



TEACHER'S PERSONALITY AND SCIENCE TEACHING COMPETENCE: THE MEDIATING EFFECT OF SCHOOL CLIMATE AMONG PUBLIC SCHOOL TEACHERS

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Abstract:

The purpose of this study was to determine the mediating effect school climate on the relationship between teacher personality and teacher competence. Utilizing quantitative, non-experimental design via correlational technique, data were obtained from 300 respondents of the study who are teachers among public elementary schools in Cateel (1 and 2 districts) Baganga, and Boston province of Davao Oriental. The researcher utilized a total population sampling technique and a face-to-face survey mode of data collection. The researcher also utilized the statistical tools mean, Pearson r , and Medgraph using Sobel z -text. From the results of the study, it was found that there is a high level of teacher's personality and science teaching competence. Moreover, there is a very high level of school climate. Also, results revealed that there is a significant relationship between teacher's personality and science teaching competence, a significant relationship between teacher's personality and school climate, and a significant relationship between school climate and science teaching competence. Further, school climate has a partial mediating effect on the relationship between teacher's personality and the science teaching competence of public school teachers.

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1. Introduction

The Filipinos are in crisis today as the state of science education in the Philippines is poor as assessed by a renowned Filipino scientist both locally and internationally. The results of the Third International Mathematics and Science Study held recently showed that the Philippines is ranked 38th rank among 40 countries studied. Teachers must be able to convey material through good pedagogical activities. However, the reality in the learning process is that the teacher still delivers materials through direct instruction, discussion, and assignments, and many teachers do not focus on students' scientific thinking skills. Teachers usually give assignments directly from textbooks or work on worksheets with the task of summarizing the material as a way for students to be more active (Fatmawati, 2021; Premacio, 2021).

Science teaching competence is important as students will also be scientifically competent as they can operate not only in school situations but also in a variety of conditions, demonstrating the autonomous applicability of various skills. Scientific literacy competence descriptions emphasizes contexts, like personal, local, and global contexts. Also, competency in teaching science is important as it will be useful to provide information for teachers, so they can improve the teaching quality that can enhance students' scientific literacy (Adnan *et al.*, 2021; Villalba-Condori *et al.*, 2020).

In this connection, there is a relationship between teacher personality and science teaching competencies as well as a positive relationship between teacher personality and science teaching competence together with science learning outcomes (Efgivia *et al.*, 2021). Moreover, mutual relations, cooperation, and various activities are the responsibility of every member of the school community. Since the school climate refers to various values that are key to the development of a teacher's personality, teachers emphasize commonality. Communalism is related to more positive behavioral strategies and a teacher's consistent enforcement of rules, which is associated with a more positive school climate (Martinson & Zydziunaite, 2023). Lastly, the environment refers specifically to characteristics of the environment of both the school and the teachers' community that support success and education through disciplinary and school climate as well as through cultural norms and values that motivate teachers to achieve higher goals. The environment in which the teacher's schools and communities live their lives affects science competence and thus behavior and development (Charro *et al.*, 2021).

There was an urgency to conduct this study because, as a teacher who is presently assigned Davao Oriental, the existing situation in the public schools shows that there are still a number of problems and issues involving the science public school teachers despite the implementation of various national and local programs which aim to provide science teachers with a variety of benefits, thereby improving their school climate and science teaching competence. Furthermore, there are no similar studies which deal with the

mediating effect of school climate on the relationship between teacher's personality and science teaching competence in Region XI or specifically in Davao Oriental. Existing studies are only on the Assessment of Science Teacher Competence in Teaching Secondary Science with Spiral Progression Approach by Maing *et al.* (2019) and Competence of Secondary Science Teachers in Developing Self-Learning Modules by Auditor and Mutya (2022). Also, the outcome of the study will also help become an asset to the world of literature. Hence, this study is a generation of new knowledge that can give specific contributions to the field of science education. Furthermore, results can be used to develop or augment the practices of the teachers as to their personality, science teaching competence, and school climate. Thus, the need to conduct this study.

2. Literature Review

There are review of related literature which is discussed in support of the study. The teacher's personality, as the independent variable of the study is very important for a teacher. The most important factor of a teacher is how his personality, which determines the teacher to be a good educator, coach, and guide for students. A teacher is not only required to be capable of interpreting learning, in the form of teaching and learning activities, but the most important thing is how a teacher must be able to make the teaching and learning process a place for the formation of personality competencies and good behavior of students. Teaching is a human interaction and the personality of the individual who is teaching influences this interaction. Teachers' personality greatly impacts their teaching style, which has a direct effect on student learning. Teacher personality plays a role in the sharing of knowledge with students and it is important to understand that just as students have various learning styles, teachers have various teaching styles which are the product of a teacher's personality (Sandlin, 2019; Sukawati *et al.*, 2020).

