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Pre-Service Teachers' Personal Traits and Emotional Skills: A Structural Model of General Mental Ability

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Abstract

Teachers' personal traits and emotional skills impact the quality of the teaching they deliver. Therefore, this study analyzes the relationship between pre-service teachers' general mental ability, personal traits, and perceived emotional intelligence, so as to present a structural model of general mental ability. It uses a sample of 196 final-year teaching students at a university in Spain (80.1% women, $M_{years} = 22.96$). The results of the structural equation model analysis reveal that personal traits and intelligence variables contribute the most to explaining the pre-service teachers' level of training. Regarding the pre-service teachers' academic achievement, conscientiousness and intelligence are direct predictors; negative neuroticism and conscientiousness are indirect predictors. The findings highlight the importance of working on these variables in the study of teacher training because they relate to relevant aspects of teachers' work and can help to achieve a quality educational environment.

Keywords

pre-service teachers, general mental ability, personal traits, emotional intelligence, structural equation model

Pre-service teachers' training is an essential element in achieving academic success of their future students. In addition, this training is a matter of concern because well-trained teachers are needed who can adapt to the new challenges posed by the current context and society. Nowadays, society considers other elements and characteristics of people in order to succeed in school and in life (Pérez & Castejón, 2006).

This study presents a structural model for general mental ability (GMA) that links pre-service teachers' personal traits and emotional skills. It is critical to put the model's findings to use to incorporate new demands into universities and achieve various associated objectives, such as improving academic achievement (AA) (Chamizo-Nieto et al., 2021; Cho et al., 2022; Pozo-Rico & Sandoval, 2019; Shafait et al., 2021; J. Yoon & Choi, 2021); providing evidence of the relationship between AA and emotional skills (Gilar-Corbi et al., 2020); and highlighting the role of emotional intelligence (EI), focusing on the role of personal traits in the achievement of university improvement (Shafait et al., 2021), and linking it with teachers' skills (Vashisht et al., 2023).

Accordingly, this study introduces the following antecedents to facilitate its objective. Since AA is a metric that can be used to evaluate the degree or level of training, many studies have used intelligence quotient (IQ) as a variable that has a direct bearing on trainees' AA, demonstrating its importance (Collins et al., 2016; Hui-Hua & Schutte, 2015; Khalghani et al., 2016; Mankus et al., 2016; Sanchez-Burks et al., 2016). Various studies have discussed the relation between IQ and AA; for example, the results of some research confirm that IQ predicts neuropsychological performance in children (Foley et al., 2009), and in normal adults (Diaz-Asper et al., 2004). However, several studies have suggested that variables other than IQ can also contribute to individuals' different AA, such as personal traits (Chamorro-Premuzic & Furnham, 2004), EI (A. Costa & Faria, 2015; Lanciano & Curci, 2014), and engagement with learning, motivation, and EI (Wurf & Croft-Piggin, 2015).

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However, how, and to what extent, do other types of variables, such as personal traits or emotional skills, influence pre-service teachers' level of training? Teachers' personal traits and emotional skills can influence both the way that teachers teach and the teacher–student and student–student relationships established in the classroom. A classroom in which these skills are transmitted can contribute, through emotional regulation among peers, to a more positive climate and can generate a greater predisposition toward learning (Ros-Morente et al., 2017). To achieve this, it is advisable that teachers have competent personal traits and emotional skills. Ria et al. (2003) state that emotions have a major impact on professional activity, and it is common for the actions and decisions taken in class to be based on emotions. Jennings (2011) and Sutton and Wheatley (2003) also state the importance of personal traits and socioemotional skills in teaching work. Their studies have shown a positive relation between teachers' socioemotional skills and their quality and success in teaching, both in the educative process and in learners' development of prosocial behaviors. Several studies have further examined how teachers' personal traits and emotional adjustment and well-being are related (Fernandez et al., 2012; Pope et al., 2012; Qualter et al., 2012), how these factors influence teaching quality (MacCann et al., 2011; Mavroveli et al., 2009), and how these factors negatively affect interpersonal teacher–student relations (Bastian et al., 2005; J. S. Yoon, 2002; Triliva & Poulou, 2006). However, teacher training programs often do not reflect the need for emotion training (Chew et al., 2013; Dobbins et al., 2010; Naeem et al., 2014; Sanchez-Ruiz et al., 2013).

