

Cognitive Control and Emotional Intelligence as Predictors of Personality Dynamics in Pupil Teachers

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Abstract

Personality dynamics are closely associated with the manner in which pupil teachers think, regulate their behaviour, respond to emotions and adjust to the demands of their academic and professional environments. Cognitive control and emotional intelligence may therefore serve as important psychological resources in the development of adaptive personality characteristics. The present study examined the relationships of cognitive control and emotional intelligence with personality dynamics and assessed their predictive contribution among pupil teachers. A quantitative descriptive survey based on a correlational-predictive research design was conducted with 120 pupil teachers selected through stratified random sampling. Data were obtained using measures of cognitive control, emotional intelligence and personality dynamics. Pearson's product-moment correlation and multiple regression analysis were applied to examine the relationships and predictive effects of the study variables. The results indicated a strong positive and statistically significant association between cognitive control and personality dynamics ($r = 0.736$, $p < 0.001$). Emotional intelligence was also found to have a significant positive relationship with personality dynamics ($r = 0.607$, $p < 0.001$). Further analysis showed that cognitive control and emotional intelligence together explained 61.0% of the variance in personality dynamics ($R^2 = 0.610$, $F = 91.38$, $p < 0.001$). Both variables contributed significantly to the prediction of personality dynamics, although cognitive control demonstrated a stronger predictive influence. The findings suggest that strengthening cognitive and emotional competencies during teacher preparation may promote self-regulation, adaptability, effective interpersonal functioning and professional readiness among future teachers.

Keywords: Cognitive Control, Emotional Intelligence, Personality Dynamics, Pupil Teachers, Teacher Education, Self-regulation.

Introduction

Human behaviour is influenced by the continuous interaction of cognitive and emotional processes that shape how individuals understand information, make decisions, regulate their responses and adapt to changing circumstances. These processes contribute to learning, problem-solving, interpersonal relationships and professional functioning. Individual differences in such abilities may therefore be reflected in behavioural adjustment and personality-related characteristics. Cognitive control is one important psychological capacity that supports goal-directed behaviour by enabling individuals to regulate attention and responses in accordance with situational demands (1). Cognitive control is generally understood through core executive abilities, particularly inhibitory control, working memory and cognitive flexibility (2). Inhibitory control helps individuals restrain inappropriate or

impulsive responses, working memory supports the temporary retention and use of relevant information and cognitive flexibility enables adjustment in thinking or behaviour when circumstances change. Together, these abilities assist individuals in planning, reasoning, decision-making and behavioural self-regulation, as shown in Figure 1 (3).

Emotional intelligence represents another important capacity associated with effective personal and interpersonal functioning. It broadly involves the ability to perceive, understand and manage emotional information in oneself and others (4, 5). Although emotional intelligence and emotional regulation are closely related, they are not identical concepts. Cognitive control primarily concerns the regulation of attention, thoughts and behaviour, whereas emotional regulation refers more specifically to the management and

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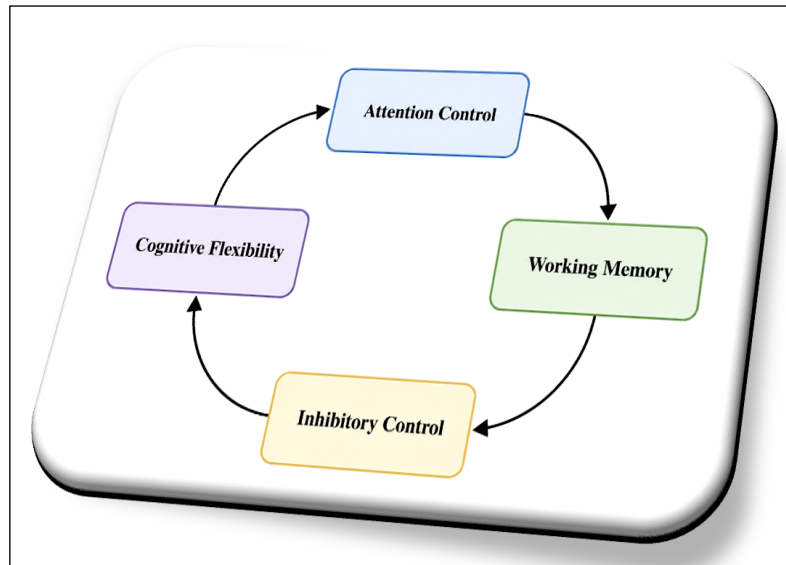


