

THE IMPACT OF TEACHER CONSTRUCTIVE FEEDBACK ON STUDENTS MOTIVATION AND ACADEMIC PERFORMANCE AT HIGHER EDUCATION LEVEL

Dr. Saima Iqbal

Assistant Professor, Department of Education, Benazir Bhutto Shaheed University Lyari
Karachi, Pakistan.

saima.mehmood@bbsul.edu.pk

Dr. Khadija Karim

Assistant professor, Department of Education, Sardar Bhadur Khan Women University Quetta

Khadijakarim17@yahoo.com

Tooba Ellahi

B.S Education, Department of Education, Benazir Bhutto Shaheed University Lyari Karachi,
Pakistan

toobaellahi580@gmail.com

Abstract

This research paper exploring the impact of how teachers effectively provide feedback to increase student motivation and academic performance of students. Feedback refers as a knowledge and inputs from an individual; as an instructor, partner, leader, peer, or any other person's concert and performance. Teacher feedback is one of the most significant teaching strategies because of its highlights valuable impacts and convenience for practically apply in the classroom. The research will seek to improve the way of feedback delivery to enhancing the motivation level of students and increase students' academic performance. Data were gathered using a quantitative research design by use of structured questionnaire that was collected from 101 university students. The data were analyzed using the t-test and correlation analysis as descriptive statistical methods. The results indicate a positive significant relationship between the teacher feedback that highlights the importance of teachers' feedback and students' motivation to improve their academic performance of students. The findings suggest that teacher feedback is powerful tool help in enhance students' motivation through constructive feedback, immediate evaluation, and examining learning gaps in students, which eventually lead to improved academic performance.

Keywords: *Teacher Feedback, Student Motivation, Students Academic Performance, Constructive Feedback, Self-Determination Theory, Higher level*

Introduction

Feedback is defined as knowledge and inputs from an individual; as an instructor, partner, leader, peer, or any other person's concert and performance (Azhar & Imran, 2024; Hattie & Timperley, 2007). Positive and respectful feedback is constructive feedback that acts of cultivating performance through modification of mistakes and errors ((Oad, et al., 2024; Imran & Akhtar, 2023); Cole, 2006; Zsohar & Smith, 2009). A teacher plays an important role in motivating students and given them with assistance through feedback. Feedback from facilitators or teachers' functions as an insightful instrument for learners in their journey of studies and supports them increase their academic performance (Phulpoto, Oad, & Imran, 2024; Oad, Zaidi, & Phulpoto, 2023; Mandhane et al., 2015). Teacher feedback is very crucial in enhancing students' interest, confidence, motivation, engagement in learning and performance ((Imran, Zaidi, & Rehan, 2024; Imran, Zaidi, & Khanzada, 2023; Wisniewski at al., 2020). Students learn great when they are enthused and motivated. Motivation plays a vibrant role in determining students' academic accomplishment and influences students' self-management and self-efficacy (Petre, 2017). Teaching well means helping learners constantly by assessing them and providing suggestion on how to become improved (Hattie & Timperley, 2007). Research indicate that specific, measurable, timely and constructive feedback can help students, specifying learning goals, students adjusting learning strategies and boost their self-motivation and confidence (Wang Zhi, 2025). The outcomes of feedback are governed by a lot

on how well it is conveyed and acknowledged. Inexpert instructors usually write weak feedbacks which can demotivate students from learning hard and soul (García-Peñalvo et al., 2021). Studies now propose that feedback and response should have a clear objective, be strong and accurate and be motivating to support the knowledge, learning and progress of students (Boud & Molloy, 2013).

The Self-Determination Theory (SDT) by Deci and Ryan (1985) which studies how a different type of motivation impact students learning outcomes is the foundation of this study. In SDT, autonomy, competence and relatedness are the central necessities that influence student motivation (Imran, et al., 2023; Ahmed, Ahmed & Buriro, 2023). If pupils feel motivated that they are studying and increase academic performance, teacher feedback on their learning boosts them to do well. Research highlight that when students are given effective, autonomy-supportive and constructive feedback, they have a tendency to good approach to focus on learning, greats efforts on completing difficult task and enhanced in their studies (Ryan &Deci, 2022). Applying SDT, the author's study how the several methods of feedback a teacher can give such as optimistic, effects students' motivation, constructive and corrective, and academic performance at higher level students (Oad, et al., 2024; Hussain, et al., 2023; Hafeez, Iqbal, & Imran, 2021). It demonstrates that giving constructive teachers' feedback supports to create a positive learning environment that responses students' cognitive necessities (Amin, 2025; Soma, et al., 2025; Amin, Daudpota & Khan, 2025). This study aims to address the gap in literature regarding the effective teacher feedback delivery has a significant impact on both enhancing students' motivation and student academic performance. To address this gap, the research will investigate how teacher feedback and student motivation directly linked with students' academic performance.

