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Analyzing Quality Learning and Development Aspects of Novice Professionals Using Artificial Intelligence: The Evidence from Law Enforcement Agencies

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Abstract: The improvement of employees' professional competence through quality learning and development is the most important goal of any organization. For this purpose, special attention to develop the skills of the novice professionals to replace the aging workforce has great significance. Novice professionals should learn and grow at work in a way that it must influence quality of their grooming as well as progression in career however, not much is known about the way it occurs. Like all other hierarchical larger organizations, law enforcement agencies (LEAs) also have to stay current on such learning and development practices. Therefore, in this research work, quality learning and development related aspects of both components of LEAs, the Pakistan Police and the Civil Armed Forces have been focused. The extent to aspects like career guidance & dialogues, team level learning, and mental model development practices have an impact on quality learning and development of novice professionals in LEAs based at Islamabad, Punjab, Sind, Khyber Pakhtukhwa (KPK), and Baluchistan regions has been investigated. Two stages sampling, stratified sampling followed by systematic random sampling method were used to gather the data, and SPSS version 26 was used for analysis. The findings revealed that identified grooming aspects have a significant positive impact on quality learning and development of novice professionals when mediated by attitude to continuous learning which itself had moderation effect of talent-oriented development. Furthermore, Artificial Neural Network technique was also applied to have improved insight of such factors on quality learning and development, the outcome was favorable. According to the study, LEAs can develop their novice professionals effectively by choosing a correct methodology that is practical rather than adhering to conventional techniques. Such measures will not only help the individual professionals but will also strengthen the organization as a whole to achieve the envisioned goals.

Keywords: Quality Learning and Development, Novice Professionals, Law Enforcement, Artificial Intelligence.

Introduction

Learning and development is an evolutionary process that is fueled by a variety of experiences (Mason & Brougham, 2020). Various human resource development strategies are

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being followed in the organizations. The purpose of development strategies and methods is to ensure that professionals of an organization acquire and enhance their potential and capabilities to undertake duties with ease and advance in the career for both benefit of their own and that of the organization. Quality learning and development of novice professionals is crucial since it directly affects the strategic goals of the organization. Without carefully thought-out early grooming and development of novice professionals, such goals cannot be realized. Raising professional standards from the start of new employees' professional career is therefore, crucial for their performance as well as that of the organization. However, quality development of employees cannot be achieved by the organizations without properly considered early grooming and development of new professionals. Therefore, it is essential to raise the bar of professionalism from the outset of a fresh entrants' professional career for both their progress and that of their employer. The growth of fresh recruits in law enforcement organizations is extensively encouraged. Hence, it is crucial for the management to develop plans for staff progression in order to increase professional dedication and motivation, the two factors that are fundamental to the quality learning and development of novice professionals (Pahi, Ali, Akour, & Ahmed, 2021).

In Pakistan, there are two different groups of law enforcement agencies. The first group consists of agencies that report to the federal government, and the second one consists of provincial police agencies. Nineteen major agencies work directly under the Federal Government that handle a variety of law enforcement responsibilities, such as gathering intelligence, keeping watch over the border and the coast, and policing and responding to numerous offices (Abbas, 2011). There are roughly 700,000 members of the federal government's law enforcement and intelligence services available to it with cross-provincial jurisdiction. Each law enforcement agency has specific needs that must be met in order for them to function properly. Law enforcement officials identify organization's material, financial, and human resources necessities and create procedures to carry out the assigned task. Organizational goals are established with the intention of supporting the mission achieving procedures. To accomplish these goals, high-quality learning and development must be extended to the professionals. Employees in the organization need continuous and focused development efforts to upgrade their potential and polish their talent. To accomplish these particular objectives, quality learning and development is an important aspect. Giving people as many options as possible to integrate their particular goals and development into the demands of the organization as a whole is an important part of in-service learning and development.

The effectiveness or failure of LEAs has far-reaching ramifications for the stability, progress, and peace in developing states like Pakistan. Any such outcome relies on the quality development of novice professionals being an important strategic resource (Mason & Brougham, 2020). However, numerous talents in law enforcement organizations go untapped because of a lack of concentrated initial growth (Abbas, 2011). When novice professionals join the organization, they are not appropriately mentored (Groppi, 2021). People are unable to grow in their employment despite having the essential skills because the environment is unfavorable. The problem is made more difficult by the fact that LEAs must train new professionals on a comparable quick-track basis due to a rapid

rate of attrition (Kleygrewe, Oudejans, Koedijk, & Hutter, 2022). These organizations do not have any guidance program; rather, regulation and authority are being applied as the principal learning and development means. Novice professionals are hardly guided properly; instead, emphasis is placed on grades and achievements. The environment provided to novice professionals prior to joining the organization and their background schooling are the two main factors that determine their future performance and success. Little is known about how best to educate novice professionals for quality development (Tezcan, 2022) in LEAs. Therefore, research is required to identify the variables influencing novice professionals' willingness to keep learning and determining the extent to which various factors contribute to quality learning and development for success in their careers.