Ria et al. (2003) compare the personal traits and socioemotional skills of pre-service teachers with practicing teachers to reveal clear differences between the pre-service teachers' skills and the skills that the practicing teachers believe they need in order to teach successfully. Ria et al.'s (2003) results show that the practicing teachers are not prepared to enter the labor market and succeed in terms of managing their emotions. Accordingly, Weare and Gray (2003) recommend that teacher-training institutions should explicitly develop teachers' emotional skills. It is difficult for teachers to teach a skill they have not yet acquired, just as it is impossible to provide high-quality teaching if there are no well-trained teachers in the educational system. Based on the above, this study posits the following hypothesis:

H1: GMA and AA are positively related.

Personal Traits and AA

This study uses the key concepts of personal traits and AA to develop a structural model for GMA that can explain the importance of teachers' personal traits and emotional skills because several studies have demonstrated the mediative power of these variables (Gilar-Corbi et al., 2020; Shafait et al., 2021; Vashisht et al., 2023; J. Yoon & Choi, 2021). For example, the research has suggested that intelligence (i.e., what a person can do) is influenced by certain skills that facilitate understanding and learning, while personal traits (i.e., how a person does something) in influenced by certain traits that enhance or hinder the application of those skills (Vroom, 1960). Personal traits refer to an individual's particularities and attributes that distinguish them from others. It also refers to a set of stable and lasting temporal and situational characteristics that allow for the establishment of a characteristic interaction style in the physical and social context (Mõttus et al., 2017). Meanwhile, several studies have asserted that personal traits is related to AA (Barchard, 2003; Brackett et al., 2004; O'Connor & Little, 2003; Perera et al., 2015). For example, the Big Five Model asserts that individuals are characterized by patterns of thoughts, feelings, and actions that can be classified into five dimensions: neuroticism, extraversion, openness, agreeableness, and responsibility (McCrae & Costa, 2004). Accordingly, the Big Five traits can predict different educational outcomes. Of these, conscientiousness is the most significant correlate of AA (Briley et al., 2014). Conscientiousness refers to an individual's tendency toward organization, efficiency, reliability, rationality, and reflection. Coenen et al. (2021) explore the relation between conscientiousness, emotional stability, risk preference, and AA and reveal that conscientiousness is positively related to AA. Further, openness, considered as a tendency toward curiosity, flexibility, open-mindedness, and creativity is also positively linked to AA (Fogarty et al., 2014; Froiland et al., 2015; Karatas, 2015; Powell & Nettelbeck, 2014). Meanwhile, agreeableness (Poropat, 2009) and extraversion, described as an individual's tendency to be positive, firm, friendly, active, and sociable (Chamorro-Premuzic & Furnham, 2006), is also a predictor of AA.

Conversely, some studies have also identified negative associations between personal traits and AA (Bauer & Liang, 2003; Powell & Nettelbeck, 2014). For example, some studies have found that introverts are more engaged in study-related activities, while extroverts are more engaged in socialization-related activities (Chamorro-Premuzic,T & Furnham, 2005; Di Giunta et al., 2013). Neuroticism also has a direct, negative influence on AA (Hayat et al., 2020; Önder et al., 2014; Perera et al., 2015). Based on the above, this study posits the following hypotheses:

H2: Neuroticism and AA are negatively related.
H3: Extraversion and AA are positively related.
H4: Openness and AA are positively related.

H5: Agreeableness and AA are negatively related.
H6: Conscientiousness and AA are positively related.

EI and AA

The previous studies have asserted that it is critical to demonstrate the relation between EI and AA (Chamizo-Nieto et al., 2021; Cho et al., 2020; Pozo-Rico & Sandoval, 2019; Warrier et al., 2021) to encourage EI training in higher education institutions. Therefore, this study uses the relation between EI and AA as a key concept in its proposed structural model of GMA. EI concerns "the subset of social intelligence that involves the ability to monitor one's own and others' feelings and emotions to discriminate among them and to use this information to guide one's thinking and actions" (Salovey & Mayer, 1990, p. 189). Following the ability model of EI, EI comprises of: (a) recognizing emotions in oneself and others, (b) utilizing emotional information to facilitate cognitive decision-making, (c) understanding the effects of emotions, and (d) managing emotions in oneself and others (Mayer & Salovey, 1997).

