The Ripple Effect: How Student Accomplishment Shapes Teacher Self-Efficacy?

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Abstract

This research examined the complex relationship between teaching efficacy of staff and student performance levels in secondary institutions throughout Rawalpindi and Islamabad Pakistan during the 2022-2024 academic year. The study was conducted across three consecutive academic years in 27 secondary schools. Data were collected from teachers and principals through structured questionnaires administered in three phases. Student academic performance was assessed in Phases 1 and 3, while Phase 2 examined teachers' self-efficacy beliefs. A 79-item questionnaire, adapted from previously validated instruments with strong psychometric properties, was employed for data collection.

The study results demonstrated intricate relationships between the investigated variables through structural equation modeling analyses. Moreover, the self-assessed confidence level of teachers influenced student achievement results slightly but not as prominently when compared to the substantial impact that student achievement demonstrated before and after both variables changed. Meanwhile, the study demonstrates how early academic achievement directly affects student performance together with teacher confidence assessment. The implementation of policies needs to focus on early intervention strategies and funding teacher professional development which improves both instructor confidence and develops strong teaching methodologies.

Key words: Teachers self-efficacy views; Student's accomplishment; Motivation; Performance

Introduction

In any civilization where education is vital to its socioeconomic prosperity, children's academic performance is especially important. Academic success is a significant measure of how well they are performing in school, even though it is not the only consequence. According to (Arias-Pastor *et al* 2024) The achievements of their pupils have a big influence on teacher self-efficacy, which is defined by Albert Bandura's social cognitive theory as a teacher's confidence in their capacity to plan and carry out instructional tasks, further added that mastery experiences like witnessing real student success are the main source of self-efficacy, boosting teachers' faith in their capacity to teach. Numerous studies demonstrate to the impact that academic achievement has on children's lives. Specifically, children's academic choices, career goals, and psychosocial well-being and adjustment are all impacted by academic achievement (Shuhrat o‘g‘li et al., 2024; Hamka et al., 2024; Li et al., 2024; Faria, 2024). Since teachers play a unique role in establishing the standards and creating the conditions for children's school attainments, it is crucial to understand the key mechanisms through which teachers contribute to their students' academic success. While the study of school achievement has traditionally placed great emphasis on student qualities (e.g., ability, motivation), family qualities (e.g., family relations, attitudes toward school), and the socioeconomic context of the family and school, the task of establishing educational environments conducive to intellectual abilities, interpersonal competencies, and personal advancement has become the main purpose of modern schools, and it is largely dependent on the aptitude of various school participants – the teachers, principal, families, and staff – to work together.

This phenomenon has been widely supported by (Ipatleleng Ntsayakgosi *et al* 2024) supported that meta-analytic and correlational research further supports this association. Higher self-efficacy teachers, for example, were more tenacious and innovative in their teaching methods, which was linked to better academic results for students, according to research conducted in Botswana.

A multitude of investigations have indicated the impact of teachers' views on self-efficacy on adolescents’ cognitive accomplishments and school success when the RAND Corporation's influential work (Sterpetti et al., 2024; Schweisfurth, 2011) and the follow-up research of Buchmann & Dalton, 2002: Dumciuviene, 2015. Teachers who believe in their own abilities are more likely than those who don't to apply didactic advancements in the classroom, employ classroom management strategies and effective teaching techniques that promote autonomy among learners and lessen custodial control (Bozzano et al., 2024; Bray and Hajar, 2007), assume obligation for students with unique educational requirements (Cornwell, 2024), handle classroom issues (Chacon, 2005; Korevaar, 1990), and maintain students' attention (Boonk et al., 2018).

Additionally, better student motivation (Desforges and Abouchaar (2003); Hanushek and Woessmann (2011)), higher self-esteem (Hoover-Dempsey et al., 2001), robust self-direction (Kao and Tienda (2022)), ease of handling school transitions (Sterpetti et al., 2024), as well as additional positive emotions toward school (Cornwell, 2024) have all been linked to teachers' perceived self-efficacy. Teachers' self-efficacy could additionally assist students feel more capable, which encourages them to participate in class activities and make an attempt to

overcome obstacles (Bozzano et al., 2024).

Furthermore, other research indicates that a student's achievement and a teacher's perceived self-efficacy are correlated, with teachers noticed self-efficacy being highest in schools with well-mannered and students who excel (Bray and Hajar, 2007). Recurring successes with students can enhance their experience and strengthen their strong sense of efficacy, since teachers of gifted and well-behaved students are more probable to succeed in their lessons and assignments than instructors of students who exhibit learning or behavioral issues.