Numerous learning and development initiatives are employed to achieve a certain level of success, however hardly any empirically tested evidence is available to support such initiatives. Only few of the scholars have touched upon this specific area of research. Hirschi and Koen, for instance, assessed current learning and development programs in 2021, correlating each plan with career success of novice professionals. Strong empirical evidence connecting individual requirement with organizational initiatives, however, is still lacking, and the question of what factors contribute to the quality learning and development of professionals has also not been investigated up to the desired level. Likewise, de Jong, Schepers, Lages, and Kadić-Maglajić (2021) place added emphasis on the necessity for research into the extent to which development strategies are related to quality grooming and development of employees. Similarly, Solangi et al. (2021) reported that future research should be conducted to assess how various development efforts affect quality in staff learning and development. According to Ebner (2021), further research should be conducted in order to observe the impact of various learning and development strategies on staff members of services organizations. While Castillo (2022) contends that quality learning and development in LEAs is a new and expanding subject of study that needs more investigation. Additionally, neither general adult learning nor learning in the context of HRD have ever examined the aspects that affect an employee's ability to succeed in their profession. Therefore, these issues should be addressed in future studies. Hence, more research is required that should concentrate on previously unstudied components, such as practices for development of mental models (Lucrezia, Noether, & Sochet, 2021), career guidance and dialogues, team level learning, amongst others. Therefore, the rationale of present study is to create and evaluate a hypothetical model for quality learning and development of novice professionals by looking at how much an individual's continuous learning attitude moderated by talent-oriented development influences the association between important basic aspects of professional grooming affecting quality learning and development.

The current research will make two novel additions in the body of knowledge. To begin with, it discusses how investments by institutions on development and learning of young professionals are likely to affect quality of grooming, the subject that has received little attention in the literature (Bagdadli & Gianecchini, 2019). Along studying factors, that influence both learning and development and career success, the present study will explore the variables that influence employees' career oriented learning and development. These variables are preferred over other learning and development factors because these

are equally applicable to both, effective learning and development strategy and career success of professionals. No such research have yet been carried out which integrates both the constructs in this way. In addition, these learning and development factors hold good for all training institutions, HRD departments of profit and non-profit organizations as well as for LEAs. Moreover, these factors are part of a wholesome HRD system, which is an alternate to general training and development system. Since current and future success of an organization depends on quality development of young professionals thus, outcome of this research can be the turning point to align the needs of all stakeholders. The study would support and cultivate current and future professionals, junior leaders, and officers alike. Overall, the research is anticipated to be a worthwhile investment for the institutions.

Literature Review

Supporting Theory

Learning and development importance can be examined using the Human Capital Theory. According to the Human Capital Theory (HCT), learning and development are the most significant investments on human capital (Isa & Muafi, 2022). Most studies examining learning and development of professionals employ Human Capital Theory as their primary theoretical framework. Therefore, theoretical perspective of current study is supported by this concept since the mechanism linking human resource development to quality learning and development, is broadly explained by Human Capital Theory (Kankaew, 2020). The current research work contributes to Human Capital Theory (HCT) and research on quality learning and development by boosting the expounding power of Human Capital Theory through investigating the collective impact of numerous development strategies with mediating influence of 'attitude to continuous learning'. Because all of the learning and development elements described in this study affect the development of human capital, it will also be the sole addition to the literature concerning Human Capital Theory.

Learning and Development

Learning and development, as a discipline of management study and practice, is concerned with how humans, either individually or in teams, obtain a sensation of gaining anything which is available previously or generates in the sense of producing something entirely novel. Such procedures give professionals the chance to increase their own awareness and abilities to advance in their current or future careers. Learning is believed as a continuous process that occurs throughout the lifetime of every professional. It is well recognized that employees must develop their skills and competencies while carrying out their job responsibilities. When they are effectively engaged in the learning processes, they will be able to upgrade their knowledge and competencies. Development though learning has been discovered as an essential to the HR sector in more than two-fifths of

the organizations. While in a fifth of cases, it is a component of generalist HR duties (Atkinson, 2016). In 25% of the organizations, the learning and development strategy is in line with organization needs. Hence, learning and development initiatives are reckoned being fundamental to the organizations. The people can improve their knowledge and comprehension of many ideas and domains through counseling and other services. All individuals must develop their professional competence and abilities to be able to perform their employment obligations successfully. It is believed that education is crucial for ensuring that people have access to knowledge about a variety of concepts and topics as well as for fostering professionalism among them (Du Plessis & Sukumaran, 2015).