Figure 1: Components of Cognitive Control

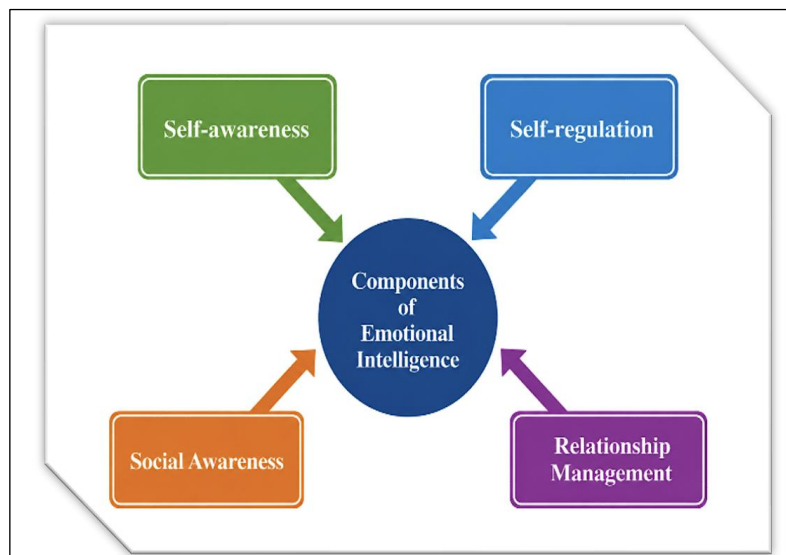


Figure 2: Components of Emotional Intelligence

modification of emotional responses. Emotional intelligence is broader and includes the recognition, understanding and effective use of emotional information. These capacities may contribute to self-awareness, empathy, effective communication and relationship management, as shown in Figure 2 (6).

The present study focuses on personality dynamics, which refers to the changing interaction of cognitive, emotional and situational processes that influence an individual's behavioural responses. Rather than viewing personality only as a stable collection of traits, this perspective recognizes that the expression of personality may vary according to how individuals interpret situations, experience emotions and regulate their

responses. This understanding is consistent with the Cognitive-Affective Personality System, which explains behaviour as an outcome of interaction among personal characteristics, cognitive-affective processes and situational conditions (7). Cognitive control and emotional intelligence may therefore be relevant to personality dynamics because both capacities influence how individuals process experiences and respond to personal, social and professional demands.

In the present study, personality dynamics include adaptability, emotional stability, self-confidence, empathy and professional responsibility, as shown in Figure 3. Adaptability reflects the capacity to respond constructively to changing circumstances, whereas emotional stability supports balanced

responses during demanding situations. Self-confidence may facilitate independent judgement and decision-making, while empathy supports understanding of the feelings and perspectives of

others. Professional responsibility further reflects appropriate and accountable behaviour within professional contexts.

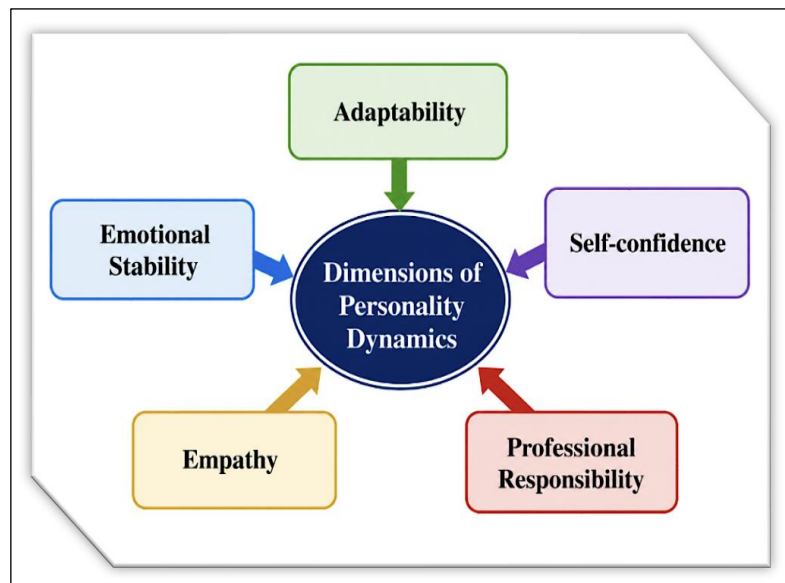


Figure 3: Dimensions of Personality Dynamics

These psychological capacities are particularly relevant among pupil teachers. Teacher education involves academic learning, classroom observation, teaching practice, interaction with learners and mentors and adjustment to different professional situations. Such experiences may require the ability to maintain attention, regulate behaviour, manage emotions, respond flexibly to changing classroom conditions and interact effectively with others. Previous research has also associated self-regulatory abilities with positive adjustment and achievement-related outcomes (8, 9). Therefore, examining the role of cognitive and emotional capacities may provide useful insight into the personality-related functioning of pupil teachers.