As noted, extraversion is positively associated with positive emotionality, number of mates over the lifetime, and mortality and negatively associated with depression, anxiety, and feelings of insecurity. Highly extroverted people tend to strive for interdependence and intimacy, create positive social environments in the course of their interactions with others, and be biased toward attending to positive stimuli. Extraversion is a valid predictor for teacher training proficiency criteria. Extraversion and certain learning styles are statistically significant predictors of job performance levels. This shows that the personality variable of an individual is responsible for measuring work performance (Kell, 2019; Ramdani *et al.*, 2020).

In addition, agreeable people are polite, trusting, flexible, cooperative, soft-hearted, forgiving, good-natured, and tolerant. Agreeable people also have a positive outlook on life. They feel that individuals are inherently trustworthy, nice, and honest. As a result, those who are agreeable are willing to sacrifice their enjoyment for the sake of others. Agreeableness describes teachers' traits to be accommodating, collaborative, patient, helpful, calm, reasonable, loving, compassionate, and polite. A high score

suggests clear indications of a teacher-educational context fit. Teachers with this personality trait tend to be sympathetic, respectful, caring and sincere. These qualities are aligned with the goals of quality education (Britwum *et al.*, 2022; Kok & Meyer, 2018).

Moreover, conscientiousness alludes to the ability to accomplish tasks efficiently, meticulously, and competently. Examples of conscientious individuals are serious, responsible teachers, who are highly efficient in their work and provide students with high-quality instruction. Conscientiousness is the trait that is associated with diligence, self-discipline, punctuality, and general competence. Conscientiousness is the personality dimension that correlates the strongest, out of all personality dimensions, with overall performance. Conscientiousness has two attributes: sustained effort and goal-setting which contribute towards success. Those who are conscientious usually have high achievement. (Chia *et al.*, 2022; Obilor & Sakpege, 2022).

On Science teaching competence as the dependent variable, Science teachers' competencies are expected to result in effective teaching. Science teachers must recognize how students make sense of scientific ideas to provide effective science instructions. Successful teaching can be achieved if the teacher can plan and implement instructions to assist students in achieving specific pedagogical goals and objectives and assess the teaching results to be used as learning reflection material. The knowledge, skills and motivation which science teachers are asked to develop during education include professional knowledge, motivational orientation and self-regulation, as well as beliefs, values and goals related to teaching and learning. The knowledge and skills needed for scientific problem-solving and reasoning in science are necessary elements of any competent science teacher (Eliyawati *et al.*, 2023; Krell *et al.*, 2023).

In today's world, almost all the information, concepts, and materials in science are readily available on the internet. It can be readily accessed by the teachers and students. As part of the teachers' effort in the science lesson preparation competency, teachers are innovative in surfing the web for the different supplementary materials to be used in their teaching. Having an internet connection allows the teachers to be able to visit reliable websites for the suggested activities, situations, problems, and materials related to the present lesson because some of the books that are available in libraries are outdated. Content representation has widespread usage as a pedagogical tool in the field of science pedagogical content knowledge for attaining many purposes, such as to enhance science teachers' science lesson preparation competency (Briones, 2018; Can, 2019).

Moreover, teaching performance is a teacher's ability to adapt to a dynamic working environment, fulfilling their designated roles and passing knowledge to other generations. The teaching profession continues in its specific mission, aiming at the development of a harmonious personality, knowledge, wisdom, goodness, and creativity, and thus contributes to the development of education, science, culture, and health for the welfare of society as a whole. The most influential source of teacher efficacy is science teaching performance competency and accomplishment, or mastery experience. Engaging in science, as both a learner and teacher, develops mastery

experience. These experiences provide evidence of a teacher's capacity to engage students with science, directly impacting teacher efficacy (Javorcikova *et al.*, 2021; O'Dwyer *et al.*, 2023).

In addition, professional development should help teachers be more effective in supporting students' learning by facilitating teachers to improve not only their knowledge and practice but also their conceptions and beliefs. Professional development focusing on science teachers has a significant impact on teacher science professional development competency to include how they implement and use innovative curricula. Effective professional development opportunities are important for helping teachers improve their understanding of the nature of science, and research with teachers shows that science teacher professional development competency programs can improve teachers' nature of science views (Bell & Sexton, 2018; Kartal *et al.*, 2018).