Quality Learning and Development

Initiatives like improvement through learning are vital to boost performance of employees (Mason & Brougham, 2020). It is one of the most essential methods of assisting individual employees in improving present skill set and knowledge by enabling them in acquiring fresh knowledge through quality learning (Shah & Steinberg, 2021). Development of human capital in HRD through education, training, human resources' learning and motivation are considered vital for quality grooming. However, absence of quality learning and development poses a great challenge to the maturity and execution of efficient HRD. Moreover, inadequate level of learning and development has been identified as an impediment to the effectiveness of the HRD system as well as quality learning and development of employees, especially of novice professionals. According to quality learning and development, employees are to be patronized and groomed. Nevertheless, most of the organizations have yet to grasp the strategic significance of quality learning and development of novice professionals (Otoo & Mishra, 2018). With the increasing significance of comprehensive quality management approaches in developing a competitive edge, organization should be able to execute total quality development practices in order to attract and motivate novice professionals (Obeidat, Tawalbeh, Akour, et al., 2019).

Career Guidance and Dialogues (CG&D)

Over the time and between cultures, the terms vocational guidance, educational guidance, and career guidance & dialogues have taken on different meanings (Hughes, Law, & Meijers, 2017). Career guidance and dialogues help people and groups in learning more about profession, training, and education. The ability of the career guidance & dialogues practitioner to assist this learning is crucial to the effectiveness of guidance program (Bimrose & Brown, 2015). The several types of dialogues include individual communication in groups or face-to-face conversation, which contains a range of rules of behavior and is essentially connected to an individual's personal development. Change happens due to dialogues because both parties learn something. Several dialogues' researchers have acknowledged this in their investigations. The dialogue's goal is to change and advance the current circumstance. Through career guidance & dialogues, learners may put their professional competences into practice and gradually build their professional identities (Savickas, 2019). Hughes et al. (2017) looked into the circumstances that allowed profes-

sionals (aged 16 to 24) to develop the professional abilities necessary for today's market and to forge a career identity. Such a practice-based, dialogical learning environment supports the application of quality learning and development practices, as well as greater learning motivation and assurance of professional development. Thus, it is hypothesized that:

H1: There is significant and positive effect of career guidance & dialogues practices on quality learning and development of novice professionals.

Team Level Learning (TLL)

The first noteworthy studies on team dynamics were made in the 1950s and 1960s, with a heavy emphasis on military units. The subject of the team is receiving increasing attention from organizational behavior specialists today (Aslam, Tahir, & Mehmood, 2023). They have investigated the subject by looking at variables that have an impact on how individuals behave in teams and organizations (Ifechi, Okoli, & Nwosu, 2022). The overall findings of a study showed that team level learning, knowledge performance, and financial success had strong, positive correlations with other aspects of learning organizations. According to a study, employees who report having friendlier social relationships on their teams also report higher levels of commitment to development activities and are less likely to have any plan to leave the organization. Watzek and Mulder (2019) assert that team members are more likely to pick up new skills at work than those who do not work in teams. The gap between team members who learn new things and those who do not is also wide. According to Clair et al. (2019), members' belief in the team's efficacy can also influence their attitude to learn and hence, is advantageous for quality learning and development process. Thus, it is hypothesized that:

H2: Team level learning has positive and considerable effect on quality learning and development of novice professionals.

Mental Model Development Practices (MMDPs)

The idea of a 'mental models' was first put forth by psychologist Kenneth Craik in 1943, who suggested that people have a small-scale picture of the functioning of the world in their minds. Years later, psychologist (Johnson-Laird, 2004) built on Craik's idea of a mental model in his research on human thinking. Postulations, abstractions, representations, and concepts that are deeply ingrained in our thinking are referred to as mental models. Our mental models strongly affect the decisions we take in life. As dynamic objects, mental models require constant acquisition and updating (Johnson-Laird, 2004). Professional training is one practical technique to develop mental models for this goal. A critical component of professional advancement is the creation and expression of mental models. However, while being a crucial constituent of development, research on mental models development approaches is quite scarce. Mental models development is important in challenging situations. Novice professionals should face challenging opportunities from

the start and must understand that the secret to their success is creating powerful mental models (Johnson & O'Connor, 2008). In conclusion, rather than just giving knowledge or information, HRD managers interested in quality learning and development of novice professionals should concentrate on helping aspiring leaders construct accurate and practical mental models. Thus, it is hypothesized that:

H3: Practices for developing mental models have a considerable positive impact on quality learning and development of novice professionals.

