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THE MEDIATING ROLE OF COGNITIVE FLEXIBILITY ON THE RELATIONSHIP BETWEEN EMOTIONAL INTELLIGENCE AND ACADEMIC SELF-REGULATED LEARNING OF SENIOR HIGH SCHOOL STUDENTS

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Abstract:
The purpose of this study was to determine the mediating role of cognitive flexibility in the relationship between emotional intelligence and academic self-regulated learning. Utilizing quantitative, non-experimental design via correlational technique, data were obtained from 267 respondents of the study who are learners among public elementary schools in Cateel 1 and 2, Davao Oriental. The researcher utilized a stratified random sampling technique and an online survey mode of data collection. The researcher also utilized the statistical tools mean, Pearson r, and Medgraph using the Sobel z-test. From the results of the study, it was found that there is a very high level of cognitive flexibility, emotional intelligence, and academic self-regulated learning. Also, results revealed that there is a significant relationship between emotional intelligence and academic self-regulated learning, a significant relationship between emotional intelligence and cognitive flexibility, and a significant relationship between cognitive flexibility and academic self-regulated learning. Further, it was revealed that there is a partial mediating

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effect of cognitive flexibility on the relationship between emotional intelligence and academic self-regulated learning.

Keywords: educational management, cognitive flexibility, emotional intelligence, academic self-regulated learning, students, mediating effect, Philippines

1. Introduction

Academic self-regulated learning is learning that is guided by one's metacognition, strategy adaptability, and motivation, among others (Blackmore *et al.*, 2021). Further, mastery of senior high school student skills in academic self-regulated learning is still immature. Students who get bad teacher assistance will have a slower development of academic self-regulation (Kesuma *et al.*, 2021). Also, students' monitoring judgments are inaccurate, and self-monitoring of problem-solving tasks is difficult. This leads to various problems as accurate self-monitoring is a necessary condition for accurate self-regulation and, thus, effective academic self-regulated learning (van Gog *et al.*, 2020).

Moreover, learning is an activity accomplished by the students themselves and not a response to teaching, for that reason, the students self-regulating their learning are proactive in their efforts to learn. Self-regulated learning influences the motivational and emotional aspects of individuals. If a student has the necessary methods to learn and study, their academic performance will increase. Also, it is necessary for students to attend courses in order to meet program requirements. An essential skill is self-regulated learning, which encapsulates autonomous navigation through learning content and enables students to be successful in capitalizing on what learning environments have to offer. It is of high importance to research the impact that self-regulated learning has on the satisfaction and academic performance of students (Ejubovic & Puska, 2019; Eladl & Polpol, 2020).

Academic self-regulated learning and emotional intelligence positively influence character building. Academic self-regulated learning and emotional intelligence are the basis of the socialization process as it relates to all domains in the physical, cognitive, social, and emotional development. The emotional intelligence construct can be divided into two categories namely: personal and social attributes. Personal attributes are self-awareness, self-regulation, and motivation, while the social attribute is social skills. Self-regulation directs emotions positively and allows individuals to withhold decisions until information is collected. The individual thinks carefully before action. Emotional intelligence plays a vital part in students' academic learning. Students with greater emotional intelligence are more self-confident in managing academic challenges. Thus, emotional intelligence is a significant predictor of students' academic performance (Iqbal *et al.*, 2021; Siregar, 2018).

Cognitive flexibility is correlated with emotional intelligence and psychological symptoms. There is also a correlation between cognitive flexibility and students' attitudes towards learning. The results of the study indicated the need to integrate cognitive

flexibility into foreign language teaching. Teachers have a positive attitude towards creating a classroom atmosphere based on cognitive flexibility and cognitive coaching. Cognitive flexibility, the ability to switch between thinking about two different concepts or to think about more than one concept at the same time is associated with openness to discussion, tolerance towards conflict, interpersonal communication, initiative, self-efficacy, problem-solving, adaptation, and self-compassion, decision-making, change management, and emotional intelligence (Kostereliogl u, 2021; Malkoc & Mutlu, 2019).

There was an urgency to conduct this study because, the existing situation in schools shows that there are still a number of problems and issues involving the students despite the implementation of various national and local programs that aim to provide students with a variety of benefits, thereby improving their cognitive flexibility and academic self-regulated learning. Furthermore, there were no similar studies that dealt with the mediating effect of cognitive flexibility on the relationship between emotional intelligence and academic self-regulated learning in Region XI or specifically in Davao Oriental, Davao Province. Existing studies are only on The Relationship Between Emotional Literacy, Cognitive Flexibility, and Counseling Self-Efficacy of Senior Students in Psychology and Psychological Counseling and Guidance by Malkoc & Sunbul (2020) and Self-Leadership Perception and Emotional Intelligence as the Predictors of Cognitive Flexibility by Kostereliogl u (2021). 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 education. Furthermore, results can be used to develop or augment practices of students as to their emotional intelligence, academic self-regulated learning, and cognitive flexibility. Thus, the need to conduct this study.

The main purpose of the study was to determine the mediating role of cognitive flexibility in the relationship between emotional intelligence and academic self-regulated learning. Specifically, this study sought to find answers to the following objectives, first to determine the level of emotional intelligence when analyzed in terms of perception of emotion, managing own emotions, managing others' emotions, and utilization of emotion, second is to ascertain the level of academic self-regulated learning when analyzed in terms of forethought, performance control, and self-reflection, third is to assess the level of cognitive flexibility, fourth is to determine the significant relationships between emotional intelligence and academic self-regulated learning; emotional intelligence and cognitive flexibility; and cognitive flexibility and academic self-regulated learning, and the last is to determine the mediating role of cognitive flexibility on the relationship between emotional intelligence and academic self-regulated learning.