Further, teachers' perceptions of student motivation and behavior have the most significant impact on school climate which meaningfully predicts one's teaching efficacy. Workload stress and student behavior stress are also factors that determine one's sense of teaching efficacy. School climate influences organizational performance, satisfaction levels, and work motivation. It could enhance school educators' endeavors to fulfill their needs at the workplace. School climate can foster resilience or become a risk factor in the lives of people who work and learn in school. (Alqarni, 2020; Lacks & Watson, 2018).

Moreover, on school climate as the mediating variable of the study, school climate is important in building healthy relationships in school. There are innovative ways to improve an effective school and work environment for teachers. School climate describes the standard of learning environment felt by the teachers, staff, students, and other members of the school community. There are various perceptions people have about the policies, practices and processes of schools. Assessing the perspectives of teachers on school climate is one of the important measures of effective leadership. School climate acts as a bridge between leadership and learning in schools. Building the bridge occurs by manifesting working conditions, caring about teachers' well-being, and supporting instructional practices (Hidayati, 2022; Veletic *et al.*, 2023).

Also, a good personality is of utmost importance to a teacher. The most important factor of a teacher is how the good personality determines the good teacher, and mentor to the students. A teacher is not just required to let students learn through teaching and learning activities, but also learn to teach as an event for the establishment of science teaching competency and positive behavior of students. Implementing group meetings aims to create a positive school climate. During the process, facts and problems are discussed together as students can present both individual and collective creativity such as project development, essays, and teaching competence, among others (Abbasova, 2021; Sukawati *et al.*, 2019).

School climate has been described as the heart and soul of a school or the amount of teacher morale and empowerment. School climate is also linked to the personality of the teacher and the school, the health of the organization, and the spirit or heartbeat of the school. School climate has also been expressed as the essence that leads a student, a

teacher, and an administrator to love the school and look forward to being there each school day. Relatedly, the school climate is linked with the personality of the teacher and the organization. School climate describes the feelings and attitudes about the school shown by students, teachers, and parents, where these attitudes are based on their perceptions of school in an academic context. Students' perceptions about school are closely related between teachers and students, the relationship between students and students is a special characteristic in the classroom that affects student learning (Ningsih *et al.*, 2020; Prado, 2022).

Furthermore, caring relationships are important in every school that manifests a positive school climate. Relationships with teachers foster student development and are connected with better school performance, science teaching competence, and willingness to take on challenges. In another study, there are three domains of school climate namely: engagement (teaching competence, relationships, and participation), safety (emotional, physical, and emergency readiness), and environment (physical, instructional, and discipline (Darling-Hammond & DePaoli, 2020; Payne, 2018).

Moreover, this study was anchored on the Teacher Competence Theory by Medley (1977) wherein teacher competence is viewed as any single knowledge, skill, or professional value position, the professional of which is believed to be relevant to the successful practice of teaching. Competence that teaches believe, know, and do refer to specific things, but no others are relative to the effectiveness of this attribution. Competence refers to the repertoire of competences a teacher possesses. Overall competencies are a matter of the degree to which a teacher has mastered a set of individual competencies, some of which were more critical to a judgment of overall competence than others. Teacher competence is the knowledge, abilities and skills a teacher possesses. It is a stable characteristic of the teacher and does not change appreciably when the teacher moves from one situation to another.

In support of the study was the Behavioral Theory by Skinner (1957) which highlights the behaviors of teachers, which render them as effective or ineffective. Behavior comprises foundation, interplay, importance of objectives and assistance as the range of interconnected actions required for good teaching. Further, the understanding of good teaching based on teacher characteristics or personality traits rests in the relationships between teachers and students. Good teachers are surrounded by human qualities of understanding, self-assurance, regard for others, empathy, fair play, appreciation, adaptability, objectivity, interest, friendliness, maturity, credibility, trustworthiness, humor, polished delivery and ability to engage which allows them to influence students.

Additionally, this study was also supported by the Social Cognitive Theory by Bandura (1993) which has been a popular theoretical explanation for the climate-achievement link as it relates to students and staff. Authors have suggested that people need collective efficacy to activate the influence of the school climate, in particular for the aspect of the academic press, on their achievement. This approach has also been applied

in explaining the impact of staff perspectives on student achievement. Teachers' self-efficacy beliefs were significantly related to students' academic achievement.

3. Material and Methods

There was a total of 189 respondents in the study who are public school teachers teaching Science subjects in the elementary and secondary public schools in Cateel (Districts 1 and 2), Baganga and Boston, all under Davao Oriental. With a desire to give everyone a chance to be included in the study, a total population sampling was used. Total population sampling is a design where you choose to examine the entire population that has a particular set of characteristics such as specific experience, knowledge, skills, and exposure to an event (Laerd, 2012). In particular, the respondents are public elementary and secondary school teachers under the Science department which included those who are full-pledged Science teachers and non-Science teachers but who are presently handling or teaching Science and who are currently employed for the School Year 2023-2024 as they can answer the survey questionnaire considering that they are in the same working situation with the full-fledged Science teachers and they are the ones who are in the position to provide useful information to test the hypothesis of the study.