In order to solve the aforementioned problems, the current study was designed to investigate a conceptual model that, in accordance with social-cognitive principles and reasoning, attributes a significant influence on students' academic accomplishment to teachers' self-efficacy beliefs (Bozzano et al., 2024; Hao and Bonstead-Bruns (1998); and Cornwell, 2024). With an emphasis on global measures of school functioning, we looked at teacher beliefs regarding self-efficacy and student success accumulated at the school stage. Given the features of secondary schools in Islamabad and Rawalpindi, we highlight what we consider to be suitable measures of school functioning by combining student accomplishment and teacher beliefs of self-efficacy. The rest of the paper is organized as section 2 display Literature review; section 3 explores methodology; section 4 explains literature review; section 5 demonstrates conclusion of our study.

Literature Review

According to Albert Bandura's Social Cognitive Theory human conduct develops through an active interplay between three causal elements that combine personal beliefs with self-perceived abilities and behavioral practices alongside environmental social components and accessible resources (Schunk and DiBenedetto (2020); Schunk (2013); Dai et al., 1998). According to this theory of reciprocal determinism people interact dynamically with their environment through mutual shaping processes. This framework integrates observational learning from observing others with self-efficacy about success and outcome expectancies about behavioral results (Almasseri and AlHojailan (2019). Bandura’s Social Cognitive Theory (1986) offers a comprehensive framework for examining the interplay between individual cognition, behavior, and environmental factors. Central to this theory is the principle of reciprocal determinism, which explains how personal beliefs, social influences, and behavioral patterns continuously interact to shape human functioning. The model has been widely applied in educational and psychological research, as it provides a lens to understand how individuals acquire knowledge, regulate their actions, and adapt to changing social environments. Empirical studies have shown its relevance in explaining diverse behavioral domains, including health-related decision making, motivation, and the dynamics of social relationships (Schunk & DiBenedetto, 2020). By situating learning and behavior within a social context, Social Cognitive Theory has contributed significantly to understanding the mechanisms of self-efficacy, observational learning, and social interaction, thereby offering a robust foundation for investigating teacher and student development. (Pekrun (2000); Lent et al., 1993; Lopez (1999); Lemberger et al., 2012).

Bandura’s Social Cognitive Theory (1986, 1997) highlights how self-efficacy beliefs shape individuals’ actions, motivation, and learning outcomes. In educational contexts, teachers’

self-efficacy—their belief in their ability to facilitate student learning—has emerged as a critical factor influencing instructional quality and student success. Recent studies reaffirm this relationship. For example, Burić and Kim (2020) found reciprocal effects between teacher self-efficacy, instructional quality, and student motivational beliefs, while Perera and John (2020) demonstrated that teachers' efficacy in teaching mathematics was closely related to both instructional quality and student achievement. Similarly, Künsting, Neuber, and Lipowsky (2016) identified teacher self-efficacy as a long-term predictor of classroom instructional quality. In subject-specific contexts, teacher efficacy has been shown to foster effective practices that improve student motivation and achievement in EFL classrooms (Zarei & Mohammadi, 2020) and to enhance engagement and outcomes in STEM learning environments (Porsch & Wittwer, 2023). Beyond content areas, teacher support in online learning environments has been found to strengthen students' academic self-efficacy, reduce procrastination, and improve performance (Wang et al., 2022). Moreover, the quality of teacher–student relationships, as shown in research from secondary schools, has been identified as a significant predictor of students' academic self-efficacy (Jayasuriya & Wickramasinghe, 2021). Collectively, these findings support Bandura's proposition that teachers' beliefs and behaviors reciprocally influence students' learning and performance through fostering motivational, cognitive, and social development.

Previous studies (Gordon *et al* 2023) have also suggested that Teacher self-efficacy (TSE) is still rooted in socio-cognitive theory, which holds that affective states, social persuasion, vicarious experience, and mastery experiences all influence ideas about one's own abilities. the author further added that Mastery experiences are the most powerful source, according to recent evaluations in teacher education. This suggests that instructors' experiences of their students' success might serve as efficacy-building mastery evidence for them.

A recent study by (Honicke 2023) concluded that an aachievement-efficacy relationships are increasingly being treated as bidirectional in large-scale, longitudinal studies. This research shows a strong accomplishment→efficacy path (earlier achievement boosting later efficacy), which provides a model for teacher-level effects when teachers observe learner gains, even if a large portion of it focuses on students' self-efficacy.