2. Literature Review

Self-regulation of emotions by cognitions is linked to daily human life and helps individuals control their emotions during or after the experience of negative events or emotions. Cognitive flexibility and self-regulation are related to each other and their

interaction may influence the development of anxiety. Students with higher levels of distress tolerance possessed higher levels of cognitive flexibility. Those who were more cognitively flexible experienced less difficulty with self-regulation. Cognitive flexibility is positively linked with self-regulation and adaptive functioning. There is a relationship between cognitive flexibility and social self-efficacy that suggests students who have increased flexibility in solving problems may be able to create more alternatives in coping with conflicts (Demirtas, 2020; Girard, 2022).

Emotional intelligence is a set of mental abilities. It is a combination of intelligence and emotion. Emotional intelligence includes emotional, personal, and social abilities that have a great impact on a person's overall ability. It helps people lead their social and personal lives effectively and manage difficulties. Emotional success is important for success in life. Success at work and in life depends on 80% of emotional intelligence and only 20% intellect. Through emotional intelligence enhancement, students will be more active in oral communication and tend to achieve high levels of proficiency in class (Adillah, 2021; Saud, 2019).

Moreover, programs that continue to attract educational leaders need to know that these students are attuned to their own emotions as well as others. Students seeking careers in educational leadership have similar levels of emotional intelligence since this profession may be attractive to those who have a high perception of emotion, are able to utilize their emotions and manage their own emotions. Relatedly, students with a clear understanding of their own emotions are neither overly critical nor unrealistic when it comes to hopes and expectations. Such students recognize not only how their own feelings affect themselves, but also how they affect others and their job performance. Self-aware students are comfortable with acknowledging their own personal strengths and weaknesses (Bower *et al.*, 2018; Gong & Archer, 2021).

Both male and female students are able to control and manage their own and others' emotions in order to deal with stress. Both males and females have the same perception of stress because they are exposed to the same amount of workload in a similar university environment. Male students have higher levels of as they tend to show less emotion. Meanwhile, female students preferred to use social support and help-seeking behavior from others to handle stress. Perceiving emotions is considered a basic aspect of emotional intelligence and encompasses the ability to identify emotions in others' faces, voices, and behavior. The perceived ability to adequately recognize emotions in oneself and others leads to reduced burnout (Koppe *et al.*, 2019; Talip *et al.*, 2019).

Further, emotional intelligence is also the capacity to recognize and utilize emotion and comprehend and manage emotional information. Emotional intelligence plays an important role in the environment in terms of its impact on the modern workforce. Also, emotional intelligence has a long-lasting impact and is becoming very important to educators concerned with the increasing levels of conflict in children (Singh *et al.*, 2022; Siregar *et al.*, 2018).

Self-regulated learning refers to the self-directive processes and self-beliefs that enable learners to turn their mental abilities into academic performance skills. Self-

regulated learning is praised as the key competence to maintain lifelong learning. Self-regulated learning has a wide influence in various areas namely: subjective well-being, physical health, social achievement, economy, and education.

During forethought, students evaluate and assess the task in accordance with their goals and expectations. Students evaluate their interest, purpose and ability to complete the task. Students' initial goals, expectations, and interests in the class comprise the forethought planning phase that has been shown to be influential for successful outcomes. After this initial evaluation phase, students' own beliefs about their abilities influence their motivation and use of learning strategies to achieve their goals. Similarly, proactive learners self-regulate more effectively because they engage in high-quality forethought, which in turn improves their self-regulatory functioning during subsequent phases. The forethought phase involves the activation of motivational beliefs such as the feeling of self-efficacy, the value assigned to the task, and goal orientation (Cosnefroy & Fenouillet, 2018; Landrum, 2020).

Self-reflection refers to students' reflective thinking about their own performance. It is typically related to the assessment criteria and feedback information of different forms. A core aim of self-reflection is for students to generate internal feedback on the strengths and weaknesses of their task responses. Thus, the principle for this step is making explicit the internal feedback generated by self-reflection. More self-reflection was related to an increase in self-insight which in turn could improve subjective well-being (Mertens *et al.*, 2022; Yan & Carless, 2022).

Cognitive flexibility refers to a person's awareness that in any given situation there are alternatives available, willingness to be flexible and adapt to the situation, and self-efficacy in being flexible. It is the ability to alter thoughts in terms of environmental conditions. Cognitively flexible individuals are eager to encounter unfamiliar situations, try new ways of communication, and adjust behaviors to meet contextual needs. Also, an individual needs to have a certain degree of cognitive flexibility in order to be able to adapt, choose the best solution, avoid depressive moods, and not lose self-confidence. In any situation, individuals have possible scenarios for the development of further events. Individuals who predict a greater number of potential possibilities of probable scenarios have greater cognitive flexibility (Demirtas, 2020; Rybinska *et al.*, 2021).