Recent research has further emphasized the relevance of emotional and cognitive capacities within teacher education and professional practice. A systematic review by Aldrup and colleagues highlighted the importance of teachers' emotion regulation in relation to teaching effectiveness (10). Similarly, a longitudinal study among pre-service teachers reported an association between emotional intelligence and emotion regulation during teaching practicum (11). Recent studies have also linked emotional intelligence with critical thinking disposition and resilience among prospective teachers (12), as

well as teacher self-efficacy during initial teacher education (13). Other research has examined the relationship of emotional intelligence with reflective and creative teaching (14), while cognitive flexibility has been associated with reflective teaching through factors such as teaching enjoyment and vitality (15).

However, much of the available research has examined these psychological characteristics separately or has focused primarily on outcomes such as teaching effectiveness, self-efficacy, resilience, critical thinking, or reflective teaching. Limited attention has been given to the combined role of cognitive control and emotional intelligence in explaining broader personality dynamics among B.Ed. pupil teachers. Moreover, the interaction between cognitive regulation and emotional competence remains comparatively underexplored in relation to adaptability, emotional stability, self-confidence, empathy and professional responsibility as personality-related dimensions. Accordingly, the present study examines the relationships of cognitive control and emotional intelligence with personality dynamics among pupil teachers and investigates their predictive contribution. The specific objectives are to determine the relationship between cognitive control and personality dynamics, examine the relationship between emotional intelligence and

personality dynamics and assess whether cognitive control and emotional intelligence significantly predict personality dynamics. The novelty of the study lies in bringing cognitive and emotional capacities together within a single predictive framework to better understand personality dynamics among pupil teachers.

Objectives of the Study

- a) To examine the relationship between cognitive control and personality dynamics among pupil teachers.
- b) To examine the relationship between emotional intelligence and personality dynamics among pupil teachers.
- c) To determine the predictive contribution of cognitive control and emotional intelligence towards personality dynamics among pupil teachers.

Research Hypotheses

H₀₁: There is no significant relationship between cognitive control and personality dynamics among pupil teachers.

H₀₂: There is no significant relationship between emotional intelligence and personality dynamics among pupil teachers.

H₀₃: Cognitive control and emotional intelligence do not significantly predict personality dynamics among pupil teachers.

Methodology

Research Design

The present study employed a descriptive survey design with a correlational and predictive approach to examine the relationship of cognitive control and emotional intelligence with personality dynamics among pupil teachers. The study also examined the predictive contribution of cognitive control and emotional intelligence towards personality dynamics.

Participants and Research Site

The study included 120 pupil teachers enrolled in Bachelor of Education (B.Ed.) programmes at selected teacher education institutions affiliated with Chhatrapati Shahu Ji Maharaj University, Kanpur, Uttar Pradesh, India. The participants were selected through stratified random sampling. The participants represented different genders and academic backgrounds and were undergoing professional teacher education during the period of data collection. The research was conducted in Kanpur, Uttar Pradesh, India, within the

geographical area of Chhatrapati Shahu Ji Maharaj University (approximate GPS coordinates: 26.4983° N, 80.2658° E)

Tools Used

Data were collected using three self-developed and standardized tools: the Cognitive Control Scale (CCS), Emotional Intelligence Scale (EIS) and Personality Dynamics Scale (PDS). The Cognitive Control Scale assessed attention control, inhibitory control, working memory and cognitive flexibility. The Emotional Intelligence Scale measured self-awareness, self-regulation, social awareness and relationship management. The Personality Dynamics Scale assessed emotional stability, self-confidence, adaptability, interpersonal competence, resilience and reflective behaviour. All instruments were developed after a review of relevant literature and consultation with experts in education and psychology and were administered using a five-point Likert scale.

Data Collection Procedure

Permission was obtained from the heads of the selected teacher education institutions before the collection of data. The purpose of the study was explained to the participants and proper instructions regarding the completion of the instruments were provided. Participation was voluntary and confidentiality and anonymity of the responses were maintained. The completed questionnaires were collected and coded for statistical analysis.

