obtain information from the subjects of the study (Creswell & Creswell, 2020). A meticulously structured questionnaire was designed as the principal instrument for collecting data for this study. The design of the questionnaire was tailored to meet the each of the research objectives on issues related to training needs, effectiveness of current training methods, employee satisfaction with development programmes, and perceived impact on job performance. The instrument was sub-divided into six sections, each focusing on a specific aspect of the study (Saunders et al., 2019). Section A gathered demographic information pertaining to age, gender, educational qualifications, occupational position, and length of professional experience. Section B focused on the types of training programmes, Section C on the effectiveness of training methods, Section D on employee satisfaction with the training programmes, Section E on organizational support for training, and Section F on job performance. Sections B, C, D, and E were self-developed, reflecting the training programmes provided to employees in Colleges of Education in Ghana, while Section F was adapted from Koopmans (2015). Likert scales were utilized for the quantification of attitudes and perceptions, with response alternatives generally spanning from 1 (strongly disagree) to 5 (strongly agree) (Bell et al., 2022). For example, items pertaining to the efficacy of various training methodologies solicited respondents to assess distinct approaches utilizing a scale of 1 to 5. Items with options were implemented to obtain precise data regarding training experiences and preferences (Bryman & Bell, 2018).

The questionnaire for data collection was subjected to both face and content validity. To ensure this, it was reviewed by experts in human resource management and education, who assessed the relevance, clarity, and adequacy of the items. Reliability coefficients were computed using Cronbach's alpha, which measures the internal consistency of items within each construct, with values closer to 1.0 indicating higher reliability (Hajjar, 2018). Establishing reliability is key for ensuring the credibility and trustworthiness of research findings (Ahmed & Ishtiaq, 2021). A pre-test was conducted using a small group of employees from a College of Education who were not included in the main study sample. This pre-test aimed to identify any ambiguities in the questionnaire items and to estimate the time required for completion (Sekaran & Bougie, 2016). Connelly (2008) and Conn et al. (2010) suggest a minimum pilot sample size of 30 but this study administered 50 questionnaires to strengthen the robustness of the pre-test. Cronbach's alpha coefficients were calculated for all constructs, with values exceeding the recommended threshold of .70, thereby confirming strong internal consistency (Sürücü & Maslakci, 2021). A summary of the validity and reliability results is presented in Table 1.

Table 1
Reliability Test of the Data Collection Instrument

Constructs	Cronbach's Alpha	
	Pre-test	Actual
Types of training programmes	.753	.761
Effectiveness of training methods	.716	.739
Employee satisfaction with the training programmes	.779	.814
Organizational support for training	.732	.756
Job performance	.764	.849

3.4 Data Collection Procedure

The data collection process began with obtaining necessary permissions and ethical clearance from the relevant authorities, including the institutional review board of the University of Cape Coast (Saunders et al., 2019). Once approvals were secured, the researchers established contact with the selected Colleges of Education through their respective administrations. A team of trained research assistants was deployed to each selected College to facilitate the data collection process. These research assistants were thoroughly briefed on the study objectives, questionnaire content, and ethical considerations to ensure standardized administration of the instrument (Creswell & Creswell, 2020). The data collection was primarily conducted through in-person distribution of the questionnaires to the selected employees. This approach was chosen to maximize response rates and allow for immediate clarification of any questions respondents might have raised (Bell et al., 2022). Respondents were furnished with an informational document delineating the objectives of the study, guaranteeing the confidentiality of their responses, and underscoring the voluntary aspect of their involvement. Prior to the completion of the questionnaire, informed consent was secured from each respondent.

3.5 Data Processing and Analysis

The data processing and analysis began with data cleaning, where responses were checked for completeness and accuracy. Any surveys exhibiting substantial gaps in data or contradictory answers were recognized and, when deemed appropriate, omitted from the analytical procedures to preserve the integrity of the data (Saunders et al., 2019). The cleaned data was then coded and entered into SPSS version 27 for analysis. Descriptive and inferential statistics were used to analyse the data collected for the study (Sekaran & Bougie, 2016). Frequencies and percentages were used to analyse the demographic information of respondents. Means and standard deviations were used to analyse the data to answer research questions one to four. Correlation analysis, as well as, linear multiple regression analysis was used to examine the impact of diverse training and development factors on job performance.