Further, cognitive flexibility is the capacity to shift one's focus between concepts and alternative behavioral strategies in order to adapt to a changing environment. People with sufficient cognitive flexibility can effectively deal with challenging situations and generate alternative ideas. To develop cognitive flexibility, students must acquire knowledge in a variety of ways and purposes in flexible learning environments. Cognitive flexibility allows individuals to take responsibility, make sense of their experiences, become entrepreneurs, and show interest in their environment, helping them feel more secure in their relationships. (Rizi & Rostami, 2023; Tanhan *et al.*, 2023).

This study was anchored on the Social Cognitive Theory by Bandura (1986) which includes self (personal), behavioral, and environmental factors. These factors are independent and interdependent in their nature. Self-regulated environment refers to

adjust environmental situations and conditions according to an individual's observations. Self-regulatory skills allow learners to learn from others' experiences and behaviors by observing them in a social environment. At the first stage of self-regulated learning, guidance from others is necessary which is decreased at further stages of self-regulated learning. As the model of a self-regulated environment has a social cognitive nature, it is assumed that the students' efforts and learning through a self-regulatory process are dependent and contextualized to gear up student performances.

This study was supported by the Emotional Intelligence Theory by Mayer and Salovey (1993) wherein regulating emotion, one of the important components of emotional intelligence, could up-regulate positive emotions and down-regulate negative emotions. Cognitive reappraisal and expressive suppression are two common and effective individual emotional regulation strategies. On the other hand, cognitive flexibility was the foundation of cognitive reappraisal ability. It refers to the ability to transform cognitive sets effortlessly according to the changes of environmental stimuli. Individuals who have higher cognitive flexibility can quickly change their minds to cope with such challenges, keep a positive situation, and have higher life satisfaction.

This study was also supported by the Cognitive Flexibility Theory by Spiro *et al.* (1988) which offers an extension to the idea of the way students process new information, suggesting that we do not simply retrieve packets of old knowledge but assemble them to form new realities which best relate to the learning of new material. It advocates avoiding oversimplification of instruction, providing multiple representations of content, emphasizing case-based instruction, context-dependent knowledge, knowledge construction and not transmission, and introducing complexity at an early stage.

These theories were relevant to the study as they explain why emotional intelligence is important and that cognitive flexibility contributes to the academic self-regulated learning of students. In this study, cognitive flexibility impacts the emotional intelligence of the students along with the cognitive flexibility they portray every day.

3. Material and Methods

There were 267 respondents to the study from the total population of senior high school students in the three identified schools Cateel 2, Davao Oriental. With the 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). The respondents were chosen accordingly to answer the questionnaire with confidentiality. The researcher believes that such a sample size and number of respondents can represent the population

As part of the criterion in the selection of the respondents, only grades 11 and 12 students who are officially enrolled in SY 2023-2024 in the three public secondary schools: School A (Alegria Integrated School), School B (Taytuyan Integrated School) and School C (CNAHS) in Cateel 2, Davao Oriental were included as samples as they were the only

one who fit to the criteria and who can answer the questions in the survey questionnaire of the study. Other students, even if enrolled in the Grades 11 and 12 levels but not in the identified public schools/areas in Casteel 2, Davao Oriental, or enrolled in private schools were deemed excluded from the study. Lastly, other students in the identified areas such as the elementary and junior high school students (grades 7, 8, 9, 10) were also excluded from the study. The respondents were chosen accordingly to answer the questionnaire with confidentiality. The respondents were not forced to answer the research questionnaire and were encouraged to return the same to the researcher for its automatic disposal. The respondents were free to decline to participate in the survey without any form of consequence or penalty or loss of benefits. 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 feel uncomfortable about the study since they were given the free will to participate without any form of consequence or penalty.

From the four existing public secondary schools in Cateel 2, only three schools, namely: School A (Alegria Integrated School), School B (Taytuyan Integrated School), and School C (CNAHS) were the locale of the study considering that the other school is quite risky for the researcher to conduct her study. Davao Oriental is part of Region XI. Region XI, which 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 had a good number of respondents who ensured concrete results of the study and that the researcher had not come across a study using the variables on cognitive flexibility, emotional intelligence, and academic self-regulated learning of students. Moreover, as a researcher whose present teaching assignment is in Cateel, Davao Oriental, I have encountered various experiences that senior high school students need to maintain their cognitive flexibility, emotional intelligence, and academic self-regulated learning. This situation may be attributed to the past experiences encountered during the pandemic time wherein all schools, teachers, and most especially the students were greatly affected by the shift of learning methods from face-to-face to online mode. Although the schools are going back to face-to-face classes this needs another adjustment on the part of the students, thus affecting their learning capacities. The schools' accessibility and proximity to the researcher, likewise were considered as the reasons for the choice of the research locale.

This study utilized a quantitative non-experimental design of research using a correlational technique. This was used since the researcher was interested in determining the degree of connection between variables. Additionally, it tries to define and understand the state of the current study (Creswell, 2014). The correlational technique is

a non-experimental approach in which it analyses the relationship between two or more variables without reserve. It also looks into the degree of association by relating it with other variables. Apparently, correlational studies have independent and dependent variables with the effects of the independent variable observed on the dependent value (Patidar, 2013). This design was used to align the variables based on the discussion of the aforementioned related literature. This technique was appropriate since the study aims to determine whether there was a significant relationship between emotional intelligence, academic self-regulated learning of students, and cognitive flexibility in which the findings of the study may become good inputs in the formulation of relevant programs and activities for the betterment of both the teachers and the students, as well.

