

A MULTI-PERSPECTIVE STUDY ON COGNITIVE, EMOTIONAL, AND SOCIAL FOUNDATIONS OF LEARNING

¹**Sehar Anees**

*Institute of Agricultural Extension, Education and Rural Development University
of Agriculture Faisalabad*

Email: seharbajwa7033@yahoo.com

²**Omar J. Alkhatib**

Corresponding Author

*Professor of Civil and Structural Engineering, Architectural Engineering
Department, United Arab Emirates University*

Email: Omar.alkhatib@uaeu.ac.ae

³**Asad Ali**

Forensic Science, School of Life and Science, Anglia Ruskin University

Email: Asadali011220@gmail.com

⁴**Francesco Ernesto Alessi Longa**

Department of Kinesiology - Sport Sciences, Liberty University- Virginia (USA).

Email: fealessilonga@liberty.edu

ORCID 0009-0002-6068-6203

⁵**Abdul Rehman**

PhD Scholar Gomal University D I Khan

Email: gps80tda@gmail.com

Abstract

Learning is a multidimensional process which is influenced by cognitive, emotional and social factors interacting to determine academic experiences and outcomes of students. This paper was done to analyze the personal and combined levels of influences of cognitive processes, emotions, and social dynamics on academic achievement among university students. Quantitative research design was adopted, where a survey was conducted to gather information about 400 students in four government universities. Cognitive factors (attention, memory, and problem-solving), emotional factors (motivation, emotion regulation, and stress), and social factors (peer interaction and teacher-student relationships) were assessed using standardized instruments. The analysis of the data was performed with the help of descriptive statistics, Pearson correlation, multiple and hierarchical regression analyses. The results indicated that all three domains had significant positive correlations with academic performance. Cognitive factors came out as the most serious predictors, after which came emotional and social factors. The hierarchical regression analysis proved to show that a combination of cognitive, emotional and social factors can explain a significant amount of variance in academic performance, which is evidence of the interdependence between the foundations of learning. The research finding is that successful learning in higher education must be holistic, considering not only cognitive abilities but also students' emotional and social learning-related conditions.

Keywords: *Cognitive learning, Emotional factors, Social interaction, Academic performance*

Introduction

The study of learning has evolved over time, incorporating multiple perspectives that encompass cognitive, emotional, and social domains. To understand how people learn, one must recognize the

underlying factors, as they jointly shape both the learning process and its outcomes. This multi-perspective is an effort to combine cognitive psychology, emotional theory, and social learning theory in an effort to give a holistic approach to how individuals gain knowledge, acquire skills and adapt their behaviors in various situations. All these domains provide their own perspective on the intricacies of learning and outline the interaction between mind processes, emotional experiences, and social interactions.

The role of cognition in the learning process is central since it involves mental processes of obtaining, storing, and processing information. Cognitive theories, including theory of cognitive development by Piaget and theory of sociocultural by Vygotsky, focus on the way in which people create knowledge by interacting with the surroundings (Piaget, 1972; Vygotsky, 1978). The stages of cognitive development introduced by Piaget offer a framework of how the way of thinking of children can change during the time they experience the world surrounding them and the thoughts put forward by Vygotsky on the zone of proximal development point to the significance of social interaction in cognitive development. Cognitive modes of learning bearing in mind information processing theories concentrate on how individuals perceive, process and store information but concentrate on attention, memory, and problem solving as important aspects of learning (Sweller, 1988). Also, cognitive load theory provides information relating to the process of processing complex information by learners and constraints of the working memory during learning. The studies of cognitive load by Sweller (1988) indicate that the cognitive design of the instructions should consider the mental effort that is needed to process the information so as to not overburden the learners with too much cognitive load.

Emotion is another vital aspect of learning that is receiving increasing attention in education. Emotions play a major role in the way the learners approach the content, the way they continue despite facing challenges, and how they become part of prior knowledge systems with the new information. Emotions in learning are closely connected to motivation since emotional reactions to the learning activities also help to determine the motivation of the learners in the process of learning and their persistence in fulfilling academic objectives. Emotional intelligence studies (Goleman, 1995) have highlighted the significance of cognitive awareness, emotional cognition and emotional regulation as a source of improving learning and social interaction. EI people are in a better position to overcome learning difficulties that comprise; stress, frustration, and anxieties, which otherwise will frustrate learning processes and academic achievements (Parker, Salovey, and Mayer, 2004).