The research has also extensively discussed the impact of EI on AA (Barchard, 2003; Qualter et al., 2012). For example, some studies have demonstrated the predictive capacity of EI based on ability (Mayer & Salovey, 1997), mixed models (Bar-On et al., 2005), and success in academic and work environments (Coetzee & Harry, 2014; Jones-Schenk & Harper, 2014; Vergara et al., 2015; Ybarra et al., 2014). Meanwhile, Salovey et al. (1995) reveal that components of EI that are generated from the Trait Meta-Mood Scale (TMMS), such as "clarity" and "repair," can positively increase AA according to various criteria determined by the TMMS. Further, Sánchez-álvarez et al. (2020) use three theoretical models of EI to investigate the association between EI and AA: (model 1) Mayer and Salovey (1997) define the ability model of EI as having four components; (model 2) Salovey and Mayer (1990) define three-branch self-perception model of EI; (model 3) EI mixed model because include cognitive emotional competences and other non-cognitive features like personal traits, motivational, and social aspects (Bar-On, 2006; Goleman, 1995; Petrides et al., 2004). They reveal better association between EI measured with ability instruments and AA.

Regarding the interventions aimed at enhancing emotional competence and measuring AA, some studies have found improvements in some subjects in early childhood, primary (Corcoran et al., 2018), and secondary (Murray & Malmgren, 2005) students as a result of teachers' improved emotional competence. Moreover, specific aspects of EI can predict pre-service teachers' AA, such as conscientiousness, adaptability, empathy, organizational awareness, and building bonds (Pope et al., 2012). In fact, in the study by Pope et al. (2012) these specific aspects significantly predicted AA after controlling for gender, whilst global EI did not significantly predict final AA. Conversely, other studies have found no link between EI and AA (Powell & Nettelbeck, 2014). Based on the above, this study posits the following hypotheses:

H7: The TMMS's EI component "attention" is positively related to AA.
H8: The TMMS's EI component "clarity" is positively related to AA.
H9: The TMMS's EI component "repair" is positively related to AA.

Hypothetical Model

The previous studies have demonstrated that IQ has a direct, positive impact on AA (Gil-Espinosa et al., 2019; King & Gaerlan, 2014). Conscientiousness is the most reliable predictor of academic performance and may be one of the most important factors that directly contributes to and influences AA (Bauer & Liang, 2003; Karatas, 2015; Ozbilir et al., 2015; Perera et al., 2015). Conversely, neuroticism is considered the source of hostility, tension, impulsivity, illogical thinking, shyness, low self-esteem, anxiety, and depression (McCrae & Costa, 1987; McCrae & John, 1992). Neuroticism is also strongly associated with the experience of negative emotions (Matthews et al., 2009). In sum, the previous studies' findings regarding the effects of EI on learning ability or AA are inconsistent. Therefore, this study examines the effects of EI on AA and includes other confirmed predictors of AA, such as personal traits and GMA, to examine the interrelationships and contributions of these three predictor types. It uses a sample of final-year pre-service teachers to assess whether these variables have different predictive capacities depending on the pre-service teachers' level of training. To better understand how the three different predictors of academic performance are related, this study employs a structural analysis method to identify the relationships between these variables. This study tests a theoretical model that incorporates the interrelations between these three predictor types using structural equation modeling (SEM). Accordingly, this study examines the direct and indirect relations between the predictors of interest and the variable criteria to determine the impact of the chosen predictors on pre-service teachers' AA.

Overall, this study's proposed model results reveal that GMA, personal traits, and EI all impact AA during the pre-service teachers' final-year training. The proposed structural model of GMA can explain the relationships between the cognitive, personal, and emotional variables studied herein, so as to improve the future

teacher training programs. Further, the study provides clear proposals for the future investigations that are based on the development of new teacher improvement programs derived from the principles and relationships evidenced from the proposed model. Therefore, the contribution of this study lies in its emphasis of the key variables that influence performance and teaching quality to empower university education, which indicates a clear innovation in the education field. The results have practical implications, since the model can be applied to real-world difficulties in teaching.