Research Question

1. How does teacher feedback have a significant impact on students' motivation at higher education?
2. How does teacher feedback impact student academic performance at higher education?
3. How does students' motivation enhance the academic performance of students at higher education?

Research Hypothesis:

The research hypotheses for this study are as follows:

H₁ Teacher feedback has not significant impact on students' motivation at higher education

H₀ Teacher feedback has a significant impact on students' motivation at higher education

H₂ Students' motivation has not significant impact on students' academic performance at higher education

H₀ Students' motivation has a significant impact on students' academic performance at higher education

This study is significant to contribute to the existing literature by providing a comprehensive impact of teacher feedback on student motivation and academic performance. Effective feedback enhances students' engagement, motivation and confidence, while ineffective and inappropriate feedback can hinder student learning process such as inactiveness, lack of encouragement and others (Khoso, et al., 2024; Sultana & Imran, 2024; Ahmad, Bibi & Imran, 2023). This research provides the insightful knowledge of critical relationship between teacher feedback, student motivation, and academic performance. By understanding the impact of teacher feedback, instructors and facilitator can help to develop positive strategies to enhance and improve student motivation and academic performance.

LITERATURE REVIEW

Feedback

According to Cambridge dictionary, the term feedback comes from French word “retour” which means “to be back”, guidance or critical approach about how effective something or someone’s work on it. Feedback is the systematic process of given remarks, comments or praise of someone to do something right or wrong (Danish, Akhtar & Imran, 2025; Mankash, et al., 2025; Hafeez, Yaseen & Imran, 2019). Feedback given by others sometime positive or sometimes negative, it depends on people work and performance as well as feedback help person to improve their mistakes and errors.

Teacher Feedback

Teacher feedback is one of the most significant teaching strategies because of its highlights valuable impacts and convenience for practically apply in the classroom (Educational Endowment Foundation, 2018, 2021). Learners of all grades of formal schooling system get feedback messages on a regular basis. In a classroom setting, sharing learning objectives, defining principles for achievement, as long as information that moves students forward, and motivating students as the vendors of their education are fundamental purpose of feedback (Black & Wiliam, 2009). Undoubtedly, feedback is a vital component of effective instructional practices those that put forward to the enhancements of student academic performance (e.g., Brown, 2018; Educational Endowment Foundation, 2021; Hattie & Timperley, 2007; Shute, 2008; Wiliam, 2018). Feedback is an integral component of education, playing a crucial role in the teaching and learning process (Imran, Sultana, & Ahmed, 2023; Khan, Hussain & Ahmad, 2023). It has evolved from a traditional, unidirectional form of communication to a more dialogic feedback approach, emphasizing a two-way interaction between educators and learners (Rowe, 2017). This concept emphasizes the crucial roles and responsibilities that students have in the feedback process and posits that meaningful engagement with feedback is a collective endeavor, not just the educator’s responsibility (Carless & Boud, 2018). Nicol David, (2022) said that in higher education, when we consider about feedback, we usually think about the prescribed and unambiguous comments that someone, usually a teacher or instructor, given to learners about their academic performance or work (Amin, Said & Butt, 2025; Shah, Amin & Khan, 2025; Dash, et al., 2025). The idea is that learners will help those feedback to improve their understanding and comprehension of that work, and that this will support to enrichment in future success. However, comments or remarks oneself do not encourage to improvements in studies or academic achievement, unless students associate them with their own work and create core feedback out of that evaluation (Nicol, 2019). Teacher Feedback is a way as taking developmental influences on learning. Study on formative assessment put emphasis on the significance of feedback being a dynamic connection between teacher feedback process and student learning outcomes and academic performance (Black and Wiliam, 1998; Sadler, 1998). As a effect of feedback’s developmental influence on learning, students’ acquaintance and expertise are shaped keen on a more advanced stage than they were earlier to application of the specific feedback involvement (Hargreaves et al., 2000).