Moreover, the emotional atmosphere of a learning situation may significantly influence academic performance of students. An emotional atmosphere of support, encouragement and engagement creates a feeling of safe and belonging which subsequently increases motivation and learning results (Rimm-Kaufman and Sandilos, 2011). On the other hand, negative feelings like anxiety, fear of failure and low self-esteem may pose a hindering factor to effective learning through a lack of attention, memory and thinking. Schutz and DeCuir (2002) have emphasized that educators should be able to affect the emotional needs of the students in order to facilitate a more comprehensive method of learning.

In addition, the social environment within which learning takes place is also very important since social interactions and cultural forces determine the ways through which people learn, values and behaviors. The social learning theories especially those expressed by Albert Bandura (1986) emphasize observation, imitation and modeling as part of the learning process. The social cognitive theory developed by Bandura assumes that humans learn through observing the behaviours of

others and especially role models and through feeling the results of the behaviours of others. This is the process of observational learning, as well as the development of self-efficacy beliefs that is important in determining the motivation, behavior, and cognitive development of learners. In his work, Bandura, as well as, Vygotsky (1978) in his notion of social interaction and cultural tools in learning, focus on the concept that cognitive development is social and exists within a cultural background.

Integrating Cognitive, Emotional, and Social Foundations

Over the past few years, the need to incorporate cognitive, emotional and social views in the learning process has gained a lot of recognition. This multi-dimensionality admits that learning is not a cognitive process only but it is highly affected by emotional and social factors. Cognitive-behavioral methods, such as the example of them, are based on combining the aspects of cognitive psychology with the strategies of emotional regulation to assist learners in overcoming anxiety and performing better at school (Beck, 2011). Also, social-emotional learning (SEL) programs aim at building the emotional intelligence, social skills, and self-regulation of students and promoting cognitive and emotional development in schools (Durlak et al., 2011).

Moreover, these foundations are important in interpreting the needs and diversity of learners. Students have varying emotional backgrounds, social background, and cognitive capacities to the learning context, and teaching methods need to put these differences into consideration. Differentiated instruction as the concept where teaching is adjusted to the unique needs of the students includes the aspects of cognitive, emotional, and social theories in order to help prevent the situation when some students are not given a chance to succeed (Tomlinson, 2001).

Problem Statement

The process of learning is complex, shaped by cognitive, emotional, and social factors that interact dynamically. While significant research has been conducted within each of these domains, a comprehensive understanding of how they collectively shape learning outcomes remains underexplored. This study seeks to investigate the interplay between cognitive, emotional, and social foundations of learning, and their collective impact on student learning processes, motivation, and academic performance. By adopting a multi-perspective approach, this research aims to contribute to a more integrated framework for understanding the factors that influence learning in educational contexts.

Research Objectives

1. To examine the role of cognitive processes, including memory, attention, and problem-solving, in shaping the learning experience.
2. To explore the influence of emotional factors such as motivation, emotional intelligence, and stress on academic performance and learning outcomes.
3. To investigate the impact of social factors, including peer interactions, teacher-student relationships, and cultural context, on the learning process.
4. To understand how the cognitive, emotional, and social foundations of learning interact to enhance or hinder academic achievement.

Research Questions

1. How do cognitive processes such as attention, memory, and problem-solving influence the learning process?
2. What is the role of emotions, including motivation and emotional regulation, in enhancing or impeding learning outcomes?

3. How do social interactions, including peer relationships and teacher-student dynamics, affect students' learning experiences?
4. In what ways do cognitive, emotional, and social factors interact to shape students' academic performance and overall learning success?