Moreover, a mediation model was used in this study. The mediation model seeks to identify and explicate the mechanism or process that underlies an observed relationship between an independent variable (emotional intelligence) and a dependent variable (academic self-regulated learning) via the inclusion of a third explanatory variable, known as a mediator variable (cognitive flexibility). Rather than hypothesizing a direct causal relationship between the independent variable and the dependent variable, a meditational model hypothesized that the independent variable influences the mediator variable, which in turn influences the dependent variable. Thus, the mediator variable serves to clarify the nature of the relationship between the independent and dependent variables. 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).

In the collection of data, the researcher followed a systematic procedure. First, the researcher prepared a letter-request to be 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 senior high schools of the three identified schools in Cateel 2, 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 data gathering to all concerned respondents. To ensure the safety of the respondents, the researcher still observed the safety protocols 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 will secure the Certificate of Compliance from UMERC (UMERC-2024-003) to ensure compliance with some ethical considerations in research. All retrieved questionnaires will be 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 levels of cognitive flexibility, emotional intelligence, and academic self-regulated learning of students. Pearson Product Moment Correlation (Pearson r) was used to determine the significance of the relationship between cognitive flexibility, emotional intelligence, and academic self-regulated learning of students. Medgraph using Sobel Z test was used to determine the significance of the mediation of cognitive flexibility on the relationship between emotional intelligence and academic self-regulated learning of students.

Another important aspect of this research was the observance of ethical consideration since the researcher aimed to impart authentic knowledge, truth, and prevention of error in doing research. The ethical considerations included the following: The respondents of the study consisted of 267 respondents of the study who are senior high school students in three public schools of Cateel 2, Division of Davao Oriental. The researcher did not force the respondents to join the data gathering. The respondents were free to decline to participate in the survey, were not forced to answer the research questionnaire, and were encouraged to return the same to the researcher for its automatic disposal lastly, they could withdraw anytime their participation in the research process if they felt uncomfortable about the study.

The researcher ensured that the data to be gathered were kept confidential and that such information was utilized only for the purpose of the research. No names were required from the respondents so their identities were anonymous. The researcher adhered to the provisions of Republic Act No. 10173, otherwise known as the Data Privacy Act of 2012 which seeks to protect the fundamental human right to privacy of communication. The responses in the survey were used for the purpose of the study and they were kept confidential. After the conclusion of the study, the accomplished survey questionnaire was shredded as they already served its purpose. Likewise, any soft copies of the data were destroyed or deleted from the hard drives where they were saved. For any misuse of the data and information, the respondent had the right to file a complaint and request for investigation.

Each target respondent was given an informed consent form before the gathering of data. In the form, the title and the purpose of the study were stated. It was a form asking for their voluntary consent in giving their ideas for the study. The researcher asked permission from the adviser, subject teacher, and counselor to allow the respondents to participate in the study. The letter of assent was also reviewed by the guidance counselor or the subject teacher and the selection of the respondents was participated by the subject teacher, adviser, and guidance counselor. The researcher included as part of the process a briefing from the resident guidance counselor to all respondents to ensure that the respondents were properly informed of the nature and purpose of the study. Likewise, before the conclusion of the study, a debriefing was conducted by the resident guidance counselor to the respondents to ensure that the respondents had left the study in the same state when they began it. There was close monitoring on the part of the guidance counselor and subject teacher in the conduct of the research. The respondent signed the

ICF to prove his/her willingness to participate and was assured of the confidentiality of the data and that the data was used only for the study.

The participants were carefully selected based on the criteria provided in the research. The respondents are the grades 11 and 12 students who are officially enrolled in SY 2023-2024 in the three public secondary schools: School A (Alegria Integrated School), School B (Taytuyan Integrated School) and School C (CNAHS) in Cateel 2, Davao Oriental. No individual answered the questionnaire if he/she did not qualify for the criteria. The study did not involve high risks of situations that the respondents had experienced. Some mitigating measures were also considered, including psychological, financial, and physical preparations. As part of the process and to mitigate the possible risks, there was a briefing from the resident guidance counselor to all respondents to ensure that the respondents were properly informed of the nature and purpose of the study. Likewise, before the conclusion of the study, a debriefing activity was conducted for all the respondents by the guidance counsellor, subject teacher, or adviser with the assurance that the participation of the respondents said the study did not, in any way, affect their academic status, in accordance with Republic Act No. 9262 otherwise known as "Anti-Violence Against Women and Their Children Act of 2004". The researcher still adhered to the safety protocols as per mandate by the Inter-Agency Task Force for the Emerging Infectious Disease (COVID-19) such as physical/social distancing and wearing of face masks.

The senior high school students are the primary beneficiaries of the study. They will be able to gain an understanding of the dynamic of cognitive flexibility, emotional intelligence, and academic self-regulated learning at the workplace. The results of this study can help the students since the findings of this study will give them new information about cognitive flexibility, emotional intelligence, and academic self-regulated learning of students. At the same time, the agency may establish a scientific basis for drawing out interventions for any issues resulting from the study that need to be addressed, to help all the students in their studies and learning while they are in school. 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 and before its completion, the student respondents received tangible benefits such as a simple token (ball pen or notebook) from the researcher.

Moreover, the researcher ensured that the materials used underwent paraphrasing and were expressed in the researcher's ideas. There was no portion of the study which made use of another person's ideas or words and if there was such, the person was given appropriate credit for his works and study. The study underwent plagiarism check in the University using the Turnitin, to ensure that no plagiarism happened in 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 trace/evidence of intentional misrepresentation of what was done and no making up of data and/or results, or purposefully putting forward conclusions that were not accurate.