Statistical Analysis

The collected data were coded and Statistical analysis was performed using IBM SPSS Statistics, Version 26.0. The mean and standard deviation were calculated to describe the study variables. Pearson's product-moment correlation coefficient was used to examine the relationships among cognitive control, emotional intelligence and personality dynamics. Multiple regression analysis was performed to determine the predictive contribution of cognitive control and emotional intelligence towards personality dynamics. Standardized regression coefficients, adjusted R² and other relevant regression statistics were also examined. The level of significance was set at 0.05.

Results

The data were analysed to examine the relationships between cognitive control, emotional intelligence and personality dynamics among pupil

teachers. Pearson's product-moment correlation was used to test the relationships among the study variables, while multiple regression analysis was performed to determine the predictive contribution of cognitive control and emotional intelligence to personality dynamics.

Table 1: Relationship between Cognitive Control and Personality Dynamics among Pupil Teachers (N = 120)

Variables	N	Mean	SD	r	p
Cognitive Control	120	74.54	7.94		
Personality Dynamics	120	80.53	6.03	0.736	<0.001

Note: N = Total Number of Pupil Teachers, SD = Standard Deviation, r = Pearson Correlation Coefficient, p = Significance Level.

Table 1 presents the descriptive statistics and relationship between cognitive control and personality dynamics among the 120 pupil teachers. The mean score for cognitive control was 74.54 (SD = 7.94), while the mean score for personality dynamics was 80.53 (SD = 6.03). Pearson's product-moment correlation yielded a coefficient of $r = 0.736$, indicating a strong positive association between the two variables. The relationship was statistically significant ($p < 0.001$). The positive direction of the correlation indicates that higher scores on cognitive control were associated with higher scores on personality dynamics in the present sample. The magnitude of the correlation represents a substantial

Hypothesis 1

H₀₁: There is no significant relationship between cognitive control and personality dynamics among pupil teachers.

relationship between the two variables. However, because the analysis was correlational, the finding indicates an association and does not establish a causal relationship.

As the obtained p -value was less than the predetermined significance level of 0.05, the null hypothesis (H_{01}) was rejected. Therefore, a statistically significant positive relationship was found between cognitive control and personality dynamics among pupil teachers.

Hypothesis 2

H₀₂: There is no significant relationship between emotional intelligence and personality dynamics among pupil teachers.

Table 2: Relationship between Emotional Intelligence and Personality Dynamics among Pupil Teachers (N = 120)

Variables	N	Mean	SD	r	p
Emotional Intelligence	120	77.65	6.73		
Personality Dynamics	120	80.53	6.03	0.607	<0.001

Note: N = Total Number of Pupil Teachers, SD = Standard Deviation, r = Pearson Correlation Coefficient, p = Significance Level.

Table 2 presents the descriptive statistics and correlation between emotional intelligence and personality dynamics among the 120 pupil teachers. The mean score for emotional intelligence was 77.65 (SD = 6.73), whereas the mean score for personality dynamics was 80.53 (SD = 6.03). Pearson's product-moment correlation produced a coefficient of $r = 0.607$, indicating a moderate positive association between emotional intelligence and personality dynamics. This relationship was statistically significant ($p < 0.001$). The positive correlation indicates that pupil teachers with higher emotional intelligence tended to report higher levels of personality dynamics. The obtained correlation therefore suggests a meaningful association

between emotional competencies and personality-related characteristics within the present sample. However, as the analysis is correlational, the finding should be interpreted as an association rather than evidence of a causal effect.

Since the obtained p -value was lower than the 0.05 level of significance, the null hypothesis (H_{02}) was rejected. Thus, a statistically significant positive relationship was found between emotional intelligence and personality dynamics among pupil teachers.

Hypothesis 3

H₀₃: Cognitive control and emotional intelligence do not significantly predict personality dynamics among pupil teachers.

Table 3: Model Summary of Multiple Regression Analysis Predicting Personality Dynamics (N = 120)

Model	R	R ²	Adjusted R ²	SE of the Estimate
1	0.781	0.610	0.603	3.80

Note: R = Multiple Correlation Coefficient, R² = Coefficient of Determination, SE = Standard Error of the Estimate.

Table 3 presents the multiple regression model examining the combined predictive contribution of cognitive control and emotional intelligence to personality dynamics. The multiple correlation coefficient was $R = 0.781$, indicating a strong overall relationship between the two predictors considered together and personality dynamics. The model yielded an R^2 of 0.610, showing that

cognitive control and emotional intelligence together explained 61.0% of the variance in personality dynamics. The adjusted R^2 was 0.603, indicating that the model retained a substantial explanatory contribution after adjustment for the number of predictors. The standard error of the estimate was 3.80.