Literature Review

Cognitive Foundations of Learning

Cognitive psychology provides critical theories of learning, processing and storing information by learners. Piaget's (1972) initial research laid the foundation for the study of mental development as children engage with their surroundings. The model by Piaget puts strong emphasis on the active participation in knowledge construction where children proceed through concreteness to abstract thought as they grow old. Such stages give an understanding of the way cognition changes with time, which affects the attitude of students to problem solving processes and understanding concepts.

Besides the cognitive development stages as suggested by Piaget, the sociocultural theory proposed by Vygotsky (1978) is also important, as it points out the role of social interaction in cognitive development. Vygotsky proposed the Zone of Proximal Development (ZPD) which argues that cognitive development would be best achieved through mediated interactions with people who are more knowledgeable (i.e. teachers or classmates). The presence of the social context of learning as highlighted by Vygotsky has had far reaching effects on the process of education especially in the manner in which teachers scaffold the learning process so as to enable students to achieve greater levels of learning.

The concept upon which cognitive load theory is based is the fact that the learner possesses limited cognitive resources and that the instructional resource should so that it has minimal cognitive load. (Sweller, 1988). According to the theory, learners find it very difficult to learn more information or complicated tasks when they are offered information which is beyond their cognitive abilities. This model is particularly useful in instructional design, where simplifying and organizing information to reduce cognitive load facilitates understanding and memorization. Research has indicated that the way information is delivered, through chunking and having clear guidelines can best utilize cognitive resources and enhance the learning results (Sweller, 1988).

Current research on metacognition or awareness and control of one's cognitive processes extends our learning definition on cognitive foundations. The high metacognition will make learners plan, track and review their comprehension, thus performing better in school. It has been determined that metacognitive strategies, including self-reflection and goal setting, used in teaching students can greatly improve their learning process as they help students become more autonomous and strategic in their studying (Flavell, 1979).

Emotional Foundations of Learning

Emotions are a crucial factor in the learning process, as they affect motivation, engagement, and performance in school. Goleman (1995) further came up with the concept of emotional intelligence that focuses on the need to identify and control the emotions of individuals and others. It was also established that emotional intelligence makes a great difference in learning outcome since students with a high level of emotional intelligence are more capable of tolerating stress, frustration, and effectiveness in learning conditions (Parker, Salovey, and Mayer, 2004). Emotional regulation enables learners to be focused and motivated even when in the situation of difficulty resulting in improved persistence and success in learning activities.

Another important emotional determinant of learning is motivation. According to self-determination theory (Deci and Ryan, 1985), intrinsic motivation or doing things because they are enjoyable leads to more effective and longer-term learning than extrinsic motivation where one will do something due to external rewards. When students can attain some personal meaning or interest in what they are studying, they will have a more chance to get into the content and continue until they pass through a tough time. Studies have also found out that intrinsic motivation is connected to higher academic performance and creativity because it promotes autonomy and intrinsic satisfaction in learning (Deci and Ryan, 1985).

Stress and anxiety on the other hand, may be counterproductive to learning. Anxiety may affect cognitive performance, especially when one is required to perform tasks that need some concentration and memory (Zeidner, 1998). The phenomenon of test anxiety, specifically, has been observed to impair the performance of students in schools since it leads to a condition of hyper-arousal that interferes with the process of thinking (Cassady and Johnson, 2002). Therefore, emotional elements like the stress, anxiety, and motivation should be well controlled in a learning setting to achieve the best learning environments. It has been found that by providing the students with the supportive and low-stress environments, the academic results may be improved since students feel more relaxed and confident in their skills to succeed in their academic performance (Rimm-Kaufman and Sandilos, 2011).

Social Foundations of Learning

Social context through which the learning process takes place is a significant determinant of how the students learn and acquire skills. The social learning theory, especially the work by Albert Bandura (1986) puts much emphasis on observation and modeling in the learning process. Observational learning is another concept by Bandura which proposes that people can learn by watching the actions of other people and especially role models in addition to the outcomes of those actions. The social learning affects the acquisition of new behavior as well as the strengthening of behavior. An example is that students can model good behaviors that they see in their peers or teachers and this can improve their learning experiences.