Attitude to Continuous Learning (ATCL)

The concept of continuous learning (Aksoy, 2008) was first debated in England in 1919 for educating adults working in the military services and industry. In the 1920s, John Dewey, Eduard Lindeman, and Basil Yeaxle were some of the people who used the term most frequently (Amasyali & Ersoy, 2009). Continuous learning gives people the opportunity to gain the abilities and information necessary for their success. Continuous learning is essential for the long-term and short-term development of professionals. It is also crucial for survival of both the stakeholder, hence the subject warrants discussion. Consequently, there are numerous researches on lifetime learning from a variety of domains and perspectives in the literature on continuous learning. The capacity to consistently learn new talents and enhance the one already have, has emerged as a crucial component of the recipe for professional success. Along with the ability to learn how to study, acquire knowledge from a variety of sources, and have a positive attitude toward learning, Professionals should be eager to learn and self-motivated in that direction. Ability to learn new things quickly and propensity to pursue new development possibilities, and other factors, are all considered to be part of one's attitude toward learning. The learners' choices for learning are frequently correlated with their attitudes. To understand how professionals view and interpret the quality of learning and development, attitudes toward continuing learning must be investigated (Sadler-Smith, 1996). Thus, it is hypothesized that:

H4: The relationship between factors like 'career guidance & dialogues', 'team level learning', and 'mental model practices', and quality learning & development of novice professionals is mediated by attitude to continuous learning.

Talent-oriented Development (TOD)

Talent oriented development requires a systemic view that calls for dynamic interaction between many functions and processes. It is about identifying, developing, motivating and promoting people who have a potential to succeed within an organization (Maqueira, Bruque, & Uhrin, 2019). It is an ongoing, proactive activity. The importance of talent management practices stems from their presumed impact on whether an organization will be successful or not within a competitive environment. Piech (2016) states that organizations that embed talent-oriented development into their very core can have better success over the long run. It has been stated that augmenting the organization's human talents will

lead to the organization booming (Suseno & Pinnington, 2018). Berger and Berger (2018) established that the choice of talent-oriented development strategy highly affects employees' attitude to learning. It is also been found that the pursuit of a strategy focusing on polishing talent has the greatest impact on the quality development process. Study by Anwar, Nisar, Khan, and Sana (2014) established that talent-oriented development and management of talent practices positively affect organizational strength of law enforcing forces. It is therefore, generally acknowledged amongst management researchers that talent-oriented development influences professional standards and quality development of human resource (Ali, Bashir, & Mehreen, 2019). Thus, it is hypothesized that:-

H5: Talent-oriented development (TOD) of novice professionals moderates the association between 'career guidance & dialogues', 'team level learning', 'mental model practices' and 'attitude to continuous learning' such that if the TOD is high then this association is more pronounced.

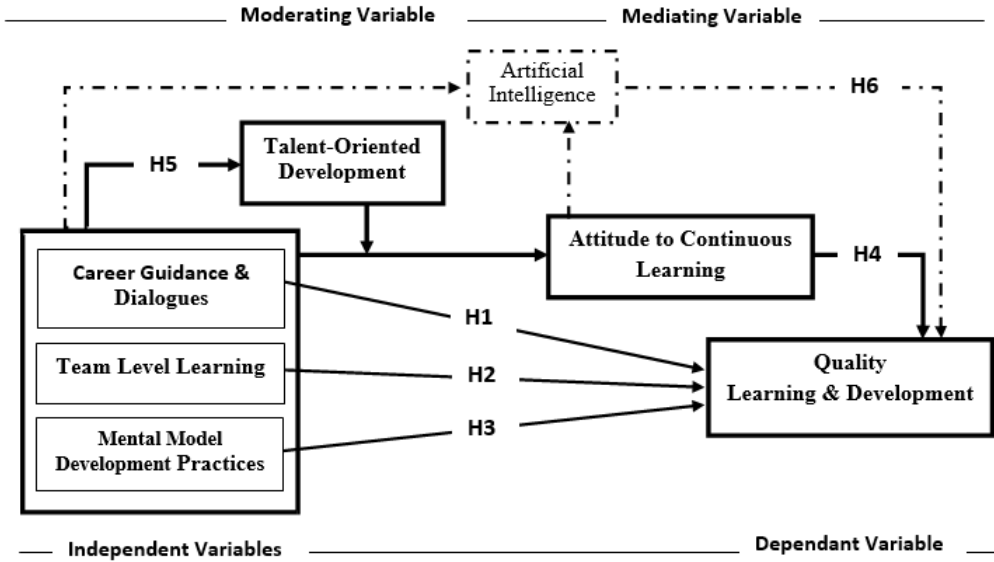
Significance of AI in Predicting in Quality Learning & Development

Artificial intelligence (AI) developments in recent years are predicted to have a significant impact on prospective competency requirements as well as open up new learning and development opportunities (Premnath, Arun, et al., 2020). According to research studies (Berk, 2021), AI can help a range of activities in learning such as personalized learning support and feedback, learning process support, assessment and evaluation, profiling and prediction, and competence management. A study looked into how AI might affect learner experiences, particularly academic support. They reached at the conclusion that AI can have a good bearing on learners as well as the institutions, groups, individuals, and processes that make up learning and development systems. Quality learning & development and AI are intricately linked (Sakka, El Maknoui, & Sadok, 2022). First, learning should focus on developing learners' AI-related competencies, as these will be obligatory in future workplaces where AI is used. Second, AI-based technology can be included in learning and development procedures, added to current learning settings, or used to benefit learning by utilizing intelligent environments. Thus, it is hypothesized that:

H6: AI has significance in predicting quality learning & development with high accuracy based upon independent factors (career guidance & dialogues, team level learning, and 'mental model practices') of the study.