There was no evidence that the study was intentionally misrepresented to match a model or theoretical assumption. There was no indication of fabrication or over-claiming.

The study had no conflict of interest (COI) since the researcher had no relationship with the respondents of the study. The researcher ensured that there were no circumstances that provided them put in their personal interests or those of any other person or organization. This study was a requirement for the completion of the master's degree in education at the University of Mindanao Professional School. There was no deceit and everything that was written and reflected was true and has undergone validation and thorough checking from different experts in the field of research.

Before the conduct of the study, the researcher secured proper permission to conduct the study in the form of a letter which was approved by the Dean, Professional Schools, University of Mindanao, addressed to the Division Superintendent of the division of Davao Oriental, copy furnished the school heads of the 3 identified schools. In the conduct of the data gathering and after the approval of the UM Ethics Committee, the researcher utilized the face-to-face mode where the respondents indicated their responses to the specific item questions being asked. The specific instructions on how to accomplish and return the accomplished forms are indicated in the instrument.

Furthermore, no person was authorized to publish nor present this paper except for the researcher herself or her adviser without the consent of the researcher. In case, an organization wants to have a copy of the result of the study then it can be accessed only to create programs and policies in the organization but still with the permission of the researcher, adviser, and the university. For purposes of the publication, the adviser becomes a co-author of the study. Lastly, before the conduct of actual data collection, the researcher secured Compliance Certificate from UMERC with the understanding that all ethical considerations were properly observed.

4. Results and Discussion

Table 1: Level of Emotional Intelligence

Indicators	**SD**	**Mean**	**Descriptive Level**
Perception of emotion	0.36	4.68	Very High
Managing own emotions	0.32	4.68	Very High
Managing others' emotions	0.35	4.65	Very High
Utilization of emotion	0.36	4.66	Very High
Overall	**0.30**	**4.66**	**Very High**

The level of emotional intelligence is very high, resulting from the very high levels of responses. The very high-level rating of perception of emotion is suggestive that every student can function well academically. Employing collaborative learning cognitive and socio-emotional forms of interaction among students activates learning mechanisms. This is supported by statements such as: "*as a student, I find it easy to understand the non-verbal messages of other people, am aware of my emotions as I experience them. I am aware of the non-verbal messages I send to others*". This implies that the respondents are very sensitive to the

feelings of other people and that they can understand the reasons for such emotions/behavior. This is in agreement with the various authors (Matejka, 2022; Zhu *et al.*, 2020) stating that individuals report on their own perceptions of relationship strength with all school adults, the degree to which teachers in the school care about students, and students' sense of support in school. Cognitive interactions mediate knowledge sharing, construction, and creation. Social-emotional interactions shape student perception of emotions and community climate which in turn, influence their expressions of emotions.

Moreover, the very high-level rating of managing their own emotions is indicative of the very high ability of students to have a clear understanding of their own emotions and can manage their emotional intelligence. In support of this finding, the statement that *"as a student, I expect good things to happen, know how to make positive emotion last when I experience it, seek out activities that make me happy, have control over my emotions"*. By implication, this means that the respondents are aware of the activities they are going to undertake in order to experience positive and favorable emotions/outcomes.

This claim concurs with the statements of various authors (Bower *et al.*, 2018; Gong & Archer, 2021) who mentioned that individuals with a clear understanding of their own emotions are neither overly critical nor unrealistic when it comes to hopes and expectations. Such students recognize not only how their own feelings affect themselves, but also how they affect others and their job performance. Self-aware students are comfortable with acknowledging their own personal strengths and weaknesses.

On the indicator of managing others' emotions, this is supported by the statements: as a student, "*I find it easy for other people to confide in me, I like to share my emotions with others and compliment others when they have done something well"*. This implies that the respondents cater easily to others' emotions and that they even made positive gestures to welcome other's feelings/emotions. This finding is consistent with the authors (Koppe *et al.*, 2019; Talip *et al.*, 2019) stating that students can control and manage their own and others' emotions in order to deal with stress. Both males and females have the same perception of stress because they are exposed to the same amount of workload in a similar university environment. Perceiving emotions is considered a basic aspect of emotional intelligence and encompasses the ability to identify emotions in others' faces, voices, and behavior. The perceived ability to adequately recognize emotions in oneself and others leads to reduced burnout.

Table 2: Level of Academic Self-Regulated Learning

Indicators	**SD**	**Mean**	**Descriptive Level**
Forethought	0.32	4.69	Very High
Performance control	0.26	4.71	Very High
Self-reflection	0.32	4.68	Very High
Overall	**0.27**	**4.70**	**Very High**

The level of academic self-regulated learning was analyzed based on the obtained and computed mean ratings of the indicator's forethought, performance control, and self-reflection. Table 2 revealed that academic self-regulated learning has an overall standard

deviation of 0.27 and a Very High level with an overall mean score of 4.70. while self-reflection obtained the lowest mean of 4.68 and standard deviation of 0.32, albeit very high.