Types of Feedback

According to Sadler (1989), feedback’s primary objective is to lessen the gaps among performance and a goal and existing comprehensions. Based on this, Hattie and Timperley (2007) contended that feedback can be viewed through multiple angles: “feed-up” (comparing the current state with the desired state, informing students and educators of the learning objectives to be met) “feed-forward” (explanation of the desired position according to the real position, giving learners and educators details that contributes to an adaptation of knowledge in the shape of improved obstacles, more autonomy over the procedure of learning, more

proficiency and competence, more methods and procedures for focusing on the assignments, greater comprehension, and more knowledge of exactly what is and is not acknowledged) and “feed-back” (an assessment of the current state with an earlier state, giving learners and instructors the knowledge regarding the achievements they achieved in relation to a particular predicted desired or earlier accomplishments). Feedback might be offered in a structured or unplanned way and can take many different forms, including written remarks, scores, or spoken answers. It can also be incorporated into an intricate combination of instructions or conversations (Assessment Reform Group, 2002; Plank et al., 2014). Feedback typically takes the shape of only one-way interaction to give learners knowledge to aid in their learning in a conventional learning environment, whereas the main goal of instruction is to transmit learning (Askew and Lodge, 2000). Verification feedback is often the information supplied, such as assessments, grades, and critical remarks. According to Butler and Winne (1995), this verification feedback, also known as feedback on the outcome, offers binary information indicating the probability that the outcomes are accurate. Further than the assignment’s stage of completion, this kind of verification feedback contains no further information. As a result, verification feedback probably offers learners little outside direction on self-regulation (Butler and Winne, 1995). Facilitative feedback, which “offers feedback and ideas in order to guide learners throughout their individual modifications and understanding,” is the best example of this (Shute, 2008, p. 157). According to Shute, scaffolding is a popular facilitative feedback technique that enables students to complete increasingly complex tasks and consider and solve obstacles more complexly than they otherwise possible. Students’ performance will immediately improve when they receive constructive feedback that clarifies their concepts, Aslam, R., Khan, N., and Oad, L (2021).

Motivation

“A desire and readiness to do something rather than wanting to be taught or pushed into doing it” is how the online Longman Dictionary of Contemporary English defines motivation. According to Elliot & Covington (2001), motivation is the driving force behind our needs, wants, and behaviors in order to achieve a goal. In a nutshell, motivation is the sense of obligation and desire that propel us to work toward an objective.

Student Motivation

When students are motivated, they learn more effectively. In addition to influencing students’ self-efficacy and self-regulation, motivation is a critical factor in deciding their accomplishments (Petre, 2017). Without the active participation of both teachers and students, the process of learning and teaching is not complete (Aslam, R., Khan, N., & Oad, L., 2021). The responsibilities that instructors and students play in giving and receiving feedback in the natural classroom environment must thus be examined in order to boost students’ motivation in the context of setting educational objectives (Javed, 2017).

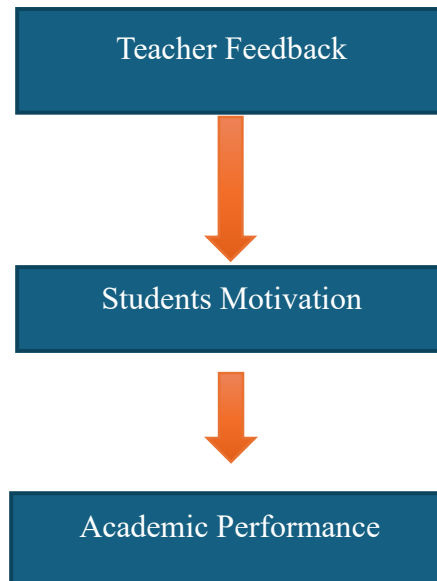
Types of Motivation

We looked at definitions and studies on intrinsic and extrinsic motivation, which was still a relatively new area of research (Ryan & Deci, 2000). Since then, the field has developed quickly, and a lot has been discovered about these two main motivational styles, particularly in the context of self-determination theory (SDT; Ryan & Deci, 2017), a comprehensive theory of developmental psychology and well-being with significant educational implications. This begs the question: Why do some pupils have a strong sense of motivation while others don’t? Why do we act in certain ways? What motivates us? We must comprehend the distinction between intrinsic and extrinsic incentives in order to respond to these queries. Learners are intrinsically motivated, according to Ryan & Deci (2000). It is the drive to invest time and energy in learning for its own sake, independent of any potential benefits. In a way, learners are intrinsically motivated. It also occurs in the relationship that students have with the tasks