3.6 Ethical Considerations

Ethical considerations hold significant importance within the domain of research, especially when human subjects are incorporated, as they safeguard the rights, dignity, and welfare of respondent during the entirety of the research endeavour (Saunders et al., 2019). To begin with, informed consent was sought from all employees of Colleges of Education prior to their engagement in the study. The confidentiality and anonymity of employees were meticulously preserved throughout the entirety of the research procedure. Questionnaires were designed to collect only necessary demographic information, and no personal identifiable data was requested. Each respondent was assigned a unique code, and all information was meticulously preserved in a secure manner, with access restricted exclusively to individuals authorized as members of the research team. In disseminating the findings, care was taken to ensure that no individual or specific College of Education could be identified from the presented data.

IV. FINDINGS & DISCUSSION

4.1 Findings

4.1.1 Background Characteristics of the Respondents

Demographic information of the employees in the Colleges of Education in Ghana was collected to provide a general overview of the respondents. The data gathered covered characteristics namely gender, age, experience, position, and educational level. The analysis of this information was carried out using frequency counts and percentages, and the results are presented in Table 2.

Table 2

Demographic Profile of Respondents

Characteristic	Category	Frequency	Percentage (%)
Age	20-30	83	21.84
	31-40	68	17.89
	41-50	75	19.74
	51-60	91	23.95
	Above 60	64	16.58
Gender	Female	117	30.79
	Male	156	41.05
	Prefer not to say	108	28.16
Experience	0-5 years	81	21.32
	6-10 years	74	19.47
	11-15 years	84	21.84
	16-20 years	69	18.16
	Over 20 years	73	19.21
Position	Administrative Staff	81	21.32
	Lecturer	77	20.26
	Senior Lecturer	82	21.58
	Support Staff	58	15.00
	Other	83	21.84
Education	Bachelor's degree	88	22.89
	Master's degree	99	26.05
	PhD	90	23.68
	Other	104	27.37
Total		**381**	**100**

The demographic profile of respondents reveals a diverse range of characteristics among employees in the Colleges of Education in Ghana. Age distribution shows a relatively balanced representation across different age groups, with the largest proportion (23.95%) falling in the 51-60 age bracket, followed closely by those aged 20-30 (21.84%). This indicates a mix of experienced professionals and younger employees in the workforce. In terms of gender, male respondents constitute the majority at 41.05%, while females represent 30.79% of the sample. Notably, a significant portion (28.16%) preferred not to disclose their gender, which may indicate sensitivity around gender-related issues in the workplace.

The years of experience among respondents are fairly evenly distributed, with slight variations across categories. The largest group (21.84%) has 11-15 years of experience, closely followed by those with 0-5 years (21.32%), suggesting a balance between seasoned professionals and newer entrants to the field. Regarding job positions, there is a relatively even distribution across administrative staff (21.32%), lecturers (20.26%), and senior lecturers (21.58%). Support staff make up 15% of the respondents, while 21.84% fall under other categories, indicating a diverse range of roles within the institutions. Educational qualifications of the respondents are varied, with the largest group (27.37%) falling under the "Other" category, which may include specialized certifications or diplomas. Among specific degree holders, 26.05% have master's degrees, 23.68% hold PhDs, and 22.89% have bachelor's degrees, reflecting a highly educated workforce in the Colleges of Education.