The very high level resulted from the very high ratings of the respondents. These indicators are performance control, forethought, and self-reflection. The very high level of performance control reveals how students avoid distraction from interruption, focus on learning, and use time effectively, which are important for students' learning. However, they are capable of a response that involves systematically monitoring their own performance. This is further supported by the statements from the respondents such as: "*As a student, I study in a suitable place where I can concentrate, I go through the study material carefully to understand it properly and I study in a manner that makes it more interesting/enjoyable*". By implication, the statements revealed that the respondents are doing their best to incorporate some study habits in their activities by making sure that they practice the better way where they study well and do their best.

The result is aligned with the studies of various authors (Astuti & Wangid, 2018; Khiat & Vogel, 2022) which explained that self-control and self-observation are the two categories of performance control. Students rely on both self-regulated learning enablers and strategies when they are doing learning tasks. They flexibly use planned strategies such as reading, writing, listening, asking, note-taking, memorization techniques, and collaborating with peers, to achieve their set learning goals.

The lowest indicator of self-reflection is supported by the statements from the respondents stating that "*as a student, I try to strengthen the strategies that worked for me previously, I try to identify my mistakes when my studies are affected and I keep track of study areas where I am lacking".* This means the respondents are aware of their predicament in terms of their studies. They tried to make some efforts to correct their deficiencies and adopt better methods to improve themselves in their studies. This is congruent with the various authors (Mertens *et al.*, 2022; Yan & Carless, 2022) who stated that self-reflection refers to students' reflective thinking about their own performance. It is typically related to the assessment criteria and feedback information of different forms. This is for students to generate internal feedback on the strengths and weaknesses of their task responses. More self-reflection was related to an increase in self-insight which in turn could improve subjective well-being.

Illustrated in Table 3 are the results of the descriptive statistics on assessing the level of cognitive flexibility. The overall mean obtained a value of 4.68 and a standard deviation of 0.31 with a descriptive interpretation of very high. This signifies that the students' cognitive flexibility is always manifested. Mainly, this is supported by the results as shown in items such as: "*can communicate an idea in many different ways*" which obtained the highest mean of 4.76 and standard deviation of 0.44; feel like I always get to make decisions; and have many possible ways of behaving in any given situation" both got an average of 4.71 and standard deviation of 0.50 and 0.47, respectively.

Table 3: Level of Cognitive Flexibility

Item Statements	SD	Mean	Descriptive Level
Can communicate an idea in many different ways.	0.44	4.76	Very High
Can face new and unusual situations.	0.50	4.69	Very High
Feel like I always get to make decisions.	0.50	4.71	Very High
Can find workable solutions to seemingly unsolvable problems.	0.48	4.70	Very High
Often have choices when deciding how to behave.	0.52	4.66	Very High
Am willing to work at creative solutions to problems.	0.60	4.64	Very High
Am able to act appropriately in any given situation.	0.50	4.69	Very High
Believe that my behavior is a result of conscious decisions that I make.	0.52	4.67	Very High
Have many possible ways of behaving in any given situation.	0.47	4.71	Very High
Am at ease using my knowledge on a given topic in real-life situations.	0.49	4.67	Very High
Am willing to listen and consider alternatives for handling a problem.	0.50	4.69	Very High
Have the self-confidence necessary to try different ways of behaving.	0.58	4.56	Very High
Overall	**0.31**	**4.68**	**Very High**

Data also revealed, as indicated in the research instrument that "students can face new and unusual situations". Respondents also revealed that "*they are able to act appropriately in any given situation*". The very high level of cognitive flexibility reveals the students' responsiveness in any given situation there are alternatives available, they are willing to be flexible and they adapt to the situation, and there is self-efficacy in being flexible. Hence, they can shift focus between concepts and alternative behavioral strategies to adapt to a changing environment This claim is in line with the authors (Demirtas, 2020; Rybinska *et al.*, 2021) stating that cognitively flexible individuals are eager to encounter unfamiliar situations, try new ways of communication, and adjust behaviors to meet contextual needs. Also, an individual needs to have a certain degree of cognitive flexibility to be able to adapt, choose the best solution, avoid depressive moods, and not lose self-confidence. They have possible scenarios for the development of further events.

Moreover, this is supported by various authors (Rizi & Rostami, 2023; Tanhan *et al.*, 2023) who said that people with sufficient cognitive flexibility can effectively deal with challenging situations and generate alternative ideas. Students must acquire knowledge in a variety of ways and purposes in flexible learning environments to develop cognitive flexibility. Since cognitive flexibility requires planning related to perception, memory, and behavioral processes, these individuals have a high level of ability to plan events related to their environment.

Table 4.1: Significant Relationships Between Emotional Intelligence and Academic Self-Regulated Learning

	Forethought	**Performance control**	**Self-reflection**	**Overall**
Perception of emotion	0.586	0.524	0.437	0.577
	< .001	< .001	< .001	< .001
Managing own emotions	0.622	0.549	0.478	0.616
	< .001	< .001	< .001	< .001
Managing others' emotions	0.581	0.530	0.472	0.591
	< .001	< .001	< .001	< .001
Utilization of emotion	0.657	0.621	0.567	0.689
	< .001	< .001	< .001	< .001
Overall	**0.705**	**0.641**	**0.564**	**0.713**
	< .001	**< .001**	**< .001**	**< .001**

Presented in Table 4.1 are the results of the relationship between the level of emotional intelligence and academic self-regulated learning. It can be gleaned that the indicators of emotional intelligence and academic self-regulated learning revealed an overall r-value of 0.713 with a p-value of < 0.000 which is significant at a 0.05 level. It shows that there is a strong positive correlation between emotional intelligence and academic self-regulated learning. Also, the null hypothesis of no significant relationship between emotional intelligence and academic self-regulated learning is rejected. This means that there is a significant relationship between emotional intelligence and academic self-regulated learning.