Table 4: ANOVA for Multiple Regression Model

Source	SS	df	MS	F	p
Regression	2687.52	2	1343.76		
Residual	1720.61	117	14.71	91.38	<0.001
Total	4408.13	119	—		

Note: SS = Sum of Squares, df = Degrees of Freedom, MS = Mean Square, F = F-statistic, p = Significance Level.

Table 4 provides the ANOVA results for the regression model. The regression sum of squares was 2687.52, compared with a residual sum of squares of 1720.61. The resulting mean square for regression was 1343.76, whereas the residual mean square was 14.71. The overall model was

statistically significant, $F(2,117) = 91.38$, $p < 0.001$. This indicates that the combination of cognitive control and emotional intelligence significantly improved the prediction of personality dynamics compared with a model without these predictors.

Table 5: Regression Coefficients Predicting Personality Dynamics

Predictor	B	SE	β	t	p
Constant	15.82	4.36	—	3.63	<0.001
Cognitive Control	0.51	0.08	0.52	6.42	<0.001
Emotional Intelligence	0.34	0.09	0.31	3.81	<0.001

Note: B = Unstandardized Regression Coefficient, SE = Standard Error, β = Standardized Regression Coefficient, t = t-statistic, p = Significance Level.

Table 5 presents the individual regression coefficients. Cognitive control had an unstandardized coefficient of $B = 0.51$ and a standardized coefficient of $\beta = 0.52$ ($t = 6.42$, $p < 0.001$). Emotional intelligence also contributed significantly, with $B = 0.34$ and $\beta = 0.31$ ($t = 3.81$, $p < 0.001$). The standardized coefficients show that cognitive control made the larger contribution to predicting personality dynamics when both predictors were considered simultaneously. The constant was 15.82 ($SE = 4.36$) and was statistically significant ($t = 3.63$, $p < 0.001$).

Overall, the regression findings indicate that cognitive control and emotional intelligence were both significant predictors of personality dynamics among pupil teachers, as depicted in Figure 4. Cognitive control showed the stronger standardized contribution ($\beta = 0.52$) compared with emotional intelligence ($\beta = 0.31$). Since the overall regression model was statistically significant and both predictors independently contributed significantly to the model, H_{03} was rejected.