Those teachers who are not teaching Science subjects were excluded as respondents and those even if teaching Science subjects under the elementary and secondary public schools in areas outside of Cateel (Districts 1 and 2), Baganga and Boston, Davao Oriental were excluded in the study, for they were in different work environment and supervision. Also, teachers who are working in private schools whether in the same identified areas including those teachers who hold managerial or supervisory positions are excluded from the study.

The respondents were chosen accordingly to answer the questionnaire with confidentiality. The target respondents were free to decline from participating in the survey. They were not forced to answer the research questionnaire and were encouraged to return the same to the researcher for its automatic disposal. Moreover, they can withdraw anytime their participation in the research process if they felt uncomfortable about the study since they were given the free will to participate without any form of consequence or penalty.

This study was conducted in public schools of Cateel (Districts 1 and 2), Baganga and Boston, Davao Oriental which is part of Region XI, Philippines. Region XI is located in the southeastern portion of Mindanao, and Mindanao consists of five provinces, namely: Compostela Valley, Davao del Norte, Davao del Sur, Davao Oriental, and Davao Occidental. Davao Oriental, as the locale of the study is a province in the Philippines located in the Davao Region in Mindanao. Its capital is the city of Mati, and it borders the province of Davao de Oro to the west, and Agusan del Sur and Surigao del Sur to the north.

The researcher believed that this was the appropriate locale for the study because it has a good number of respondents who can ensure concrete results of the study and

the researcher has not come across a study using the variables on teacher personality, science teaching competence and school climate among public school teachers. Moreover, as a researcher who is presently teaching science subjects and whose area of assignment is in Cateel, Davao Oriental has observed that the existing situation in the public schools shows that there are still a number of problems and issues involving the science public school teachers despite the implementation of various national and local programs which aim to provide science teachers with a variety of benefits, thereby improving their school climate and science teaching competence.

This study utilized a quantitative non-experimental design of research using a correlational technique. This kind of design according to De Vaus (2001) provides summary data specifically measures of central tendency including the mean, standard deviation and correlation between variables or employing methods of analyzing correlations between multiple variables by using tests such as Pearson r and regression analysis. Generally, correlational studies use independent and dependent variables, but the effect of the independent variable is observed on the dependent variable without manipulating the independent variable (Patidar, 2013). This technique was appropriate since the study aims to determine the mediating effect of school climate on the relationship between teacher's personality and science teaching competence (Creswell, 2014).

Moreover, the mediation process was used to determine whether the relationship between the teacher's personality as the independent variable and science teaching competence as the dependent variable is significantly reduced after the inclusion of the mediator variable- school climate. In other words, mediating relationships occur when a third variable plays an important role in governing the relationship between the other two variables (MacKinnon, 2008).

This study followed a systematic procedure. First, the researcher prepared a letter-request which was approved by the Dean, Professional Schools. The approved letter was forwarded to the School Division Superintendent of the Department of Education Division of Davao Oriental asking permission for the conduct of the study. Then, the researcher furnished a copy of the approved letter to the different School Heads of the respondents for the conduct of a full-blown data gathering.

Before the administration of the survey questionnaire to the respondents of the public school teachers of Cateel (Districts 1 and 2), Baganga and Boston, Davao Oriental, the researcher visited the school heads of the identified public schools for a courtesy call and discussed the plan on the conduct of the face-to-face survey to all concerned respondents. The researcher still observed the safety protocols during this pandemic time as per mandate by the Inter-Agency Task Force for the Emerging Infectious Disease (COVID-19) such as physical/social distancing and the wearing of face masks.

Also, before the actual data collection, the researcher secured the Certificate of Compliance from U MERC to ensure compliance with some ethical considerations in research. All retrieved questionnaires were encoded in the Excel template after verification and checking as to the completeness of the answers. After all the tallying and

validating of results, the data was analyzed and interpreted in line with the objectives of the study. Based on the findings of the study, conclusions and recommendations were formulated.

The following statistical tools were used in the computation of data and testing the hypotheses at 0.05 level of significance: mean was used to determine the level of teacher's personality, science teaching competence and school climate among public school teachers, Pearson Product Moment Correlation (Pearson r) was used to determine the significance of the relationship between teacher's personality, science teaching competence and school climate among public school teachers. Medgraph using Sobel Z test was used to determine the significance of the mediation of school climate on teacher's personality, and science teaching competence among public school teachers.