that they do. Put another way, pupils will be naturally driven to complete a job if they find it fascinating and pleasurable. Additionally, because they seek for inwardly satisfying results including a sense of competence, autonomy, self-worth, and contentment, students participate in intrinsically driven activities. Conversely, extrinsic drive originates from outside sources. It is described as performing an action in order to obtain a reward or stay out of trouble. The expectation of an external reward, such as salary, appreciation, rankings, or praise, is what motivates extrinsically motivated action (Brown, 2007; Maslow, 1970; Ryan & Deci, 2000). Since intrinsic motivation is a quintessential manifestation of the active integrating characteristics in human beings that SDT assumes exist, SDT research started with an emphasis on this topic. Activities performed “for their own sake,” or out of innate interest and delight, are technically considered to be motivated by intrinsic factors (Deci & Ryan, 2000). Activities that stem from play, exploration, and curiosity are prime examples of intrinsically driven behaviors since they bring about their own delights and satisfactions rather than relying on outside pressures or incentives. The majority of human learning throughout life is probably due to intrinsic drive rather than externally imposed education and training (Ryan & Deci, 2017).

Impact of Teacher Feedback on Students’ Motivation

To achieve mastery and boost motivation, students require teachers to provide them with accurate information about their development in the form of constructive feedback (Aslam & Khan, 2020; Javed, 2017). The quality of the feedback given following the assessment is just as important to students’ motivation, academic achievement, and achievement of learning goals as the instructional strategies used by the teachers (Ahmed et al., 2020; Din & Saeed, 2018). Assessment must be in line with educational standards in order for any nation to build a standard-based education system (Gulzar & Mahmood, 2019). Good instructor feedback has a significant positive impact on students’ learning and skill development. Proper feedback helps students improve their learning skills by connecting their goals with their accomplishments (Hattie, 2021). Teachers employ a variety of feedback types, including corrections, constructive criticism, and praise, and each has a unique impact on students’ engagement and achievement (Wisniewski et al., 2021). Feedback that is tailored to the requirements of the learner can lead to longer memorization and improved learning outcomes. Students who are strongly driven by one another are greater chances to be successful in higher education because they’re more capable to recognize and overcome the challenges they confront during their studies, according to a research by Koseoglu (2015). Feedback’s ability to encourage pupils relies on how explicit, clear, and timely it is given. Giving students specific guidance concerning how to make their work better boosts their self-confidence in their ability to learn and motivates them to participate in the process (Brookhart, 2023). According to study, students who receive timely and correct feedback are more engaged in their studies because they feel inspired to learn (Wisniewski et al., 2021). However, students may get demotivated, irritated, and cease participating in learning activities if they receive harsh or offensive criticism (Shute, 2022).



Methodology

The research study had a quantitative survey research design to investigate the impacts of teachers' feedback that are motivated students and enhance their students academic performance. The data were obtained with the help of a structured questionnaire that was given to students of who regularly experience that teacher provide a constructive feedback to enhance their motivation level of students and increase academic performance. The sample population was students in institutions of higher learning and a sample of 101 students was picked by random sampling method to ensure that different subjects participants were participate in data gathering process and give own view towards teachers feedback delivery and students motivation level of learning to achieve their academic objectives. Descriptive statistical tests such as mean, median, mode, and standard deviation were used to investigate the impact of teachers feedback with regards to students motivation and academic performance. Moreover, the correlation analysis was carried out to prove the hypotheses of the research study and identify the correlation between the effectiveness of teacher feedback on students motivation, and the academic performance of students. The significance of these relationships was determined using the coefficient of correlation to determine if the relationships were positive or negative.