The conceptual model of the study is illustrated in Figure-1 below:-

Figure 1
Conceptual Framework



Method

Sample

Pakistan's LEAs based at Islamabad, as well as the provinces of Punjab, Khyber Pakhtunkhwa (KPK), Baluchistan and Sind made up the research population for this study. For this study, 1000 professionals from all categories of LEAs were included in the research sample. The respondents who completed the survey were picked from several categories of professionals for both the Police and the CAFs, which comprised top management participation, new entrants named 'novice professionals', and lower and intermediate level employees of the organization. Each of these big groups had an accurate representation of 3%, 25%, and 72%, proportionately. As a result, the sample size consisted of 30 officers (middle and senior management), 720 professionals named as 'others' (remaining staff), and 250 fresh professionals (named as novice professionals). Total 750 correct responses were received which were selected for analysis. Stratified sampling was applied in the first stage and simple random sample for data collection was used in second stage.

Respondents consisted 58% from Police and 42% from CAFs, of which 20.6% were from Rangers, 17.4 % were from Frontier Corps and 4% were from others categories of professionals. Out of these, male comprised 94.8% (711) of the sample and females were 5.2% (39) were females. Data included 1.06% professionals having ages 20 years or less, 23.8% between 20 to 30 years or less, 45.6% between 30 to 40 years or less, 26.4% between 40 to 50 years or less, 3.06% between 50 to 60 years or less and none was beyond 60

years of age. Hence, about 70% of the respondents were under the age of 40, making them the majority of respondents. Likewise, 2.5% of the participants had fewer than two years of organization service, 14.2% between two to less than 5 years, 8.2% between 5 to less than 10 years, 65.4% between 10 to less than 15 years and 9.4% had worked for the organization for more than 15 years. Over 80 percent of the staff have worked for the particular organization for more than five years. Besides 23.2% of the respondents were having High School Certificates in education, 0.8% were with Diplomas, 36.4% were with Higher Secondary School Certificates, 32.2% were with Bachelor Degrees and 7.6% of the respondents were with Master Degrees in education.

Instruments

The questionnaire was adapted for survey consisting of all structured questions. A five-point Likert scale was used, with one representing a "Very Low" degree of dispersion and five representing a "Very High" degree. Survey questionnaire comprising of 44 items was adapted using number of sources. For dependant variable (QL&D), seven items were adapted from the study of [Wickramaratne \(2021\)](#). For independent variables, seven items each on career guidance & dialogues from the study of [Ibrahim, Aloka, Wambiya, and Raburu \(2014\)](#), and for team level learning from the study of [Carson and Mennenga \(2019\)](#), eight items on mental model development practices were adapted from the study of LaMere et al (2020). For mediating variable (Attitude to Continuous Learning), eight items were adapted from the study of [Hursen \(2016\)](#) and for moderating variable (talent-oriented development), seven were adapted from the study of Rita (2013).

Procedure

Professionals from different groups were approached during their routine working hours in discussion with the management of the relevant departments. Furthermore, the appropriate supervisors gave their consent for this process to be carried out. The survey was willingly performed, and SPSS 26 was used to code the survey results for analysis. Thereafter, specific module of SPSS for Artificial Intelligence prediction was employed using same data. Everyone who participated in the study was advised to carefully read the given instructions and mark the options that best matched how they felt on the whole and the circumstances they were in. The self-administered questionnaires were available in both English as well as in Urdu languages. The data was gathered over a 6 month period, with a time lag for distinct categories of professionals.

Results

Statistical analysis was performed to evaluate the study objectives. Confirmatory factor analysis was followed by descriptive, correlations, regression, mediation, moderation and AI analysis. Results along with interpretations are discussed in succeeding paragraphs.

Confirmatory Factor Analysis

A Confirmatory factor analysis was performed to establish that whether respondents perceive these construct distinct from one another and model is fit for the purpose or not. For this purpose, Structural Equation Modeling (SEM) was used through AMOS software to determine the discriminate validity of constructs and fitness of the model. According to the suggestion of Anderson and Gerbing (1988), full measurement models for study was run and the model fit statistics (CMIN/DF, RMSEA, IFI, TLI and CFI) have been collected and presented in the Table 1.