In the conduct of this study especially before the data was gathered, ethical issues and considerations were dealt with. The researcher underwent an evaluation conducted by the members of the ethics review committee. After several review processes, this study was marked as passed and approved by the UM Ethics Review Committee.

The participation of the respondents was completely voluntary and anonymous to protect their privacy and information was given whenever the respondents did not understand, before deciding whether to participate or not in the study. As a researcher, all data gathered were kept confidential and such information was only utilized for the purpose of the research. No names were required from the respondents so that their identities became anonymous. Thus, this research adhered to the Data Privacy Act of 2012 which protects the respondents from unauthorized processing of their private or identifiable information or guarantees them that their response cannot be traced back to its real sources to protect their identity. Informed consent was secured from all the respondents involved in the study. The respondent signed the ICF to prove his/her willingness to participate. It was in a form asking for their voluntary consent in giving their ideas for the said study.

The respondents are public elementary and secondary school teachers under the Science department which included those who are full-fledged Science teachers and non-Science teachers but who are presently handling or teaching Science and who are currently employed for the School Year 2023-2024. They were carefully selected based on the criteria provided in the research. The study did not involve high risks of situations that the respondents experienced with teachers in the areas of physical, psychological, or socio-economic concerns since the respondents are in public school. It protected and secured the rights of the respondents who are public elementary school teachers and this was conducted in accordance with due process. Since there was a face-to-face data gathering, the researcher still observed the safety protocols. All the teachers are the primary beneficiaries of the study. They will be able to gain an understanding of the dynamic of their teacher's personality, science teaching competence and school climate in the workplace. The results of this study can help the teachers since the findings of this study will give them new information about teacher's personality, science teaching competence and school climate. In addition, this study will be used as a practical

reference for future research in the field of Education. Further, in the conduct of this research, the respondents received tangible benefits such as a simple token (mug or coin purse) from the researcher.

The study used the Grammarly or Turnitin software and/ or Plagiarism Detector to ensure that there was no plagiarism that happens during the whole duration of the study. The study underwent the standard procedure of research established by the Professional Schools of the University of Mindanao. There was no evidence that the study was intentionally misrepresented to match a model or theoretical assumption. The study has no conflict of interest since the researcher has no relationship with the respondents of the study, but it was a requirement for the completion of the master's degree in education at the University of Mindanao Professional Schools. In this study, there was no deceit as everything that was written and reflected was true and underwent validation and thorough checking from different experts in the field of research. The researcher secured proper permission from the targeted agencies where the respondents are teaching/working. The researcher sent letter to the Schools Division Superintendent of the Department of Education, Division of Davao Oriental asking for permission to conduct the study and once approved was furnished to the School Heads of the respondent. There was a face-to-face mode of data gathering with the observance of the health and safety protocols as mandated by the government. No person was authorized to publish nor present this paper except the researcher or the adviser without the consent of the researcher. For purposes of publication of this study, the adviser becomes the co-author of the study.

4. Results and Discussion

Table 1: Level of Teacher Personality

Indicators	Mean	SD	Descriptive Level
Extraversion	4.19	0.23	High
Agreeableness	4.20	0.27	Very High
Conscientiousness	4.20	0.55	Very High
Neuroticism	4.15	0.52	High
Openness to experience	3.91	0.76	High
Overall	4.17	0.21	High

The level of the teacher's personality is high, resulting from the very high and high levels of responses. The indicators of *agreeableness* and *conscientiousness* have very high ratings while the indicators of *extraversion*, *neuroticism*, and *openness to experience* have high ratings. These indicators are arranged from highest to lowest level. The very high-level rating of *agreeableness* is indicative of the highly polite, trusting, flexible, cooperative, soft-hearted, forgiving, good-natured, and tolerant teachers. This is aligned with various authors (Britwum *et al.*, 2022; Kok & Meyer, 2018) who stated that agreeable people also have a positive outlook on life. A high score suggests clear indications of a teacher-educational context fit. Teachers with this personality trait tend to be sympathetic,

respectful, caring and sincere. These qualities are aligned with the goals of quality education.

Also, the very high level of *conscientiousness* is suggestive of the high ability of the teachers to accomplish tasks efficiently, meticulously, and competently. This is also in line with various authors (Chia *et al.*, 2022; Obilor & Sakpege, 2022) who mentioned that conscientious individuals are serious, responsible teachers, who are highly efficient in their work and provide students with high-quality instruction. It is associated with diligence, self-discipline, punctuality, and general competence. Those who are conscientious usually have high achievement.