Ho: Teacher feedback has a significant impact of teachers feedback on students motivation at higher education

Correlation between Teacher Feedback and Students Motivation

		Correlations	
		Teacher Feedback	Student Motivation
Teacher Feedback	Pearson Correlation	1	.628**
	Sig. (2-tailed)		<.001
	N	101	101
Student Motivation	Pearson Correlation	.628**	1
	Sig. (2-tailed)	<.001	
	N	101	101

** . Correlation is significant at the 0.01 level (2-tailed).

This results revealed that “There is a significant and statistically strong correlation between feedback and students motivation N=101 ($r = .628, p < .001$)”. This indicates that when teacher provide more constructive feedback, then students’ motivation will increase continuously. According to this finding the hypothesis of this study Ho is accepted and H1 is rejected.

Correlation between Students Motivation and Academic Perform11'ance

		Student Motivation	Academic Performance
Student Motivation	Pearson Correlation	1	.710**
	Sig. (2-tailed)		<.001
Academic Performance	N	101	101
	Pearson Correlation	.710**	1
	Sig. (2-tailed)	<.001	
	N	101	101

** . Correlation is significant at the 0.01 level (2-tailed).

The results revealed a strong positive and statistically significant correlation between students’ motivation and academic performance N=101 ($r = .710, p < .001$). This indicates that higher levels of students’ motivation are associated with better academic performance among students. According to this finding the hypothesis of this study H0 accepted and H2 is rejected.

Findings

The first research hypothesis stated that teacher feedback had a significant impact on students’ motivation at higher education. When the data is averaged, it reveals that the vast majority of students agree and strongly agree that their teacher feedback is effective, timely, verbal, written, evaluative, or constructive to boost students’ motivation or has a positive impact on students’ motivation and engagement. Of these, 44.71% agree and 39.1% strongly agree, indicating that teacher feedback is an important tool to enhance students’ motivation to learn better and accomplish their academic objectives. Measures of student motivation and teacher feedback are correlated by computing the coefficient of correlation between the two. These results ($r = .628, p < .001$) demonstrate a substantial positive association between student motivation and teacher feedback, indicating that students are more likely to learn when teachers give timely, constructive, relevant, and effective feedback. Feedback from teachers serves as a link in the learning process between students and teachers. Feedback from teachers increases students’ enthusiasm to learn, recognizes their effort and diligence, and helps them strengthen their areas of weakness. The hypothesis H0 is proven to be accepted and hypothesis H1 is proven to be rejected based on the majority of student responses and the relationship between instructor feedback and student motivation. The second hypothesis stated that students’ motivation had a significant impact on students’ academic performance at higher education. This section of the questionnaire is split into two sections: students’ motivation and academic performance. Students’ motivation is linked to both teachers’ feedback and students’ academic performance. This section explains how teachers’ feedback affects students’ motivation and how students’ motivation affects students’ academic performance. The academic performance section has five more items, and the majority of students (46.4%) agree that academic performance improves continuously when students are intrinsically motivated to work hard and interested in learning new things. In the students’ motivation section, there are four more items

in the questionnaire, and the majority of students (44.5%) agree that students' motivation enhances their senses of engagement to improve their academic performance.

Students' motivation and academic performance are correlated. This is determined by calculating the coefficient of correlation between students' motivation and academic performance. The results, $r = .710$, $p < .001$, demonstrate a strong positive correlation between students' motivation and academic performance, suggesting that higher levels of motivation are associated with higher academic performance. The majority of students' replies and the relationship between students' motivation and academic achievement support the acceptance of hypothesis H0 and the rejection of hypothesis H2.

Discussion

The study's goal was to determine whether teacher feedback significantly affected students' academic performance and motivation at a higher education level. 101 university students, 26 of whom were male and 75 of whom were female, were chosen at random from various classes to make up the population sample. Their ages, educational backgrounds, and socioeconomic statuses were all mixed. The respondents were separated based on their marital status and whether they attended a public or private institution. This was done since more divisions would confuse the sample size. To obtain the proper average and outcomes, the quantitative data was examined using SPSS 27. The respondents are given complete discretion and freedom to complete the questionnaire in any way that suits them; the anonymity offered to them permits a stronger expression of freedom through the usage of the Google form questionnaire method for data collecting. The study found that enhancing students' motivation and academic performance greatly depends on instructor comments. According to Self-Determination Theory (SDT), which emphasizes the significance of autonomy, competence, and relatedness, the results demonstrated that providing constructive and positive feedback significantly increased student motivation (Deci & Ryan, 2020). Students responded better to thorough, timely, and encouraging feedback than to vague or purely critical input. This supports the claims made by Wisniewski et al. (2021) and Brookhart (2023) that well-structured feedback helps students see both their strengths and flaws, which motivates them to learn more and develop a greater interest in the material being taught. The study found that academic performance is more impacted by constructive criticism than by general praise. Good feedback helps students succeed academically by providing them with recommendations to follow. It was no wonder that this study supported Hattie and Timperley (2007), who propose the main objectives feedback should response are: What is my objective? How am I doing? And What would be I do after that? Furthermore, the results support the hypothesis that students perform better academically when they receive feedback, primarily because they are more motivated. This finding thus highlights how crucial it is to support student motivation for learning (Abbasi et al, 2025).