Table 1
Results of Confirmatory Factor Analysis

	Chi-square/df	RMSEA	IFI	TLI	CFI
Initial Values	2.680	0.070	0.790	0.750	0.780
Final Values	1.840	0.060	0.920	0.900	0.910

Table 1 indicates that initially value of Chi-square/df (2.68), which indicates good model fit (less than 3), RMSEA (.07) indicates fair fit (Between .06 to .08). But IFI (.79), TLI (.75) and CFI (.78) value were below 0.9, which is less than permissible threshold. However, correlating the error terms, fitness of the model improved Chi-square/df further dropped to (1.84) and RMSEA value dropped to (.06) which indicates good fit. Moreover, IFI (.92), TLI (.90) and CFI (.91) were also improved up to required level. The results of CFA indicated that the full CFA model was adequately fits the data well and the respondent perceived the items differently. Table 2 demonstrated the mean values, standard deviation and correlations among under study variables.

Table 2
Results of the correlation

Variable	M (SD)	1	2	3	4	5	6
1. QL&D	3.0 (.61)	1					
2. CG&D	4.0 (1.0)	.86**	1				
3. TLL	3.9 (1.2)	.80**	.23**	1			
4. MMDPs	4.2 (1.0)	.85**	-.46**	.12*	1		
5. ATCL	3.3 (2.9)	.81**	.72**	.76**	.79*	1	
6. TOD	3.1 (1.9)	.84**	.77**	.69**	-.08	1	

The results of the correlation revealed significant positive association among study variables i.e. between CG&D and QL&D ($r = 0.86$, $P \leq 0.01$); TLL and QL&D ($r = 0.80$, $P \leq 0.01$); MMDPs and QL&D ($r = 0.85$, $P \leq 0.01$); ATCL and other variables ($r = 0.81, 0.72, 0.76, 0.79$; $P \leq 0.05$) and, TOD and other variables ($r = 0.84, 0.77, 0.69, -0.08$; $P \leq 0.05$) This means that the more emphasis on factors like CG&D, TLL and MMDPs of novice professionals having good attitude to continuous learning with higher TOD, the higher will be the QL&D.

Regression results (Table 3) revealed that 77.5% of the variability in quality learning and development (QL&D) is due to CG&D, TLL, and MMDPs with other factors accounting for remaining 22.50%. Additionally, the fact that the value calculated by Durbin-Watson at the one percent (1%) threshold of significance is 1.797 (nearer to 2) indicates that the data fall inside the no autocorrelation region.

Variance analysis indicated that the independent variable's contribution to variance is only 77493.51, but error term (the residual) variability is 28878.03. This suggests that there are more variables directly influencing professionals' QL&D but are not included in our model. The F-statistic's likelihood is less than 1%, which indicates that the dependent variable in question is significantly influenced by independent variables. Model fitness is shown by ESS (Regression/Explained Sum of Square) being significantly higher than RSS (Residual Sum of Square). Combined effect of all independent variables can be verified by means of the F-statistics value, as in this case the calculated value of F-statistics is 18.57. The number, 3.32 (at 1% significance), is much lower than the computed value of F-statistics when we relate it to the tabular figure of F-statistics. Therefore, at the one percent (1%) threshold of significance, the combined substantial impact of all explanatory factors on the dependent variable of interest can be substantiated.

Table 3
Regression Results

R	R Square	Adj R Square	Std. Error of the Estimate	Durbin-Watson	F	Sig.
.88a	0.770	0.760	163.37	1.790	18.57	.000*
a. Predictors: (Constant), Career Guidance & Dialogues, Team Level Learning, Mental Model Development Practices						
b. Dependent Variable: Quality Learning and Development. *p <.05						

Table 4
Regression Results

Model		Un-standardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.648	0.199		13.297	.000*
	Career Guidance & Dialogues	0.109	0.046	0.191	2.381	.001*
	Team Level Learning	0.04	0.042	0.082	2.771	.000*
	Mental Model Development Practices	0.126	0.043	0.218	2.966	.003*

Table 4 results demonstrate that the CG & D value under Standardized Coefficients is + 0.191, indicating that CG & D will be deemed statistically significant as the computed t-Statistics value (2.381) is greater than the tabular numbers for t-Statistics (1.96) at the five percent (5%) threshold of significance. As a result, H1 is confirmed as true since, at a 0.05 threshold of significance, the CG&D of novice professionals affects quality learning and development significantly. Likewise, the β value of TLL under Standardized Coefficients is +0.082, indicating that TLL will be considered statistically significant because the computed t-Statistics value (2.771) is greater than the tabular results of t-Statistics (2.576) at one percent (1%) threshold of significance. Thus, at a significance threshold of less than 0.01 %, hypotheses (H2) is substantiated, highlighting that team level learning of novice professionals has a significant impact over quality learning and development. The third is the MMDPs value (under Standardized Coefficients), that stands as +0.218, indicating that MMDPs will be considered statistically significant since the computed value of

t-Statistics is 2.966, which is greater than the t-Statistics value given in the tables, which is 2.576 at the one percent (1%) threshold of significance. Thus, the hypotheses (H3) is also supported since MMDPs for novice professionals have significant impact on quality learning and development at the significance threshold of 0.01 %.