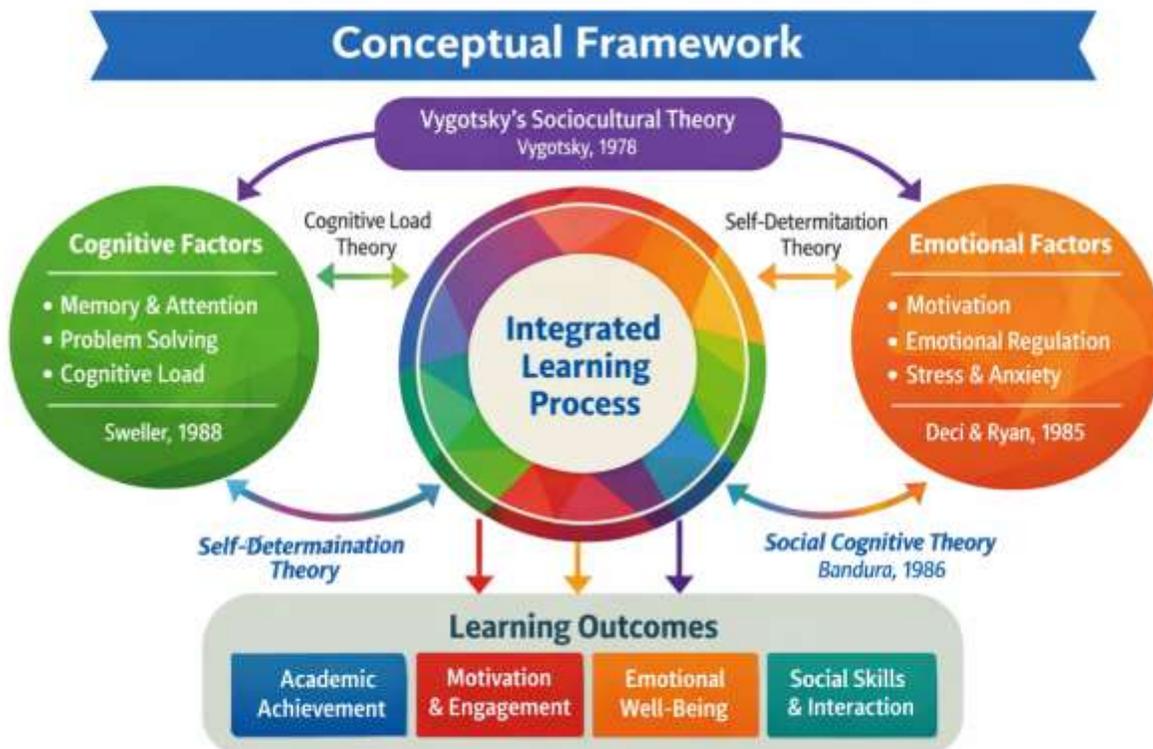
The sociocultural theory of learning, formulated by Vygotsky (1978), also places considerable emphasis on social interaction in the learning process. Vygotsky argued that cognitive development is a social process and that interactions with other individuals in a cultural environment influence cognitive development. As one of the tools of culture, language is important in the development of cognition. Students learn through group learning exercises whereby they absorb knowledge and strategies that are shared with their fellow students and their teachers. This brings out the significance of cooperative learning settings, where one socializes and engages in dialogue to enhance cognitive development.

The other significant feature of the social context of learning is teacher-student relationships. Teacher-student relationships have been found to be positive, which have been associated with increased motivation, interest in the students, and student performance (Pianta, 1999). When students can believe that their teachers support and appreciate them, there are more chances that they can be more academically engaged and persistent. Conversely, poor academic performance and lack of engagement can be brought about by negative or bad teacher student relationships (Baker, 2006). Therefore, positive and constructive relationships between teachers and students should be encouraged to enhance the learning conditions.

The social learning also depends on peer interactions. Team learning in which students are allowed to solve problems among themselves, has been found to enhance learning process as it facilitates sharing of ideas and critical thinking (Johnson and Johnson, 1989). Peer support may also assist the students in acquiring social and emotional skills, including empathy, communication, and conflict resolution, which are the keys to effective learning and personal growth. This way, academic learning is not only improved by the social interactions, but it is also the factor that helps develop emotional and social skills.