Conclusion

In addition to aiding students in their studies, teacher feedback helps schools create encouraging learning environments and steers students in the right path (engagement) for both high academic achievement and a prosperous future. The phase of constructive feedback from professors and mentors provides students with inspiration, appreciation, acknowledgment, and reinforcement. Motivation is essential to students' academic lives since it increases their productivity and motivates them to improve and reach their desired academic objectives. Students who are intrinsically motivated to learn will persevere through all learning challenges.

In summary, the study emphasizes how crucial prompt, thorough, and encouraging feedback is to raising student engagement and academic achievement. The findings show that giving pupils constructive criticism can significantly boost their enthusiasm and academic performance. Giving each student feedback at the appropriate time and using the appropriate

techniques should be a specific focus for educators. Constructive criticism, in particular, enables students to evaluate their work, develop, and get a deeper understanding of the material. Students can recognize where they need to grow and remember their strengths if teachers provide clear, concise, and simple-to-implement feedback. (Abbasi and others, 2025)

Recommendation

1. In order to boost students' motivation, enable them to actively participate in the learning process, and provide them with opportunities to reflect on their expertise, effectiveness, and comprehension, teachers should give students timely, specific, and relevant feedback.
2. Improved teacher feedback delivery so that students and teachers are aware of my academic objectives? And what should I do next? Teachers should be aware of how to give students timely feedback in order to improve their academic performance if students are not motivated and are unaware of their learning potential.
3. Self-Determination theory is essential for motivating students because it gives them a sense of control over their interests and choices, makes them feel capable of achieving their desired learning outcomes and goals, and makes them feel connected to their family, friends, and teachers.
4. Giving students the right motivation: Research indicates that students' motivation and self-esteem are related. Teachers should give students plenty of motivation through feedback, which will help them become more self-assured and at ease with the instructor and the feedback they receive. This will enable them to self-regulate their learning and its objectives in a more effective way.
- 5.

References

- Abbasi, Parveen, Alvi, Sodhar, and Kalsoom, 2025. The Impact Of Teacher Feedback On Student Motivation and Academic Performance: A Quantitative Study In Larkana, Pakistan
- Ahmad, D. N., Bibi, N., & Imran, M. (2023). Effects of Teacher's Motivation On Students' academic Performance at Public Secondary Schools In Karachi Pakistan. *Available at SSRN 5165741*.
- Ahmed, S., Ahmed, S., & Buriro, A. (2023). Strategies and Best Practices for Managing Cost Overruns in the Construction Industry of Pakistan. *Propel Journal of Academic Research*, 3(1), 28-55.
- Alotaibi Yousef, 2020 Motivation: The Overlooked Factor in Second Language Instruction.
- Amin, F. (2025). Binary Flaw Detection: A Security Analysis Paper. *International Conference on Artificial Intelligence and Cybersecurity*.
- Amin, F., But, M. A., Amin, I., & Khan, A. (2024). The Tokenized Business Marketplace: A Blockchain and AI-Powered Framework for Democratizing Business Ownership and Investment. *International Journal of Business and Management Sciences*, 5(4), 318-328.
- Amin, F., Daudpota, N., & Khan, A. (2025). A Complete Penetration Testing Framework: Simulating Attacks and Evaluating Post-Exploitation Techniques with Kali Linux and Metasploit. *Spectrum of Engineering Sciences*, 386-407.
- Amin, F., Said, I., & Butt, M. A. (2025). AI-Based Cybersecurity Solutions: Securing Information and Privacy in the Evolving Digital Age. *Journal of Engineering and Computational Intelligence Review*, 3(2), 142-158.
- Applying Self-Determination Theory to Education: Regulations Types, Psychological Needs, and Autonomy Supporting Behaviors Frédéric Guay1, 2021
- Aslam, Khan and Joseph, 2021 Impact of Learning Motivation on Students' Academic Achievement: Mediating Role of Constructive Feedback
- Aslam, R., Khan, N., & Oad, L. (2021). Constructive Feedback, Learning Motivation and Academic Achievement in Chemistry Subject: Qualitative Experiences from Classroom Intervention. *Global Educational Studies Review*, VI (I),
- Azhar, Z., & Imran, M. (2024). Ethical Considerations in the Adoption of Artificial Intelligence in Human Resource Management: A Comprehensive Review. *Journal of Emerging Technologies and Innovative Research (JETIR)*, 11(8).