Mediating Effect

As the data in social sciences is always problematic due to the situation, nature and context of respondents so the bootstrapping technique for mediation in Hayes (2012) process method increases the likeability of realistic results because the sample is divided into many small bits and pieces and analysis is run on those smaller sized sub samples. The bootstrapping method was used to assess how the factor of attitude to continuous learning mediated the relationship between explanatory and dependent variables. According to Table 5, the average indirect effect of CG&D, TLL, and MMDPs on QL&D, the variable that is dependent, through the mediator (attitude to continuous learning) is significant. The bootstrapping values are .0075 to .0595 with a 95 % confidence Interval excluding zero. These results highlight that the relationship between QL&D and independent variables is partially mediated by professionals' attitude towards lifelong learning. As a result, the hypotheses (H4) is substantiated since, at a significant level of 0.05, ATCL mediates the relationship between CG&D, TLL, and MMDPs) and QL&D.

Table 5
Results of Bootstrap

	Index	SE (Boot)	LL95% CI	UL 95% CI
Results of Bootstrap for indirect impact of career guidance & dialogues, team level learning and mental model development practices on Quality Learning and Development	0.0265	0.0129	0.0075	0.0595

Moderating Effect

Finally results from Table 6 & 7 support Hypothesis 6 which claimed that Talent oriented development (TOD) of novice professionals moderates the association between 'career guidance & dialogues', 'team level learning', 'mental model practices' and 'attitude to continuous learning' a way that higher the TOD, stronger the association or lower the TOD, weaker the association.

Table 6 shows that in Model 1 without the interaction effect of Talent Oriented Development on CG&D, TLL, and MMDPs, the R square value is 0.729 this means that 72.9% of Attitude to Continuous Learning can be attributed to the factors such as CG&D, TLL, and MMDPs. However, after the moderation effect of (Talent Oriented Development * Independent Variables (CG&D, TLL, and MMDPs) in Model 2 the R square value is 0.789. This shows an R square change (ΔR^2) has taken place, indicating a moderate significant moderation effect of Talent Oriented Development on Attitude to Continuous Learning. Moreover all beta values are increasing after moderation effect and are also statistically significant at 0.5% level of significance as shown in Table 7 meaning that TOD is moder-

ating relation between CG&D, TLL, MMDPs and ATCL. Based on Table 6 & 7, it is clear that TOD has greater effect among novice professionals compared to experience ones in quality learning and development process (CG&D, TLL, and MMDPs).

Table 6
Results of Moderation

Model	R	R Square	Adj R Square	Std. Error of the Estimate
1	.856a	0.729	0.726	0.18164
2	.888b	0.789	0.768	0.53261

Predictors: (Constant), Talent Oriented Development, Career Guidance & Dialogues, Team Level Learning, Mental Model Development Practices

Hence, the H6 is approved as Talent Oriented Development moderates the relationship between 'career guidance & dialogues', 'team level learning', 'mental model practices' and 'attitude to continuous learning' at significance level $\alpha = 0.05$.

AI Prediction

The Artificial Neural Network (ANN) module of SPSS was employed to predict QL&D. ANNs are supervised learning methods that are influenced by how biological neural networks function (Cireřan, Meier, Gambardella, & Schmidhuber, 2010). This network is made up of interconnected artificial neurons, which multiply inputs with predetermined weights to produce output. Another neuron receives the signal after that. Through connections, this creates a network of neurons. The size of the batch, the rate of learning, the total number of layers that are hidden, and the number of neurons for each layer are all specified during the training of the ANN. Compared to all other techniques, ANN frequently works well with many forms of nonlinear and linear as well as other complex datasets. Table 5 shows a comparison of different ANN architectures to predict QL&D. The ANN 'L-N' symbol indicates that there are 'L' layers and 'N' neurons for each layer. When compared to various combinations, the outcome shows that combination 'ANN 4-32' obtains the highest F1 score of 0.50%. This is a result of the ANN architecture's enhanced capacity to recognize non-linear patterns in the data and accurately anticipate the results.