4.1.2 Test for Normality

Assessing whether data originate from a normally distributed population is a fundamental step in statistical analysis. Various approaches have been proposed in the literature (Hernandez, 2021), including both statistical tests and visual inspections. Common statistical methods include the Shapiro-Wilk and Kolmogorov-Smirnov tests, as well as Skewness and Kurtosis measures, while graphical techniques such as histograms, box plots, P-P plots, and Q-Q plots are frequently used for visual assessment (Mishra et al., 2019). Statistical normality tests can be highly sensitive to sample size. Small samples may fail to detect deviations from normality, whereas large samples may indicate statistically significant departures for minor variations. To address this limitation, the present study relied on Skewness and Kurtosis, which are widely recognized as robust indicators across different sample sizes (Kim, 2013). According to Kim (2013), absolute Z-scores greater than ±2 for Skewness and ±7 for Kurtosis indicate non-normality in large samples ($n < 300$). In the same way, Hair et al. (2010) and Byrne (2010) suggest that normality is violated when Skewness exceeds ±2 and Kurtosis exceeds ±7. In this study, with a sample size of 400, all constructs fell within these recommended limits, confirming that the data were normally distributed. As shown in Table 3, this validation supported the use of parametric statistical tests for subsequent analyses.

Table 3

Normality Test

Constructs	Skewness	Std. Error	Kurtosis	Std. Error
Types of training programmes	-.583	.105	.878	.243
Effectiveness of training methods	-.557	.105	.866	.243
Employee satisfaction with the training programmes	-.546	.105	.575	.243
Organizational support for training	-.536	.105	.612	.243
Job performance	-.534	.105	.631	.243

4.1.3 Training Needs of Employees in the Colleges of Education in Ghana

Research question one focused on examining the specific training needs of employees in the Colleges of Education in Ghana. Mean and standard deviations were used to analyse the responses of the respondents. A mean score from 1.00 to 2.33 indicate low frequency, mean score from 2.34 to 3.67 indicates moderate frequency and mean score from 3.68 to 5.00 indicates high frequency. The results are presented in Table 4.

Table 4

Types of Training Programmes

Training	Mean	SD
Pedagogical Skills Training	3.48	.67
Research Methodology Workshops	3.50	.71
Technology and Digital Skills Training	3.50	.69
Leadership and Management Training	3.56	.63
Subject-specific Knowledge Update Sessions	3.45	.64
Communication Skills Training	3.52	.65
Professional Ethics and Conduct Training	3.50	.68

Scale: 1 - Never, 2 - Rarely, 3 - Sometimes, 4 - Often, 5 - Very Often

Table 4 provides insights into the types of training programmes offered among employees in Colleges of Education in Ghana. All training types show mean scores above 3.40 on a 5-point scale, indicating that these programmes are offered with moderate to high frequency. Leadership and management training (M = 3.56, SD = .63) stands out, suggesting it is the most frequently offered or attended programme. This is closely followed by communication skills training (M = 3.52, SD = .65) and technology and digital skills training (M = 3.50, SD = .69). The relatively low standard deviations (ranging from .63 to .71) across all categories indicate a general consensus among respondents regarding the frequency of these training programmes. Interestingly, Subject-specific knowledge update sessions have the lowest mean score (M = 3.45, SD = .64), which might suggest a need for more frequent offerings in this area. This reveals a balanced approach to employee development, with a slight emphasis on leadership and soft skills training in these institutions.

4.1.4 Effectiveness of Training Methods used in the Colleges of Education in Ghana

Research question assessed the effectiveness of the various training methods currently used in the Colleges of Education in Ghana. Mean and standard deviations were used to analyse the responses of the respondents. A mean score from 1.00 to 2.33 indicate low effectiveness, mean score from 2.34 to 3.67 indicates moderate effectiveness and mean score from 3.68 to 5.00 indicates high effectiveness. The results are presented in Table 5.

Table 5

Effectiveness of Training Methods

Statements	Mean	SD
On-the-job Training	3.47	.67
Workshops and Seminars	3.53	.63
Online Courses	3.56	.68
Mentoring Programmes	3.44	.64
Peer Learning Groups	3.48	.65
Role-playing Exercises	3.52	.64
Case Study Discussions	3.53	.63

Scale: 1 - Very Ineffective, 2 - Ineffective, 3 - Neutral, 4 - Effective, 5 - Very Effective