According to social cognitive theory (Navarro et al., 2007; Zimmerman (2013); Grigg et al., 2018; Bandura (2002)), personal and interconnected agency have a major impact on people's motivation, engagement, and success. SCT identifies these elements and processes as crucial for students' academic performance (Lopez, 1999). There are several steps involved in the formation of social comparisons (Stevenson and Lochbaum (2008); Almasseri and AlHojailan (2019); Vogt et al., 2007; Caprara et al., 2013; Ugwuanyi et al., 2020). Early comparisons mostly focus on differences and similarities before shifting to concerns about task performance. Even though they compare themselves to their peers, first graders frequently do so in order to get the right answers.

Young children could get more motivated when given comparative information for pragmatic reasons rather than to learn about their own talents (Wolters (2004); Ross et al., 2004; Bandura (1999); Chang and Tsai (2022); Zysberg and Schwabsky (2021); Brown et al., 2006). The detrimental effects of failure may not be lessened by informing young children who struggle

with a task that the majority of other kids struggle as well. After elementary school, there is a greater interest in assessing peers' performance, and one's own talents are assessed using comparison data (Fryer and Elliot (2012)). Students are seen as active information seekers and processors in contemporary theoretical theories of learning (Lent et al., 2000; and Jiang et al., 2019). The motivation, course, and durability of achievement-related responses can be influenced by learners' cognitive processes (Doménech-Betoret et al., 2017; Sohail and Akram (2025)). Students' perceptions of their ability to exert control over significant facets of their lives are a focus of research from a variety of theoretical traditions (Ugwuanyi et al., 2020; Mutweleli (2014)).

Three subdivisions make up self-regulation, according to social-cognitive hypothesis: self-observation, self-reaction, and self-judgment (Goddard et al., 2021; Motlagh et al., 2011). Instead of being mutually exclusive, these subprocesses engage with one a different one. A person could react favorably or unfavorably to features of their own behavior when evaluating them against norms. Then, one's assessments and responses provide the ground for more observations, which may include the same behavioral features or different ones (Almasseri and AlHojailan (2019)). Furthermore, the learning environment has an impact on these subdivisions; environmental factors can help foster the creation of self-regulation. Given the growing push by educators to teach students how to control their performance in school, this point is crucial (Hanham et al., 2021; Wigfield et al. (2015)).

A social cognitive framework for self-regulated learning stated that learners engage learning events with specific objectives such as obtaining knowledge, understanding how to resolve problems, wrapping up textbook pages, and executing science projects. Learners will fluctuate in how competent they believe about being competent to reach those aspirations (; Brown et al., 2006; and Avry et al., 2020). Students' skills, past experiences, and perspectives regarding learning, along with pedagogical and social elements (e.g., teacher's communication of substance, classroom incentive structure), can all have an impact on the feeling of self-efficacy for education (Hanham et al., 2021). The self-regulation approach also has an impact on efficacy; learners who consider their accomplishments toward learning objectives to be satisfactory are more likely to have trust about keeping up their skill development (Zysberg and Schwabsky (2021)).

Theoretically, the feeling of self-efficacy plays a role in the motivational impact of vicarious outcomes. One significant form of vicarious knowledge for assessing one's self-efficacy is likeness to patterns (Hanham et al., 2021). Because people are inclined to think that if others are capable of succeeding, they can too, seeing similar people succeed might boost their self-efficacy and inspire them to attempt the job themselves (Cattelino et al., 2019; Bandura (2014)). When people see others who are similar to them collapse, they may think they are not capable of succeeding, which may discourage them from trying the action themselves. Performance capabilities are frequently predicted by model features. Similarity has a significant impact when people have struggled in the past and are apprehensive about performing well. Performance capabilities are frequently predicted by model features. Similarity has a significant impact when people have struggled in the past and are apprehensive about accomplishing well (Young et al., 2014; and Pajares et al., 2009).

The persuasive impacts of vicarious outcomes hypothetically depend to a limited extent on saw self-viability. Likeness to models is a significant wellspring of vicarious data for checking one's self-viability (Avry et al., 2020). Noticing comparative others succeed can raise eyewitnesses' self-adequacy and spur them to attempt the actual undertaking, since they are able to trust that on the off chance that others can succeed, they can too (Zysberg and Schwabsky (2021); Brown et al., 2006). Noticing comparable others fizzle can persuade individuals to think that they miss the mark on capability to succeed, which can deter them from endeavoring the way of behaving. Model credits frequently are prescient of execution capacities. Closeness is exceptionally compelling in circumstances where people have recently experienced hardships and hold questions about performing great (Bandura (1999); Chang and Tsai (2022)).