Table 7
Results of Moderation

Method	Accuracy	Precision	Recall	F1 Score
ANN 1-2	0.910	0.440	0.510	0.470
ANN 1-128	0.890	0.460	0.480	0.470
ANN 2-2	0.920	0.450	0.530	0.460
ANN 2-128	0.890	0.450	0.480	0.470
ANN 3-2	0.920	0.460	0.500	0.480
ANN 3-128	0.880	0.460	0.470	0.460
ANN 4-2	0.920	0.460	0.500	0.480
ANN 4-32	0.890	0.510	0.505	0.500
ANN 4-128	0.880	0.460	0.480	0.470

The values of accuracy are mostly above 90% indicating identified factors for learning

and development process as better predictors of QL&D under the given circumstances. Overall, results of AI are quite satisfactory as far as accuracy of prediction is concerned. Compared to SPSS analysis for predictors of QL&D, the values of AI show better accuracy (77% versus 90%). Hence, AI can be an effective technique to observe the prediction of QL&D factors for novice professionals.

Discussion

The rationale of the study was to investigate how various aspects contribute to quality learning and development in LEAs. Findings of the investigation support the significance of a novice professional's formative environment established in earlier research by ([Alnajim, 2022](#)). The study also adds to the body of knowledge showing how different elements of foundational coaching and educating circumstances influence cultivation of novice professionals in a variety of methods. The manner by which novice professionals are handled is not only considered as strengthening the process of quality learning and development but also one in which attitude is believed as crucial for professional competence by means of ongoing learning ([Andresen, Boud, & Cohen, 2020](#)). This attitude is energized more once the professionals are developed and groomed according to their true talent. Equipping coworkers to help each other during the process of quality learning and development may have an impact on fresh entrants' attitudes toward continuous learning given that coworkers' support is directly related to novice professionals' development. To help novice professionals evaluate their capabilities and limitations and find real talent for further development, it would be useful to involve them in-group activities. Professionalism must be cultivated for quality grooming and development ([Cain, 2020](#)), but it is also critical that organizations and peers consistently encourage novice professionals to thrive in their fields.

The outcomes of the correlation study support [Ramadhan et al. \(2021\)](#)'s conclusions that, when new entrants (novice professionals) are groomed objectively about their roles and trained according to their talent, it changes their learning attitudes and motivates them to improve their professional abilities, which is crucial for their career success. The study also strengthens ([Suwardi, 2021](#)) findings that developing new employees in a practical and focused manner increases both their likelihood of long-term success and their motivation to learn. Hence, factors identified in this study for development process are directly linked to the quality learning and development of professionals as well as strength of the organization. Professionals actively participate in programs for training and development once they realize the advantages of learning. In light of these implications, organizations may want to investigate how much learning and early development are valued, stressed and promoted via organizational policies and procedures. Nevertheless, as evidenced by studies, not all novice employees have the identical amount of access to opportunities for development. Hence, it would be prudent for organizations, to assess whether there are enough of such opportunities in order to guarantee that all novice professionals may realize their true potential. Research also shows that AI and learning have a manifold relationship ([Sakka et al., 2022](#)) thus; AI can also positively influence

prediction about quality learning and development process (Christian, 2022). Organizations must therefore, employ these cutting-edge methodologies to determine the true QL&D factors in order to better educate novice professionals in the right direction so that they can be groomed well for their betterment and that of the organization or society as a whole.

Recommendations

This study emphasizes the importance of targeted QL&D practices for novice professionals for their career advancement and organizational effectiveness. Therefore, by addressing their primary challenges, non-profit hierarchal organizations like the Police, CAFs, and others must concentrate on the quality learning and development of their novice employees. They must be inspired to grow and increase their professional standards because they are a strategic asset. Professionals who are happy and sincere increase productivity and benefit organizations. The following are some pertinent recommendations. To affect the quality learning and development of their subordinates, leaders must enforce a process of debate and discussion and get training in career guidance and dialogues. When designing development programs, team level learning should be used as validation test to uncover talent that would best suit novice professionals in the positions. To prepare their novice leaders for quick and effective decision-making, which is crucial for their professional success, LEAs and other similar larger organizations must turn to novel approaches like mental model development practices. It is strongly recommended that LEAs should begin implementing a variety of quality learning and development techniques and allocate funds for staff professional activities that are connected to organizational and job development objectives LEAs need to support the development of AI-related competencies, and AI-based technology should be applied in QL&D procedures, incorporated into already-existing learning practices, or by employing intelligent settings for learning.

Conclusion

Enhancing the skills of novice professionals so they may more productively contribute to the organization's efforts is one of the main objectives of HRD in LEAs. This study enables understanding of elements crucial for novice professionals to realize their quality learning and development, such as TLL (team Level learning), CG&D (career guidance & dialogues) and MMDPs (mental model development practices). Organizations can effectively manage novice professionals' quality development issues by putting more of an emphasis on practical policies than on the conventional and status quo methods. When employees' developmental needs are met, both their and the organization's prospects of success are increased.

Limitations

The most recent AI techniques should have been preferred over traditional SPSS methods of data analysis to predict quality learning and development of novice professionals. In addition, for more accurate results, a comparative study on the organizations further rich in quality learning and development practices and vice versa should have been conducted for improved reliability of study.

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