- Danish, F., Akhtar, N., & Imran, M. (2025). AI-Driven Personalization in Educational Marketing: A Framework for Enhancing Student Recruitment and Retention. *Journal of Political Stability Archive*, 3(2), 559-590.
- Darazi, Khoso & Mahesar, 2022, Investigating The Effects of Esl Teachers' Feedback on Esl Undergraduate Students' Level Of Motivation, Academic Performance, And Satisfaction: Mediating Role of Students' Motivation
- Dash, A., Amin, F., Sahoo, S. K., & Mishra, S. K. (2025). Secure comparative evaluation of Alzheimer MRI classification models using blockchain. In *2025 13th International Conference on Intelligent Systems and Embedded Design (ISED)* (pp. 905-911). IEEE.
- Gan Z, An Z and Liu F (2021) Teacher Feedback Practices, Student Feedback Motivation, and Feedback Behavior: How Are They Associated with Learning Outcomes?
- Hafeez, A., Iqbal, S., & Imran, M. (2021). Impact of Devolution of Power on School Education Performance in Sindh after 18th Constitutional Amendment; *Journal of Development and Social Sciences*, Vol. 2, No. IV, 273-285. [http://doi.org/10.47205/jdss.2021\(2-IV\)24](http://doi.org/10.47205/jdss.2021(2-IV)24)
- Hafeez, A., Yaseen, G., & Imran, M. (2019). Management Paradigm Change in Pak-Turk (International Schools & Colleges) After a Failed Military Coup in Turkey: A Case Study.
- Hussain, A., Jat, Z. G., Hassan, M., Hafeez, A., Iqbal, S., & Imran, M. (2022). Curriculum Reforms in School Education Sector in Sindh; What Has Changed? *Journal of Positive School Psychology*, 6(9), 2675-2687.
- Imran, M., & Akhtar, N. (2023). Impact of Ethical Leadership Practices on Teachers' Psychological Safety and Performance: A Case of Primary School Heads in Karachi-Pakistan. *Academy of Education and Social Sciences Review*, 3(2), 172-181. <https://doi.org/10.48112/aessr.v3i2.505>
- Imran, M., Kazmi, H. H., Rauf, M. B., Hafeez, A., Iqbal, S., & Solangi, S. U. R. (2022). Internationalization Education Leadership of Public Universities of Karachi. *Journal of Positive School Psychology*, 6(11), 1175-1188.
- Imran, M., Sultana, Z., & Ahmed, S. (2023). The Influence Of Student-Teacher Interactions on Secondary School Students' academic Performance. *Benazir Research Journal of Humanities and Social Sciences*, 2(1).
- Imran, M., Zaidi, S.S., & Khanzada, R. A., (2023). A Comparative Analysis of South Asian Countries and East Asian Countries on Moral Education. *Spry Journal of Humanities and Social Sciences (SJHSS)*, 1(2), 120-134. <https://doi.org/10.62681/sprypublishers.sjhss/1/2/5>
- Imran, M., Zaidi, S.S., & Rehan, F., (2024). The Impact of Excessive Internet Usage on the Emotional Maturity of Adolescents: A Case Study in Pakistan. *Spry Journal of Humanities and Social Sciences (SJHSS)*, 2(1), 1-20. <https://doi.org/10.62681/sprypublishers.sjhss/2/1/1>
- Imtiaz, U., Ahmad, B., Sajid, M. H., Abbas, Q., Qureshi, M. A., Rasheed, S., & Khan, A. (2025). An Integrated Machine Learning Framework for Structural Health Monitoring of Bridges: A Case Study on Soan Bridge. *The Asian Bulletin of Big Data Management*, 5(2), 194-207.
- Imtiaz, U., Malik, S., & Khan, A. (2024). Blockchain-Driven Cybersecurity Framework for Smart Homes: Integrating IoT and Machine Learning for Secure Automation. *The Asian Bulletin of Big Data Management*, 4(4), 570-583.
- Ji-Yoon Jin I F., Maheshi B., Maldonado R. M., Gasevi D., and Tsai Y. S., 2024 Scaffolding Feedback Literacy: Designing a Feedback Analytics Tool with Students
- Karl Johan Aström and Richard Murray, (2006). Feedback Systems: An Introduction for Scientists and Engineers
- Khan, R., Hussain, A., & Ahmad, S. (2023). Revolutionizing Human Resource Management: The Transformative Impact of Artificial Intelligence (AI) Applications. *International Journal of Social Science & Entrepreneurship*, 3(4), 306-326.
- Khoso, F. J., Shaikh, N., Dahri, K. H., & Imran, M. (2024). Educational Nurturing in Underdeveloped Contexts Unraveling the Dynamics of Student Teachers' Holistic Development. *Spry Contemporary Educational Practices*, 3(1).
- Leung A1, Fine PD1, Blizard R1, Tonni I3, Ilhan D4 and Louca C2, Teacher Feedback and Student Learning-The Students' Perspective