Social-cognitive standards are helpful for cultivating self-administrative abilities among understudies. Social-cognitive hypothesis hypothesizes that self-guideline incorporates three sub-divisions: self-perception, self-judgment, self-response (Ross et al., 2004). Noticing one's ways of behaving can illuminate and persuade. The data acquired is utilized to decide how well one is advancing toward learning objectives. Perception of progress assists with ingraining a healthy identity viability for continuing to work on one's abilities. Self-adequacy, alongside the expected fulfilment of accomplishing the objective, can support students' inspiration (Wolters (2004)).

Based on the above previous literature, we probable that instructors' amassed self-efficacy convictions would contribute essentially to students' accumulated scholarly accomplishment; explicitly, to schools' scholastic results, even in the wake of controlling for past results. Moreover, we anticipated thateducators' aggregated self-efficacy convictions apply a positive impact on students collected scholastic accomplishment, albeit just in relationship with high self-adequacy convictions.

i. Students' scholastic accomplishment toward the end of secondary school process (duration 1), as estimated by average last grades, anticipates students' last scholarly accomplishment in the next year (duration 3).

ii. Students' academic accomplishment (duration 1) adds to educators' self-efficacy convictions during the next year (duration 2). Albeit self-efficacy convictions are information structures that are fabricated and remain somewhat stable throughout the long term, students' accomplishment from initial year to another add to confirming educators' abilities and to supporting their feeling of skill.

All of the set speculations depend on standards of social-mental hypothesis (Bandura, 1997, 2001; Caprara, 2002) as well as on an expansive writing supporting the persuasive job of instructor's self-efficacy convictions on his/her understudy's accomplishment. Almost certainly, the understudy's scholarly accomplishment, thus, adds to the educator's apparent self-adequacy, albeit, a few different variables might impact the instructor's apparent skill and feeling of satisfaction at work.

Research Methodology

Teachers were enlisted from 27 secondary schools. Principals and educators of each secondary school were welcome to answer various arrangements of surveys. The schools were reached in 3 successive educational years, 2022 and 2023/2024. The information was gathered during three explicit durations: students' scholarly accomplishment was gathered on occasion 1 and 3 while instructors' self-efficacy convictions was gathered at duration 2. The poll contained 79 items chose from an enormous pool of things whose psychometric characteristics have been learned in past examination (Goddard et al., 2021). For every item, educators evaluated on a 7-point reaction design (from 1 = "Emphatically dissent," to 7 = "Unequivocally concur") their concurrence with each inquiry. The vast majority of the things had been created in past exploration, as a feature of a lengthy study fully intent on evaluating educators' self-and group efficacy convictions, their impression of their partners' skill and of that of school bodies electorate, and their work fulfilment. In this review, we adopt just the information in regards to educators' apparent self-efficacy.

Table 1
Respondent's description

Gender	N	Percent
Male	70	**37**
Female	119	**62**
Age		
Under 20 years	19	**0.1**
Between 20 -30 Years	55	**29**
Between 30-40 Years	45	**23**
Between 40-50	37	**19**
Between-50-60	33	**17**
Years of Teaching Experience		
Less than 5 Years	53	**28**
Less than 10 years	39	**20**
More than 10 Years	**97**	**51**

Scholastic accomplishment to survey understudies' accomplishment we utilized their last assessment grades toward the end of the end year of secondary school. These grades sum up understudies' exhibition across different disciplines and outcome from collegial choices of various instructors; they range from 1 (= exceptionally poor) to 5 (= phenomenal), and are normalized across the sample region. Grades were collected at the school level to give a general mark of each school's scholarly accomplishment. The information accumulated in this study have a reasonable bunched staggered, or progressive, structure. All educators are settled inside their individual schools, truth be told. It is sensible to accept that people having a place with a similar school would in general be more comparable on numerous significant factors than people from various schools.

In the estimation a piece of the model we set two factors: an element estimated by the five self-efficacy things and a component estimated by the double satisfaction things, chose through fundamental factor examinations. Every single cross-loadings as well as all covariance between the uniqueness were settled to 0. For all component, one stacking was utilized to 1 for recognizable proof purposes. In the structural setting of the framework the accompanying ways were placed: time Interval 1 understudies' scholarly accomplishment impacts time 3 understudies' scholastic accomplishment, time 2 instructors' self-efficacy convictions; time Interval 2 educators' self-efficacy convictions impact time 3 understudies' scholarly accomplishment.