The high level of *extraversion* suggests that the teachers have high positive emotionality. This claim is in line with various authors (Kell, 2019; Ramdani *et al.*, 2020) wherein highly extroverted people tend to strive for interdependence and intimacy, create positive social environments in the course of their interactions with others, and be biased toward attending to positive stimuli. This shows that the personality variable of an individual is responsible for measuring work performance.

Table 2: Level of Science Teaching Competence

Indicators	Mean	SD	Descriptive Level
Science lesson preparation competency	4.19	0.28	High
Science teaching performance competency	4.11	0.25	High
Science teaching professional development competency	4.10	0.31	High
Overall	4.13	0.22	High

The high level of *science lesson preparation competency* is suggestive of the high effort in the science lesson preparation competency of the teachers. This is in line with various authors (Briones, 2018; Can, 2019) stating that teachers are innovative in surfing the web for the different supplementary materials to be used in their teaching. Content representation has widespread usage as a pedagogical tool in the field of science pedagogical content knowledge for attaining many purposes, such as to enhance science teachers' science lesson preparation competency.

In addition, the high level of *science teaching performance competency* suggests the high ability of the teachers to adapt to a dynamic working environment. This claim is in line with various authors (Javorcikova *et al.*, 2021; O'Dwyer *et al.*, 2023) wherein the most influential source of teacher efficacy is science teaching performance competency and accomplishment, or mastery experience. Engaging in science, as both a learner and teacher, develops mastery experience. These experiences provide evidence of a teacher's capacity to engage students with science, directly impacting teacher efficacy.

The high level of *science teaching professional development competency* is indicative of the high extent teachers are effective in supporting students' learning by improving not only their knowledge and practice but also their conceptions and beliefs. This is aligned with various authors (Bell & Sexton, 2018; Kartal *et al.*, 2018) who mentioned that professional development focusing on science teachers has a significant impact on teacher science professional development competency including how they implement

and use innovative curricula. Effective professional development opportunities are important for helping teachers to improve their understanding of the nature of science.

Table 3: Level of School Culture

Items	SD	Mean	Descriptive Level
Feel supported by other teachers at my school.	0.71	4.40	Very High
Get along well with other staff members at my school.	0.67	4.30	Very High
Feel like I am an important part of my school.	0.84	3.89	High
Enjoy working in teams (e.g. grade level, content) at my school.	0.79	4.38	Very High
Feel like I fit in among other staff members at my school.	0.70	4.30	Very High
Feel connected to the teachers at my school.	0.85	4.22	Very High
Frequently recognize students for good behavior.	0.73	4.27	Very High
Have high standards for achievement.	0.78	4.21	Very High
Encourage promotion of academic success for all students.	0.84	4.17	High
Treat fairly by the adults at my school.	0.77	4.32	Very High
Treat students fairly regardless of race, ethnicity, or culture.	0.74	4.34	Very High
Work hard to make sure that students do well.	0.84	4.26	Very High
Feel safe.	0.73	4.33	Very High
Have been concerned about my physical safety.	0.76	4.25	Very High
Know that problems of unsafe or dangerous behaviors are taken care of.	0.86	4.16	High
Feel safe when entering and leaving my school building.	0.67	4.49	Very High
Appreciate that the school building is well-maintained.	0.74	4.24	Very High
Am happy that the Instructional materials are up to date and in good condition.	0.76	4.24	Very High
Keep their classrooms clean and organized.	0.82	4.23	Very High
Make an effort to keep the school building and facilities clean	0.78	4.25	Very High
Help another student who is being bullied.	0.74	4.34	Very High
Get along well with one another.	0.77	4.29	Very High
Treat each other with respect.	0.88	4.21	Very High
Treat other students fairly regardless of race, ethnicity, or culture.	0.74	4.33	Very High
Show respect to other students regardless of their academic ability.	0.74	4.28	Very High
Demonstrate behaviors that allow teachers to teach, and students to learn.	0.79	4.35	Very High
Attend PTA meetings or parent/teacher conferences.	0.71	4.33	Very High
Frequently volunteer to help on special projects.	0.78	4.24	Very High
Frequently attend school activities.	0.85	4.25	Very High
Overall	0.25	4.27	Very High

The results are in line with various authors (Alqarni, 2020; Lacks & Watson, 2018) who stated that teachers' perceptions of student motivation and behavior have the most

significant impact on school climate which meaningfully predicts one's teaching efficacy. School climate influences organizational performance, satisfaction levels, and work motivation. It could enhance school educators' endeavors to fulfill their needs at the workplace. School climate can foster resilience or become a risk factor in the lives of people who work and learn in school.