Method

Participants

This study used a sample of 196 final-year pre-service teachers undertaking the Degree in Early Childhood Education or the Degree in Elementary Education at a university in Spain as voluntary participants. The sample comprised of 80.1% women and 19.9% males, with a mean age of 22.96 years (standard deviation = 4.56). This study employed a convenience sampling technique. The participant inclusion criteria were as follows: (a) full-time enrollment in one of the two aforementioned degrees; (b) enrollment in the final year of study. The exclusion criterion was the improper completion of any of the measurement instruments utilized in this study. Regarding sample size, an adequate sample size is widely accepted as 10 cases/observations per indicator variable (Nunnally, 1967). Accordingly, this study used 10 cases for each of the 13 indicators (factorG1, factorG2, factor G3, factor G4, AA, mood repair, attention, clarity, neuroticism, extraversion, conscientiousness, openness, and agreeableness) (n = 130).

Measures

G-Test, Scale 3. This study used this scale to measure GMA in relation to four aspects of participants' IQ: series, classification, matrices, and conditions (Cattell & Cattell, 1994). Cronbach's alpha was .90 for the Spanish version. The Spanish version of the scale can be purchased at TEA Ediciones.

The Big Five Inventory (NEO-FFI). This version included 60 items (Costa & McCrae, 1999). The participants' responses were scored on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree) to measure the following personal traits dimensions: openness (α = .68), consciousness (α = .82), extraversion (α = .77), agreeableness (α = .82), and neuroticism (α = .90) (Aluja et al., 2005; Rogowska, 2015). The Spanish version can be purchased at TEA Ediciones.

The Trait Meta-Mood Scale-24 (TMMS-24). This scale contained 24 items to assess the participants' perceived intrapersonal EI using three factors (Fernandez-Berrocal et al., 2004): attention to emotions (α = .90), emotional clarity (α = .90), and emotional repair (α = .86). The participants' responses were scored on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). The TIMSS-24 instrument can be found in Salguero et al. (2010) and at https://emotional.intelligence.uma.es/documentos/pdf78.pdf.

Level of Training: AA Criteria. The AA variable was defined using the mean grade of each participant's academic record. The grades ranged from 1 to 10 and were rounded to one decimal place.

Data Collection

This study was conducted in accordance with the Declaration of Helsinki, and the protocol was approved by the university (blinded for review). All participants provided written informed consent. The instruments were applied in a collective manner during two scheduled sessions at the university (2019–2020 academic year). A researcher administered the measurement instruments to the sample. The general intelligence evaluation tool was applied in the first session, which lasted about an hour, and pertained to the participants' AA. The participants completed the personal traits and EI evaluation tools in the second session, which lasted an hour. The importance of answering all items was emphasized in both sessions.

Data Analysis

To account for the links between the variables, this study evaluated a structural model of GMA (as measured by IQ), personal traits, perceived EI, and AA. The model was estimated using SEM in AMOS 7. There were no data gaps. This study used the maximum likelihood technique due to its resilience to deviations from normality, especially when the skewness (I2I) and kurtosis (171) values are not high (West et al., 1995). This study also used the bootstrap approach for the parameter estimation as well as the chi-square index (χ2), comparative fit index (CFI), goodness-of-fit index (GFI), and the p of close fit (PCLOSE) to assess the model fit.

Results

The initial theoretical model (Table 1) shows a lack of fit to the data (χ^2 = 178.42, df = 37, p = .000, CFI = 0.30). Considering the changes suggested by the AMOS modification indices and the theoretical meaning of these

changes, this study made successive changes in the relations between the variables. The final model fits the data well ($\chi^2 = 50.33$, $df = 38$, $p = .087$, CFI = 0.95). Table 1 presents the fit values: all fit indices in the initial model are far from the desired values (Hu & Bentler, 1999), while the indices in the final model indicate a good fit.

Figures 1 (hypothetical model) and 2 (final model of AA) compare the models to the formulated hypotheses and include only significant paths ($p < .05$). Overall, the predictors can explain 15% of the variance in the pre-service teachers' AA. The two predictors for AA are conscientiousness ($\beta = .289$, $p = .012$) followed by IQ ($\beta = .265$, $p = .011$). Conversely, none of the factors related to EI have a direct and significant influence on AA. Neuroticism has an indirect effect on AA that is mediated via conscientiousness ($\beta = -.093$, $p = .004$).