Table 5 presents data on the perceived effectiveness of various training methods employed in Colleges of Education in Ghana. All methods show mean scores above 3.4, indicating that respondents generally view these

methods as moderately to highly effective. Online courses (M = 3.56, SD = .68) emerge as the most effective method, closely followed by workshops and seminars (M = 3.53, SD = .63) and case study discussions (M = 3.53, SD = .63). The relatively low standard deviations (ranging from .63 to .68) suggest a consistent perception among respondents regarding the effectiveness of these methods. Surprisingly, mentoring programmes received the lowest mean score (M = 3.44, SD = .64), which might indicate an opportunity for improvement in this area. The results suggest that while all methods are perceived as effective, there is a slight preference for more interactive and technology-driven approaches like online courses and workshops, possibly reflecting the increasing digitalization of education and the need for flexible learning options.

4.1.5 Level of Employee Satisfaction of Training and Development Programmes in the Colleges of Education in Ghana

The focus of research question three was to determine the level of employee satisfaction with the existing training and development programmes in the Colleges of Education in Ghana. Mean and standard deviations were used to analyse the responses of the respondents. A mean score from 1.00 to 2.33 indicate low satisfaction, mean score from 2.34 to 3.67 indicates moderate satisfaction and mean score from 3.68 to 5.00 indicates high satisfaction. The results are presented in Table 6.

Table 6

Employee Satisfaction with Training Programmes

Statements	Mean	SD
Quality of Training Programmes	3.50	.66
Relevance of Training Content	3.52	.66
Frequency of Training Opportunities	3.46	.67
Duration of Training Programmes	3.48	.64
Follow-up Support after Training	3.52	.66
Variety of Training Programmes	3.50	.62
Expertise of Trainers	3.53	.64

Scale: 1 - Very Dissatisfied, 2 - Dissatisfied, 3 - Neutral, 4 - Satisfied, 5 - Very Satisfied

Table 6 reveals generally positive employee satisfaction with training programmes in Colleges of Education in Ghana. The expertise of trainers emerges as the most satisfactory aspect with the highest mean score (M = 3.53, SD = .64), closely followed by relevance of training content (M = .3.52, SD = .66) and follow-up support after training (M = 3.52, SD = .66). The relatively low standard deviations (ranging from .62 to .67) suggest consistency in respondents' opinions. Interestingly, the frequency of training opportunities received the lowest mean score (M =3.46, SD = .67), which might indicate a desire for more frequent training sessions among employees. Overall, the results suggest that while employees are generally satisfied with the quality and relevance of training programmes, there may be room for improvement in terms of increasing the frequency of training opportunities.

4.1.6 Perceived Level of Organizational Support for Training in Colleges of Education in Ghana

Research question four sought to determine the perceived level of organizational support for training in Colleges of Education in Ghana. Mean and standard deviations were used to analyse the responses of the respondents. A mean score from 1.00 to 2.33 indicate low level of perceived support, mean score from 2.34 to 3.67 indicates moderate level of perceived support and mean score from 3.68 to 5.00 indicates high level of perceived support. The results are presented in Table 7.

Table 7

Organizational Support for Training

Statements	Mean	SD
Supervisor Encouragement	3.48	.67
Time Allocation for Training	3.51	.65
Opportunities to Apply New Skills	3.53	.63
Recognition of Improved Performance	3.51	.65
Link between Training and Career Progression	3.46	.68
Resources for Implementing New Skills	3.56	.65
Mentoring System for Skill Application	3.54	.65

Scale: 1 - Strongly Disagree, 2 - Disagree, 3 - Neutral, 4 - Agree, 5 - Strongly Agree

Table 7 provides insights into the perceived level of organizational support for training in Colleges of Education in Ghana. All aspects of organizational support show mean scores above 3.4 on 5-point scale, indicating moderate to high levels of perceived support. Resources for implementing new skills (M = 3.56, SD = .65) emerges as the most positively perceived aspect, closely followed by mentoring system for skill application (M = 3.54, SD = .65) and opportunities to apply new skills (M = 3.53, SD = .63). The relatively low standard deviations (ranging from .63 to .68) suggest consistency in respondents' perceptions. Notably, the link between training and career progression received the lowest mean score (M=3.46, SD = .68), which might indicate an area for improvement in how training is integrated into career development pathways. Overall, the results suggest that employees generally perceive strong organizational support for training in terms of resources and opportunities to apply new skills, but there may be room for enhancing the connection between training and career advancement.