Further, this is aligned with various authors (Hidayati, 2022; Veletic *et al.*, 2023) wherein school climate is important in building healthy relationships in school. Assessing the perspectives of teachers on school climate is one of the important measures of effective leadership. School climate acts as a bridge between leadership and learning. Building the bridge occurs by manifesting working conditions, caring about teachers' well-being, and supporting instructional practices.

Table 4.1: Significance on the Relationship between
 Teacher's Personality and Science Teaching Competence

	SLP	STP	STPD	Overall
EX	0.011	0.137	0.102	0.102
	0.850	0.018	0.078	0.078
AG	0.211	0.356	0.300	0.358
	< .001	< .001	< .001	< .001
CON	0.084	0.081	0.122	0.121
	0.146	0.161	0.035	0.036
NEU	0.042	0.059	0.041	0.059
	0.471	0.305	0.475	0.312
OP	0.202	0.277	0.266	0.309
	< .001	< .001	< .001	< .001
Overall	0.167	0.256	0.244	0.277
	0.004	< .001	< .001	< .001

The correlation between the measures of teacher's personality and science teaching competence revealed a significant relationship. This implies that teacher's personality is significantly correlated with science teaching competence. This claim is in line with various authors (Abbasova, 2021; Sukawati *et al.*, 2019) wherein a teacher is not just required to let students learn through teaching and learning activities, but also learn to teach as an event for the establishment of science teaching competency and positive behavior of students. Implementing group meetings aims to create a positive school climate. During the process, facts and problems are discussed together as students can present both individual and collective creativity.

Table 4.2: Significance on the Relationship between Teacher's Personality and School Climate

	School Climate
EX	0.136
	0.018
AG	0.235
	< .001
CON	0.114
	0.049
NEU	0.108
	0.063
OP	0.264
	< .001
Overall	0.264
	< .001

The correlation between measures revealed that there is a significant relationship between teacher's personality and school climate. This implies that teacher's personality is positively correlated with school climate. The findings of this study are in line with the studies of various authors (Ningsih *et al.*, 2020; Prado, 2022) who stated that school climate is linked with the personality of the teacher and the organization. School climate describes the feelings and attitudes about the school shown by students, teachers, and parents, where these attitudes are based on their perceptions of school in an academic context.

Table 4.3: Significance on the Relationship between School Climate and Science Teaching Competence

	SLP	STP	STPD	Overall
School Climate	0.271	0.496	0.433	0.496
	< .001	< .001	< .001	< .001

The correlation between the measures of school climate and science teaching competence revealed a significant relationship. This implies that school climate is positively associated with science teaching competence. The result of the study confirms various authors (Darling-Hammond & DePaoli, 2020; Payne, 2018) who mentioned that relationships with teachers foster student development and are connected with better school performance, science teaching competence, and willingness to take challenges. There are three domains of school climate namely: engagement which includes teaching competence, safety, and environment.

Table 5: Regression Results of the Variables
 in the Criteria of the Presence of a Mediating Effect

Type	Effect	Estimate	SE	95% C.I. (a)		β	z	p
				Lower	Upper			
Indirect	TP \Rightarrow SC \Rightarrow STC	0.131	0.0313	0.0694	0.192	0.120	4.18	<.001
Component	TP \Rightarrow SC	0.320	0.0677	0.1876	0.453	0.264	4.73	<.001
	SC \Rightarrow STC	0.408	0.0460	0.3181	0.498	0.454	8.88	<.001
Direct	TP \Rightarrow STC	0.171	0.0558	0.0620	0.281	0.157	3.07	0.002
Total	TP \Rightarrow STC	0.302	0.0606	0.1833	0.421	0.277	4.98	<.001

The aim of this study is to contribute to the literature regarding the possible mediating variable for the relationship between teacher's personality and science teaching competence. Specifically, school climate was investigated as a possible mediating variable that could explain the effect of teacher's personality on science teaching competence. Partial mediation is found in the study, and important and significant direct effects were presented that may help in the enhancement of the existing researches on teacher's personality and science teaching competence. Significantly, the present study on the relationship of teacher's personality and science teaching competence has found relevance to the study of Efgivia *et al.* (2021) wherein there is a relationship between teacher personality and science teaching competencies as well as a positive relationship between teacher personality and science teaching competence together with science learning outcomes. Specifically, the current study has found that school climate is a positive and significant partial mediator of teacher's personality and science teaching competence and met Baron and Kenny's (1986) mediation guidelines.