Table 2 presents the overall values of the standardized direct, indirect, and total effects, in which all the path coefficients are statistically significant. Correlations are observed between attention and clarity (e7, e8 = 0.28), attention and mood repair (e7, e6 = 0.21), and clarity and mood repair (e9, e6 = 0.39). The results also show statistically significant direct relations between personal traits, such as neuroticism and extraversion ($\beta = -.270$, $p = .003$), and neuroticism and conscientiousness ($\beta = -.323$, $p = .009$). There are also direct relations between personal traits and perceived EI. Therefore, neuroticism influences mood repair ($\beta = -.383$, $p = .007$), clarity ($\beta = -.302$, $p = .010$), and attention ($\beta = .325$, $p = .009$); openness influences mood repair ($\beta = .218$, $p = .006$); and extraversion influences attention ($\beta = .160$, $p = .012$) and mood repair ($\beta = .162$, $p = .008$).

Discussion

The purpose of this research is to analyze the relationship between pre-service teachers' general mental ability,

Table 1. Fit of Hypothetical and Final Models.

Model	χ^2	*df*	*p*	χ^2/df	CFI	GFI	PCLOSE
Hypothetical	178.42	37	.000	3.98	0.305	0.814	0.000
Final	50.33	38	.087	1.23	0.950	0.943	0.845

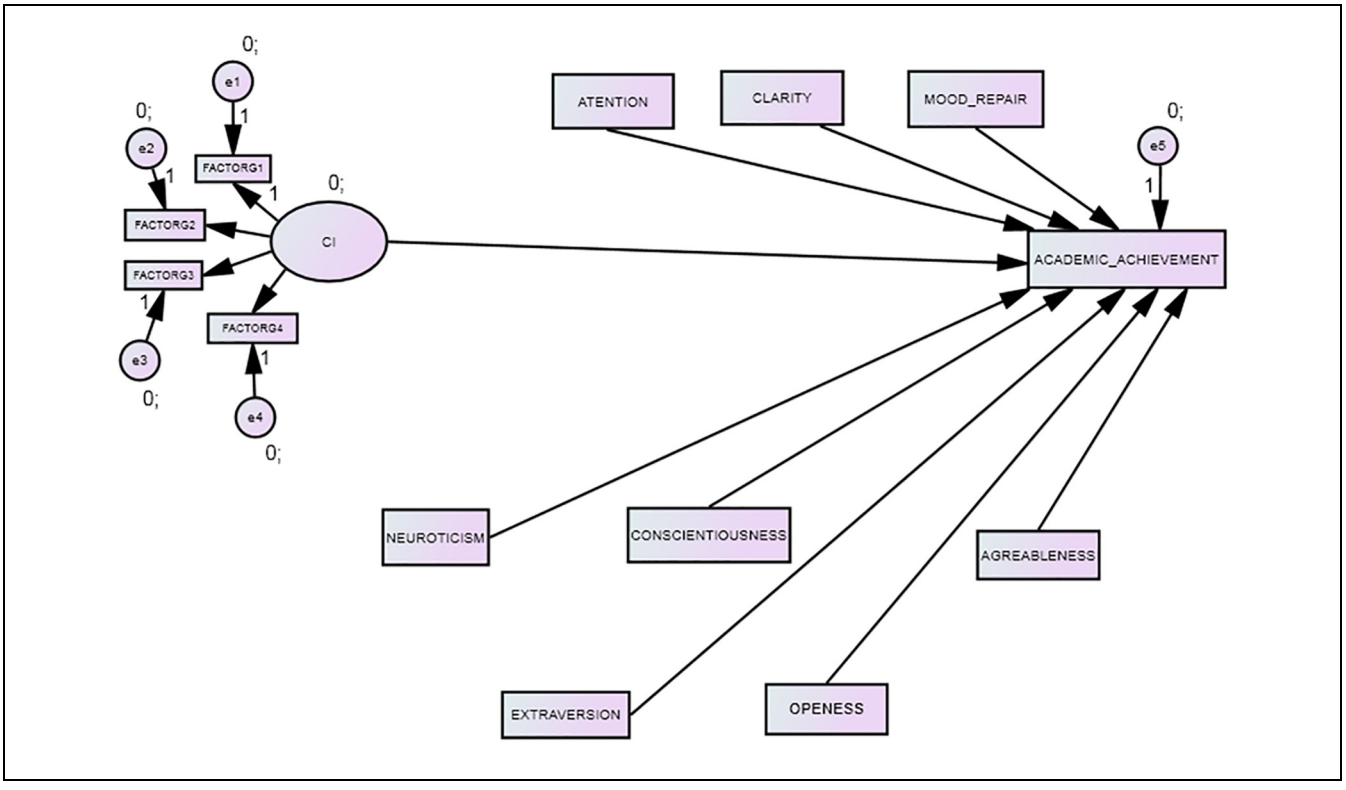

Figure 1. Hypothetical model.