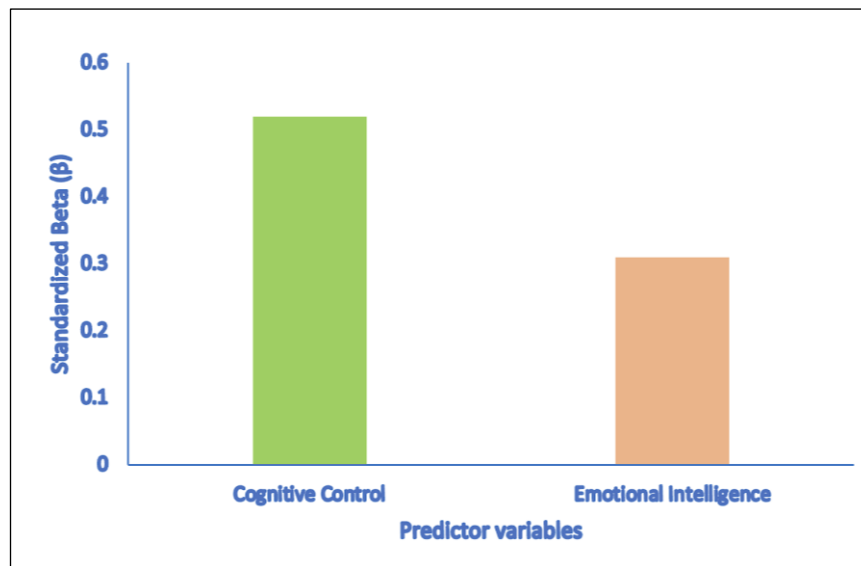


Figure 4: Regression Coefficients Predicting Personality Dynamics

Discussion

The present study examined the relationships of cognitive control and emotional intelligence with personality dynamics among pupil teachers and further assessed their predictive contribution. The findings revealed a strong positive and statistically significant relationship between cognitive control and personality dynamics ($r = 0.736$, $p < 0.001$). Emotional intelligence was also positively and significantly related to personality dynamics ($r = 0.607$, $p < 0.001$). Furthermore, the multiple regression model indicated that cognitive control and emotional intelligence together explained 61.0% of the variance in personality dynamics ($R^2 = 0.610$, adjusted $R^2 = 0.603$, $F(2,117) = 91.38$, $p < 0.001$). Both predictors contributed significantly, with cognitive control showing a stronger standardized effect ($\beta = 0.52$) than emotional intelligence ($\beta = 0.31$). The strong association between cognitive control and personality dynamics indicates that the ability to regulate attention, inhibit inappropriate responses, maintain relevant information and adapt behaviour may be closely related to how pupil teachers respond to academic and professional demands. This finding is consistent with the view that cognitive control is a flexible mechanism through which individuals regulate behaviour in response to changing goals and environmental demands (1). The significant predictive contribution of cognitive control also supports the broader understanding of executive functioning as an important foundation for goal-directed behaviour, planning, decision-making and self-regulation (2, 3).

Contemporary work on cognitive control further emphasizes the importance of proactive and reactive control processes in adapting behaviour to task demands (16). The present finding may therefore be interpreted as evidence that stronger cognitive control is associated with more adaptive and dynamically regulated personality functioning among pupil teachers. The significant relationship between cognitive control and personality dynamics may also be understood in terms of conflict monitoring and response regulation. Effective cognitive control enables individuals to detect competing demands and modify their responses when necessary. Such processes are particularly relevant in teacher education, where pupil teachers frequently have to manage competing academic requirements, interpersonal interactions, classroom-related responsibilities and changing situational demands. The established role of conflict monitoring in cognitive control provides a theoretical basis for understanding why stronger cognitive control may be associated with more adaptive behavioural patterns (17).

Emotional intelligence also demonstrated a substantial positive relationship with personality dynamics ($r = 0.607$, $p < 0.001$) and made a significant independent contribution to their prediction ($\beta = 0.31$, $p < 0.001$). This finding is consistent with the conceptualization of emotional intelligence as involving the recognition, understanding and effective management of emotional information (4, 5). In the context of teacher preparation, the ability to understand and regulate emotions may facilitate constructive

interpersonal behaviour, communication, empathy and adjustment to challenging situations. Teacher social and emotional competence has also been associated with effective classroom functioning and positive educational outcomes (18). The contribution of emotional intelligence is particularly relevant because teacher education involves substantial interpersonal and emotional demands. Pupil teachers interact with peers, teacher educators, school personnel and learners and may encounter situations requiring emotional awareness and appropriate regulation. Evidence concerning self-control and academic achievement further suggests that the capacity to regulate thoughts, emotions and behaviour is relevant to successful functioning in educational contexts (19). Thus, the present findings support the view that emotional competencies should not be considered separate from the broader psychological development of future teachers. The findings also have implications for teacher-education programmes. The significant contributions of both cognitive control and emotional intelligence suggest that professional preparation may benefit from activities designed to strengthen these competencies. Systematic evidence on emotional intelligence training for teachers indicates that structured interventions can be used to develop teachers' emotional competencies (20). In addition, research examining teacher effectiveness suggests that cognitive ability and personality-related characteristics can both contribute to instructional quality (21). These findings collectively indicate that teacher preparation may need to address not only subject knowledge and pedagogical skills but also psychological competencies that support effective professional functioning.

The positive contribution of emotional intelligence is also consistent with research linking emotional intelligence with psychological well-being and adaptive functioning (22). Academic and professional development may similarly benefit from emotional competencies, as emotional intelligence is associated with academic performance across educational contexts (23). For pupil teachers, therefore, the development of emotional intelligence may have implications extending beyond immediate emotional adjustment to academic engagement, interpersonal functioning and future professional performance.

The present results are also consistent with intervention-based evidence among pre-service teachers. Training programmes aimed at developing emotional competence have demonstrated the potential to strengthen relevant emotional skills during teacher preparation (24). Emotional experiences during teaching practicum may also fluctuate according to situational demands, interpersonal interactions and professional experiences (25). Developing emotional intelligence alongside cognitive control may consequently help pupil teachers respond more effectively to the emotional and situational demands encountered during professional preparation.