In this connection, the mediation analysis involved the path between teacher's personality and science teaching competence, and the path between school climate and science teaching competence. The findings confirmed the significant relationship between teacher's personality and science teaching competence leading to support various authors of this study (Abbasova, 2021; Sukawati *et al.*, 2019) who stated that implementing group meetings aims to create a positive school climate. During the process, facts and problems are discussed together as students have the opportunity to present both individual and collective creativity. A teacher is not just required to let students learn through teaching and learning activities, but also learn to teach as an event for the establishment of science teaching competency and positive behavior of students.

5. Recommendations

The researcher came up with recommendations based on the results of the study. On the high level of teacher's personality, the researcher recommends that teachers may be encouraged and allowed to showcase their expertise in Science by being able to organize groups in schools that may allow them to become the second parents of these students. This may be in the form of clubs and organizations where teachers may become mentors, facilitators, counselors and negotiators to all students. Each organized club may plan,

create and implement activities that would strengthen the harmonious relationships inside and even outside schools. The researcher may also recommend the institutionalization of an award committee to look into and recommend exemplary teachers. A yearly awarding ceremony may be conducted for this purpose. Exposure to more challenging assignments which will develop their personalities and potential is a good effort to be done by the school management which in effect will boost the teacher's morale and self-esteem. The teachers are able to get out of their comfort zones and exhibit a sense of fulfillment in their teaching profession.

On the high level of Science teaching competence, it is recommended that activities to improve teachers' skills in critical thinking, innovation and creativity are encouraged as these are skills which need to be exhibited being Science teachers. These may include the conduct of mini debates (critical thinking skills), exposure to actual science competition activities to be conducted by inter-schools (innovation skills) and membership to professional local organizations (local connections). Also, the researcher recommends the regular conduct of class activities such as quiz bee contests, group discussions, and role plays which will enhance and develop both the teachers and the students' abilities to build confidence and mastery in the Science subject. Attendance to trainings and seminars about Science may be encouraged and conducted either at the local, regional or national level. Teachers may be provided with opportunities to pursue their higher and professional education in the master's and doctoral degrees with some negotiations from school management as to financial support (grant of soft loans) or time adjustment while the studies are ongoing.

On the very high-level result of school climate, the researcher recommends maintaining the best practices being implemented in school by creating a continuous spirit of camaraderie and oneness among teachers' school management and even other stakeholders. The school's vision, mission and goals may be always emphasized (or even memorized by students and teachers as well) so that every action in class or in school will always be guided by these principles. Proper installation of signage and bulletin boards in conspicuous places inside the school may be conducted to allow everybody to follow school rules and regulations. If the budget warrants, the school may ensure that the school building is completely conducive to learning and that everybody feels safe and secure while they are in school. There may be enough comfortable rooms for all classes, designated rooms for the laboratory, clean comfort rooms and a room designated for prayer or meditation. This will increase everybody's feeling that the school is their second home.

In addition to the very high level of school climate, the researcher believes that part of the school climate is the working environment of the teachers while they are in school. It is recommended that to maintain a positive working environment, teachers may be given the opportunity to exercise their academic freedom in their field of expertise, are allowed to express or show more of their abilities and capabilities in their teaching career and may be given enough support by the school so that they can perform well while

teaching the students. In this connection, school management may conduct an evaluation (using evaluation tools) to check on the progress or status of the teacher's performance.

On the partial mediation result, it is recommended for a continuous adoption of activities like open communication/dialogue, introduction of some innovations in the teaching strategies, and reaching out to parents to participate in school activities like community outreach. The realization of the school's vision, mission and goals will all depend on how school management is sensitive to the needs of the teachers and students, after all, they are the people behind the success of the school.

Furthermore, future researches on the use of the variables of the study may be conducted using a bigger population and qualitative researches may also be recommended to determine the impact of teachers' personality traits in their teaching profession.

6. Conclusion

With consideration of the findings of the study, conclusions are drawn in this section. There is a high level of teacher's personality and science teaching competence. There is a very high level of school climate. There is a significant relationship between teacher's personality and science teaching competence. There is also a significant relationship between teacher's personality and school climate and a significant relationship between school climate and science teaching competence. Also, there is a partial mediation on the effect of school climate on the relationship between teacher's personality and science teaching competence.

The findings of the study clearly confirm the notion about the mediating effect of school climate on the relationship between teacher's personality and science teaching competence. The findings are supported by the anchor theory, the Teacher Competence Theory by Medley (1977) wherein teacher competence is viewed as any single knowledge, skill, or professional value position, the professional of which is believed to be relevant to the successful practice of teaching. Moreover, the findings of the study were substantiated by the Behavioral Theory by Skinner (1957), and the Social Cognitive Theory by Bandura (1993).

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Conflict of Interest Statement

The authors declare no conflicts of interest.

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