Theoretical Framework

This paper is based on the most important theories in the field of cognitive psychology, emotional intelligence and social learning to analyze the complexity of learning. The Cognitive Load Theory (Sweller, 1988) enlightens the way mental resources are allocated in the course of learning, with the emphasis on the fact that the appropriate reduction of cognitive overload does provide an opportunity to learn effectively. The Sociocultural Theory of Vygotsky (1978) offers an insight into the concept of learning as a social phenomenon that emphasizes the role of contact with more intelligent people in the cognitive development of the individual. Also, Self-Determination Theory (Deci and Ryan, 1985) is implemented to comprehend the role of intrinsic motivation and emotional regulation in the learning processes and the Social Cognitive Theory (1986) by Bandura is used to understand the role of social interactions and observational learning on the behavior and learning outcomes. The combination of the theories can use a comprehensive approach to cognitive, emotional and social aspects of the elements affecting the process of learning.



Research Methodology

This study adopted a quantitative research methodology to explore the cognitive, emotional, and social foundations of learning and their impact on academic outcomes. A survey-based approach

was employed to collect data from students across four public sector universities. The survey included standardized questionnaires measuring cognitive factors such as memory, attention, and problem-solving skills, as well as emotional factors like motivation, emotional regulation, and stress. Additionally, social factors, including peer interactions and teacher-student relationships, were assessed.

A stratified random sampling technique was used to ensure that the sample was representative of the student population across different academic disciplines and year levels at the selected universities. The total sample size consisted of 400 students, with 100 students selected from each university. Data were analyzed using SPSS (Statistical Package for the Social Sciences). Descriptive statistics were used to summarize the responses, while inferential statistics, such as correlation and regression analysis, were employed to examine the relationships between cognitive, emotional, and social factors and learning outcomes. The study aimed to establish significant patterns and correlations between these factors and provided empirical evidence to support the development of more integrated learning strategies.

Results and Findings

Table 1

Correlation among Cognitive, Emotional, Social Factors and Academic Performance

Variables	Cognitive Factors	Emotional Factors	Social Factors	Academic Performance
Cognitive Factors	1	.54**	.48**	.62**
Emotional Factors	.54**	1	.57**	.59**
Social Factors	.48**	.57**	1	.55**
Academic Performance	.62**	.59**	.55**	1

Note: $p < .01$

Table 1 indicates the Pearson correlation coefficients of cognitive factors, emotional factors, social factors and academic performance. The findings reveal that there are statistically significant positive interrelationships of all variables at the 0.01 level. The cognitive variables were significantly positively correlated with academic performance ($r = .62$) indicating that students who possess high levels of attention, memory and problem-solving skills would have higher academic performance. Academic performance was also closely related to emotional factors ($r = .59$) which, together with motivation, emotional regulation, and stress management argument, can be significant in learning. Likewise, social factors showed moderate and strong positive relationship with academic performance ($r = .55$), which shows that positive teacher student relationships, and positive peer relationship with students lead to a significant student success. The high interrelations of the cognitive, emotional, and social factors also imply that those areas are related and have a joint effect on the learning process.

Table 2

Multiple Regression Analysis Predicting Academic Performance from Cognitive Factors

Predictor	B	SE	β	t	p
Constant	1.87	.24	—	7.79	.000

Predictor	B	SE	β	t	p
Attention	.31	.05	.36	6.20	.000
Memory	.27	.06	.29	4.50	.000
Problem-Solving	.22	.05	.25	4.40	.000

Model Summary: $R^2 = .48$, Adjusted $R^2 = .47$, $F(3, 396) = 121.34$, $p < .001$

The findings of the multiple regression analysis of the predictive ability of cognitive factors on academic performance are given in Table 2. The model was significant ($F = 121.34$, $p < .001$) and had been found to explain 48 percent of the variance in academic performance ($R^2 = .48$). Among the predictors, attention was the strongest one (between-.0.36), then there was memory (between-.0.29) and problem-solving skills (between-.0.25). All cognitive variables were strong predictors of academic performance ($p < .001$) which showed that students who are more attentive and have better memory and problem solving skills are prone to achieve better in academics. These results highlight the primary importance of the cognitive processes in determining the outcomes of learning.