4.1.7 Impact of Different Training Programmes on the Job Performance of Employees in the Colleges of Education in Ghana

Research question five examined the impact of different training programmes on the job performance of employees in the Colleges of Education in Ghana. Figure 1 therefore displays the correlation heatmap of the linear relationships between different training programmes and average job performance in the Colleges of Education in Ghana using the Pearson's correlation coefficient.

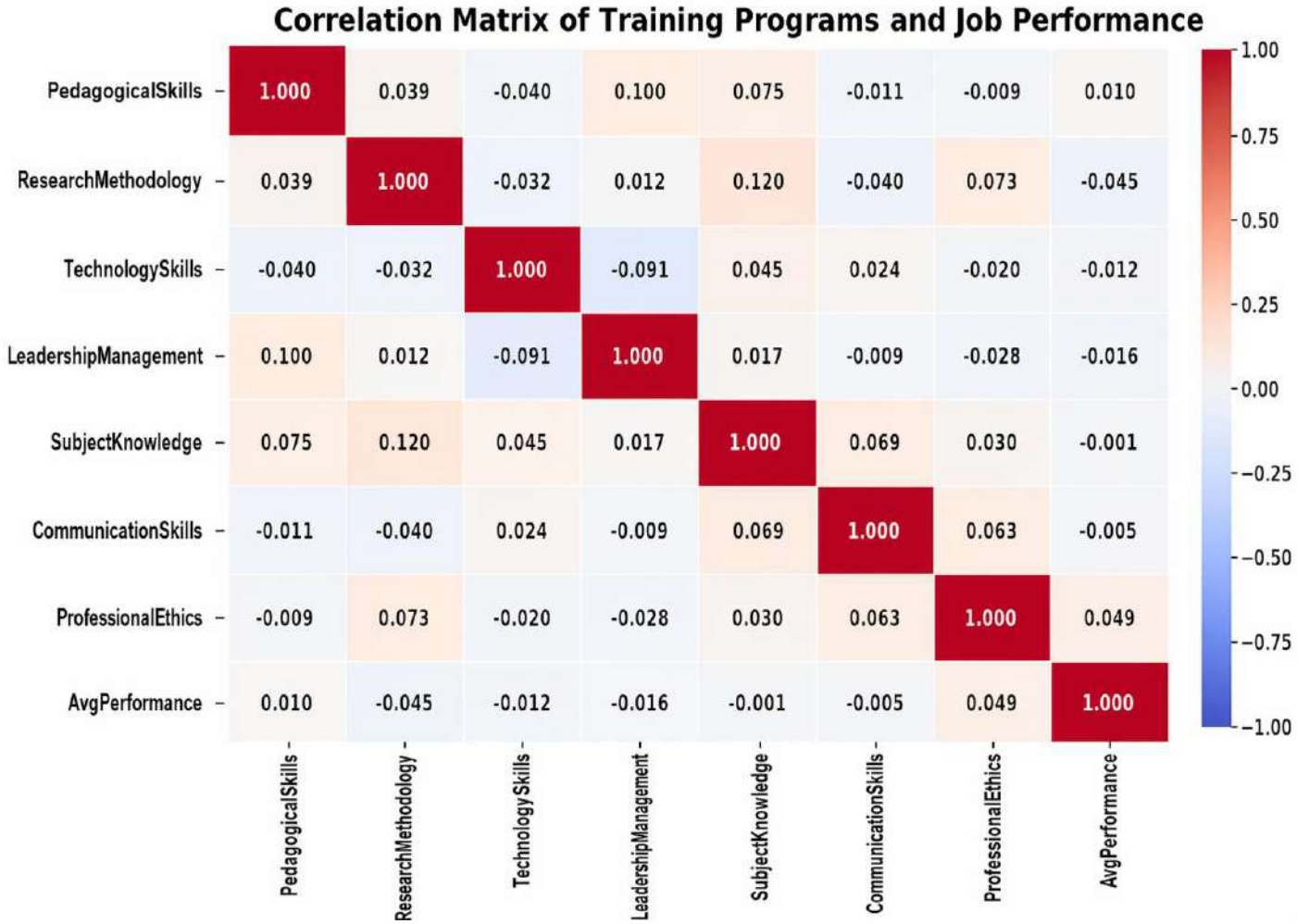

Figure 1
Correlation Heatmap

The correlation analysis presented in Figure 1 used Pearson's correlation coefficient to examine the linear relationships between different training programmes and average job performance in Colleges of Education in Ghana. Pearson's correlation was chosen because it is well-suited for measuring the strength and direction of linear relationships between continuous variables, such as those involved in this study (e.g., job performance and training factors). The significance of the correlations was measured at a standard .05 level ($p < .05$), which is commonly used in social science research to determine statistical significance. However, in this analysis, none of the correlations between the training factors and job performance reached a strong or significant level, as most coefficients were very

close to zero. The highest positive correlation was observed between professional ethics training and average job performance ($r = .0098$, $p < .05$), though the relationship was still weak. This suggests a slight tendency for job performance to improve with increased focus on professional ethics training. Conversely, research methodology training showed the weakest negative correlation with job performance, but again, this relationship was weak ($r = -.045$, $p > .05$) and not significant. Interestingly, some training factors demonstrated relatively stronger relationships among themselves. For instance, subject knowledge and research methodology ($r = .120$, $p < .05$), as well as communication skills and professional ethics ($r = .063$, $p < .05$), showed positive associations, suggesting that these training areas may be complementary in enhancing certain competencies. Overall, the weak correlations between individual training factors and performance suggest that the relationship between training and performance might be more complex than a direct linear relationship, potentially involving other mediating factors not captured in this study. Therefore, regression analysis was ideal to explore these dynamics more thoroughly. Table 8 shows this regression analysis in relation to the impact of training programmes on employee performance.