The correlation between emotional intelligence and academic self-regulated learning revealed a significant relationship. This implies that in other words, students pertain to the socialization process as it relates to all domains in the physical, cognitive, social, and emotional development. This finding confirms the claims of various studies (Iqbal *et al.*, 2021; Siregar, 2018) wherein emotional intelligence plays a vital part in students' academic learning. Self-regulation directs emotions positively and allows individuals to withhold decisions until information is collected. The individual thinks carefully before action. Students with greater emotional intelligence are more self-confident in managing academic challenges. Thus, emotional intelligence is a significant predictor of students' academic performance.

Table 4.2: Significant Relationships Between Emotional Intelligence and Cognitive Flexibility

	Overall
Perception of emotion	0.471
	< .001
Managing own emotions	0.562
	< .001
Managing others' emotions	0.559
	< .001
Utilization of emotion	0.597
	< .001
Overall	**0.630**
	< .001

Displayed in Table 4.2 are the results of the relationship between the level of emotional intelligence and cognitive flexibility. It can be gleaned that the indicators of emotional intelligence and cognitive flexibility revealed an overall r-value of 0.630 with a p-value of <0.000 which is significant at a 0.05 level. It shows that there is a strong positive correlation between emotional intelligence and cognitive flexibility. Thus, the null hypothesis of no significant relationship between emotional intelligence and cognitive flexibility is rejected. This means that there is a significant relationship between emotional intelligence and cognitive flexibility.

The correlation between measures revealed that there is a significant relationship between emotional intelligence and cognitive flexibility. This implies that emotional intelligence is positively correlated with cognitive flexibility. The result of the study confirms various authors (Kostereliogl u, 2021; Malkoc & Mutlu, 2019) who mentioned that cognitive flexibility is correlated with emotional intelligence. Teachers have a positive attitude towards creating a classroom atmosphere based on cognitive flexibility and cognitive coaching. Cognitive flexibility, the ability to switch between thinking about two different concepts or to think about more than one concept at the same time is associated with openness to discussion, tolerance towards conflict, interpersonal communication, initiative, self-efficacy, problem solving, adaptation, and self-compassion, decision-making, change management, and emotional intelligence.

Table 4.3: Significant Relationships Between Cognitive Flexibility and Academic Self-Regulated Learning

	Forethought	**Performance control**	**Self-reflection**	**Overall**
Overall	0.724	0.658	0.637	0.755
	< .001	< .001	< .001	< .001

Presented in Table 4.3 are the results of the relationship between the level of cognitive flexibility and academic self-regulated learning. It can be gleaned that work cognitive flexibility and academic self-regulated learning revealed an overall r-value of 0.755 with a p-value of <0.000 which is significant at 0.05 level. It shows that there is a strong positive correlation between cognitive flexibility and academic self-regulated learning. Thus, the null hypothesis of no significant relationship between cognitive flexibility and academic self-regulated learning is rejected. This means that there is a significant relationship between cognitive flexibility and academic self-regulated learning.

The correlation between the measures of cognitive flexibility and academic self-regulated learning revealed a significant relationship. This implies that cognitive flexibility is positively associated with academic self-regulated learning. This claim is in line with various authors (Demirtas, 2020; Girard, 2022) wherein self-regulation of emotions by cognitions is linked to daily human life and helps individuals control their emotions during or after the experience of negative events or emotions. Students with higher levels of distress tolerance possessed higher levels of cognitive flexibility. Those who were more cognitively flexible experienced less difficulty with self-regulation.

Table 5: Mediation Analysis of the Three Variables

				95% C.I. (a)				
Type	**Effect**	**Estimate**	**SE**	**Lower**	**Upper**	**β**	**z**	**p**
Indirect	EI ⇒ CF ⇒ ACRL	0.281	0.0331	0.216	0.346	0.319	8.50	<.001
Component	EI ⇒ CF	0.643	0.0485	0.548	0.738	0.630	13.26	< .001
	CF ⇒ ACRL	0.438	0.0395	0.360	0.515	0.506	11.06	<.001
Direct	EI ⇒ ACRL	0.347	0.0403	0.268	0.426	0.394	8.60	<.001
Total	EI ⇒ ACRL	0.628	0.0379	0.554	0.702	0.713	16.58	<.001

Data was analyzed with linear regression method as input to the Medgraph. Mediation analysis developed by Baron and Kenny (1986) is the mediating effect of a third variable in the relationship between two variables. There are three steps to be met for a third variable to be acting as a mediator. In Table 5, these are categorized as Steps 1 to 3. In step 1, emotional intelligence as the independent variable (IV) significantly predicts academic self-regulated learning, which is the dependent variable (DV) of the study. In step 2, emotional intelligence significantly predicts cognitive flexibility, the mediator (M). In step 3, cognitive flexibility significantly predicts academic self-regulated learning.