Table 3

Multiple Regression Analysis Predicting Academic Performance from Emotional Factors

Predictor	B	SE	β	t	p
Constant	2.14	.26	—	8.23	.000
Motivation	.34	.05	.38	6.80	.000
Emotional Regulation	.29	.06	.31	4.83	.000
Stress	-.21	.05	-.24	-4.20	.000

Model Summary: $R^2 = .44$, Adjusted $R^2 = .43$, $F(3, 396) = 104.76$, $p < .001$

Table 3 shows the relationship of the emotional factors on the academic performance by the use of multiple regression analysis. This model was statistically significant ($F = 104.76$, $p < .001$) and explained 44 percent of the variation of academic performance. The strongest emotional predictor was identified as motivation ($\beta = .38$) and then emotional regulation ($\beta = .31$). On the contrary, stress had a significant negative impact on academic performance ($\beta = -.24$) which implies that the more stress a student is the less the academic achievement. The results indicate a dual nature of emotional factors in learning that positive emotions can improve academic performance whereas uncontrollable stress is a barrier to good learning.

Table 4

Multiple Regression Analysis Predicting Academic Performance from Social Factors

Predictor	B	SE	β	t	p
Constant	2.06	.25	—	8.24	.000
Peer Interaction	.28	.06	.30	4.67	.000

Predictor	B	SE	β	t	p
Teacher–Student Relationship	.35	.05	.41	7.00	.000
Cultural Support	.19	.06	.20	3.17	.002

Model Summary: $R^2 = .41$, Adjusted $R^2 = .40$, $F(3, 396) = 92.54$, $p < .001$

Table 4 shows the outcomes of the regression estimation to determine the effect of social factors on academic performance. The model had a statistically significant difference ($F = 92.54$, $p < .001$) and was able to explain a percentage of 41 in the variance in academic results. The relationship with teachers came up as the best social predictor ($\beta = .41$), peer interaction ($\beta = .30$) and cultural support ($\beta = .20$). Such findings show that students with positive relations with instructors, positive peer interactions, and cultural and social support have high chances of attaining high academic performance. This highlights the presence of an accommodative social learning setting in institutions of higher learning.

Table 5

Hierarchical Regression Analysis Showing Combined Effect of Cognitive, Emotional, and Social Factors on Academic Performance

Model	Predictors Added	R^2	ΔR^2	F Change	p
Model 1	Cognitive Factors	.48	—	121.34	.000
Model 2	+ Emotional Factors	.61	.13	89.45	.000
Model 3	+ Social Factors	.69	.08	64.72	.000

Final Model: $R^2 = .69$, Adjusted $R^2 = .68$, $p < .001$

The table 5 summarizes the hierarchical regression analysis that tested the combined impact of cognitive, emotional and social factors on academic performance. In Model 1, the cognitive factors themselves explained 48 per cent of the academic performance. Model 2 added emotional factors and dramatically enhanced the explained variance to 61, meaning that there was a significant incremental contribution ($\Delta R^2 = .13$). Lastly, a further improvement to the model was the fact that social factors were included in Model 3 and this led to an additional total explained variance of 69% ($R^2 = .69$). The large changes in the explained variance at every step illustrate that there is a combination of cognitive, emotional, and social factors that have a more holistic explanation of academic performance when it is combined together than when it is viewed separately. In this study, this observation endorses the multi-perspective theory of learning.

Discussion

The current research paper has looked at the cognitive, emotional and social learning basics and how they combine to affect academic performance in university students. The results strongly support the empirical rationale of multi-perspective conceptualization of learning in that academic achievement is not determined by the single need factors but consists of the interplay of the cognitive processes, emotional, and social environments. These findings are in line with modern theories of learning that focus on holistic and integrative approaches (Illeris, 2018; Schunk et al., 2014).