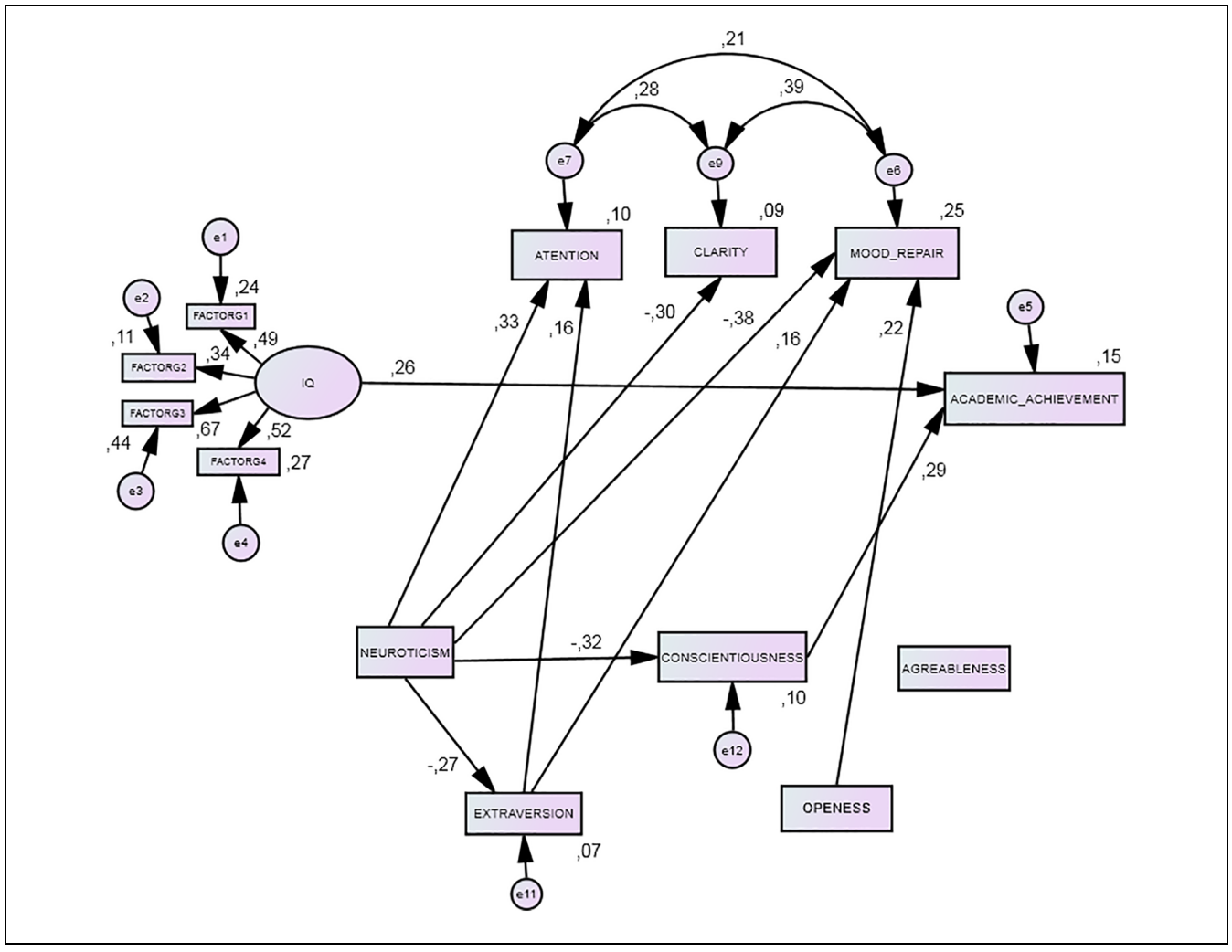

Figure 2. Final model of AA.