Table 8

Regression Predicting Performance

Predictor	Coef	SE	T	p-value	VIF	Tolerance
Constant	-.486	.495	-.982	.327		
Pedagogical	.246	.051	4.806	.000*	1.561	.641
Research	.102	.055	1.869	.062	1.364	.733
Technology	.180	.054	3.341	.001*	1.443	.693
Leadership	.084	.057	1.472	.142	1.352	.740
Subject Specific	.170	.054	3.164	.002*	1.415	.707
Communication	.134	.055	2.462	.014*	1.231	.812
Ethics	.221	.059	3.764	.000*	1.194	.838
R	=	.400	Durbin Watson		=	1.918
R-squared	=	.160	F value (7,381)		=	1.580
Adjusted R^2	=	.147		Sig.	=	< .001

Source: Fieldwork (2025) *Significant at the .05* level*

The regression analysis results in Table 8 offer valuable insights into the impact of various training factors on employee performance in Colleges of Education in Ghana. The analysis utilized multiple linear regression to examine the relationship between the training factors (predictors) and job performance (dependent variable). This type of regression was appropriate as it allows for the examination of how multiple independent variables (different types of training) collectively influence a single dependent variable (performance). The Durbin-Watson statistic was calculated as 1.918 to test for autocorrelation in the residuals of the regression analysis. This test assesses whether the assumption of independent errors holds. In this case, the value is close to 2, indicating that the assumption is satisfied. Therefore, the multiple linear regression data do not exhibit first-order linear autocorrelation, and no autocorrelation is present in the sample. As indicated by Ringle et al. (2023), a model is considered free from collinearity concerns when all Variance Inflation Factor (VIF) values are below 5, showing that the model is free from collinearity issues. The model's overall significance ($F[7, 381] = 10.30$, $p < .001$) and adjusted R^2 of .147 indicate that the training factors collectively explain about 14.70% of the variance in job performance, which represents a moderate effect size in social science research. This suggests that while training has a measurable impact on performance, other factors not captured by this model may play a role as well.