The findings further support the importance of social-emotional competence within teacher education. Pre-service preparation has been associated with the development of social-emotional competence among student teachers (26). Emotional intelligence may also contribute to longer-term professional outcomes. Development in emotional intelligence has been linked with professional identity, teaching enthusiasm and teacher-student relationships among novice teachers (27). These findings strengthen the practical relevance of the present study by suggesting that competencies associated with emotional functioning may continue to influence teachers beyond the period of initial professional preparation. The relationship between the study variables may also reflect the multidimensional nature of psychological competencies. Social-emotional competence among teachers can be assessed through multiple behavioural and situational dimensions rather than through a single characteristic (28). Similarly, executive functions are characterized by both unity and diversity, with different components contributing to complex cognitive activities (29). The present findings should therefore not be interpreted as suggesting that personality dynamics are determined by a single psychological ability. Rather, cognitive control and emotional intelligence appear to represent important and complementary resources associated with adaptive functioning.

The strong regression model, with 61.0% of the variance in personality dynamics explained jointly by cognitive control and emotional intelligence, provides further evidence of their combined

relevance. Previous research on executive-function interventions suggests that cognitive control can be influenced through appropriately designed activities and programmes, although the effectiveness of interventions may depend on the nature and duration of training (30). Cognitive control is also closely connected with emotional processes through interacting neural and psychological mechanisms (31, 32). This provides a plausible theoretical explanation for why cognitive and emotional competencies may jointly contribute to personality-related functioning. The stronger standardized contribution of cognitive control ($\beta = 0.52$) compared with emotional intelligence ($\beta = 0.31$) suggests that cognitive regulation may have a relatively greater role in explaining personality dynamics within the present sample. One possible explanation is that cognitive control directly supports the regulation of attention, working memory, inhibition and flexible responding, all of which are required when individuals encounter changing academic and interpersonal demands. Working memory, in particular, has been conceptualized as an important component of executive attention and controlled cognitive processing (33). However, the stronger contribution of cognitive control should not be interpreted as indicating that emotional intelligence is unimportant; rather, both variables made statistically significant independent contributions to the regression model.

Emotion regulation provides another possible mechanism underlying the observed relationships. The ability to regulate emotional responses enables individuals to modify emotional experiences and behavioural reactions according to situational requirements (34, 35). Emotional intelligence may support this process by helping individuals recognize and understand emotional information before responding to it (36). Consequently, pupil teachers possessing stronger emotional and cognitive regulatory capacities may be better positioned to maintain adaptive behavioural patterns across different academic and professional situations. The findings can also be considered in relation to personality development and self-regulatory functioning. Personality expression is influenced by the interaction of individual characteristics, cognitive-affective processes and situational conditions (37). From this perspective, personality dynamics are

not necessarily fixed; rather, behavioural expression may vary as individuals interpret and respond to different circumstances. The present results are compatible with this perspective because both cognitive control and emotional intelligence were associated with personality dynamics.

Self-efficacy and self-regulation may also be relevant to the observed pattern of findings. Individuals who can regulate their behaviour effectively may be better able to maintain confidence, persistence and adaptive responses when confronted with challenging tasks. Self-efficacy theory emphasizes the role of perceived capability in regulating motivation and behaviour (38), while social-cognitive perspectives on self-regulation highlight the importance of monitoring and regulating one's own thoughts, emotions and actions (39). These processes may operate alongside cognitive control and emotional intelligence in shaping adaptive personality-related functioning. The present findings also align with contemporary approaches that conceptualize cognitive control as involving identifiable behavioural and neural processes rather than as a single undifferentiated capacity (40). Research using theoretically guided cognitive-control tasks further demonstrates the multidimensional nature of cognitive-control processes and their measurement (41). Accordingly, future studies may examine specific components of cognitive control separately, such as inhibitory control, working memory and cognitive flexibility, to determine which components are most strongly associated with different dimensions of personality dynamics.

The findings have practical implications for teacher education institutions. Programmes for pupil teachers could incorporate structured activities involving attention regulation, problem-solving, reflective exercises, emotional awareness, conflict management, self-regulation and interpersonal communication. Such activities may help future teachers develop psychological resources that complement their pedagogical and subject-specific preparation. Emotional intelligence and related competencies may also interact with broader contextual resources. For example, social support has been associated with teachers' psychological well-being through pathways involving emotional intelligence and

related emotional competencies (42). Thus, development of individual competencies should ideally be accompanied by supportive educational and institutional environments.

Overall, the findings indicate that cognitive control and emotional intelligence are significant correlates and predictors of personality dynamics among pupil teachers. Cognitive control demonstrated the stronger predictive contribution, although emotional intelligence also contributed significantly to the regression model. The findings suggest that adaptive personality functioning among future teachers may be supported by a combination of cognitive regulation and emotional competence. Integrating these competencies into teacher education may therefore contribute to the broader development of self-regulation, adaptability, interpersonal effectiveness and professional readiness.