personal traits, and perceived emotional intelligence. Therefore, mainly, this study is founded on the premise that, among other skills, teacher training should encompass the development of intellectual, personal traits, and emotional skills. The findings indicate that the variables under study (personal traits and EI) impact the pre-service teachers' level of training. Specifically, IQ, conscientiousness (in a positive and direct form), and neuroticism (in a negative and indirect form) relate to the level of training as measured by AA. Moreover, general intelligence has a direct and positive influence on AA, which confirms H1, and is consistent with the previous studies (Gil-Espinosa et al., 2019; King & Gaerlan, 2014). Similarly, conscientiousness is the best predictor of academic performance, which confirms H6, and is consistent with the studies that imply that conscientiousness is one of the most crucial factors that directly contributes to and influences AA (Karatas, 2015; Ozbilir et al., 2015; Perera et al., 2015). One possible interpretation of this finding is that the most responsible trainees are substantially better at academic tasks than those with lower indices of responsibility (Bauer & Liang, 2003).

Meanwhile, the results show no relation between extraversion, openness, and agreeableness with AA, thus, this study rejects H3–H5. This contrasts with the previous studies, such as Smith-Woolley et al. (2019), who find that openness and agreeableness are linked to AA. Regarding neuroticism, some studies have found that AA and neuroticism are negatively correlated in the higher education context (Komarraju et al., 2011; Stajkovic et al., 2018). Neuroticism is considered to be derived from hostility, tension, impulsivity, illogical thinking, shyness, low self-esteem, anxiety, and depression (McCrae & Costa, 1987; McCrae & John, 1992). Considering the previous findings and this study's results, which reveal an indirect influence of neuroticism through responsibility for AA, neuroticism may have a negative influence on AA. Meanwhile, neuroticism has

Table 2. Significative Standardized Direct, Indirect, and Total Effects.

Variables	Effect	IQ	Neuroticism	Extraversion	Openness	Conscientiousness
Extraversion	Total	-	−0.270	-	-	-
	Direct	-	−0.270	-	-	-
	Indirect	-	-	-	-	-
Conscientiousness	Total	-	−0.323	-	-	-
	Direct	-	−0.323	-	-	-
	Indirect	-	-	-	-	-
Clarity	Total	-	−0.302	-	-	-
	Direct	-	−0.302	-	-	-
	Indirect	-	-	-	-	-
Attention	Total	-	0.282	0.160	-	-
	Direct	-	0.325	0.160	-	-
	Indirect	-	−0.043	-	-	-
Mood repair	Total	-	−0.426	0.162	0.218	-
	Direct	-	−0.383	0.162	0.218	-
	Indirect	-	0.044	-	-	-
FACTORG4	Total	0.519	-	-	-	-
	Direct	0.519	-	-	-	-
	Indirect	-	-	-	-	-
FACTORG3	Total	0.667	-	-	-	-
	Direct	0.667	-	-	-	-
	Indirect	-	-	-	-	-
FACTORG2	Total	0.339	-	-	-	-
	Direct	0.339	-	-	-	-
	Indirect	-	-	-	-	-
AA	Total	0.265	−0.093	-	-	0.289
	Direct	0.265	-	-	-	0.289
	Indirect	-	−0.093	-	-	-
FACTORG1	Total	0.489	-	-	-	-
	Direct	0.489	-	-	-	-
	Indirect	-	-	-	-	-

been substantially linked to negative emotions and conditions, such as anxiety and psychological distress (Matthews et al., 2009). This reinforces the importance of implementing skills-based training to encourage, regulate, foster, and develop optimal personal traits profiles to result in appropriate teaching practices and enable teachers to serve as role models for pre-service teachers.

Several studies (Amai, 2020; Austin, 2010; Wang et al., 2020) have sought to establish a link between pre-service teachers' personal traits and stress coping mechanisms, and have discovered that neuroticism is the most influential variable in trainees' coping; Conard and Matthews (2008) further suggest that neuroticism is important in interpreting students' perceived stress due to their workload. Therefore, to enhance pre-service teacher training, highly valuable initiatives include designing programs, training courses, and similar courses in higher education that assist the pre-service teachers in regulating their levels of anxiety and stress and teach them self-control and coping strategies.