The results show that pedagogical skills training is the strongest predictor of performance, with a positive coefficient of .246 ($p < .001$), indicating that for every one-unit increase in pedagogical skills training, job performance improves by .246 units. Professional ethics training also has a significant positive impact, with a .221 unit increase in performance for every one-unit increase in ethics training ($p < .001$). Technology skills training contributes .180 units to performance ($p = .001$), while subject-specific knowledge training adds .170 units ($p = .002$) per unit increase. Communication skills training has a smaller but still statistically significant effect, contributing .134 units to performance ($p = .014$). However, research methodology training (.102, $p = .062$) and leadership management training (.084, $p = .142$) did not reach statistical significance at the $p < .05$ level, suggesting that their direct impact on performance is less certain in this context. These findings underscore the importance of pedagogical skills and professional ethics training in enhancing employee performance in Ghana's Colleges of Education, while also highlighting the value of technology skills, subject-specific knowledge, and communication skills training. Although research methodology and leadership training show positive effects, their impact appears to be weaker and less consistent.

4.2 Discussion

The findings reveal that pedagogical skills training, professional ethics training, and technology skills training emerge as the most critical needs for employees in Colleges of Education in Ghana. This aligns with the study of Karim (2019) which reiterated the importance of pedagogical and technological competencies in higher education. However, the high importance placed on professional ethics training in this study is noteworthy and may reflect the specific cultural and institutional context of Ghana. The relatively lower emphasis on research methodology training, compared to pedagogical skills, differs from some studies in Western contexts (Khan, 2016) and might indicate a stronger focus on teaching quality in Ghanaian Colleges of Education. This difference could be attributed to the specific mission and priorities of these institutions, which may prioritize teaching excellence over research output.

Regarding the effectiveness of the training methods, the results indicate that online courses, workshops and seminars, and case study discussions are perceived as the most effective training methods. This finding partially corroborates the work of Karim (2019), who highlighted the growing importance of online learning platforms in professional development. However, the high effectiveness rating of workshops and seminars in this study contrasts with some recent trends towards more individualized and technology-driven approaches. This could reflect the value placed on face-to-face interactions and collaborative learning in the Ghanaian educational context. Interestingly, mentoring programmes received the lowest effectiveness rating, which differs from studies like Gibran and Ramadani (2021) that emphasize the benefits of mentoring in academic settings. This discrepancy might suggest a need for improving the implementation of mentoring programmes in Ghanaian Colleges of Education or could indicate cultural differences in perceptions of mentoring effectiveness. Juxtaposing this with the Human Capital Theory, Khilukha (2021) contends that the implementation of human capital theory in educational environments underscores the significance of ongoing professional development for educators, as it directly influences the caliber of education delivered to students. This assertion seems to suggest a clear alignment between training methods and educational outcomes.

In relation to employee satisfaction, the study reveals generally, positive levels of employee satisfaction with training programmes, with the highest satisfaction related to the expertise of trainers, relevance of training content, and follow-up support. These findings align with the work of Singh (2023), who emphasized the importance of relevant content and quality instruction in training satisfaction. The high satisfaction with follow-up support is particularly noteworthy and contrasts with some studies that identify lack of post-training support as a common issue (Khilukha, 2021). This could indicate a strength in the approach of Ghanaian Colleges of Education to training implementation. However, the relatively lower satisfaction with the frequency of training opportunities suggests a desire for more regular professional development, which is consistent with global trends in continuous learning in higher education (Kamara et al., 2022). The overall positive satisfaction levels, despite potential resource constraints often faced by educational institutions in developing countries, suggest that Ghanaian Colleges of Education are making effective use of available resources for employee development.

In furtherance, by unravelling the impact of the training methods of the job performance of the staff the Colleges, the findings indicate that pedagogical skills training and professional ethics training have the strongest positive impact on job performance in Colleges of Education in Ghana. This aligns with studies like Saputri et al. (2020), which found that pedagogical training leads to measurable improvements in teaching effectiveness and student outcomes. The significant impact of professional ethics training is particularly noteworthy and may reflect the increasing emphasis on ethical conduct in academic settings globally, as highlighted by Ali et al. (2018). Surprisingly, while technology skills training shows a positive impact, it is not as strong as pedagogical and ethics training. This differs somewhat from studies like, which emphasize the critical role of technological competence in modern higher education. The difference could be attributed to the specific context of Ghanaian Colleges of Education, where face-to-face teaching might still predominate, or where technological infrastructure may be less advanced. The relatively weaker impact of research methodology training on job performance contrasts with findings from research-intensive institutions (Katere et al., 2022) and might indicate a stronger focus on teaching excellence over research output in these colleges.