The correlation analysis showed that there were very strong positive correlations between the cognitive, emotional, and social factors and academic performance. Cognitive factors were the most related to academic achievement which supports the key position of attention, memory, and problem solving as a part of the learning processes. This observation is consistent with the

cognitive learning theory, which assumes that the key to academic success lies in the effective information processing, encoding, and retrieval (Baddeley, 2012; Mayer, 2020). Students having greater attentional control and problem-solving capacity are in better position to respond to complicated academic assignments and produce better outcome in terms of performance.

The regression analysis also indicated the predictive power of the cognitive factors and the strongest variable was attention. The findings align with earlier studies that have implied that sustained attention is a determining factor of learning effectiveness and classroom activity (Posner and Rothbart, 2018). Cognitive skills in terms of memory and problem solving were also important and this highlights the fact that the learning outcomes are entrenched in the cognitive ability of students. These results serve as evidence of the significance of instructional methods of active learning, cognitive processing, and skills of higher-order thinking that enhance learning in higher education.

There were also emotional elements that proved to contribute significantly to academic achievement. Motivation proved the greatest emotional predictor, then emotional regulation, and stress had significant negative effect. The findings are in line with self-determination theory where the motivation is a major force of learning and academic persistence (Ryan and Deci, 2020). Intrinsically motivated students are more likely to show more engagement, resilience, and commitment to learning activities. Furthermore, the beneficial effect of emotional regulation comes in line with the studies that reveal that students with the ability to regulate emotions efficiently can deal with academic stresses and stay focused (Gross, 2015).

It is of particular interest to note that stress has a negative impact on academic performance. Stress may negatively affect the cognitive performance, motivation, and information processing, eventually causing lower academic performance (Putwain et al., 2017). This observation demonstrates that universities need to consider the emotional health of the students by providing counseling services, stress management programs, and nurturing academic conditions. Emotional factors are thus facilitating and inhibiting factors depending on their response in terms of their management.

Social influences also proved to be quite significant in the determination of academic performance, with teacher-student relationships being found to be the best social predictor. This finding is consistent with the social constructivist theory that puts a lot of importance on the role of social interaction and significant relationships in knowledge building (Vygotsky, 1978). Good teacher-Student relationships bring about trust, engagement and academic support that consequently promote the student learning experiences (Hattie, 2009). Cultural support and peer interaction were also significant, which implies that learning in a collaborative setting and a culturally responsive practice positively affect academic achievement.

The hierarchical regression analysis presented a strong argument on the integrated nature of the learning. Although cognitive factors explained a large percentage variance in academic performance, emotional and social factors added a lot of value in explaining performance in the model. The result corresponds with the all-inclusive theory of learning proposed by Illeris (2018) and views learning as a process that interacts on the cognitive, emotional, and social levels. The findings indicate that it is not possible to focus on cognitive skills only to maximize the learning; it is necessary to have a balanced emphasis on emotional well-being and social interaction.

Conclusion

These findings are significant in the context of higher education and especially in developing nations like Pakistan. Students in the university may encounter emotional and social stresses, and there are inadequate resources, and even severe sociocultural pressures, which may bring about emotional distress and impair their social lives. Academic performance can be improved significantly through the integration of the emotional support systems, positive faculty-students interaction, and collaborative learning. Besides, the faculty development initiatives focusing on emotional intelligence, inclusive methods of teaching, and student-centered pedagogy could contribute to the establishment of more accommodating learning conditions. The current study is relevant to the current literature on the need to adopt a holistic view of learning. Having empirically proved the integrated effect of cognitive, emotional, and social variables, the findings support the necessity of the combined educational approaches considering the various aspects of the learner. This would not only boost academic success but also facilitate life long and sustainable learning within higher learning.