The academic realm is an important context for developing emotional competence (Zeidner & Matthews, 2016) and is specifically linked to some EI variables. However, the literature has underexplored the relationship between overall EI and AA (Bar-On, 1997). Perhaps, as some authors have suggested, there are many ways in which EI can influence AA (Brunner, 2008). The current study's results reveal no direct or indirect effects of the EI variables on AA, thus, it rejects H7 to H9. Many studies have revealed that pre-service teachers' development of personal traits and emotional skills is essential. For example, the adult emotional learning model has the greatest impact on pre-service teachers, while those with an acceptable level of EI can more successfully deal with challenges in the educational environment (Berkovich & Eyal, 2015; Chan, 2008; Di Fabio & Kenny, 2015; Di Fabio & Pazazzeschi, 2008; Ju et al., 2015; López-Fernández et al., 2015; J. S. Yoon, 2002; Wurf & Croft-Piggin, 2015; Yin, 2015). It is important to speculate why this study did not observe an effect of EI on AA. Based on the literature, this study believes that during training, teachers do not recognize, work on, or evaluate pre-service teachers' competence; therefore, it is impossible to obtain evidence along these lines. This finding allows for the future research to explore teacher training and evaluation to reveal a relationship between EI and AA (Pozo-Rico & Sandoval, 2019) that is consistent with the previous studies (Chamizo-Nieto et al., 2021; Cho et al., 2022).

Finally, considering the previous studies on EI, there is a need for further university-based research on the impact of emotions on pre-service teachers as an explanatory variable for AA (Parker et al., 2004; Pope et al., 2012).

The current study's results also show no relationship between the emotional variables and pre-service teachers' training level, which may be explained by the fact that training programs do not explicitly focus on emotional skills; thus, they are not considered when evaluating learning and training levels. This is also reinforced by Ria et al. (2003) results, which indicate major differences between the personal traits and emotional skills of pre-service teachers and the skills considered necessary for practicing teachers.

The practical implications of this study's findings highlight the importance of focusing on the variables covered herein in the study of teacher training. Neuroticism is a prominent interpretation of students' stress due to their workload (Conard & Matthews, 2008); however, it is challenging to provide adequate training for neuroticism. (Shafait et al., 2021; J. Yoon & Choi, 2021). Conscientiousness is also relevant because it reflects the tendency to be responsible, organized, hard-working, goal-orientated, and adhere to established norms and rules. Consequently, these foundations should be included in teacher training as good educational practices that can increase the possibility of facing current challenges in the educational environment; they are also in line with the previous studies' proposals (Cho et al., 2022; Pozo-Rico & Sandoval, 2019).

Limitations of the Research

This study reveals that personal traits and IQ can explain 15% of the variance in AA, yet Kappe and van der Flier's (2012) combination of personal traits and IQ can predict 33% of the variance in AA, while other studies have explained up to 50% of the variance in AA (Cheung et al., 2015; Chew et al., 2013; Crick et al., 2015). Thus, in the current study, the proposed model's relatively small explanatory power could be explained by the inclusion of a larger number of measuring instruments to generate more robust evidence.

Conclusion

The previous studies' findings regarding the effect of pre-service teachers' EI on their AA are inconsistent. Therefore, this study explores the effect of pre-service teachers' EI on their AA and includes other confirmed predictors of AA (e.g., personal traits and GMA), so as to examine the interrelations between these three predictor types and present a structural model of GMA. The results indicate that conscientiousness and IQ are direct predictors of AA, while negative neuroticism and conscientiousness are indirect predictors. The findings highlight the importance of working on these variables in the study of teacher training because they refer to relevant aspects of teachers' work and have been demonstrated in the previous studies to help achieve a quality educational environment. Despite the empirical evidence that suggests that personal traits may be a more accurate predictor of AA than emotional or intelligence variables in higher education, the future studies could employ various measures to assess EI, including the use of instruments other than self-report ones.

This study did not discover a relationship between the emotional variables and the pre-service teachers' level of training. This can be partially explained by the fact that emotional skills are not explicitly included in teacher training programs; therefore, they are not considered when assessing learning and the level of training. Accordingly, this study believes that more research is required on pre-service teachers' development of personal traits and emotional skills. For example, the evaluation of AA should be expanded to include a review of pre-service teachers' current training in personal traits and emotional skills, if any.

Declaration of Conflicting Interests

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Ethical Consent

The study was conducted in accordance with the Declaration of Helsinki and obtained the approval of the University of Alicante Ethics Committee (UA-2021-12-09_2).

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Data Availability

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

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