- Mankash, M. A., Ahmed, S. T., Shabbir, N., & Imran, M. (2025). Second Language Learning in the Digital Age: How Technology Shapes Language Acquisition at Universities in Karachi, Pakistan. *Liberal Journal of Language & Literature Review*, 3(1), 182-199.
- Nicol David, (2022). The power of internal feedback: exploiting natural comparison processes.
- Oad, L., Shah, R., Sewani, R., Ahmad, N., Akhtar, N., & Imran, M. (2024). Empowerment of Artificial Intelligence in Learning Optimisation Student Perceptions in Karachi, Pakistan. *International Journal of Educational Sciences*, 47(2), 34-44.
- Oad, L., Shah, R., Sewani, R., Ahmad, N., Akhtar, N., & Imran, M. (2024). Empowerment of Artificial Intelligence in Learning Optimisation Student Perceptions in Karachi, Pakistan. *International Journal of Educational Sciences*, 47(2), 34-44.
- Oad, L., Zaidi, S.S., & Phulpoto, S. A. J., (2023). Helicopter Parenting and its Influence on the Children of Pakistan: Thematic Analysis. *Spry Journal of Humanities and Social Sciences (SJHSS)*, 1(2), 72-87. <https://doi.org/10.62681/sprypublishers.sjhss/1/2/1>
- Panadero E. & Lipnevich A.A., 2022 A reviews of feedback models and typologies: Towards an integrative model of feedback elements
- Phulpoto, S. A. J., Oad, L., & Imran, M. (2024). Enhancing Teacher Performance in E-Learning: Addressing Barriers and Promoting Sustainable Education in Public Universities of Pakistan. *Pakistan Languages and Humanities Review*, 8(1), 418-429. [https://doi.org/10.47205/plhr.2024\(8-1\)38](https://doi.org/10.47205/plhr.2024(8-1)38)
- Relationships between Teacher Feedback and Student Motivation: A Comparison between Male and Female Students
- Renske A. M. de Kleijn (2023) Supporting student and teacher feedback literacy: an instructional model for student feedback processes, *Assessment & Evaluation in Higher Education*, 48:2, 186-200, DOI: 10.1080/02602938.2021.1967283
- Ryan & Deci, 2020 Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions
- Shah, S. M. H., Amin, F., & Khan, A. (2025). Cyber-Resilient Mobile Edge Computing: A Deep Neural Approach for Secure and Efficient Task Offloading. *The Asian Bulletin of Big Data Management*, 5(1), 200-215.
- Soma, R., Sahoo, S. K., Amin, F., & Mishra, S. K. (2025). A Federated Learning Framework for Multi-Parameter Optimization in Edge Computing. In *2025 13th International Conference on Intelligent Systems and Embedded Design (ISED)* (pp. 1-6). IEEE.
- Sultana, Z., & Imran, M. (2024). Challenges Faced by English Teachers in Pakistan. *Spry Journal of Literature and Linguistics*, 2(1).
- Wisniewski B, Zierer K and Hattie J (2020). The Power of Feedback Revisited: A Meta-Analysis of Educational Feedback Research.