Results and Discussion:

Table 2 displays the self-efficacy beliefs levels of teachers together with student academic performance numbers. Teachers reported high levels of self-efficacy according to results showing their commitment to teaching skills is strong throughout various assessment items. Research must conduct additional correlation and regression analysis to study the relationship between teacher self-efficacy and student academic outcomes although performance measurements show students achieved lower scores between duration 1 and duration 2.

Table 2
Statistical summary for teachers' self-efficacy beliefs for students' accomplishment

Particulars	**Max.**	**Min.**	**SD**	***Avg***
Self-efficacy views of teacher's beliefs				
1. I am able to gain the respect and confidence of each and every of my coworkers.	4.57	2.91	.31	3.74
2. I am able to overcome every obstacle in order to accomplish my teaching goals.	5.48	3.31	.37	6.05
3. I am able to encourage my learners to acknowledge and appreciate me as a teacher	4.78	3.31	.35	4.04
4. I can enforce adherence to rules and conduct standards among my students.	5.92	3.96	.32	4.94
5. Even the most reticent and challenging learners can participate in my class activities.	5.78	3.98	.37	4.88
Students' performance				
Average academic performance at Time Interval 1	3.89	1.98	.34	2.93
Average academic performance at Time Interval 2	3.57	1.87	.29	2.72

Table 3 presents the results of the structural equation model. Since the study "The Ripple Effect: How Student Accomplishment Shapes Teacher Self-Efficacy" explores intricate, multifaceted relationships between latent constructs rather than straightforward direct effects, Kline (2023) claims that Structural Equation Modeling (SEM) is the most suitable analytical method. Since teacher self-efficacy is a latent variable that is impacted by a number of variables (including feedback, classroom experiences, and perceived student performance).

The analysis reveals several key findings. Firstly, a statistically significant positive relationship was found between teachers' self-efficacy beliefs at Time interval 2 and student

accomplishment at Time interval 3, though the magnitude of this effect was relatively small. Secondly, prior student accomplishment at Time interval 1 exhibited a significant positive influence on teachers' self-efficacy beliefs at Time interval 2. Notably, the strongest relationship was observed between student accomplishment at Time interval 1 and student achievement at Time interval 3, highlighting the significant impact of prior academic performance on future outcomes. These findings suggest a complex interplay between teacher self-efficacy, student achievement, and their reciprocal influences over time.

Table 3
Structural model

Path	Coefficient	t-value	S. E
Time 2 self-efficacy beliefs → time 3 accomplishment	.031*	4.428	.007
Time 1 accomplishment → time 2 self- efficacy beliefs	.412*	2.671	.154
Time 1 Accomplishment → time 3 achievement	.654*	11.08	.059

Note: * Shows level of significance at p< 1 percent

Conclusion and Discussion

The analyzed educational structures in secondary schools across Islamabad and Rawalpindi in the period of 2022-2024 showed essential linkages between teacher self-efficacy and student achievement and the time-based patterns of these factors. Student achievement levels at Time 1 had a powerful direct effect that shaped both Time 2 student achievement and Time 2 teacher self-efficacy levels. Teacher self-efficacy at Time 2 produced a minor positive relationship with Time 3 student achievement. Student academic success from the beginning of their studies proves essential in determining how students perform and how teachers understand their work environment.

The research demonstrates the critical need to focus on early intervention which enhances student learning outcomes particularly during the primary grades since initial academic achievements negatively or positively affect student achievement along with teaching efficacy. The establishment of supportive schools that encourage student motivation belongs among school improvement strategies. Schools need to put into practice strong instructional practices while giving all necessary resources and by establishing specific learning requirements. Develop professional training programs for teachers through funding that promotes their developing self-efficacy through studies about instructional methods and classroom control mechanisms and methods to motivate students. The authorities should award teachers for their student-success outcomes because this action will improve educator morale and strengthen their perception of competence.

Future research studies should analyze intermediary factors including particular instructional approaches while determining school environments' and instructor qualities' effects and tracking these relationships across time to create successful interventions that help improve

academic achievement and teacher welfare. Moreover, research should also examine how contextual school factors such as available resources combined with leadership practices alongside social economic conditions influence teacher confidence and educational outcomes and their related dynamic connections.

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