Also, because the three steps (paths a, b, and c) are significant, further mediation analysis through Medgraph is necessary, including the Sobel z test to assess the significance of the mediation effect. If the effect of the independent variable on the dependent variable becomes non-significant at the final step of the analysis, full mediation will be achieved. It means all the effects are mediated by the mediator variable. In addition, if the regression coefficient is substantially reduced at the final step but remains significant, only partial mediation is obtained, which implies that part of the independent variable (emotional intelligence) is mediated by the mediator (cognitive flexibility) but other parts are either direct or mediated by other variables that are not included in the model. In this case, as gleaned in step 3 (denoted as c), the effect of emotional intelligence on academic self-regulated learning was found to have been decreased after being mediated by cognitive flexibility. With this, no mediation took place since the effect was found to be significant.

This study aims to contribute to the literature regarding the possible mediating variable for the relationship between emotional intelligence and academic self-regulated learning. Specifically, cognitive flexibility was investigated as a possible mediating variable that could explain the effect of emotional intelligence on academic self-regulated learning. Partial mediation is found in the study, and important and significant direct effects were presented that may help in the enhancement of the existing research on emotional intelligence and academic self-regulated learning. Specifically, the current study has found that cognitive flexibility is a partial mediator of emotional intelligence and academic self-regulated learning and met Baron and Kenny's (1986) mediation guidelines.

In this connection, the mediation analysis involved the path between emotional intelligence and academic self-regulated learning, and the path between cognitive flexibility and academic self-regulated learning. The findings confirm the relationship

between emotional intelligence leading to support for various authors in this study (Demirtas, 2020; Girard, 2022) wherein self-regulation of emotions by cognitions is linked to daily human life and helps individuals control their emotions during or after the experience of negative events or emotions. Those who were more cognitively flexible experienced less difficulty with self-regulation. There is a relationship between cognitive flexibility and social self-efficacy that suggests students who have increased flexibility in solving problems may be able to create more alternatives in coping with conflicts.

5. Recommendations

The researcher came up with recommendations based on the results of the study. On the results of the very high levels of cognitive flexibility, emotional intelligence, and academic self-regulated learning, the researcher recommends that the school maintain its existing best practices for the continuous observance of cognitive flexibility, emotional intelligence, and academic self-regulated learning.

With a very high level of cognitive flexibility, the researcher may recommend that students be continually given the chance to showcase their skills and talents by allowing them to join regional, national even international competitions with a good budget for their allowances. This can be the best way of marketing the schools to other places with the intention also of rewarding the achievement of the students. The competition may include participation in cultural and academic activities like science or math contests/quiz bees or even in essay writing, debate, and extemporaneous contests. There may be a continuous observance of open open-door policy wherein the students are free to discuss important matters with the teachers and school management.

For the very high level of emotional intelligence, it is recommended that students be given the chance to attend orientation and reorientation activities to allow them to be reminded of the school's vision, mission, and goals and become committed to helping build a good image of the school by their examples and experiences in the school. Regular conduct of symposiums about mental awareness, interpersonal relationships, and discipline and maintain as good models to all.

On the results of a very high level of academic self-regulated learning, it is recommended to provide the students with a presentable place where they could discuss with their classmates and teachers. It may be good also to continue the practice of using the suggestion box where wholesome comments from students about their subjects and teachers may be considered as the basis for action. The practice of having peer-to-peer mentoring to help below-average students recover their deficiencies in their subjects and other class activities. The grant of incentives, awards, and rewards to students every year may be continued to encourage students to make good in their classes. Activities be conducted like mentoring and the creation of special classes for students to ensure continuous improvement to support the learning process. The Department of Education officials, teachers, students, parents, and community stakeholders may work hand in hand and must acknowledge their respective roles in achieving quality education with a

focus on promoting leadership that makes the school productive. More collaborative efforts to involve all stakeholders in the academe

The results of partial mediation, the researcher recommends that the best practices of the school be continued, and if there are some deficiencies and inadequacies, then those areas may be improved or there may be room for continuing quality improvement. To maintain good rapport with the students, there may be a conduct of regular dialogue or focus group discussions between teachers and students to address some concerns in class. The parents may become partners in the school activities like community outreach, and gift-giving during the school foundation. Parents may always be given some updates on the status of their children in school.

Furthermore, the results of this study may be a good basis for future researchers to replicate the study in other regions in a larger population using a quantitative structural equation model or a quantitative study using additional variables to determine whether the results may differ from this study and another qualitative study- a case study or phenomenological one depicting the best practices of schools which other schools may duplicate as a basis for improvement and enhancement.

6. Conclusion

Based on the findings of the study, conclusions and recommendations are drawn in this section. There is a very high level of mean for emotional intelligence, a very high level of mean for academic self-regulated learning, and a very high level of mean for cognitive flexibility. Moreover, there is a significant relationship between emotional intelligence and academic self-regulated learning. There is also a significant relationship between cognitive flexibility and emotional intelligence and a significant relationship between cognitive flexibility and academic self-regulated learning. Also, there is a partial mediation of the effect of cognitive flexibility on the relationship between emotional intelligence and academic self-regulated learning.

The findings of the study clearly confirm the notion about the mediating effect of cognitive flexibility on the relationship between emotional intelligence and academic self-regulated learning. The findings are supported by the anchor theory, the Social Cognitive Theory by Bandura (1986) wherein it includes self (personal), behavioral and environmental factors. Self-regulatory skills allow learners to learn from others' experiences and behaviors by observing them in a social environment. Further, the findings of the study are substantiated by the Emotional Intelligence Theory by Mayer and Salovey (1993), and the Cognitive Flexibility Theory by Spiro *et al.* (1988).

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Conflict of Interest Statement

The authors declare no conflicts of interest.

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