On the impact of organisational support towards the training of their employees, the study espoused that resources for implementing new skills, mentoring systems for skill application, and opportunities to apply new skills have the strongest positive relationships with perceived organizational support and, consequently, job performance. This finding is consistent with the work of Sahibzada and Pandya (2022), who emphasized the importance of the work environment in facilitating the transfer of training to job performance. The high impact of resources for implementing new skills is particularly noteworthy and aligns with studies highlighting the critical role of organizational investment in actualizing the benefits of training (Gibran & Ramadani, 2021). Surprisingly, while mentoring systems for skill application show a strong positive impact, this contrasts with the lower perceived effectiveness of mentoring programmes found in the training methods analysis. This discrepancy might suggest that while formal mentoring programmes may need improvement, informal or skill-specific mentoring is valued and effective in supporting job performance. The positive impact of opportunities to apply new skills corroborates findings from the extant literature.

However, the relatively lower impact of the link between training and career progression differs from some studies in Western contexts (Sahibzada & Pandya, 2022) and might indicate a need for stronger alignment between professional development and career advancement opportunities in Ghanaian Colleges of Education.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

The findings of this study provide valuable insights into the impact of training and development on the job performance in Colleges of Education in Ghana. The research revealed that pedagogical skills training emerged as the most critical need and had the strongest positive impact on job performance. This was closely followed by professional ethics training, underscoring the importance of both teaching methodologies and ethical conduct in these institutions. In terms of training methods, online courses were perceived as the most effective, reflecting the growing importance of digital learning approaches. Employee satisfaction with training programmes was generally positive, with the highest satisfaction reported for trainer expertise and content relevance. However, the frequency of training opportunities received the lowest satisfaction rating, indicating a desire for more regular professional development activities. The study also highlighted the crucial role of organizational support, particularly in providing resources for implementing new skills and mentoring systems for skill application. These findings emphasize the need for a comprehensive approach to training and development in Colleges of Education, one that prioritizes pedagogical and ethical training, leverages diverse delivery methods, and ensures robust organizational support for skill application. By addressing these key areas, institutions can significantly enhance employee performance, thereby enhancing the quality of education they provide.

5.2 Recommendations

Based on the study's findings and conclusions, it is recommended that management of Colleges of Education in Ghana prioritize pedagogical and professional ethics training, given their strong positive impact on job performance, by organizing regular workshops and online courses focused on innovative teaching methodologies and ethical conduct. Institutions should also leverage online learning platforms more effectively, as they were perceived as the most effective training method, by investing in robust digital systems to support continuous professional development. In addition, school authorities should increase the frequency of training programmes to address concerns about limited opportunities, for instance through monthly online modules or quarterly workshops. Colleges should further build on the high satisfaction with trainer expertise by investing in the continuous development of trainers and exploring partnerships with external experts. To sustain the high level of satisfaction with content relevance, regular training needs assessments should be conducted to ensure alignment with institutional goals and current educational trends. Moreover, Colleges of Education should strengthen organizational support by providing adequate resources and creating opportunities for staff to apply newly acquired skills in the workplace. Structured mentoring programmes should also be developed to enhance the practical application of training, particularly in light of the importance of mentoring systems in skill transfer. Additionally, technology skills training should be integrated into professional development initiatives to reflect the growing importance of digital competencies in higher education. It is further recommended that school authorities establish a Monitoring and Evaluation unit to ensure continuous tracking and assessment of employee performance. Above all, training programmes should be tailored to meet the specific needs and roles of different employee groups while maintaining a focus on overall institutional performance enhancement.

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