Recommendations

- Universities should integrate teaching strategies that strengthen students' attention, memory, and problem-solving skills through active and student-centered learning approaches.
- Academic programs should include initiatives that enhance student motivation and emotional regulation while reducing stress through counseling and well-being support services.
- Faculty development programs should emphasize building positive teacher–student relationships to foster engagement and academic support.
- Collaborative learning activities should be promoted to strengthen peer interaction and social support within classrooms.
- Educational policies should adopt a holistic learning framework that simultaneously addresses cognitive, emotional, and social dimensions of student development.

Limitations of the study

1. The study relied on self-reported data, which may be subject to response bias.
2. The cross-sectional design limits the ability to infer causal relationships among variables.
3. Data were collected from public sector universities only, which may restrict the generalizability of the findings to the private sector.

References

- Baddeley, A. (2012). *Working memory: Theories, models, and controversies*. Annual Review of Psychology, 63, 1–29. <https://doi.org/10.1146/annurev-psych-120710-100422>
- Baker, J. A. (2006). Teacher-student interactions in urban at-risk classrooms: Differential behavior, relationship quality, and student satisfaction with school. *Journal of Educational Psychology*, 98(2), 110-120.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall.
- Beck, A. T. (2011). *Cognitive therapy: A 30-year retrospective*. American Journal of Psychotherapy, 65(3), 271-280.
- Cassady, J. C., & Johnson, R. E. (2002). Cognitive test anxiety and academic performance. *Contemporary Educational Psychology*, 27(2), 270-295.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. Springer Science & Business Media.

- Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). *The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions*. *Child Development*, 82(1), 405-432.
- Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new era of cognitive-developmental inquiry. *American Psychologist*, 34(10), 906-911.
- Goleman, D. (1995). *Emotional intelligence: Why it can matter more than IQ*. Bantam.
- Gross, J. J. (2015). Emotion regulation: Current status and future prospects. *Psychological Inquiry*, 26(1), 1–26. <https://doi.org/10.1080/1047840X.2014.940781>
- Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. Routledge.
- Illeris, K. (2018). *Contemporary theories of learning: Learning theorists in their own words* (2nd ed.). Routledge.
- Johnson, D. W., & Johnson, R. T. (1989). *Cooperation and competition: Theory and research*. Interaction Book Company.
- Mayer, R. E. (2020). *Multimedia learning* (3rd ed.). Cambridge University Press.
- Parker, J. D., Salovey, P., & Mayer, J. D. (2004). *Emotional intelligence: Theory, findings, and implications*. *Psychological Inquiry*, 15(3), 197-215.
- Piaget, J. (1972). *Psychology and pedagogy*. Viking Press.
- Pianta, R. C. (1999). Enhancing relationships between children and teachers. *American Psychological Association*.
- Posner, M. I., & Rothbart, M. K. (2018). Attention, self-regulation, and consciousness. *Philosophical Transactions of the Royal Society B*, 373(1744), 20170159. <https://doi.org/10.1098/rstb.2017.0159>
- Putwain, D. W., Sander, P., & Larkin, D. (2017). Academic stress, emotional well-being, and achievement. *Educational Psychology*, 37(5), 521–540. <https://doi.org/10.1080/01443410.2016.1185398>
- Rimm-Kaufman, S. E., & Sandilos, L. E. (2011). *The influence of the teacher-student relationship on students' school adjustment: Implications for theory, research, and practice*. In M. A. Weyandt (Ed.), *Handbook of school mental health* (pp. 81-97). Springer.
- Ryan, R. M., & Deci, E. L. (2020). *Intrinsic and extrinsic motivation from a self-determination theory perspective*. Academic Press.
- Schunk, D. H., Meece, J. L., & Pintrich, P. R. (2014). *Motivation in education: Theory, research, and applications* (4th ed.). Pearson.
- Schutz, P. A., & DeCuir, J. T. (2002). *Emotions and learning: How do emotions shape the learning process?* *Educational Psychology Review*, 14(3), 222-238.
- Sweller, J. (1988). Cognitive load during problem solving: Effects on learning. *Cognitive Science*, 12(2), 257-285.
- Tomlinson, C. A. (2001). *How to differentiate instruction in mixed-ability classrooms*. ASCD.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
- Zeidner, M. (1998). *Test anxiety: The state of the art*. Plenum Press.