Conclusion

The present study investigated the relationships among cognitive control, emotional intelligence and personality dynamics among pupil teachers. It examined the predictive contribution of cognitive control and emotional intelligence to personality dynamics. The findings revealed that both cognitive control and emotional intelligence were positively and significantly associated with personality dynamics. Also, multiple regression analysis demonstrated that these two psychological constructs jointly accounted for a substantial proportion of the variance in personality dynamics, with cognitive control emerging as the stronger predictor. The results emphasize that personality development in pupil teachers extends beyond academic knowledge and pedagogical skills. The ability to regulate cognitive processes, manage emotions effectively, adapt to changing situations and maintain positive interpersonal relationships play a crucial role in shaping professional competence and personal effectiveness. Pupil teachers possessing stronger cognitive control and higher emotional intelligence are more likely to demonstrate resilience, self-confidence, adaptability, reflective thinking and effective communication, all of which are essential attributes for successful teaching in contemporary educational contexts.

The findings contribute to the growing body of educational psychology literature by providing

empirical evidence that cognitive and emotional competencies collectively influence personality dynamics among pupil teachers. The study also supports contemporary theoretical perspectives that view personality as a dynamic construct shaped through continuous interactions among cognitive, emotional and behavioural processes.

Overall, the study highlights the importance of integrating cognitive skill development and emotional competence training into teacher education programmes. Strengthening these competencies during pre-service teacher preparation may foster adaptive personality development, enhance professional readiness and prepare future teachers to respond effectively to the diverse academic, emotional and social challenges of twenty-first-century classrooms.

Educational Implications

The findings of the study have important implications for teacher education. Teacher preparation programmes should use activities that strengthen cognitive control, emotional intelligence, reflective thinking and self-regulation alongside pedagogical training. Workshops, mentoring, mindfulness practices, problem-based learning and social-emotional learning interventions can enhance these competencies. Such initiatives may contribute to the development of professionally competent, emotionally resilient and adaptable teachers capable of addressing the diverse demands of contemporary classrooms.

Suggestions for Future Research

Future studies may include larger and more diverse samples from different regions and universities to improve generalizability. Longitudinal and experimental studies may be undertaken to examine causal relationships between cognitive control, emotional intelligence and personality dynamics. Future research may also investigate additional psychological variables such as resilience, self-efficacy, psychological well-being, motivation and teacher effectiveness to develop more comprehensive predictive models.

Abbreviations

B.Ed.: Bachelor of Education, CC: Cognitive Control, EI: Emotional Intelligence, PD: Personality Dynamics.

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provided their valuable time and responses. The authors also acknowledge the support and cooperation received from the concerned teacher education institutions during the data collection process.

Author Contributions

Nazish Khan: Conceptualization, Study Design, Data Collection, Data Analysis, Interpretation of Findings, Manuscript Preparation, Critical Revision of the Final Version, Sarfaraz Ahmad: Data Collection, Interpretation of Findings, Manuscript Preparation, Critical Revision, Sabiha Bano: Data Collection, Interpretation of Findings, Manuscript Preparation, Critical Revision, Gyan Prakash: Data Collection, Interpretation of Findings, Manuscript Preparation, Critical Revision, Shadab Khan: Data Collection, Interpretation of Findings, Manuscript Preparation, Critical Revision, Akanksha Yadav: Data Collection, Interpretation of Findings, Manuscript Preparation, Critical Revision, Varisha Azmat: Data Collection, Interpretation of Findings, Manuscript Preparation, Critical Revision. All authors approved the final version of the manuscript for submission.

Conflict of Interest

The authors declare that there is no conflict of interest associated with this study or its publication.

Data Availability

The data supporting the findings of this study are available from the corresponding author upon reasonable request, subject to appropriate ethical and institutional considerations.

Declaration of Artificial Intelligence (AI) Assistance

During the preparation of this manuscript, generative artificial intelligence and AI-assisted technologies were used for language refinement, grammatical correction and improvement of clarity and presentation. The author reviewed and critically evaluated all AI-assisted outputs and takes full responsibility for the accuracy, interpretation, originality and final content of the manuscript.

Ethics Approval

Ethical principles applicable to research involving human participants were followed throughout the

study. Participation was voluntary and the participants were informed about the purpose of the study. Appropriate confidentiality and privacy of the participants' responses were maintained.

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